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A review from  
the Federal Reserve Bank  
of Chicago

SEPTEMBER/OCTOBER 1985

**Financial industry deregulation  
in the 1980s**

Is deposit rate deregulation an Rx for M1?

Universal reserve requirements  
and monetary control

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Priced services: The Fed's impact  
on correspondent banking

Private prices, public insurance:  
The pricing of federal deposit insurance

Bank and thrift performance since DIDMCA

A deregulated rerun: Banking in the Eighties

## **ECONOMIC PERSPECTIVES**

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# Financial industry deregulation in the 1980s

Douglas D. Evanoff

The 1980s have been characterized as the decade of deregulation in the financial industry. Two major national legislative bills and numerous state proposals have been approved permitting banking activities that were previously disallowed. This special issue of *Economic Perspectives* looks at the impact of legislative mandates for industry deregulation. More precisely, it reviews and evaluates issues directly addressed in the 1980 Depository Institutions Deregulation and Monetary Control Act (DIDMCA), and the 1982 Garn-St Germain Act. Not intended as a detailed evaluation of the various provisions of the acts, the articles presented here describe and analyze some of the acts' most important and topical issues.

Market pressures and the resulting impetus for change have been strong in the U.S. financial industry for the past twenty-five years. However, the industry evolved within a regulatory framework that restricted products, prices, risk, and means of product distribution. In addition to these restrictions, the regulatory control of the industry was somewhat fragmented. Different types of institution (e.g., Federal Reserve member banks, nonmember banks, S&Ls, and credit unions) had different reserve requirements, service and price constraints, and other limitations. As these institutions responded to the demands of the marketplace, they frequently sidestepped the intent of existing regulation—though technically remaining within the “letter of the law.” These evasions frequently induced new regulations that sought to preclude the undesired activity. Since the regulatory structure was somewhat fragmented to begin with, the industry soon became one regulated by stop-gap measures.<sup>1</sup> The incentives to elude regulatory constraints intensified during the 1970s as inflation increased significantly. Interest rate limitations became binding, the opportunity cost of holding idle reserve balances and below-market interest-bearing assets rose sharply, and traditional deposit options frequently failed to fulfill customer needs.

At the same time that financial institutions were trying to circumvent regulatory

constraints, the Federal Reserve was encountering difficulty in maintaining its membership and in managing the money stock. The introduction of new money substitutes and a shrinking reserve base caused the central bank to seek legislative changes to improve its ability to implement monetary policy.

In the spring of 1980, DIDMCA was enacted and was immediately perceived as major legislation having significant potential impact on the future of the financial industry. Legislators and industry participants hailed it as the most significant banking legislation since the 1930s or, perhaps even since the Federal Reserve Act of 1913.

Two years later the Garn-St Germain Act was passed. It broadened the powers of thrift institutions and created a means of dealing with that portion of the industry that had become insolvent. It also allowed other institutions to offer new deposit services bearing market rates of interest and mandated a review of the existing deposit insurance system.

Together, these two pieces of legislation provided a framework for the development of the financial services industry throughout the coming decade. While some may argue that deregulation was not extensive enough, the legislation incorporated many of the recommendations of previous congressional commissions and numerous proposals suggested by policy researchers.<sup>2</sup>

The specific details of the two legislative mandates have been adequately addressed elsewhere and will not be repeated here.<sup>3</sup> The thrust of the acts was to eliminate many of the barriers to competition and allow market mechanisms to establish deposit and loan rates, service offerings, and to influence behavior and decisions of customers and industry personnel. Additionally, the acts expanded the reserve base, equalized the reserve burden, and were expected to aid in monetary policy implementation. Toward achieving these goals, six provisions of the acts can be delineated. These

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provisions will be the topics evaluated in the articles in this issue of *Economic Perspectives*. The major provisions include the following:

1. Articles in DIDMCA set new reserve requirement ranges on various deposit accounts, and imposed them uniformly across all depository institutions. This would enable the Fed to collect deposit data on a significantly larger number of institutions, and was intended to improve the control of the monetary aggregates as a result of the larger portion of industry members holding reserves directly with the Fed.
2. DIDMCA also provided for a phasing out of interest rate ceilings on all federally-insured deposits except demand deposits. This would encourage institutions to compete for deposits on explicit price terms and would allow depositors to receive a market rate of return. The phasing out was to be implemented by the Depository Institutions Deregulation Committee and was aimed at eliminating the need for some of the creative means utilized by institutions to pay higher implicit rates on deposits. It also curbed the process of directing funds toward particular sectors of the economy (e.g., housing) by eliminating the protected differential in allowable deposit rates. Deposit rate deregulation could have unintended monetary policy implications as it affected the public's demand for "money" balances.
3. To continue the interest rate deregulation process, Title V of DIDMCA overrode state usury law provisions for specific types of loans.
4. Both acts permitted institutions to introduce new services and allowed for investments in areas not previously acceptable. For example, thrifts were allowed to invest significantly in commercial activities; an area from which they had been previously excluded.<sup>4</sup>
5. To limit the loss of treasury revenues resulting from lower reserve requirements, and to encourage efficiency in the payments mechanism, Title I of DIDMCA required the Federal Reserve to price its correspondent services and to make them available to all depository institutions.

These services had previously been provided free to member banks.

6. DIDMCA raised the deposit insurance coverage from \$40,000 to \$100,000 at federally insured institutions. Garn-St Germain required the three federal deposit insurance agencies to evaluate the structure of deposit insurance programs and recommend modifications.

To analyze and address the impact of these provisions seven related articles are presented here. The first two address monetary policy issues resulting from deposit rate deregulation and the implementation of universal reserve requirements. The phasing out of deposit ceilings and the authorization of interest-bearing transaction account services were introduced to provide customers a market rate of return on their deposits. However, they also had monetary policy implications.

In "Is deposit rate deregulation an Rx for M1?", Paul Kasriel considers the effects of complete deposit rate deregulation on the public's demand for money and the monetary authority's ability to control the money stock. These effects have implications for the desirability of using the money stock as an intermediate target in achieving desired levels of macroeconomic activity. In "Universal reserve requirements and monetary control," Robert Laurent considers the DIDMCA provision specifically aimed at improving monetary control—uniform reserve requirements. He evaluates the impact of various central bank operating procedures on the monetary control benefits resulting from the application of universal reserve requirements.

The next two articles consider specific provisions of DIDMCA and describe their impact on the industry to date. Donna Vandenbrink reviews the reasons for the preemption of state usury ceilings in "Usury ceilings and DIDMCA." She also discusses the initiative taken by state legislators to override the preemption in DIDMCA. In "Priced services: The Fed's impact on correspondent banking," the author reviews events in the correspondent banking industry resulting from the presence of a quasi-governmental agency as an active competitor.

Because of the recent surge in the bank and thrift failure rate, and as a result of a direct mandate in Garn-St Germain, numerous new



deposit insurance programs have recently been proposed. A common, and logical, theme in most of these proposals is to incorporate risk-based premiums. In "Private prices, public insurance: The pricing of deposit insurance," by Herbert Baer, the problems involved with risk based premiums are discussed, and a number of recent proposals are reviewed. An alternative proposal is then offered which benefits from both public and private sector involvement.

Diana Fortier and Dave Phillis discuss the impact of deregulation on the performance of banks and thrifts in "Bank and thrift performance since DIDMCA." While the new service offerings and investment options resulting from deregulation were numerous, the most important element is how they enabled institutions to better generate and utilize funds, and how this affected performance. This article quantifies that behavior and performance.

The final article discusses a number of specific provisions in the 1980 and 1982 acts and puts them into historical perspective. It is common for most students of the industry to view the deregulation trends as novel approaches to industry problems. In "A deregulated rerun: Banking in the Eighties," Randall Merris and John Wood present significant parallels between the situation after the recent legislative changes and that in the early 1900s.

Although the topics discussed in this special issue of *Economic Perspectives* are quite varied, a number of comprehensive conclusions can be drawn. First, there was significant market pressure for the legislative changes that were implemented, and most would argue that the changes should positively affect the financial industry. However, the two acts were not a panacea. Indeed, there is significant disagreement on whether the provisions aimed at improving monetary control will be as successful as many originally assumed. There is also disagreement on whether further deposit rate

deregulation will aid or hamper the central bank's ability to control the money stock. Many of the new provisions can probably better be labeled as re-regulation or temporary stop-gap measures instead of true deregulation. In many cases, the industry has also been slow in exercising the new legislated powers, and, as with many legislative changes, there is disagreement as to whether the regulatory agencies are properly interpreting and implementing the new provisions.

However, the restructuring of an industry requires significant time, and more legislation and further deregulation will probably be forthcoming. The new provisions can be expected to address the issues discussed here.

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<sup>1</sup> For a more detailed discussion of this "regulatory dialect" see Edward Kane, "Good Intentions and Unintended Evil: The Case Against Selective Credit Allocation," *Journal of Money, Credit and Banking*, 9 (February 1977), pp. 55-69; and "Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation," *Journal of Finance*, 36 (May 1981) pp. 355-366.

<sup>2</sup> For the recommendations of previous commissions see *Report of the Committee on Financial Institutions to the President of the United States* (Washington D.C.: U.S. GPO, 1963); and *The Report of the Presidents Commission on Financial Structure and Regulation* (U.S. GPO, 1971).

<sup>3</sup> See *Leveling the Playing Field: A Review of the DIDMCA of 1980 and the Garn-St. Germain Act of 1982*, Chicago: Federal Reserve Bank of Chicago, 1983.

<sup>4</sup> For a discussion of allowable thrift commercial investment activities, and the fragmentation of commercial bank product lines, see Harvey Rosenblum, M.K. O'Brien, and John J. Di Clemente, "On Banks, Nonbanks, and Overlapping Markets: A Reassessment of Commercial Banking as a Line of Commerce," *Tennessee Law Review* 51 (Spring 1984), pp. 401-443; particularly pp. 422-428.



# Is deposit rate deregulation an Rx for M1?

*Paul L. Kasriel*

Since the Banking Act of 1933, U.S. commercial banks have been prohibited from paying explicit interest on demand deposits. Over time, however, there has been a gradual erosion of the spirit, if not the word, of this legislation. For example, in the 1970s, the rapid growth in money market mutual fund assets and overnight repurchase agreements could be attributed to the fact that these financial instruments possess transactions characteristics as well as market rates of return. In December 1980, depository institutions nationwide were authorized to offer NOW accounts—essentially interest-bearing checking accounts subject to a legal deposit rate ceiling (currently 5-1/4 percent). Depository institutions were authorized to offer money market deposit accounts and Super NOW accounts beginning in December 1982 and January 1983, respectively. Super NOW accounts are fully checkable deposits, earn market-related rates of interest free from any legal ceiling, but are subject to the restriction that, if the account balance falls below a minimum of \$1,000, the interest rate on the deposit becomes subject to the regular NOW account deposit rate ceiling. Money market deposit accounts are similar to Super NOWs except that they have limited transactions characteristics. Recently, congressional legislation has been proposed that would remove any rate restrictions on demand deposits.

Questions have arisen as to what effects complete deposit rate deregulation would have on the public's demand for and the monetary authority's ability to control the supply of transactions balances—that is, money. Answers to these questions have important implications for the school of economic thought known as monetarism. Monetarism has been defined as “. . . the proposition that changes in the quantity of money have important influences in the short run on output and interest rates, and in the long run on prices.”<sup>1</sup>

Two fundamental assumptions underlying monetarism are:

1) that the public's demand for real (in the sense of purchasing power) money balances is relatively stable and predictable in relation

to a few explanatory variables, such as real GNP and interest rates; and

2) that the monetary authority can control the nominal quantity of money.

The monetarist policy prescription derived from these assumptions is that the monetary authority should operate so as to produce a steady rate of growth in the nominal supply of money. This steady rate would be expected to produce a relatively steady rate of inflation (which could take on a value of zero) in the long run.

Some analysts have suggested that the deregulation of deposit rates on transactions accounts would diminish any legitimacy that the monetarist policy prescription might have by undermining the validity of its two key assumptions. What follows is an analysis of the implications of complete deposit rate deregulation on transactions accounts for the stability of the public's demand for real transactions balances and the monetary authority's ability to control the nominal quantity of such balances.<sup>2</sup> The principal conclusions are that deposit rate deregulation would reduce an important source of instability in the public's demand for real transactions balances and would leave unaffected the monetary authority's ability to control the nominal quantity of these balances.

## **Implicit versus explicit interest**

The legal prohibition of the payment of explicit market rates of interest on transactions deposits implies that below-market rates of return will be earned on these deposits even if implicit payments are made. In turn, the implication of this is that there will be an incentive to create money substitutes.

The reason implicit payment of interest on transactions deposits could be expected to be below the market rate in a money economy is that implicit payments are equivalent to barter. Barter is economically inefficient in the

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sense that the marginal cost to a bank of providing free or below-market price services to its customers is greater than the marginal value that depositors place on these services. If an explicit money payment equal to the cost of subsidizing these services were made instead, then customers could purchase these same services in the same amounts provided with implicit payments but, given a choice, probably would not do so. Therefore, *explicit* payments at market rates on transactions deposits would not make banks worse off, but would make depositors better off, abstracting from income tax considerations.

Compounding this dead weight loss of implicit interest payments is the potential problem that banks may not be able to quickly alter the levels and composition of their compensating services. As a result, the implicit return on deposits would be adjusted with a lag to changes in market interest rates, driving an additional wedge between the implicit return on transactions deposits and market rates when interest rates are rising.

The fact that close substitutes for transactions deposits, such as overnight repurchase agreements and money market mutual fund shares, evolved and flourished prior to the inception of Super NOW accounts is persuasive evidence that the return on transactions deposits, largely in the form of implicit payments, was below market rates.

### Money demand instability

Because deposit rate regulation implies below-market rates of return on transactions balances when interest rate ceilings are a binding constraint, there will be an incentive to create and use money substitutes earning higher rates of return. The creation of these substitutes could be expected to lead to a fall in the demand for conventionally defined money. Indeed, it has been argued that “. . . the most likely cause of the observed instability in the demand for money after 1973 is innovation in financial arrangements . . . induced by the combination of higher inflation rates (and therefore interest rates) and legal impediments to the payment of a market rate of return on transactions balances.”<sup>3</sup> In addition to producing instability in the demand for money in the sense of changing the quantity of money demanded at given levels of GNP and interest

rates, the prohibition of the payment of explicit market rates of interest on transactions deposits could be expected to increase the responsiveness of the quantity of money demanded to changes in market interest rates.

As relatively unregulated close substitutes for regulated transactions deposits evolve, the public's demand for the latter would fall. That is, at given levels of income and interest rates, the public would prefer to hold a lower quantity of money balances than it would in the absence of close substitutes for transactions deposits. In terms of a traditional IS-LM diagram<sup>4</sup> as shown in Figure 1, the LM curve shifts out from  $LM_0^0$  to  $LM_1^0$ .

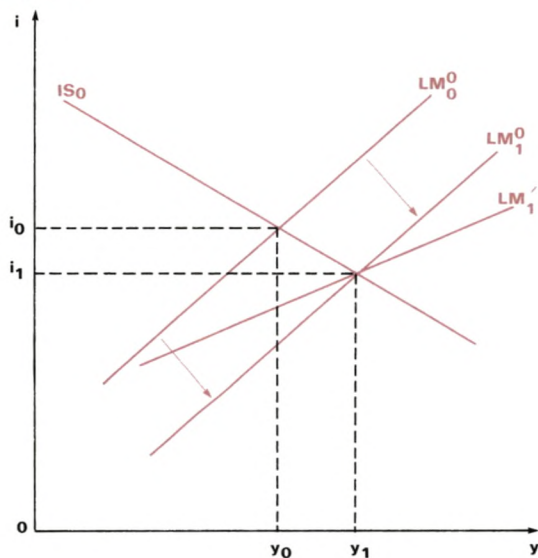
Equivalently, this effect can be described as an increase in the income velocity of money. Thus, a given quantity of money will support or be associated with a higher level of nominal GNP. This result is shown in Figure 1 by an increase in the equilibrium level of real GNP from  $y_0$  to  $y_1$ .

In addition to the LM curve shifting as a result of the development of substitutes for transactions deposits subject to interest rate ceilings, the slope of the LM curve also could be expected to decrease (as represented by  $LM_1^1$  in Figure 1). That is, the elasticity of the demand for money with respect to interest rates on alternative assets could increase. This means that the quantity of money demanded at a given level of real GNP and own rate of return on money, would show an increased response to a change in the yields on money substitutes.

This *a priori* expectation of an increased cross-elasticity of demand with respect to alternative yields follows from economic theory. It is well established that both the own price elasticity of demand for a product and the cross-elasticity of demand with respect to the prices of substitute products are greater, the closer those substitutes are for the product in question. The development of close substitutes for money implies that the elasticity of demand for money with respect to yields on these substitutes will increase. Thus, as money substitutes yielding market rates of return are developed, a given proportional change in these market rates will elicit an increasing proportional change in the quantity of money demanded. (Hereafter, discussions of the interest elasticity of the demand for money refer to the cross-elasticity rather than the own elasticity.)



Figure 1



The greater this interest elasticity of the demand for money, all else the same, the greater the potential “slippage” in the relationship between the money stock and nominal GNP or, what is the same thing, the greater the potential variability in the income velocity of money.

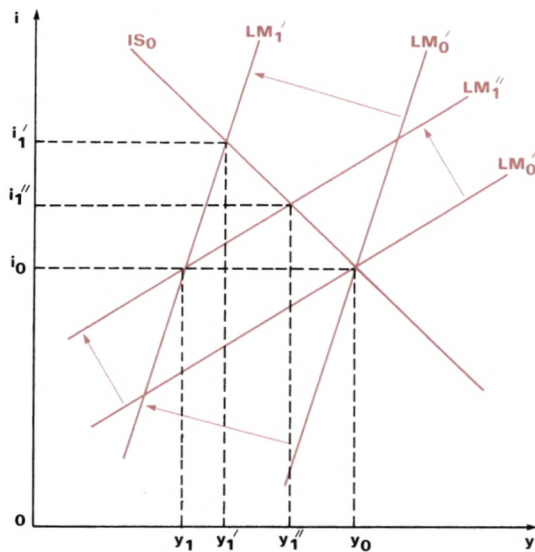
Two examples will illustrate the implications of this increased interest elasticity. First, suppose that the monetary authority takes actions to reduce the quantity of money and, in so doing, causes interest rates to rise. The greater the interest elasticity of the demand for money, all else the same, the less contractionary (in a GNP sense) will be a given reduction in the stock of money because the public will choose to economize more on the quantity of money it demands due to the interest rate increase. The interest-rate induced economization of money balances allows a lower quantity of money to support a higher level of nominal GNP than otherwise would have been the case. This is exactly equivalent to saying that the income velocity of money has increased.

In terms of an IS-LM diagram, this point is shown in Figure 2. Intersecting the IS curve  $IS_0$  at interest rate  $i_0$  and real GNP  $y_0$  are two LM curves reflecting money demand curves of different interest rate elasticities. The LM curve embodying the higher interest rate elasticity of money demand is represented by

$LM_0''$  and the lower interest elasticity by  $LM_0'$ . An arbitrary decrease in the money supply is represented by the leftward parallel shift in both LM curves such that they intersect at the coordinates  $i_0, y_1$ . Assuming no change in the general price level, the new equilibrium implied by the less interest elastic LM curve,  $LM_1'$ , would be established at interest rate level  $i_1'$  and real GNP level  $y_1'$ . In contrast, the new equilibrium implied by the more interest-elastic LM curve,  $LM_1''$ , would be established at interest rate level  $i_1''$  and real GNP level  $y_1''$ . Because  $y_1''$  is greater than  $y_1'$  for the same decrease in the money supply, the implication of Figure 2 is that the income velocity of money is higher when the interest elasticity of the demand for money is higher.

As a second example, suppose that the government finances an increase in its expenditures by borrowing from the public. All else the same, this increased demand for credit would increase market interest rates. The greater the interest elasticity of the demand for money, the more expansionary (in a GNP sense) will be the increase in federal government expenditures. Again, the rise in interest rates induces the public to economize on its demand for money balances and, thus, allows a given quantity of money to support a higher level of nominal GNP.

Figure 2





The interest rate—real GNP implications of an increase in government expenditures are shown in Figure 3. An increase in government expenditures is represented by a rightward shift in the IS curve from  $IS_0$  to  $IS_1$ . The new equilibrium level of real GNP is higher (assuming that the economy was not already at full employment), the greater the interest elasticity of the demand for money, that is, the flatter the slope of the LM curve.

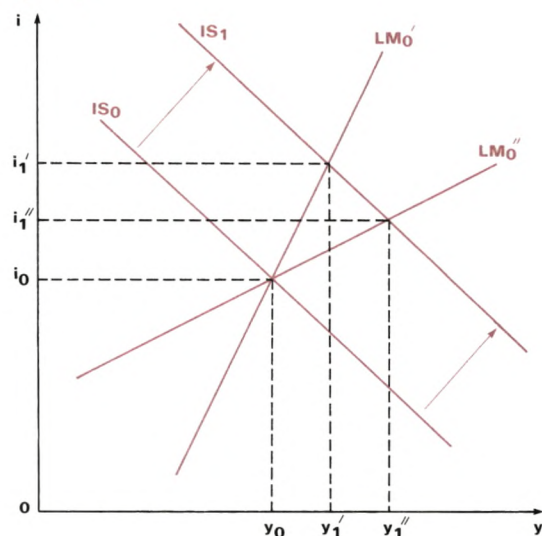
The evolution of money substitutes could present a problem for a monetary authority whose intermediate policy target is the level of the money stock. If there are difficulties in predicting the timing of innovation-induced shifts in money demand and related changes in the interest elasticity of the demand for money, there is increased uncertainty as to what level the money stock is consistent *ex ante* with the monetary authority's implicit nominal GNP goals. Indeed, from the standpoint of stabilizing nominal GNP, money targeting may be less desirable than interest rate targeting if these unpredictable elements of money demand are large relative to unpredictable changes in the aggregate demand for goods and nonmoney services.<sup>5</sup>

### Deposit rate deregulation and money demand

The payment of market interest rates on all transactions deposits would be expected to diminish greatly money demand instability caused by the evolution of money substitutes. Transactions deposits that pay explicit market interest rates and are guaranteed to be redeemable at par (by virtue of federal deposit insurance) would reduce the incentives in the marketplace for the creation of money substitutes.<sup>6</sup> As a result, changes in the demand for money as represented by parallel shifts in the LM curve would be reduced, all else the same.

Moreover, the payment of market interest rates on transactions deposits could reduce the size and variability of the opportunity cost of holding money, i.e., the yield on alternative assets compared with the yield on money. This would make the demand for money less sensitive to movements in interest rates, i.e., less interest-elastic. If, for example, interest rates in general were rising, the rate paid on transactions deposits would be expected to move sympathetically. Unless the yield spread be-

Figure 3



tween transactions deposits and substitute assets were to change, the rise in interest rates would not be expected to induce a fall in the quantity of money balances demanded.<sup>7</sup> That is, the rise in interest rates would not be expected to increase the income velocity of money.<sup>8</sup>

Contrast this result with the case of a rise in interest rates when transactions deposits are subject to a binding legal ceiling on the explicit deposit rate and a lagging implicit return. In this case, the rise in market rates itself would represent a widening in the yield differential between transactions deposits and substitute assets. Therefore, the quantity of money balances demanded would decrease. Thus, if the payment of explicit market interest rates on transaction deposits were allowed, income velocity or the relationship between money and GNP would be expected to be more stable.

### Deposit rate deregulation and savings

Some analysts have suggested that the explicit payment of market rates of interest on transactions deposits might introduce a new source of instability to the demand for money. It is argued that M1-type balances, i.e., transactions balances, could take on the characteristics of "savings" vehicles in addition to their transactions characteristics. In such an event,



“. . . M1 would become more like the various assets held for investment purposes, and changes in M1 could be dominated at various times by shifts in the composition of the public's portfolio rather than by changes in income and prices.”<sup>9</sup>

If explicit rates of interest were paid on transactions deposits, then these deposits would yield joint products—transactions services and savings services. But the explicit rate paid on transactions deposits would be expected to be dominated by the rate paid on assets that provided mainly savings services, that is, nontransactions assets, because of intermediation costs. There is a cost to a bank of managing its portfolio in such a way as to be able to honor uncertain deposit withdrawals on demand. This cost will be reflected in a lower rate paid on deposits subject to withdrawal on demand than rates paid on nontransactions assets. Although an increase in the public's propensity to save would be expected to increase the demand for transactions deposits bearing market rates of interest compared with deposits bearing below-market rates, it is difficult, *a priori*, to say how significant this differential effect would be given the yield domination of nontransactions assets.<sup>10</sup>

The critical question with regard to the explicit payment of market interest rates on transactions deposits is not whether it will lead to a greater sensitivity in the demand for money with respect to the public's saving decisions, but whether the demand for money, on net, will be more or less stable. We would expect that the more varied the services that an asset produces, the more stable would be the demand for that asset in the presence of shifts in the relative demands for different services. Comparing extreme cases of an asset that produced only one service with an asset that produced all of the different services consumed in an economy, shifts in the relative demands for different services would have less of an effect on the demand for the all-services producing asset. Therefore, if the explicit payment of market rates of interest on transactions deposits expands the number of different services provided by money, then the demand for money, on net, should be more stable. Moreover, if, as it has been argued, the most probable cause of money demand instability since 1973 was financial innovation resulting from the legal prohibition of explicit market interest payments

on transactions deposits, then it would be a curious world indeed if the removal of this prohibition caused a *net increase* in money demand instability.<sup>11</sup>

### **Greater penalty for imprecise money supply control**

The payment of explicit market interest rates on transactions deposits is a double-edged sword for the monetary authority. That the demand for money could be more stable and the quantity of money demanded could be less affected by movements in interest rates implies a more predictable relationship between the quantity of money supplied and nominal GNP. Thus, the ability of the monetary authority to stabilize GNP could be enhanced. However, the penalty for imprecise control of the money stock by the monetary authority is increased. A given variation in the money stock will, all else the same, produce a larger variation in nominal GNP and interest rates in a regime of completely deregulated rates on transactions deposits than in one of binding rate regulation.

This result obtains because the opportunity cost of holding money does not change as much for a given change in the general level of interest rates in a deregulated regime. This means that the interest elasticity of money demand will be reduced. Consequently, as the money stock decreases, the usual accompanying interest rate increase will not cause the quantity of money demanded to decrease as much as it might in a regulated deposit rate regime.<sup>12,13</sup> In a deregulated world, then, it would be incumbent upon a monetary authority that was attempting to hit a money stock target to devise and implement a reserve accounting framework and operating procedure that would minimize its errors in controlling the money stock.<sup>14</sup>

### **Monetary control**

Although, for reasons given above, the demand for money could be expected to be more stable, some analysts have alleged that deposit rate deregulation could impair the monetary authority's ability to control the stock of money. The fundamental premise of this view is that the monetary authority changes the *supply* of money by affecting the quantity of money *demand*ed by the public via



changes in the opportunity cost of holding money. For example, if the monetary authority raises market interest rates by selling bonds from its portfolio, with deposit rates subject to a binding legal ceiling, this will increase the opportunity cost of holding money. Thus, the quantity of money demanded by the public will decrease. According to this view of money supply determination, because the quantity of money demanded has fallen, the quantity of money supplied also must have fallen.<sup>15</sup> If deposit rates are market determined, however, the increase in rates of return on nondeposit assets induced by the monetary authority would lead to a simultaneous increase in deposit rates, thereby eliminating or muting any change in the opportunity cost of holding money. Thus, this avenue for monetary control would be closed or restricted. The alternative route to monetary control, according to this view, would be through the effects of interest rates on GNP, and then, of GNP on the demand for money. A policy-induced rise in interest rates would lower nominal GNP which, in turn, would reduce the demand for money.

According to this view, then, an implication of paying market rates of interest on transactions deposits is that a given policy-induced change in interest rates will have a much smaller opposite impact on the level of the money stock or a given change in the money stock will require a larger policy-induced change in market interest rates. It is argued, then, that close control of the money stock could imply interest rate movements that are destabilizing to the economy. Another alleged implication of deposit rate deregulation is that the direct GNP—money demand route to money stock control would detract from the money stock's role as an intermediate target of monetary policy because, it is argued, money would cease to be a leading indicator of nominal GNP but would be relegated to being a contemporaneous indicator.<sup>16</sup>

### **Supply view of money stock determination**

There are a number of conceptual problems with this view of money stock determination and its implications. First, it fails to make a distinction between the demand for money and the supply of money. The impression gained from the above-described view

of money stock determination is that the demand for money is an important element in determining the level of the money stock. To see that this is not necessarily so, consider a world in which there are 100 percent reserve requirements on bank deposits and both the monetary authority and banks pay market rates of interest on reserves and deposits, respectively. Changes in bank reserves plus currency (sometimes referred to as high-powered money or the monetary base), which can be strictly controlled by the monetary authority, would result in dollar-for-dollar changes in the money stock in the same direction—regardless of the demand for money.

In this 100 percent reserve requirement world, the monetary authority would change the monetary base through open market operations in some asset. Typically, it is assumed that the monetary authority conducts its open market operations in some financial asset such as government securities. But the monetary authority could just as well conduct open market operations in a nonfinancial asset, say washing machines.<sup>17</sup> The monetary authority could reduce the stock of money by selling washing machines from its portfolio. But in order to induce the public to exchange money for washing machines, the monetary authority would have to lower the price of washing machines relative to the price of other assets. As long as the demand for the asset in which the monetary authority conducts open market operations is not completely price-inelastic, then the monetary authority can change the money stock by bidding up or down the relative price of the asset in question. This is true whether deposits pay a market rate of interest or not. If the monetary authority chose to conduct open market operations in credit market instruments, say bonds, the same qualitative results would obtain as long as the public's demand for credit has some interest elasticity.<sup>18</sup> It is not the demand for money but the demand for the asset in which the monetary authority conducts open market operations that plays the key role in money stock determination.

The assumption of 100 percent reserve requirements is not critical to reaching the conclusion that the money stock is determined independent of the demand for money. At the other extreme, an assumption of no legal reserve requirements also would yield the same conclusion as long as banks desire to hold some



finite quantity of reserves for check clearing and currency withdrawal purposes. Because the monetary authority has a monopoly on the production of bank reserves, it can set the price or interest rate on reserve credit which, ultimately, will influence the determination of the money stock.

The key to understanding this is to realize that in a fractional reserve banking system, part of bank deposits and thus, the money stock, is created as a by-product of banks' acquisitions of earning assets, i.e., the extension of bank credit. Banks attempt to maximize their profits by increasing their holdings of earning assets to the point at which the expected return on an additional dollar of acquired earning assets is equal to the expected cost of funding that additional dollar of earning assets over its term to maturity, i.e., until marginal revenues equal marginal costs. The federal funds rate, being the cost of overnight reserve credit, can be viewed as a proxy for banks' marginal cost of funds.<sup>19</sup>

It is through changes in the federal funds rate relative to the marginal rate of return on earnings assets that banks' portfolio behavior and, ultimately, their deposits, a component of the money stock, are affected. If, for example, the federal funds rate should fall relative to the return on banks' earning assets, then banks will acquire more loans and investments. This increased acquisition of earning assets will cause their prices to be bid up or, what is the same thing, cause their yields to fall. An individual bank will continue to acquire earning assets until the marginal return on them is again equal to the federal funds rate. For the banking system, the increase in assets will be matched by an increase in the liability item, deposits. What is relevant, then, for an individual bank's asset portfolio decision is the cost of reserve or funds credit relative to the return on earning assets.

The federal funds rate, like any other price, is determined by supply and demand, in this case, specifically the supply and demand for reserves. Through its policy tool of, say, open market operations, the monetary authority affects the supply of reserves. Banks' demand for the reserve stock will be a function of any legally imposed reserve requirements (which could be zero) and precautionary motives related to check clearings and currency withdrawals. The monetary authority changes

the federal funds rate by affecting the supply of reserves relative to the demand for reserves. In summary, then, the monetary authority can use its policy tools to change the supply of reserves in order to change the federal funds rate or the marginal cost of funds to banks, which, in turn, affects banks' asset portfolio behavior, and, ultimately, the level of deposits for the banking system.<sup>20</sup> Through its effect on banks' asset portfolio behavior rather than the public's demand for money, then, the federal funds rate is the "cutting edge" of monetary policy.<sup>21</sup>

An implication of reduced variability in the opportunity cost of holding money (which could occur if transactions deposits paid market interest rates) is *not* that the stock of money would be any more or less difficult for the monetary authority to control, but that a *given change* in the stock of money, assuming no shift in the public's demand for money, would produce larger movements in interest rates and nominal GNP as economic agents reallocated their portfolios in response to the changed money stock.

As discussed earlier, a changing opportunity cost of holding money, which occurs with binding legal deposit rate ceilings, acts as a shock absorber for changes in the supply of money. In the 100 percent reserve requirement example of the open market sale of washing machines, economic agents' portfolios are in what has been referred to as a "momentary" equilibrium rather than a long-run equilibrium. The public willingly exchanged money for washing machines at what it perceived to be an attractive relative price.<sup>22</sup>

But portfolios are out of equilibrium because the "yield" on money has now risen relative to the yield on other assets except washing machines. The reason the yield on money has risen is related to an assumption of diminishing marginal utility of monetary services. That is, the transactions services produced by each additional unit of money diminish as the quantity of money increases. Because open market sales of washing machines by the monetary authority have reduced the quantity of money, it is assumed that the yield or marginal utility of money has increased.

Thus, the public holds less money and more of other assets than it desires. In order to re-equilibrate portfolios so that the marginal return or yield across all assets in individual portfolios is the same, individuals will sell non-



money assets in an attempt to restore money balances. Some assets sold might be bonds. This would put upward pressure on nominal interest rates. If deposit rates were legally fixed, then the increased opportunity cost of holding money as a result of increased nominal interest rates would lead, all else the same, to a decline in the quantity of money demanded. The fall in the quantity of money demanded implies that individuals' portfolios will be brought into equilibrium with less of an increase in interest rates and less of a fall in nominal GNP than would be the case if the opportunity cost of holding money did not change as much, i.e., if deposit rates were allowed to vary with other market interest rates.

### **Money stock as leading indicator**

As mentioned earlier, some analysts have suggested that if transactions deposits paid market interest rates, then the money stock would no longer serve as a good intermediate monetary policy target because it would have a contemporaneous rather than leading relationship with nominal GNP. It is not clear, however, that money would lose its leading relationship with GNP after deposit rate deregulation. The argument presented for a contemporaneous relationship explicitly associates money stock determination with the demand for money.

According to this view, with a constant or less variable opportunity cost of holding money, the principal avenue for changing the stock of money is for the monetary authority to change interest rates in order to change GNP which, in turn, will cause the quantity of money demanded to change in the same direction and, by some unspecified means, also cause the stock of money to change.

An alternative view is that the monetary authority can set the nominal money stock at whatever level it chooses regardless of the public's demand for it. Indeed, this is how changes in the money stock produce changes in GNP. The monetary authority creates a temporary portfolio disequilibrium, changing the stock of money so that, in the first instance, it is different from the quantity demanded by the public. It is this portfolio imbalance that leads to further changes in explicit and implicit interest rates and ultimately to changes in nominal GNP. Long-run equilibrium is then

re-established when nominal GNP has changed sufficiently so that the public's demand for real money balances is once again equal to the real stock of money balances outstanding.

But even if the time lag between changes in the money stock and changes in GNP approached zero, this still would not diminish the money stock's role as an intermediate monetary policy target, especially if the demand for money became more stable as a result of deposit rate deregulation. Regardless of the chosen intermediate target, monetary policy affects GNP through changes in explicit and implicit interest rates.

By choosing the money stock as the intermediate target of monetary policy, the monetary authority is implicitly using it as a guide for moving interest rates. For example, if the money stock is above target, then, all else the same, this means that the monetary authority will have to manipulate its policy tools or instruments in such a way as to raise interest rates in order to lower the stock of money. If, because of deposit rate deregulation, the demand for money is more stable, implying a more stable money—GNP relationship, money stock targeting will provide an even better guide to interest rate movements for the monetary authority. Only if the money stock should become a *lagging* indicator of GNP would it be unsuitable as an intermediate target of monetary policy.

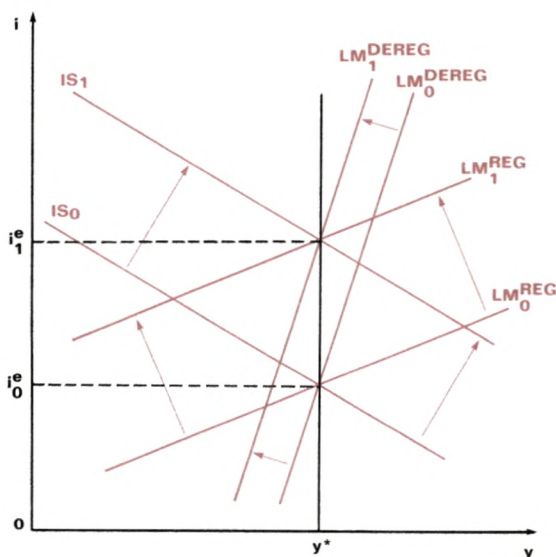
### **Destabilizing interest rate volatility?**

Another related argument advanced against using the money stock as an intermediate target if deposit rates were deregulated is that control of the money stock would imply interest rate volatility that would be destabilizing to the economy. One of the problems with this argument is that it fails to recognize that if GNP stabilization is the goal of macro policy, then at any point in time there exists a unique interest rate determined by productivity and thrift that is consistent with desired GNP. Writing at the turn of the last century, the noted Swedish economist Knut Wicksell called this unique interest rate the "natural rate of interest."<sup>23</sup>

In terms of the traditional IS-LM framework, this interest rate would be determined by the intersection of the IS curve with a vertical line drawn from a point on the real in-



Figure 4



come axis representing desired real GNP. In Figure 4, this equilibrium interest rate would be  $i_0^e$ . Two LM curves have been included in Figure 4, both intersecting the IS curve  $IS_0$  at  $i_0^e$ . The more steeply sloped LM curve,  $LM^{Dereg}$ , represents a world of deposit rate deregulation in which the interest elasticity of the demand for money is presumed to be relatively low. In a world of regulated deposit rate ceilings, the interest elasticity of the demand for money would be relatively higher as represented by  $LM^{Reg}$ . Notice that the equilibrium interest rate,  $i_0^e$ , is independent of the interest elasticity of the demand for money. If, for some reason, the aggregate demand for real goods and services should increase, causing a rightward shift in the IS curve (to  $IS_1$  in Figure 4), then a new higher equilibrium interest rate ( $i_1^e$  in Figure 4) is indicated if the policymakers' target level of real GNP ( $y^*$  in Figure 4) has not changed. Again, this higher equilibrium interest rate is independent of the interest elasticity of the demand for money. Notice that in order to maintain the targeted level of real GNP,  $y^*$ , the money stock would have to be changed by *less* in a world of deposit rate deregulation than would be the case in one of legally imposed binding deposit rate ceilings. (In terms of Figure 4, less of a horizontal shift is required in  $LM^{Dereg}$  than in  $LM^{Reg}$ .)

Unless cogent arguments can be made that the public's demand for real goods and services will become more unstable as a result of deposit rate deregulation, there is no reason to expect greater volatility in the equilibrium interest rate from autonomous changes in "IS" factors. That leaves increased instability in either the demand for or supply of money functions as the cause of assumed greater interest rate volatility. As argued above, deposit rate deregulation should result in a net increase in the stability of the demand for money.

There is no reason to expect any *increased* instability in the money supply function as a result of deposit rate deregulation. However, any extant instability in the money supply function in combination with a more stable and less interest-elastic money demand function does imply greater interest rate volatility. It also implies greater GNP volatility. As discussed earlier, the increased penalty in terms of interest rate and GNP volatility that would result from money supply variability in a world of deregulated deposit rates suggests that the monetary authority should adopt a reserve accounting system and operating procedure that would maximize its control over the money supply.

### Summary

In recent years there has been a trend toward the elimination of interest rate ceilings on deposits—including those on transactions deposits. Some analysts have argued that the payment of market rates of interest on transactions balances might produce instability in the public's demand for money and might impair the monetary authority's ability to control the money stock. If these arguments proved to be correct, the monetarist policy prescription of a steady rate of growth in the nominal stock of money would be severely flawed. The analysis in this paper indicates that the elimination of legally imposed interest rate ceilings on transactions accounts could strengthen rather than weaken the case for the monetarist policy prescription. By muting a major source of money demand instability—namely, the incentive to create new interest-bearing transactions instruments—the payment of explicit market rates of interest on transactions accounts could contribute to a more stable money demand function on net. Moreover, the deregulation



of deposit rates was shown not to have detrimental effects on the monetary authority's ability to control the stock of money. What was shown, however, is that the penalty for imprecise control of the money stock in terms of GNP and interest rate variability is higher when transactions deposits earn market rates of interest.

<sup>1</sup> Milton Friedman in *Monetarism and the Federal Reserve's Conduct of Monetary Policy, Compendium of Views*, prepared for the use of the Subcommittee on Monetary and Fiscal Policy of the Joint Economic Committee, Congress of the United States, 97th Cong., 2nd Sess. (U.S. Government Printing Office, December 30, 1982), p. 73.

<sup>2</sup> The analysis assumes that the period of adjustment to deregulated deposit rates has been completed and, therefore, does not address difficulties that might arise during the transition period from regulated to deregulated rates.

<sup>3</sup> John P. Judd and John L. Scadding, "The Search for a Stable Money Demand Function: A Survey of the Post-1973 Literature," *The Journal of Economic Literature*, 20 (September 1982), p. 1014.

<sup>4</sup> The IS curve is a locus of nominal interest rate and real GNP combinations at which the market for real goods and services is in equilibrium. When this market is in equilibrium real investment (I) equals real saving (S), hence the acronym IS. The IS curve slopes down and to the right because as interest rates decline, real spending on goods and services increases, implying higher levels of real GNP. The LM curve is a locus of nominal interest rate and real GNP combinations at which the market for real money balances is in equilibrium. When this market is in equilibrium, the public's demand for real money balances, sometimes referred to as its liquidity preference (L), equals the supply of real balances (M). The LM curve slopes up and to the right because as interest rates increase relative to the rate paid on transactions balances, the public economizes on its holdings of these balances. This incipient excess supply of real money balances leads to an increase in real GNP which increases the demand for money, thus re-equilibrating the supply and demand for real money balances. For a detailed description of the IS-LM framework, see Martin J. Bailey, *National Income and the Price Level: A Study in Macroeconomic Theory* (New York: McGraw-Hill, 1971), pp. 3-85.

<sup>5</sup> See William Poole, "Optimal Choice of Monetary Policy Instruments in a Simple Stochastic Macro Model," *Quarterly Journal of Economics*, 84 (May 1970), pp. 197-216.

<sup>6</sup> There would still be some incentive for the creation of money substitutes if reserve requirements, which act as a tax, were imposed on checkable deposits bearing market interest rates. Part of this "tax" is reduced to the degree that the social cost of deposit insurance is subsidized. For an ingenious proposal to link reserve requirements with deposit insurance premiums, see Robert D. Laurent, "Reserve Requirements, Deposit Insurance, and Monetary Control," *Journal of Money, Credit and Banking*, 13 (August 1981), pp. 314-24. Another method of eliminating the reserve requirement tax would be for the monetary authority to pay a market rate of interest on required reserves.

<sup>7</sup> If, for some reason, movements in the interest rate paid on transactions deposits lagged movements in market interest rates, then the relative change in the opportunity cost of holding these deposits could increase over what it would be if no explicit interest were paid on transactions deposits. For example, if the market rate were 10 percent and the rate paid on transactions deposits were 8 percent, a 1 percentage point fall in the market rate would represent a 50 percent decline in the explicit opportunity cost versus a 10 percent decline in the explicit opportunity cost if deposits paid no explicit interest.

Despite possible larger changes in the relative opportunity cost, the demand for transactions deposits bearing an explicit market-related rate of interest could still be less elastic with respect to movements in market interest rates. This elasticity of demand with respect to market interest rates ( $E_{m,i}$ ) can be decomposed into the product of two other elasticities—the elasticity of demand for deposits with respect to their opportunity cost ( $E_{m,opp}$ ) and the elasticity of the opportunity cost with respect to market interest rates ( $E_{opp,i}$ ). Although  $E_{opp,i}$  might be higher if movements in the rate paid on transactions deposits lag those of market interest rates, if  $E_{m,opp}$  is sufficiently small, then  $E_{m,i}$  also will be small. If the absolute value of  $E_{m,opp}$  varies directly with the level of the opportunity cost, then presumably  $E_{m,opp}$  would be relatively small for deposits earning market-related rates of interest. Whether it would be sufficiently small to offset the larger  $E_{opp,i}$  is an empirical question. For a discussion of this issue see Thomas D. Simpson, "Changes in the Financial System: Implications for Monetary Policy," *Brookings Papers on Economic Activity*, No. 1, 1984, pp. 253-256.

<sup>8</sup> John P. Judd and John L. Scadding (in "Financial Change and Monetary Targeting in the United States," *Interest Rate Deregulation and Monetary Policy*, Federal Reserve Bank of San Francisco, Proceedings of a Conference at Asilomar Conference Center, Monterey, California, November 28-30, 1982, p. 97) using Goldfeld-type money demand equations found that the absolute value of the interest elasticity of M2, a more broadly-defined money stock measure, decreased substan-



tially after rate deregulation occurred for a number of deposit categories in M2. The absolute value of the interest elasticity went from .28 in the period of 1960:Q4 to 1978:Q2 to .06 in the period of 1978:Q3 to 1981:Q4. This evidence for M2 is consistent with the qualitative expectations for the behavior of M1 interest elasticity if explicit market interest rates were paid on transactions deposits.

<sup>9</sup> John P. Judd, "Deregulated Deposit Rates and Monetary Policy," Federal Reserve Bank of San Francisco, *Economic Review* (Fall 1983), p. 30. For similar arguments see Betsy Buttrill White, "Monetary Policy Without Regulation Q," Federal Reserve Bank New York *Quarterly Review* (Winter 1981-82), p. 6, and Thomas D. Simpson, "Changes in the Financial System: Implications for Monetary Policy," *Brookings Papers on Economic Activity*, No. 1, 1984, pp. 259,261.

<sup>10</sup> In "Are NOWs Being Used as Savings Accounts?" Federal Reserve Bank of Richmond, *Economic Review* (May/June 1985), pp. 3-13, Timothy Q. Cook and Timothy D. Rowe evaluate whether other checkable deposits (OCDs), i.e., deposits included in the Federal Reserve's M1 definition of money that bear explicit rates of interest, were being used as savings balances. After examining survey information on consumer transactions and savings accounts and data on OCD average balances, transactions activity, and seasonal behavior, the authors find no evidence of widespread use of OCDs for savings purposes. Rather, their evidence suggests that the characteristics of OCDs more closely resemble those of regular checking accounts.

<sup>11</sup> Moreover, the rationale for the 1930s legislation prohibiting the payment of explicit interest on demand deposits was related to bank safety and soundness reasons. Although possible, it would have been quite a coincidence if this prohibition also would have contributed to the efficacy of monetary policy. This point is made by Thomas Mayer in "Roundtable," *Interest Rate Deregulation and Monetary Policy*, Federal Reserve Bank of San Francisco, Proceedings of a Conference at Asilomar Conference Center, Monterey, California, November 28-30, 1982, p. 122.

<sup>12</sup> Figure 2 can be used to illustrate this point. The more vertical LM curves indicating a lower interest elasticity of money demand would apply to a regime of deregulated deposit rates and the more horizontal LM curves would apply to a regulated regime. As shown in the diagram, a given decrease in the money stock (leftward shift in the LM curves) would result in a higher interest rate and a lower level of real GNP in a deregulated regime compared with a regulated regime.

<sup>13</sup> In a deregulated regime, autonomous shifts in the demand for money also would be expected to

produce larger variations in nominal GNP and interest rates for the same reason as in the case of money supply changes. As discussed above, however, the demand for money could be expected to become more stable in a deregulated regime. Therefore, if, in a regulated regime, the money stock were deemed to be the best intermediate target variable to stabilize nominal GNP, then a move to a regime of deregulated deposit rates should enhance the desirability of the money supply as the monetary authority's intermediate target variable.

<sup>14</sup> For alternative arrangements that purport to enhance money stock control see Robert D. Laurent, "Reserve Requirements: Are they Lagged in the Wrong Direction?" *Journal of Money, Credit and Banking*, 11 (August 1979), pp. 301-10 and William Poole, "A Proposal for Reforming Bank Reserve Requirements in the United States," *Journal of Money, Credit, and Banking*, 8 (May 1976), pp. 137-47.

<sup>15</sup> The mechanism that causes the money stock to contract concomitant with the decline in the quantity of money demanded is seldom explained.

<sup>16</sup> For descriptions and discussions of this view, see E. Gerald Corrigan, "Economic Prosperity: An Eclectic View," Federal Reserve Bank of Minneapolis, *Annual Report*, 1983, p. 10; Richard G. Davis, "Monetary Targeting in a 'Zero Balance' World," *Interest Rate Deregulation and Monetary Policy*, Federal Reserve Bank of San Francisco, Proceedings of a Conference at Asilomar Conference Center, Monterey, California, November 28-30, 1982, pp. 20-51; John P. Judd, "Deregulated Deposit Rates and Monetary Policy," Federal Reserve Bank of San Francisco, *Economic Review* (Fall 1983), pp. 38-39; Thomas D. Simpson and Patrick M. Parkinson, "Some Implications of Financial Innovations in the United States," Board of Governors of the Federal Reserve System, *Staff Studies No. 139*, September, 1984, pp. 15-19; and Betsy Buttrill White, "Monetary Policy Without Regulation Q," Federal Reserve Bank of New York, *Quarterly Review* (Winter 1981-82), p. 7.

<sup>17</sup> For a discussion of the macro equivalence of open market operations in nonfinancial assets versus financial assets, see Phillip Cagan, "Why Do We Use Money in Open Market Operations?" *Journal of Political Economy*, 66 (February 1958), pp. 39-40.

<sup>18</sup> This point concerning the public's interest elasticity of credit demand was made by David Laidler in "Roundtable," *Interest Rate Deregulation and Monetary Policy*, Federal Reserve Bank of San Francisco, Proceedings of a Conference at Asilomar Conference Center, Monterey, California, November 28, 30, 1982, p. 131.

<sup>19</sup> The marginal funding costs of maturities longer than 1 day are related to the current overnight reserve credit rate via the expectations theory of the



term structure of interest rates. The expectations theory hypothesizes that the levels of longer-term interest rates are a function of current and expected future short-term rates. Thus, the 90-day CD rate, the 90-day marginal cost of bank funds, would be a function of the current level of the federal funds rate and the levels of the 1-day federal funds rates expected to prevail over the next 89 days.

<sup>20</sup> Double entry bookkeeping for the banking system assures that a change in assets (an entry on the left hand side of the balance sheet in the U.S.) must result in an equal net change in the sum of the right hand side balance sheet entries (liabilities and net worth). The change in the right hand side could result in the polar cases of only a change in transactions deposits, or no change in transactions deposits, depending on the public's preferences. Despite the public's preferences, however, the monetary authority could change the level of transactions deposits to a targeted level.

One way to accomplish this would be to impose reserve requirements on transactions deposits *only*. If, say, the monetary authority wanted to increase transactions deposits, it would increase reserves which would result in a fall in the federal funds rate and an increase in banks' earning assets and liabilities and/or net worth. Abstracting from changes in net worth, if the public wished to hold the bulk of these increased bank liabilities in the form of non-transactions deposits exempt from reserve requirements, then the demand for reserves, being primarily a function of legal reserve requirements, would not increase commensurate with the increase in the supply of reserves. As a result, the federal funds rate would continue to fall and banks' earning assets would continue to increase until reserveable transactions deposits increased enough to re-equilibrate the demand and supply of reserves. In the case of no legal reserve requirements, the monetary authority would simply keep increasing reserves and thus lowering the federal funds rate until the targeted level of transactions deposits appeared. Only in the extreme cases where the public did not wish to change its holdings of transactions deposits at either a zero level or infinite level of nominal interest rates would the monetary authority not be able to hit its target level of transactions deposits in a banking system with less than 100 percent reserve requirements.

<sup>21</sup> This view that the demand for money need not play a role in the determination of the money stock

may, at first, seem at odds with conventional economic analysis. Economists usually assume that prices and quantities are determined by the interaction of supply and demand. But when the government has a monopoly in the production of a good or service and its supply curve is completely price inelastic, i.e., the quantity supplied is totally unresponsive to price, the demand for this good or service is irrelevant in the determination of the quantity that will be produced. As an example, the U.S. Treasury has a monopoly in the production of Treasury securities. The quantity of Treasury securities outstanding is strictly a function of the federal government's spending and taxing policies. The relevance of the public's demand for Treasury securities is in determining at what price or interest rate the stock of securities will be held.

Similarly, because the monetary authority has a monopoly in the production of high-powered money, it can set the *nominal* quantity of money at whatever level it chooses, but the public, through its demand for real money balances, will determine the price at which this nominal quantity will be held. Because the price of money is the amount of goods and services a unit of it will buy or, what is the same thing, the inverse of the general price level, it can be said that the public's demand for real money balances determines the general level or inflation rate given the nominal stock of money produced by the monetary authority.

<sup>22</sup> Milton Friedman and David Meiselman in "The Relative Stability of Monetary Velocity and the Investment Multiplier in the United States, 1897-1958," *Stabilization Policies* (Englewood Cliffs, N.J.: Prentice-Hall, 1963), p. 219, argue that this situation is a momentary equilibrium because "[m]oney is a temporary abode of purchasing power to which the proceeds from attractive selling opportunities can be added pending decisions what to buy and from which attractive buying opportunities can be financed pending the finding of attractive selling opportunities." This fundamental attribute of money appears to be similar to what is referred to as the role of money as a "buffer stock" in John P. Judd, "Deregulated Deposit Rates and Monetary Policy," Federal Reserve Bank of San Francisco, *Economic Review*, (Fall 1983), pp. 39-41.

<sup>23</sup> See Knut Wicksell, *Interest and Prices*, translated by R. E. Kahn (London: Royal Economic Society, 1936).



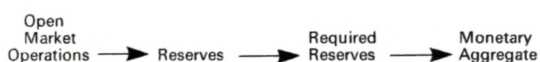
# Universal reserve requirements and monetary control

Robert D. Laurent

The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) authorized the gradual adoption of universal reserve requirements as a step toward improved monetary control. This paper examines the relationship between universal reserve requirements and monetary control. The first section examines why universal reserve requirements might be expected to improve monetary control. The second section discusses the crucial role of the monetary control operating procedure in achieving the potential benefits of universal reserve requirements. The third section discusses possible pitfalls in using the stability of the “money multiplier” (to which stability universal reserve requirements are meant to contribute) as an indicator of potential monetary control.

## The role of reserve requirements in monetary control

The extension of reserve requirements to all depository institutions—universal reserve requirements—was intended to improve monetary control. To understand the significance of universal reserve requirements, consider a commonly held view of the process by which the monetary authority influences the money stock. The process begins with the monetary authority conducting open market operations to set the level of reserves. A change in the level of reserves causes banks to adjust their earning assets, and thereby the deposits of the banking system, until required reserves are in equilibrium with the preestablished level of reserves. This level of required reserves should ideally correspond to the target level of the monetary aggregate desired by the monetary authority. The process can be described as a three-link chain as in the schematic below:



In the simplest of all possible situations, the process would have the monetary authority

engage in open market operations to set the quantity of reserves precisely at the desired level. Any deviation between reserves and required reserves would induce a response on the part of banks that changed deposits and equated required reserves to reserves. *The role of reserve requirements is to provide a connection between required reserves and the target monetary aggregate so that this level of required reserves (equal to the level of reserves provided by the monetary authority) both results from, and corresponds to, the target monetary aggregate.*

The schematic three-link chain connecting open market operations to the monetary aggregate can be used to illustrate the problems of non-universal reserves and, thus, the potential benefits of universal reserve requirements. Consider the case where required reserves exactly match the level of reserves provided by the monetary authority, but some of the demand deposits included in the target monetary aggregate are held in banks on which reserve requirements are imposed and some are held in banks on which no reserve requirements are imposed.<sup>1</sup> Suppose that the public shifts some demand deposits from banks with reserve requirements to those without reserve requirements. This has no effect on the level of required reserves, since the fall in deposits due to the public held at banks with reserve requirements is exactly offset by the increase in deposits “due to” other banks. Initially, there is also no change in the level of deposits in the banking system because the increase in the level of deposits held by the public at banks without reserve requirements exactly offsets the decrease in the level of deposits held by the public at banks with reserve requirements.

However, an important change has occurred. Banks without reserve requirements have had an equal increase in their deposits due to the public and in their reserves “due from” banks with reserve requirements. These banks have no reserve requirements so they will

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purchase more loans and securities from the public and produce an expansion in the target monetary aggregate even though there has been no change in either the total reserves or the required reserves of the banking system. Conversely, a shift in the public's preference from banks without reserve requirements to banks with reserve requirements would have the opposite effect of contracting the target monetary aggregate without any change in reserves or required reserves. *Such shifts in the public's deposit preferences can produce an entire range of monetary aggregate levels consistent with a given level of reserves and required reserves, and thereby complicate monetary control.*

The imposition of universal reserve requirements would insulate the linkage between required reserves and the monetary aggregate from changes in the public's preferences between member and non-member banks. However, the linkage could still be subject to disturbances resulting from shifts between categories of deposits having different reserve requirements. *What is desirable in a reserve accounting system for accurate monetary control is that required reserves move with, and only with, movements in the reservable deposit component of the monetary target.*<sup>2</sup> Then, if all banks had the same level of reserve requirements, any deposit shift between banks would leave the monetary aggregate unchanged, because the increase in excess reserves at the receiving bank would exactly offset the decrease at the bank losing deposits.

This stabilization of the link between required reserves and the target monetary aggregate could help stabilize the chain connecting open market operations and the target monetary aggregate. This is the advantage of universal reserve requirements described by proponents as a stabilizing influence on the linkage between reserves and money.<sup>3</sup> In the schematic presented earlier, the "money multiplier" is represented by the combined second and third links. So the benefits of universal reserve requirements might be described as contributing to the stabilization of the "money multiplier" by stabilizing the third link between required reserves and the target money aggregate.<sup>4</sup>

## **The operating procedure and the gains from universal reserve requirements**

The previous section of the paper examined how universal reserve requirements could facilitate monetary control by stabilizing the linkage between required reserves and the target monetary aggregate. This section considers the question: Under what operating procedures would stabilization of the linkage between required reserves and the monetary aggregate, were it to occur, actually improve monetary control?

The schematic presented earlier seemed to indicate that, if universal reserve requirements stabilized the third link between required reserves and the target monetary aggregate, it would necessarily improve monetary control. If the monetary authority conducted open market operations in such a way as to achieve its target level of reserves and if the banking system accurately matched required reserves to reserves, then universal reserve requirements would strengthen the linkage between open market operations and money.

What must be considered now is the possibility that monetary policy may not be conducted in the manner described. If not, then monetary control may not be improved by the imposition of universal reserve requirements.

To understand why, one must examine more closely the middle link of the monetary control process—the one connecting reserves and required reserves. Most expositions of the money control process seem to assume that the level of reserves automatically produces a matching level of required reserves. But, the actual mechanism that causes a change in reserves to produce a change in required reserves is seldom described.

One mechanism consistent with required reserves automatically matching reserves is the process of deposit creation described in introductory money and banking textbooks. In the scenario presented in these textbooks, each bank automatically responds to its reserve excess or deficiency by buying or selling an equal amount of earning assets. As customers redistribute the increase or decrease in deposits, they affect other banks and these banks experience a change in their excess reserves. The process continues through a series of progressively



smaller adjustments until deposits have changed enough to move required reserves into equality with reserves. This mechanistic model is a useful pedagogical device that nicely illuminates the relationship between the individual bank and the banking system in the deposit creation process.

*However, it is important to understand—and it is frequently overlooked—that the key variables in the transmission mechanism between reserves and required reserves are actually the current and expected prices of reserves (i.e., the current and expected future federal funds rates).* An individual bank feels neither limited to, nor stuck with, the particular level of reserves it has obtained by attracting deposits. There is always available a federal funds market where banks can exchange reserves with other banks. What is important in determining whether a bank acts to increase or decrease its holdings of assets purchased from the public is the price of present reserves and the expected price of future reserves. If the current and expected future federal funds rates fall, then banks will find the purchase of earning assets from the public (and the creation of deposits) attractive, while a rise in the current and expected future federal funds rate will lead banks to reduce holdings of earning assets purchased from the public and cause deposits to contract.

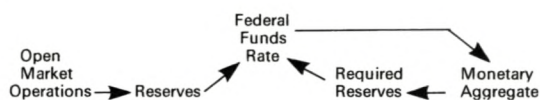
The federal funds rate is determined by the interaction of the supply and demand for reserves. The supply of reserves is the second variable in the chain and the demand for reserves (essentially required reserves) is the third variable in the chain. The federal funds rate equilibrates, and is determined by, reserves and required reserves. Standing, as it does, between reserves and required reserves, the federal funds rate is the key operative in the second link of the entire chain connecting open market operations to the target monetary aggregate.

It was implicitly assumed in the schematic presented earlier that the monetary authority first picks a level of reserves consistent with its desired level of money. The relationship between the supply of reserves and the demand for reserves determines the federal funds rate. The equilibrating process is straightforward. For example, if the monetary authority increases reserves, the level of excess reserves also rises and causes the federal funds rate to fall. As the cost of reserves falls, individual banks adjust by buying more earning

assets from the public and cover the loss of reserves by borrowing in the federal funds market. For the banking system as a whole, this involves no change in the level of reserves, but the increased purchases of earning assets from the public lower the interest rate on earning assets and increase the level of deposits. As the level of deposits increases, required reserves increase until they are in equilibrium with the higher level of reserves at a lower federal funds rate. Other interest rates are also lower in the new equilibrium.

The key point to emphasize is that, in deciding to exchange earning assets with the public (and thereby to change the deposits of the banking system), banks respond to changes in the federal funds rate and not to the level of reserves. *The real role of reserves in this reserve targeting—money multiplier view of monetary control is to help set the appropriate federal funds rate.*

The inclusion of the federal funds rate in a reserve targeting money supply process produces a schematic that looks like:

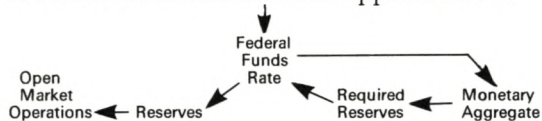


In this process the monetary authority sets reserves through open market operations and the relationship between reserves and required reserves determines the federal funds rate. This rate, in turn, determines the changes in banks' holdings of earning assets purchased from the public and the change in the monetary aggregate. Through reserve requirements, this determines the change in the level of required reserves, which changes the federal funds rate. This process continues until banks have moved the monetary aggregate (and required reserves) into equilibrium with the level of reserves provided. In the final analysis, the process might be represented by the simple three-link schematic presented initially but the actual operation depends crucially on the federal funds rate.

The desired effect of the imposition of universal reserve requirements is to link more closely required reserves and the target monetary aggregate. However, since the federal funds rate is the determining factor in producing changes in the money stock, this tightened link does not necessarily improve monetary control.



Universal reserve requirements do not improve monetary control if, for example, the monetary authority tries to control money by directly setting interest rates. Again, in this case the money stock is determined by the interest rate (federal funds rate) target.<sup>5</sup> This determines the level of required reserves and in turn obligates the monetary authority to move reserves to match the level of required reserves so as to keep the federal funds rate on target. A schematic of this situation appears below:



The monetary authority determines the federal funds rate, which determines the money stock and the level of required reserves, which, in conjunction with the target federal funds rate, determines the level of reserves. The fact that universal reserve requirements could make the linkage between reserves and money tighter is often cited as evidence that they would improve monetary control. That would be true if the monetary authority set the level of reserves and money adjusted to reserves. *However, under an interest rate targeting procedure the causation runs from money to reserves.* Therefore, the increased stability of the “money multiplier” is simply an accounting artifact and does not imply any improvement in monetary control.

It can plausibly be argued that the monetary control procedures utilized by the Federal Reserve have never strictly corresponded to the reserve targeting procedure for which universal reserve requirements are designed.<sup>6</sup> During the time between the resumption of discretionary monetary policy in 1951 and the late 1960s, the Federal Reserve did not try to control the money supply. From the late 1960s until 1979, the Fed sometimes targeted money, but clearly tried to control it by varying a directly set federal funds rate.

Under the operating procedure in effect from October 1979 to October 1982, the Fed tried to control money by targeting nonborrowed reserves. Given that the level of required reserves was predetermined under the lagged reserve requirements in effect until February 1984, setting the level of nonborrowed reserves also largely determined the amount of reserves banks had to borrow from the Federal Reserve. Given that individual

banks view the federal funds market as a close substitute for borrowing from the Federal Reserve, this meant that the federal funds rate tended toward a level equal to the marginal cost of borrowing from the Federal Reserve, i.e., the nominal discount rate plus the nonpecuniary costs associated with Federal Reserve administration of the discount window. Because the latter cost would tend to rise with the amount and persistence of borrowing, the federal funds rate rises as banks are forced to borrow more from the Federal Reserve.<sup>7</sup>

Thus, the nonborrowed reserve operating procedure was not one in which the monetary authority set total reserves and allowed the federal funds rate to be determined by interaction between the level of reserves and the level of required reserves determined by current deposits. Rather, it was one where the monetary authority determined the federal funds rate, albeit indirectly, by deciding the quantity of reserves it would force the banking system to borrow at the discount window.<sup>8</sup> Therefore, the maximum benefits of universal reserve requirements for monetary control would not be realized under a nonborrowed reserve targeting procedure.

However, such requirements could enhance monetary control even under that operating procedure. If the monetary authority strictly adhered to a predetermined pattern of nonborrowed reserves, given a set discount rate and an unchanged administration of the discount window, then the adoption of universal reserve requirements should improve monetary control. Universal reserve requirements should strengthen the linkage between changes in required reserves and changes in the target monetary aggregate. This would provide a degree of automaticity that is lacking in a strict federal funds setting procedure. This automaticity arises from the fact that any unexpected change in the level of the target aggregate forces required reserves and, with the same level of nonborrowed reserves, bank borrowing to move in the same direction as the movements in the monetary target. Thus, an increase in the money stock causes borrowing at the discount window to increase, while a fall causes borrowing at the discount window to decrease. This has the beneficial effect of automatically raising the federal funds rate when the money stock grows more rapidly than expected and automatically lowering it when the money



stock grows less rapidly than expected. *By strengthening the link between the target monetary aggregate and the level of required reserves, universal reserve requirements help improve the automatic response in the federal funds rate.*

It should be noted, however, that, if the monetary authority does not stick with a predetermined growth in nonborrowed reserves or if it undertakes changes in the discount rate or the administration of the discount window, then the monetary authority more directly determines the federal funds rate and the benefits of universal reserve requirements decrease, and may even disappear.<sup>9</sup>

Finally, the policy utilized from October 1982 to the present has been one which targets borrowed reserves. Changes in the demand for reserves that would affect the level of borrowing are neutralized by the monetary authority through offsetting operations in nonborrowed reserves. By stabilizing the level of borrowing, this procedure tends to stabilize the federal funds rate. To the extent that this policy stabilizes the federal funds rate, any device that tightens the linkage between required reserves and the target monetary aggregate such as universal reserve requirements, would be irrelevant for improving monetary control.<sup>10</sup>

### **Operating procedure and the stability of the money multiplier**

The previous section asked the question: What other factors are important in determining whether a tightened third link between required reserves and the monetary aggregate target would improve monetary control? This section asks a closely related and much more frequently posed question. When is it appropriate to look at the stability of the relationship between reserves and the target monetary aggregate (the combined second and third link, or, equivalently, the "money multiplier") as an indicator of how accurately money *potentially could be controlled*?<sup>11</sup>

The imposition of universal reserve requirements is directed toward the immediate goal of stabilizing the relationship between reservable deposits included in the target aggregate and the level of required reserves. Stabilization of this relationship, in turn, is designed to stabilize the ratio of the target monetary aggregate to total reserves, i.e., the money multiplier. Other things being equal,

the more stable is the money multiplier, the greater the potential improvement in monetary control under the proper type of operating procedure. In practice, the more stable is the money multiplier, the more accurate would be monetary control under any operating procedure where unanticipated changes in the money stock are allowed to affect the federal funds rate. In no case would a more stable relationship between the target monetary aggregate and reserves lead to poorer monetary control. At worst, under a strict interest rate targeting procedure, the increased stability between the target aggregate and reserves would have no effect on monetary control.

One must, however, be cautious in drawing monetary control implications from the stability of the relationship between reserves and the target monetary aggregate (i.e., the combined second and third link of the schematic chain, or the money multiplier). *A closer link is a necessary, but not sufficient, condition for improved monetary control.* As noted earlier, an interest rate targeting procedure will lead to a tighter link between reserves and the target monetary aggregate, but the causation runs from changes in the target aggregate to changes in the level of reserves. The stability of the relationship under an interest rate target gives an overly optimistic impression of the results that could be achieved under a reserves targeting procedure. In drawing implications from the multiplier for monetary control it is necessary to know the operating procedure employed.

For example, a borrowed reserves targeting procedure (as the present Fed policy is often described)<sup>12</sup> in which the monetary authority hits a predetermined level of borrowed reserves could also produce stability in certain relationships that might be misinterpreted. A borrowed reserves targeting procedure is similar to an interest rate targeting procedure because in stabilizing the level of borrowings from the discount window the monetary authority tends to stabilize the marginal cost of reserves, which is represented by the federal funds rate. Like a direct interest rate targeting policy, this policy stabilizes the linkage between reserves and the target monetary aggregate. But again, the causation runs from the aggregate to reserves.

If there is a movement in the monetary aggregate being targeted, there would tend to be a reaction in which borrowed reserves would move in the same direction as the monetary



aggregate. This would initially tend to dampen the movement in the aggregate by moving the federal funds rate in the appropriate direction. However, under a borrowed reserves targeting procedure, the monetary authority changes the level of nonborrowed reserves so as to prevent a change in borrowed reserves. In this way the policy moves total reserves (and nonborrowed reserves) to match changes in the monetary aggregate. Thus, the relationship between the target aggregate and both total reserves and nonborrowed reserves will be stabilized. However, it is misleading to consider the evidence from this borrowed reserve targeting procedure as indicative of how stable the relationship would be if the monetary authority targeted nonborrowed or total reserves. Such a conclusion could lead one to be too optimistic with regard to monetary control.

## Conclusion

Universal reserve requirements were adopted with the intent of improving monetary control. They were designed to do this by tightening the linkage between the target monetary aggregate and required reserves and thereby stabilizing the money multiplier.

Any actual improvement in monetary control stemming from the adoption of universal reserve requirements depends critically on the operating procedure used by the monetary authority. Universal reserve requirements would be most beneficial under an operating procedure that targeted total reserves. On the other hand, universal reserve requirements would make no difference under a strict interest rate targeting policy. It can be argued that the operating procedures utilized by the Fed have never corresponded to those under which the maximum benefits of universal reserve requirements might be realized. However, to the degree that universal reserve requirements strengthen the linkage between the target aggregate and required reserves, they cannot be deleterious to monetary control.

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<sup>1</sup> Actually, the problem of non-universal reserve requirements occurs anytime that reserve requirements on an additional dollar of the same type of deposit differ between different depository institutions, and not just when there are no reserve requirements at some banks.

<sup>2</sup> Essentially, what is required is that deposits bear relative marginal reserve requirements proportional to the weight with which they enter the target monetary aggregate.

<sup>3</sup> This argument was made in the 1970s in a number of Fed publications. See Edward G. Boehne, "Falling Fed Membership and Eroding Monetary Control: What Can Be Done?" *Business Review*, Federal Reserve Bank of Philadelphia, (June 1974), pp. 3-15; Ira Kaminow, "The Case Against Uniform Reserves: A Loss of Perspective," *Business Review*, Federal Reserve Bank of Philadelphia, (June 1974), pp. 16-21; Robert E. Knight, "An Analysis of the Case for Uniform Reserve Requirements," *Monthly Review*, Federal Reserve Bank of Kansas City (May 1974); and Dorothy M. Nichols, "Toward More Uniform Reserve Requirements," *Business Conditions*, Federal Reserve Bank of Chicago, (March 1974), pp. 3-12.

<sup>4</sup> There was debate, prior to the adoption of universal reserve requirements, about whether the changes would help stabilize the money multiplier. See Kenneth J. Kopecky, "Nonmember Banks and Empirical Measures of the Variability of Reserves and Money: A Theoretical Appraisal," *Journal of Finance*, 33 (March, 1978), pp. 311-318 and "Nonmember Banks and Monetary Control: Reply," *Journal of Finance*, 35 (June, 1980), pp. 807; also Dennis R. Starleaf, "Nonmember Banks and Monetary Control," *Journal of Finance*, 30 (September 1975), pp. 955-975 and "A Comment on Nonmember Banks and Empirical Measures of the Variability of Reserves and Money: A Theoretical Appraisal," *Journal of Finance*, 35 (June 1980), pp. 801-805.

<sup>5</sup> Actually it depends not just on the current federal funds rate, but on the expectations of future funds rates engendered, at least in part, by the current federal funds rate.

<sup>6</sup> It should be emphasized that numerous socio-political and institutional factors enter into the Fed's decision to utilize a particular operating procedure. It may be that precise monetary control over short time frames has not been viewed as the most pertinent goal.

<sup>7</sup> See Paul L. Kasriel and Randall C. Merris, "Reserve Targeting and Discount Policy," *Economic Perspectives*, Federal Reserve Bank of Chicago, 6 (Fall 1982) pp. 15-25.

<sup>8</sup> See Robert Laurent, "Lagged Reserve Accounting and the Fed's New Operating Procedure," *Economic Perspectives*, Federal Reserve Bank of Chicago, 6 (Midyear 1982) pp. 32-43.

<sup>9</sup> For analyses of the theoretical impact of universal reserve requirements under different operating procedures, See Kenneth J. Kopecky, Darrel W. Parke, and Richard D. Porter. "A Framework for



Analyzing Money Stock Control under the Monetary Control Act," *Journal of Economics and Business*, 35 (June 1983), pp. 139-157; also Kenneth J. Kopecky, "The Monetary Impact of Universal Reserve Requirements Under Alternative Operating Targets," *Economic Letters*, (1984), pp. 103-108; and Case M. Sprenkle and Bryan E. Stanhouse, "A Theoretical Framework for Evaluating the Impact of Universal Reserve Requirements," *Journal of Finance*, 36 (September 1981), pp. 825-840. It is not clear that the Fed, during the "new operating procedure" period (October 1979 - October 1982), strictly adhered to a predetermined nonborrowed reserve path. Besides changing the discount rate, the Fed also appeared to reduce the provision of nonborrowed reserves when money growth was running below target. This last reaction appears designed to prevent the federal funds rate from

plunging, as would occur under lagged reserves and a strict nonborrowed reserves operating procedure, when money growth is running below target.

<sup>10</sup> This connection was advanced some years ago even within the Federal Reserve System. See Edward E. Veazey, "Reserve Requirements: Structure an Impediment to Monetary Control?" *Business Review*, Federal Reserve Bank of Dallas, (December 1976), pp. 9-18.

<sup>11</sup> For an example of the "money multiplier" approach, see James M. Johannes and Robert H. Rasche, "Predicting the Money Multiplier," *Journal of Monetary Economics*, 5 (July 1979), pp. 301-325.

<sup>12</sup> See Henry Wallich, "Recent Techniques of Monetary Policy," *Journal of the Midwest Finance Association*, 13 (1984), pp. 1-10.



# Usury ceilings and DIDMCA

*Donna C. Vandenbrink*

Title V of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) preempted certain state usury ceilings—the legal interest limits that may be charged on loans. It provided a federal ceiling as an alternate to state ceilings on some loan transactions and left rates for other types of loans to be determined by the market. The preemptions were permanent in most cases, although in one case the preemption was temporary and has already expired. In all cases, the federal preemption could be overridden by individual states.

This paper describes the state/federal scheme of usury ceilings as it existed in 1980. It then outlines the provisions of Title V with respect to usury ceilings and discusses their motivation and consequences. Title V is seen not as a sweeping deregulation of usury ceilings, but as a limited reform targeted to immediate problem areas.

## State interest regulation

Colonial legislatures adopted usury laws based on English precedent, and the regulation of interest ceilings initially became a responsibility of individual states. These regulations grew increasingly complex over time. At first, state usury statutes set out a so-called unitary or general usury ceiling that applied to all lenders. Later, as credit markets developed, states adopted numerous special provisions to regulate credit including ones that exempted certain transactions from the general usury ceiling, and others that stipulated separate maximum rates for particular types of credit transactions.

This evolution in usury legislation has left a multiplicity of state interest rate ceilings varying by location of borrower, location of lender, amount of loan, term of loan, and purpose of loan. Today, one can find on the books in various states separate provisions relating to state chartered banks, retail installment sales (with separate rates for open-end and closed-end credit), motor vehicle sales, small loans, bank credit cards, and home loans (with sepa-

rate rates for first and junior mortgages). In Michigan, for example, a 1981 listing by the Financial Institutions Bureau identified 25 different loan categories subject to interest rate ceilings under state law, with effective maximum rates ranging from 5 percent on personal loans by individuals for nonbusiness purposes to 36 percent on loans by pawnbrokers. At the same time, in 1981 the state of Arkansas had a single general usury ceiling of 10 percent and the state of Arizona had no maximum rates.

## Federal interest rate ceilings

Although individual states have been the agents with primary responsibility for enacting usury ceilings, the federal government also has set forth interest rate limits. The National Bank Act and related regulatory and judicial rulings have added several more pieces to the patchwork of usury ceiling coverage.

Under the National Bank Act as originally passed in 1864, national banks were subject to individual state ceilings, being permitted to charge “a rate allowed by the law of the State . . . where the bank is located.” An early Supreme Court decision determined that this Act gave national banks most-favored-lender status, allowing them to abide by either the unitary usury ceilings or special statutes for state banks, where they existed and were more advantageous. Then, in 1933 the National Bank Act was amended, authorizing national banks to charge one percent over the Fed discount rate, regardless of state ceilings.

The meaning of the most-favored-lender doctrine became more complicated as the number of different interest rate ceilings adopted by the states increased. A recent interpretative ruling by the Comptroller of the Currency reiterated the most-favored lender status of national banks, stating that national banks may “charge interest at the maximum rate permitted by state law to any competing state-chartered or licensed lending institution.” This ruling sanctioned the practice of national

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banks' "borrowing" rates permitted other lenders in the state.

The ceiling options available to national banks were expanded further as a result of the Supreme Court decision in *Marquette National Bank v. First of Omaha Service Corp.* In this case, the Court ruled that national banks may charge out-of-state customers the rate allowed by the state where the bank is located even if that rate is higher than that permitted in the borrower's state. This decision legitimized the practice of "exporting" favorable rates. By allowing national banks to charge a uniform national rate, it gave them a competitive edge over retailers who were subject to the ceilings in each of the states where they transacted business.

## **Title V**

State and federal usury regulation was complicated further by Title V of DIDMCA. This title contained a federal preemption of state usury ceilings on mortgage loans (i.e., first mortgage loans on residential properties), business and agricultural loans (Sections 501 and 511), and loans made by federally insured institutions (Sections 521-524). The preemptions were permanent in some cases and temporary in others. Alternative federal ceilings were set out in certain cases and none of the preemptions necessarily applied nationwide since each could be overridden by legislative initiative in individual states.

The specific provisions of the usury preemptions on Title V were as follows:

- Section 501 effectively eliminated state ceilings on residential mortgage loans on real property or mobile homes. It did not abolish state usury statutes, but it mandated that they did not apply to the transactions specifically enumerated in the Act. State ceilings continued to apply when the lender was not in compliance with consumer protection regulations issued by the Federal Home Loan Bank Board. The states had the right to reject this federal preemption by acting before April 1, 1983.

- Section 511 temporarily preempted state ceilings on business and agricultural loans of \$25,000 or more with a floating federal ceiling 5 percent above the Federal Reserve discount rate. This preemption expired on April 1, 1983 and it could be overridden by specific state action.

- Sections 521-523 amended the Federal Deposit Insurance Act, the National Housing Act, and the Federal Credit Union Act. It added to each a section allowing federally insured state banks, S&Ls, and credit unions to choose between state ceilings and a federal ceiling of 1 percent above the Federal Reserve discount rate. While this alternative ceiling was permanent, there was no time limit on the privilege of states to override these sections.

- Section 524 amended the Small Business Investment Act of 1958 and permitted small business investment companies to make loans at 1 percent above the Federal Reserve discount rate, or the applicable state ceiling, or the maximums prescribed by the Small Business Administration, whichever was lowest. The provisions of this section were also permanent, but they too could be overridden at any time in the future.

## **The intent of the federal preemptions**

The function of these preemptions was to alleviate two problems with usury ceilings that emerged in the high interest rate environment of 1978-80. First, from a lender's perspective, ceilings on certain types of credit were preventing lenders from raising rates commensurate with the increase in their cost of funds. Second, a competitive problem arose when state ceilings prevented some financial institutions from charging rates as high as national banks were permitted to charge under the National Bank Act.

Sections 501 and 511 of Title V dealt with the first problem by freeing rates on mortgage loans and certain commercial loans from state ceilings that had become restrictive. Table 1 lists the state ceiling rates on mortgage loans that existed on April 1, 1980—the effective date of DIDMCA. Eleven states had no restrictions on rates for home mortgages, but 39 states had either fixed maximum rates or ceilings that floated with some market index. Fifteen of the fixed-rate states and at least 6 of the floating ceiling states restricted mortgage lenders to rates of 16 percent or less. At that time, yields on conventional home mortgages in the ceiling-free secondary market averaged over 16.5 percent.

Table 2 shows the situation for business and agricultural loans at the time of the federal preemption. It lists those states that had ceil-



**Table 1**  
**State ceilings on mortgage loans**  
**in effect on April 1, 1980**

	Fixed	Type of ceiling:	
		Floating	No limit
Alabama	18%		
Alaska		5 + FRDR*	
Arizona	16%		
Arkansas	10%		
California			X
Colorado	13%		
Connecticut			X
Delaware		4% + FRDR	
D.C.	15%		X
Florida			X
Georgia		2½% + 20 yr bond index*	
Hawaii	12%*		
Idaho	13%		X
Illinois			
Indiana	15%		
Iowa		2% + 10 yr bond index	
Kansas		1½% + FHLMC rate	
Kentucky		4% + FRDR*	
Louisiana	12%		
Maine			X
Maryland			X
Massachusetts			X
Michigan			X**
Minnesota		Prev. mo FNMA auction rate	
Mississippi	10%		
Missouri		3% + 10 yr bond yield	
Montana		17 - 18%	
Nebraska	16%		
Nevada	18%		
New Hampshire			X
New Jersey		8% + bond index	
New Mexico		1% + FNMA auction rate	
New York	10½%		X
North Carolina			
North Dakota		Greater of 7% or 5% + 30-mo CD rate	
Ohio		3% + FRDR	
Oklahoma	13%		
Oregon	12%*		
Pennsylvania		2½% + long-term bond yield*	
Rhode Island	21%		
South Carolina			X
South Dakota			if fixed rate without prepayment penalty
Tennessee		Greater of 18% or 2½% + FNMA auction	X
Texas		Less of 12% or 10 yr bond yield	
Utah	18%		
Vermont		1¼% + average on selected securities	
Virginia			X
Washington	12%		
West Virginia		1½% + 20 yr bond yields	
Wisconsin	12%		
Wyoming	18%		

\*Indicates no limit for residential first mortgages for some loan sizes. FRDR designates Federal Reserve Discount rate.

\*\*Indicates no limit on 1-family dwellings.

SOURCE: "Override of State Usury Laws as Related to Federal Pre-emption" Office of State Legislative Counsel. American Bankers Association February 12, 1981.

ings below the federal alternative provided in Title V for business and agricultural loans. On April 1, 1980, the federal ceiling was 18

percent, and 20 states restricted lenders to lower rates. Not only were legal maximum rates in these 20 states lower than the new federal ceiling, in many of these states they were lower than what lenders could obtain in the commercial paper market (16.5%) or on Treasury bills (14-15%).

Sections 521-524 of Title V addressed the second problem—inequities between national and state banks—by granting state banks ceiling rates on par with those of national banks. National banks had been given the option to charge one percent over the Federal Reserve discount rate in 1933, but before the late 1970s this alternative was rarely more advantageous than the state ceilings. However, in 1979 the discount rate hit 12 percent, making the federal ceiling more lenient than many state ceilings. The federal ceiling allowed national banks to achieve more profitable spreads than competing institutions. Title V rectified this competitive inequity by extending to state banks and other federally insured institutions the same ceiling option available to national banks.

We need now to ask why Congress sought to remedy these problems itself—by preempting state usury ceilings—rather than await state-by-state reforms. There are several pieces to the explanation. First, the combination of high interest rates and restrictive state ceilings created a situation with potentially harmful economy-wide consequences. And, from a borrower's perspective, if lenders were unwilling to extend credit at the ceiling rates, businesses could not finance their operations and builders could not sell new homes to buyers without mortgages.

Experience had shown, also, that the states probably could not be counted on to relax their ceilings quickly enough or far enough to avert these consequences. Many states had already reformed their usury ceilings during the 1970s, eliminating some, raising others, and indexing still others. But in many states, ceilings were still not flexible enough to avoid credit allocation problems in the high interest environment of 1979-80. Furthermore, several states had been unable to enact any reform because of concern that relaxing usury ceilings would leave some consumers prey to unscrupulous lenders wanting to charge exorbitant interest rates.

Third, the high interest climate that brought these problems to a head was the result



**Table 2**  
**Twenty state ceilings immediately preempted by federal ceiling**  
**on business and agricultural loans on April 1, 1980**

State	Ceilings	State	Ceilings
Alabama	Unincorp 8%, Corp 15%	New Jersey	Unincorp: 8% to \$50,000
Arkansas	10%	New Mexico	Unincorp: 10%, 12% or 3% + FRDR
Delaware	Unincorp 4 + FRDR	North Dakota	Unincorp: 7% or 5½% + CD rate
Hawaii	12% to \$750,000	Ohio	Unincorp: 8%
Iowa	Unincorp: 2 + 10 yr index	Oregon	12% to \$50,000
Kansas	Unincorp: 10%	S. Carolina	ag: 1% + FRDR to \$50,000 else: 8%
Louisiana	Unincorp: 8%	Texas	Unincorp: 10% to 250,000 above: 18%
Minnesota	Unincorp: 4½% + FRDR	Washington	12% to \$50,000
Mississippi	Unincorp: 10%	Wisconsin	12% to \$150,000 Corp: 15%
Missouri	Ag: 3% + long-term bond index		
Montana	10% or 4% + FRDR		

SOURCE: "Override of State Usury Laws as Related to Federal Preemption" Office of the State Legislative Counsel, American Bankers Association February 12, 1981. FR Discount rate was 13% on 4/1/80. Table lists only those state ceilings that were under the federal alternative ceiling as of 4/1/80.  
FRDR means Federal Reserve Discount Rate.

of federal policies to stop inflation. Finally, with the deregulation of interest rates payable by federally insured depository institutions on deposits, Congress was leaving the liability side of financial institutions' ledgers open to market forces. It may have seemed fair and prudent for Congress to loosen restrictions on the asset side as well.

Despite this rationale for federal action, Congress acceded to the states' historical role in regulating usury ceilings and their concerns

about the consumer protection function of ceilings by giving states the opportunity to override any or all provisions of Title V. To date, 15 states have exercised this option. Table 3 lists those states and indicates the sections of Title V to which the override applies. The mortgage preemption—which left mortgage rates completely open to the market—was overridden by all fifteen states while the other preemptions—which did provide for a federal ceiling—were rejected less often. Five states re-

**Table 3**  
**States enacting override of federal usury preemptions as of March 1985**

State	Date Override Effective	Sect. 501* Mortgages	Sect. 511 Business & Ag. Loans**	Sect. 521-24 Other Loans
Colorado	7/1/81	X	X	X
Georgia	3/31/83	X	X	—
Hawaii	5/30/80	X	X	—
Idaho	3/31/83	X	—	—
Iowa	5/10/80-7/1/83	X	X	X
Kansas	5/17/80	X	—	—
Maine	9/1/81	X	—	X
Massachusetts	9/2/81	X	X	X
Minnesota	6/2/81-8/1/87	X	—	—
Nebraska	7/17/82	X	—	—
Nevada	6/14/81	X	X	—
North Carolina	3/21/83	X	—	X
South Carolina	6/30/82	X	X	—
South Dakota	12/31/80	X	X	X
Wisconsin	11/1/81	X	X	X

\*The deadline for overriding the mortgage preemption was April 1, 1983.

\*\*The federal preemption of state ceilings on business and agricultural loans expired on April 1, 1983.

SOURCE: Commerce Clearing House, *Consumer Credit Guide*.



### The economics of usury ceilings

Usury ceilings have existed in various forms for many centuries. Their fundamental intent is to prevent the taking of "excessive" interest by setting a legal maximum rate. However, keeping lenders from charging more than acceptable rates is not the only effect of usury ceilings. Usury ceilings may also restrict the availability of credit.

When a usury ceiling is above the market rate of interest—the rate which lenders would charge based on the market forces of supply and demand—the ceiling has no effect on either the price or availability of credit. On the other hand, when the ceiling is binding—that is, when the legal limit is lower than the market rate of interest—it does reduce the price which law-abiding lenders may charge for loans. However, these lenders will be less willing to supply credit at the ceiling rate than if they could charge the higher market rate of interest. Therefore, when the legal limit does hold down the price of credit to the ceiling rate, it also has the effect of reducing the availability of credit or obliging would-be borrowers to seek (higher-cost) retailer credit.

This view of the way usury ceilings work has been borne out in numerous empirical studies over the last 20 years. These studies have found that when usury ceilings are binding, lenders reduce loan volumes and/or raise noninterest charges and terms to allocate credit.\*

A multiplicity of interest ceilings—as is found in the United States—can also have undesirable economic consequences by misdirecting available credit among alternative uses. With credit transactions in a single state subject to rate ceilings

ranging from 5 percent to 36 percent, it is apt to happen that market interest rates will be above the ceiling for some credit transactions and not for others. Faced with a situation in which rates on some transactions are constrained by ceilings while rates on others are not, rational lenders will prefer to make those types of loans on which they can obtain market rates. Moreover, since credit markets are not confined by state boundaries, the diversity of ceilings among states will have a similar effect on the distribution of credit across states. When the current market rate of interest for a given type of credit transaction is above one state's ceiling and not another's, again, rational lenders will allocate credit to those states where they can obtain market rates. Thus, the existence of a variety of interest rate ceilings creates incentives for lenders to allocate credit where market rates prevail or where ceilings are most favorable. This allocation is not the one that puts scarce funds to their most efficient use, in a purely economic sense.

In summary, the economic view of usury ceilings is that they cannot effectively bind interest rates below market levels without at the same time causing lenders to limit credit availability. Therefore, in formulating policies to protect borrowers from exorbitant rates, the benefits of specifying a legal maximum rate need to be weighed against the demonstrated adverse effects of usury ceilings on credit availability and distribution.

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\*For a review of these studies, see Donna Vandenbrink, "The effects of usury ceilings," *Economic Perspectives*, (Midyear, 1982), pp. 44-55.

jected all of the preemptions. It is not possible here to attribute a motive to each individual state, but it is clear that at least some overrides were motivated by something other than the desire to maintain restrictive ceilings. Some states that overrode the mortgage preemption, such as Massachusetts, had no existing regulations on mortgage loan rates to be preempted. And other states that rejected this

preemption—Hawaii, Idaho, and Wisconsin, for example—concurrently or subsequently removed their legal limits on these loans.

### Conclusion

The best way to summarize Title V of DIDMCA is in terms of what it was not. First, it was not an attempt to shift the locus of re-



sponsibility for usury ceilings from the states to the federal government. The federal government already had a long-standing role in regulating certain lending rates. Title V extended the scope of federal jurisdiction of mortgage loans, business and agricultural loans, and loans by federally insured institutions<sup>1</sup> but it permitted the states to override the federal action and reassert their jurisdiction.

Second, Title V did not simplify the existing scheme of usury regulations. The provisions of the Title itself were complicated, and their enactment generated additional jurisdictional issues. For example, one question yet to be resolved is whether the federal preemption applies to a loan made by a lender in a state which has opted out of Title V to a borrower in a state which has not opted out.

Finally, and most importantly, Title V was not the lending counterpart to the elimination of interest rate ceilings on deposits. Rather than imposing interest rates on credit to the forces of the market place, as was being

done with deposit rates, Title V merely preempted state usury ceilings on certain loans or certain lenders. Only on mortgage loans were interest rates permanently freed from all ceilings. And here, as elsewhere, states could reimpose ceilings if they so chose. Title V of DIDMCA was regulatory reform directed toward the immediate credit allocation and competitive problems created by state ceilings during a period of generally high interest rates. It was not regulatory reform guided by an overarching goal of eliminating regulation of usury ceilings.

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<sup>1</sup> Even here there was precedent for federal action. State ceilings on mortgage loans and business and agricultural loans had been preempted as a temporary emergency measure in December 1979 (Public Law 96-161). In addition, Public Law 93-501 preempted business and agricultural loans of \$25,000 or more from October 29, 1974 until July 1, 1977.



# Priced services: The Fed's impact on correspondent banking

*Douglas D. Evanoff*

With the passage of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA), the Congress set in motion the process of eliminating numerous competitive barriers between financial intermediaries. The basis for a more "level playing field" was developed as product and price barriers were removed, reserve requirement levels lowered, reserve inequities narrowed, and the regulatory reporting burden standardized across depository institutions. The goal was improved industry efficiency from increased competition. At the same time, the Congress decided that the Bank Operations Division of the Federal Reserve, a long-time provider of *free* correspondent banking services, should be more accountable to the forces of the marketplace. Services would no longer be provided free of charge nor limited to member banks, and the Federal Reserve would be an active market participant alongside other (private) correspondent banks.

What initially seemed a relatively minor aspect of DIDMCA has resulted in significant controversy and substantial modification to Fed service operations and to the correspondent banking industry. This article reviews the development of the correspondent banking industry as it has been affected by the presence of the Fed since DIDMCA. In particular, how have the Federal Reserve and other correspondent banks responded to the "Fed pricing environment"? The history of the Federal Reserve as a financial service provider is briefly discussed, as are the reasons why Congress required a (quasi) governmental agency to compete with private sector correspondents. The legislative mandate is then discussed, followed by the Fed's and private correspondents' interpretation of and responses to that mandate. Finally, the result of the Fed's presence is analyzed by viewing changes in correspondent bank services, service prices, market shares, and Fed performance.

## **Correspondent banking**

Financial institutions are in the business of transferring claims over financial resources. In doing so they collect and clear checks and securities, transfer funds, make loans, and perform other financial service functions. While all financial institutions want to be capable of providing most of these services to customers, few are involved with the actual production of many of them. For example, few banks in Florida would physically transport checks drawn on a Wyoming bank through the entire clearing process. The same can be said for bond or coupon collection or storage, the interbank transfer of funds, and investment decisions. Instead, an elaborate network has developed in which the larger institutions, which have sufficient customer demand to justify the necessary physical and human capital required by these production processes, produce the services. Once the network is in place, efficiencies allow the larger banks to provide similar services to other financial institutions and corporate customers. In this fashion, a symbiotic correspondent-respondent relationship has evolved. Similarly, correspondents from different regions utilize one another to provide nationwide services.

The number of respondent services provided by correspondents is almost endless, but all can be categorized as either credit or non-credit services. Credit services include loan participations and overlines which allow a respondent institution to make large loans that exceed its own legal lending limit. Non-credit services include clearing services (funds transfers, check and securities collection) and asset management offerings (coin and currency delivery, document safekeeping, investments).<sup>1</sup> While the respondent institution benefits from this relationship by being able to offer a wider array of services than would otherwise be pos-

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sible, the correspondent utilizes its excess capacity (decreasing its own service average costs) and receives payment either from explicit fees ( "hard charges") or, more commonly, cash balances. Additionally, the credit services provide the correspondent with an alternative market outlet for portfolio diversification and risk reduction.

During the early 1900s, this correspondent network provided a nationwide payments mechanism. Checks were cleared and inter-bank fund transfers occurred without the aid of a central bank. However, the system was plagued by non-par check and securities collection and numerous means to delay the interbank transfer of funds. Many observers feared these inefficiencies might impair economic growth. As a consequence, when Congress established the Federal Reserve System in 1913, it gave the Fed a regulatory and operational role in the payments system. The stated role was to "make and promulgate from time to time regulations governing the transfer of funds and charges."<sup>2</sup> The Reserve Banks would collect at par checks that were both deposited by and drawn on member banks. Additionally, the Federal Reserve was not required to pay a presentment fee to the paying bank but would charge a processing fee to the presenting institution instead.

The Fed had little success in eliminating non-par check clearance during the 1914-18 period because very few institutions chose to use it as a clearing agent. Instead, established clearing arrangements continued to be used as smaller banks continued to profit from presentment fees and slow presentment of items drawn on themselves. In 1918 the Fed removed service fees and offered member banks free access to all services. This was followed by a rather steady rise in Fed service usage over the next 60 years. Par clearance evolved as a result of the Fed's active opposition to non-par banking and the growing intolerance of bank customers for exchange charges.

Between 1920 and 1980 the Fed provision of correspondent services performed a convenient dual role. First, the free services allowed member banks to justify Federal Reserve membership and the resulting idle reserve balances. Second, by maintaining a presence in the payments system the Fed was better able to implement service enhancements and more efficient payment system technology. Check

clearing efficiencies resulting from Fed-induced MICR-encoding are the best known examples of benefits resulting directly from Fed participation in the payments system.<sup>3</sup> With the introduction of regional check processing centers (RCPCs) in 1972, the Fed significantly improved check clearing times and nearly cut system float in half.<sup>4</sup> However, inefficiencies also occurred. Since the Fed service was free, a number of efficient clearing arrangements were eliminated as institutions decided to utilize the Fed alternative. Local clearinghouses were closed and the absence of the pricing mechanism created some unique check routing. For example, regional institutions suddenly found it "economical" to stop exchanging checks with other local institutions, perhaps across the street, and instead to sort the checks into groups drawn on institutions in a particular Federal Reserve check territory. The banks would then send them to the Fed and receive prompt payment while the Fed would return the checks to the paying institutions. The process resulted in a more lengthy and costly clearing process on these particular items than had occurred prior to the introduction of the new Fed facilities. This was obviously not the intent of the RCPCs but resulted because of the zero price set for clearing checks. Thus, part of the improvement in check clearing resulting from the introduction of the RCPCs was offset.

During the late 1970s, it became obvious that some changes were needed in the financial industry. With rising interest rates, price controls and product restrictions often led to severe disintermediation and had a significant impact on bank profitability. Inefficiencies resulting from barriers became a matter of great concern. The Federal Reserve saw its ability to implement monetary policy impeded as large banks began to withdraw from Fed membership because of the high reserve balance opportunity cost and the lower reserve requirements common at the state level. With declining membership, fewer institutions were subject to the reserve requirements with which the Fed controlled monetary growth. To correct this problem some new means of maintaining control was necessary.<sup>5</sup>

At the same time, private correspondents were complaining that the Fed was monopolizing certain markets by giving away check services to nonmember as well as member



banks. While the Fed had allowed nonmembers to utilize the new RCPCs with the hope of improving the check-clearing process, it was aware of circuitous check routing patterns.

## **DIDMCA**

In March 1980, the Congress passed DIDMCA. In addition to eliminating numerous price and product barriers, it attempted to give the Federal Reserve better control over the monetary aggregates by requiring all depository financial institutions to hold reserves with the Fed. This not only made the declining membership problem moot, it also gave the Federal Reserve deposit information on savings and loan institutions and credit unions. To ease the reserve burden, the reserve requirement ratio was lowered from previous levels. However, the lower ratio and resulting decline in reserve balances and government securities held by the Fed would reduce earnings on these balances and, as a result, decrease payments to the Treasury.<sup>6</sup> Given the size of the federal deficit, the Congress attempted to recoup part of this revenue loss by having the Fed price its correspondent services. This also would subject the Fed to competitive market forces and help eliminate inefficiencies previously introduced.

The Act mandated that the Fed explicitly price 1) coin and currency services; 2) check clearing and collection services; 3) wire transfer services; 4) automated clearinghouse services; 5) net settlement services; 6) security safekeeping services; 7) Federal Reserve float; and 8) any new services. Services were to be made available to all depository institutions regardless of Fed membership (i.e., banks, S&Ls, and credit unions) and to be explicitly priced-based on all long-run direct, indirect, and imputed costs. The imputed cost would take into account taxes and return on capital that the Fed would have if not for its special quasi-governmental status. Additionally, the Fed was to develop a fee schedule and a list of pricing principles by which future prices would be established.

While DIDMCA stated that costs were to be recovered “over the long run”, the pricing principles and resulting prices were to “give due regard to competitive factors and the provision of an adequate level of such services nationwide.” This provided justification for a continuing Fed presence in the payments sys-

tem. The final article of the pricing section of the Act stated that “the Board shall require reductions in the operating budgets of the Federal Reserve banks commensurate with any actual or projected decline in the volume of services.” Thus, demand decreases should result in commensurate cut-backs in the Fed’s scale of operation. Two very different interpretations of these mandates were made.

## **Reaction**

Initial reaction to the pricing provisions of DIDMCA was swift and intensified significantly during the first two years after the law’s enactment. The Fed responded to the request for pricing principles and published the following principles for public comment (these supplemented those included in the Act):

1) Over the long run fees should recover total cost for all priced services.

2) Fees should be structured so as to avoid disruptions in services and facilitate an orderly transition to pricing.

3) Both fees and the level of service should be administered flexibly to allow for response to changes in market conditions.

4) Incentives may be provided to improve the efficiency and capacity of the payments system and induce desirable long-run changes.

The request for public comment described the Fed’s position concerning its participation in the payments system. The Fed took the position that the Congress wanted to encourage competition in the provision of these services and, by so doing, assure that they were provided in the most efficient manner possible. Similarly, the increased competition between the Fed and other service providers would stimulate innovation and provide improved payment alternatives. However, the increased drive for efficiency would not be allowed to create an incentive for a return to “undesirable banking practices” such as non-par clearing or circuitous routing of checks. Nor would competition alone be the determining factor in deciding on service levels and prices. To avoid these undesirable practices and insure an “adequate” level of services nationwide, the Fed would maintain an operational presence in the payments mechanism. This attempt to impose, but limit, the forces of the marketplace emphasizes the contradictory nature of this interpretation of DIDMCA.



The initial response by the financial industry was mixed. Smaller institutions were generally indifferent to this section of the Act and simply tried to adjust to the other modifications such as new reporting requirements and new services. However, most larger correspondents favored the imposition of market discipline on the Fed and many doubted that it was capable of becoming a viable competitor. While these banks had been major users of Fed services in the past, they had also competed with the Fed. Although the Fed had given the product away, the private correspondents had maintained a significant market share in the correspondent business by providing a more complete array of services and being more flexible and customer-oriented. Many correspondents felt it was the intent of Congress to gradually phase down the Fed's role as service provider. The Fed would suddenly be at a significant competitive disadvantage if it had to price its services and would be required to phase down or drop out of many business lines completely. The check clearing service, the most lucrative correspondent business line, was expected to be the one most affected. Thus, the Act essentially was expected to create new correspondent business opportunities.

When the Fed published its pricing principles and proposed prices the private correspondents argued that the wording was too vague and might not fulfill the intent of the Congress. The proposed prices were thought too low and incapable of recovering all Fed expenses. The price adjustment to allow for the Fed's special tax and cost of capital status was also thought to be too low at 12 percent. However, there was little doubt that once prices became effective the Fed would begin losing volume and that private correspondents would be the principal beneficiaries.

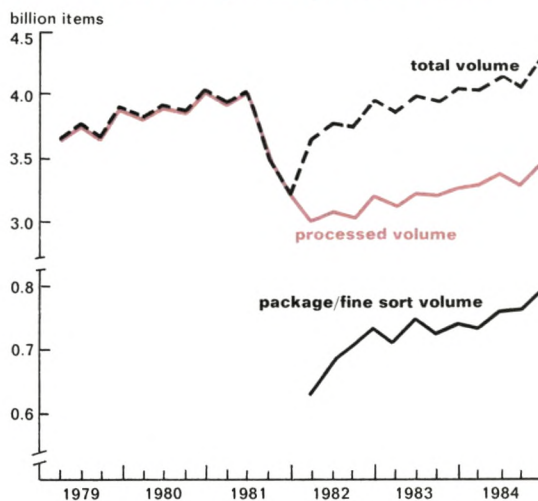
In January 1981, the Fed began phasing in the pricing scheme by imposing prices on the wire transfer and net settlement services. As expected, given the lack of close substitutes in the marketplace, little volume shift occurred. In contrast, customer reaction was immediate and significant when check services were priced in August 1981. Fed-processed check volume fell nearly 22 percent between the second and fourth quarter of that year. Financial institutions realized that the Fed service had become relatively more expensive and immediately sought alternatives. The available

alternatives included private correspondents, direct exchanges between institutions, and the reemergence of regional clearinghouses.<sup>7</sup> Small and intermediate-sized institutions evaluated the new alternatives and, in many cases, chose the private sector correspondents.

The larger correspondents utilized alternative clearing methods but also continued to use the Fed as a check clearing agent, though in a much different manner. Much of the check volume they had originally sent to the Fed to be processed was now sent as pre-sorted work. The larger banks would sort the check items and utilize the Fed for transportation purposes only. While the Fed had offered this service (package or fine sort) prior to the pricing era, the depositing bank had little incentive to use it. Because Fed handling of package items is minimal, the price was set low. Check volume flows for processed and package/fine sort check items are shown in Figure 1.

The Fed volume declines were a welcome sight to private correspondents. Given the provisions in DIDMCA, the next logical step, according to this group, would be for the Fed to scale back operations and phase into the role of a service provider of last resort. However, the Fed took an alternative stance. Instead of phasing out of the business, it decided that the

Figure 1  
Federal Reserve quarterly check volume



NOTE: Package/fine sort volumes were not reported prior to 1982. However the totals were minimal.

SOURCE: PACs Quarterly Reports.



intent of DIDMCA was for the Fed to have a major role in the payments system.

Given that most economists would argue that private institutions are inherently more efficient than public ones, why should the Federal Reserve have stayed in the correspondent business? Basically, three arguments can be made for its inclusion: 1) Congress had mandated that it develop and maintain an efficient nationwide payments system and this may be impossible or more costly for the Fed to do without a market presence; 2) correspondent markets were not competitive and an alternative supplier of services was needed in certain areas to prevent "unreasonable" prices and to insure adequate and efficient service levels and resource allocation; and 3) given that some correspondent services have joint economies and natural monopoly characteristics (i.e., the economies of scale are such that one provider may produce more cheaply than multiple providers) it might be more cost effective for the Fed to provide competition to a private natural monopolist than to regulate it.

Representatives of the Fed argued that if it was to serve as an innovative stimulant and induce payment system efficiencies it had to maintain a viable role in the marketplace. Additionally, "adequate" accessibility to the payment system for all institutions is a goal the private sector alone would not achieve. Respondents in remote rural areas might receive an inferior level of service if private correspondents were the only service providers.<sup>8</sup> Finally, because of scale economies, certain services such as wire transfers and transportation networks may be more efficiently offered by a limited number of providers. The Fed already has the structure in place to provide these services and, because of shared inputs in the production of regulatory and payment services, may have additional joint production economies. For example, joint production efficiencies may be realized when the Fed performs its reserve accounting function and funds wire transfers. It should be emphasized that while these arguments can be used to justify a Fed presence in the correspondent industry, they are by no means universally accepted as applicable to the correspondent service industry.

After years of offering a rather generic, operationally prudent array of services, the Fed decided to change significantly its behavior in response to the marketplace. Under the spur

of market competition, what occurred was a classic example of organizational restructuring. Services were modified better to meet customer needs, bank operations became more flexible, and sales efforts became much more customer-oriented. Some Reserve Banks brought in marketing officers from the outside while others promoted from within. The general goals were to provide the market with information concerning the alternatives that were available and then let the marketplace decide whether the Fed should stay in the business. The decision was to be based on the viability of the "new Fed," not the bureaucratic, slow-to-change, inflexible "old Fed."

Within two years much of the transformation had taken place. Check clearing schedules were quickened, a larger array of services was introduced, and prices remained relatively low. Much Fed float was eliminated and the rest was priced, leading to decreased use of some inefficient cash management services. The use of electronic means of initiating funds transfers was encouraged and, aided by subsidies, increased substantially. Some of the check volume that had originally shifted away from the Fed has been regained, the previous growth trends have reemerged, and some Reserve offices that scaled back operations or laid off employees have reinstated them as volumes have increased.

The correspondent industry and the banking industry in general were significantly affected by this Fed behavior. Small to intermediate-sized banks and thrifts generally favored the change. Through its efforts to stay in the market, the Fed has challenged the private correspondents to compete by providing improved services and better prices. Therefore, whether respondents use the Federal Reserve or a private correspondent, the results for respondents are improved funds availability and an improved bottom line. Respondents, in many cases, began "unbundling" services by using different correspondents for various services. This enabled them to be more aware of the true cost of services.

The private correspondents, however, had a different view of the new Fed. They challenged the rationale for many of the moves made by the Fed after the initial volume decline in 1981. Many argued that the Fed was more concerned with the maintenance of market share than with improvements in the pay-



ments mechanism. Thus, the objective was survival at all costs instead of efficiency gains. Similarly, many argued that the Fed had marketing tools unavailable to them. For example, 1) by having a unique exemption from presentment fees (provided in the Fed Act) the Fed could keep expenses and, therefore, prices low; 2) because of interstate banking restrictions the Fed has the only true interstate clearing network; and 3) because of its dual role as competitor *and* regulator the Fed had significant marketing advantages, including control of the rules of the game. This rule-setting capability, if misused, could obviously place the Fed in a favorable market position. This last point has been by far the major criticism since enactment of DIDMCA.

In 1983 the Fed spent over \$30 million to implement a new transportation network to clear checks. At the same time, it developed a "uniform presentment" time for presenting checks to paying institutions. Previously, the Fed had presented checks for payment at agreed upon times set by the local clearing-houses. These times generally ranged from 6:00 a.m. to 12:00 p.m. However, the Uniform Commercial Code allows for checks to be presented as late as 2:00 p.m. and, within that guideline, the Fed decided that noon would be a better standard presentment time than those already in place. The later presentment time would allow the Fed to offer later deposit deadlines, reach more end points for collection, and, thus, provide improved collection services.

Viewing the collection side of the payments system only, this would improve the payments mechanism because it would speed the collection of funds. However, bankers argued that legitimate cash management services would be significantly impaired. The correspondent banks argued that the Fed, in an abuse of its rule-making authority, was changing the rules to serve itself.

Private correspondents also challenged the Fed for purposely subsidizing certain services and being slow to fully price others. The Automated Clearing House (ACH) service, for example, was considered a merit good by the Fed and, thus, was subsidized when pricing began.<sup>9</sup> Over time this subsidization has been decreased and is scheduled for complete removal during 1986. Correspondents argue that the current artificially low price discourages

entry into the service line and gives the Fed too much control of the marketplace.

Another item that DIDMCA required to be priced was Fed float. The Fed could offer a more competitive service, such as an attractive fixed funds availability schedule (e.g., one day guaranteed funds on check deposits), only at the expense of generating significant float and indirectly charging it back to the taxpayers.<sup>10</sup> Private correspondents obviously cannot do the same and claimed that as long as Fed float was not removed they would be at an unfair competitive disadvantage. Although the Fed initially planned to fully price float, and since has, the process was delayed longer than many correspondents thought reasonable.

With growing dissatisfaction among the largest correspondent banks in the country, many of them formed a coalition in 1982 aimed at seeking congressional investigation of the role the Federal Reserve was creating for itself in the correspondent industry. The two major concerns of the National Payments System Coalition were 1) whether the Fed had accurately interpreted the intent of Congress in DIDMCA; and 2) the appropriateness of Fed behavior. More precisely, many correspondents believed the Fed had used its regulatory power to systematically introduce changes in the payment system aimed at maintaining or increasing its market share. Coalition members argued that the correspondent business was best performed by the private sector and that Fed involvement was actually anticompetitive. The coalition was instrumental in having airline couriers bring a law suit against the Fed to prevent it from implementing noon or uniform presentment. Similarly, coalition members continually asked Congress to reevaluate the proper role of the Fed.

For two days in June 1983, congressional subcommittees listened to Fed personnel, Coalition members, financial industry trade association representatives, and a number of bankers discuss the Fed's role in the payments system.<sup>11</sup> The presentations and discussions proceeded along lines similar to those that appeared earlier in the banking press.

Coalition members argued that the Fed had misinterpreted the intent of DIDMCA and was exploiting its comparative advantage as a regulatory agency. They asserted that, because it was well established that private institutions consistently outperform governmental agencies,



the role of government should be minimized in areas of commerce where it was not required. While the Fed should have a presence in the payment system, it should not have an unfair competitive advantage. Such a presence did not require that the Fed have a significant market share.

Trade association and Fed representatives emphasized the need for a competitive alternative. Fed representatives argued that no inherent competitive advantages existed for the Fed and that, while potential conflicts between its role as regulator and competitor existed, many countervailing powers existed (e.g., Congress, General Accounting Office, the public). Furthermore, without the Fed presence there would be a natural conflict of interest between collecting and paying banks, and possibly large and small banks. If the Fed was to play a role in the payments system, and many people argued it should, regulation (or guidance) by competition was preferable to regulation by fiat.

While individual reports were issued by two subcommittees, the findings were similar and only the recommendations of the Subcommittee on Domestic Monetary Policy will be discussed here.<sup>12</sup> The findings were overwhelmingly in favor of the Fed's position. The subcommittee concluded that there was a "compelling need for a public institution to play a central role in the payments system . . . and that institution should be the Federal Reserve." They also found the behavior of the Fed to be in accordance with the directive of DIDMCA. The Fed had competed fairly and had not abused its power by exploiting its regulatory role to serve its competitive ends. The subcommittee went one step further and encouraged the Fed to play a central role in the development of electronic payment mechanisms such as automatic-teller-machine networks, processing credit and debit card transactions, and creating a means for non-financial institutions to bypass intermediaries and access the payments system directly.<sup>13</sup>

The findings gave significant support to the Fed's participation and competitive behavior in the payments system. While congressional findings do not really answer the economic questions, they were a clear signal to coalition members and financial institutions in general that the Fed would be an active market

participant and, currently, had the full support of Congress.

Correspondents that had relied heavily on Congress to redirect the Fed toward a more passive and, in their view, more fair role were left to reevaluate their marketing efforts in view of the continuing presence of the Fed. In fact, recent events and discussions with bankers indicate that, out of frustration, some private correspondents may be taking a less aggressive approach toward marketing efforts. Some Seventh District correspondents that competed vigorously with the Fed for check volume in the past have recently raised prices significantly, recognizing that substantial volume declines could occur. Thus, instead of increased competition and its resulting benefits, a consequence of Fed involvement in correspondent banking has been that certain correspondents have reevaluated profit margins, assessed the Fed's reaffirmed role as regulator and competitor, have become less aggressive, and have not reinvested in the business. If this becomes common, the potential benefits of the initial increase in competition may not be realized, i.e., cost efficiencies, lower prices, and innovative output.

### **Situation analysis—five years after DIDMCA**

The pricing provisions in DIDMCA have obviously had an impact on the correspondent banking industry. Although it would be speculative to discuss how the industry would have evolved without Fed pricing, the active role taken by the Fed has encouraged modifications and new offerings. Similarly, explicit pricing by the Fed has encouraged correspondents and respondents to become aware of their service cost structures either as providers or users of financial services. The Fed has also experienced volume shifts and variations in its market share over the transition period from a non-priced to a pricing environment. The following sections describe each of these events and evaluates the influence of the Fed on financial service offerings, correspondent prices, market shares, and its revenue performance through 1984.

**Correspondent services.** Prior to pricing, most Fed offices offered a rather basic, inflexible level of services. Because the major concern was with quantity rather than quality, vari-



ations from the basic offerings were kept to a minimum. As one writer described Fed services offerings, "you can have any color you want so long as it's black." The private sector had a large respondent customer base mainly because customers were willing to pay for quality and flexibility instead of obtaining the basic service free from the Fed.

However, when pricing began most Fed offices modified their service offerings. Quality and, within limits, flexibility were emphasized. Customer needs suddenly became an important factor, as they would be for any true participant in a competitive market. Most offices improved collection services (check, securities, coupons) and availability schedules, and relaxed presorting requirements. The changes made depositing easier and improved the collecting banks' level of available funds.

**New services.** The improved transportation network introduced in 1983 revamped the Fed check collection service. Payor bank services that allowed banks to obtain account information earlier than was previously possible were introduced, enabling banks to provide improved cash management services and to manage better their own balances. In early 1984 the Fed also introduced a high-dollar group sort (HDGS) program aimed at speeding the collection of large dollar items drawn on selected regional institutions. These selected institutions (generally remote disbursement points) have few but very large dollar items drawn on their corporate accounts which, under typical clearing arrangements, required substantial clearing time. The HDGS program has been successful in speeding their collection. Over the first six-month period in which HDGS was offered, check collection speed increased, on average, by one-tenth of a day according to Phoenix-Hecht, a consulting firm specializing in cash management analysis. When billions of dollars are being collected, this translates to a significant improvement in available funds and, as a result, in profits. The benefit for the payment system is the deterrence of socially inefficient controlled disbursement.

Phoenix-Hecht also found that over the period since Fed pricing began, slippage in check collection for selected disbursement points decreased by nearly 1.25 days. Slippage is the difference between the check clearance time experienced by the writer and the time

required for the depositor to obtain use of the funds. The greater the slippage, the longer the check writer has use of the funds and the more valuable the remote disbursement point is as a cash management tool. However, as a result of the new check collection services provided by both the Fed and private correspondents, the slippage has not only decreased but has actually turned negative on the selected endpoints surveyed. Thus, corporations utilizing these specific disbursement points may actually be losing money by "playing the float".

Future product developments are also being considered by the Federal Reserve System. The existing check services will be augmented by adding or deleting institutions to the HDGS program. The check return item service is being modified to provide prompt notification to institutions that checks are being returned to the depositor. This may aid in decreasing some of the check hold times banks currently impose on customers. Additional cash management services are also being considered to speed the delivery of information to the paying institution prior to the delivery of the physical check. Similarly, check truncation is also being considered to deemphasize the importance of paper flows and concentrate on information flows. The credit union industry has been the major user of this service (via private correspondents). While legal considerations have slowed the use of check truncation, the Fed hopes its involvement will encourage others to utilize it.

A related service considered twice previously by the Fed is electronic check collection (ECC). It has not been introduced because of concerns by commercial banks about legal and operational problems. Essentially, the service would involve the Fed collecting large dollar checks via the current process with one additional phase. When the check is presented to the Fed office for collection, the Fed would advise the paying institution via electronic transmission of information or the complete check image that its account was being debited by the specified amount. The depositing bank would therefore receive immediately available funds. The physical check would then be transported to the paying bank via standard means, although one can envision the time when the check would be truncated.<sup>14</sup>

The advantages of ECC are that checks would be collected sooner, remote disburse-



ment activities (a net social inefficiency) would be made disadvantageous to all parties, and resources used to speed the transportation of paper would be put to more productive uses. Given the recommendation of Congress that the payment system be encouraged to use more electronic means of payment, the ECC proposal will probably reappear if the legal and operational concerns can be resolved.

Another new service currently being studied by the Fed involves the presentment of checks by collecting banks directly to the paying institution for immediate credit, just as if they had been presented by the Fed. This differs from current procedures because many collecting banks must pay a presentment charge and/or be denied use of the funds for one day if they present checks directly to the paying institution. As discussed earlier, the Fed does not pay presentment fees and, since it manages the accounts, receives immediate funds. This *direct settlement service* (DSS) was proposed by Bank of America and would have the Fed serve as the bookkeeper while private correspondents physically cleared the checks. While DSS may increase total collection costs because a larger number of institutions would be expending resources to collect the same number of checks (a net social cost), it could discourage socially inefficient expenditures for remote or controlled disbursement activities. Thus, the viability of DSS essentially reduces to a cost/benefit analysis involving elements which are difficult to quantify.

**Service prices.** Prices of Fed services have changed significantly since the initial pricing effort required by DIDMCA. Price schedules have become more complicated and now more closely approximate the structures of many private correspondents. While eight Federal Reserve districts initially set single district-wide prices for clearing checks, in 1985 only the Cleveland district maintained this practice. All others chose to price at the individual office level. Nearly all offices now have time of day check pricing to allow for later presentment times at a premium price. Thus, with the benefit of time, the Fed has gained experience and perhaps has improved its pricing methodology. The private sector has also been affected by the presence of a new competitor. In the Seventh Federal Reserve District the check prices charged by a number of correspondents

are below those charged before DIDMCA. Thus, as would be expected with increased competition, price setting has become a major aspect of marketing efforts.

As a new entrant in the pricing environment, one might expect the initial Fed prices to be less closely associated with production expenses than those charged by other correspondents with more pricing experience. An earlier study indicated that initial Fed prices, while generally at the low end of the price range, were usually within the range of prices charged for similar services by local private correspondents. However, that cross-sectional analysis indicated that Fed prices were not closely correlated with those of local correspondents and were also not closely related to a cost-of-labor index. Private correspondent prices tracked much more closely to the wage indexes at various cities around the country. Prices should track closely to the wage index if the Fed and private correspondents price on a cost-plus basis, and labor is an important production input.<sup>15</sup>

To see if Fed prices are now more closely related to input costs, the correlations were re-estimated for 1983 check service fees. Once again, these services are considered because of their size and importance in the payments system. The results for 1983 are presented in Table 1. Fed prices in 1983 did not track closely with the labor cost index for either check service considered. The private correspondent check prices, while more closely associated, also did not closely follow the labor expense index. Thus, there has been a deterioration in this association since 1980. The major change has been in the relationship between the Fed and private correspondent prices. These should be closely related if competition exists and private correspondents and Federal Reserve Banks operate under similar production conditions. The prices of Fed city and RCPC check services are positively and significantly associated with those of private correspondents. The higher correlations found in 1983 compared to 1980 suggest that the marketplace has encouraged market participants to monitor competitive prices closely and "stay in line" with them. To the extent that the wage index is indicative of true production expenses, the results also suggest that this increased price competitiveness may have come at the expense of a close relationship between private corre-



**Table 1**  
**Relationships between FRB and private correspondent check prices,**  
**and a cost of labor index**

Variables	Correlation coefficient*
FRB city check service and BLS index (n=12)	.301 (.342)
FRB RCPC check service and BLS index (n=11)	.298 (.374)
Private correspondent city check service and BLS index (n=12)	.348 (.266)
Private correspondent RCPC check service and BLS index (n=12)	.426 (.167)
FRB and private correspondent city check service (n=12)	.686 (.014)
FRB and private correspondent RCPC check service (n=11)	.760 (.007)

\*Where n=the number of observations and the significance probability of the correlations are in parentheses. Expanded samples were used for the first two correlations as additional office and BLS data were available. The correlations were slightly inferior.

**Table 2**  
**Federal Reserve processed check market share\***

	Written check volume <i>(billions)</i>	Reported FR volume <i>(billions)</i>	Estimated** FR processed volume	FR market share of total written volume	FR market- share of potential market volume
1979	32.0	15.1	13.7	42%	60%
1980	34	15.7	14.1	42	60
1981	35	15.9	14.3	40	58
1982	37	15.2	11.2	30	42
1983	39	15.9	11.7	30	42
1984	41	16.5	12.1	30	42

\*Total written check volume for 1981-84 is calculated assuming an annual growth rate of 5.0% since 1979. This assumption is based on the trend during the 1975-79 period; see "A Quantitative Description of the Check Collection System", Table 5.9. Government checks are excluded. FR Volume is from PACS data or the FRB *Annual Reports*.

\*\*Prior to 1982 package sort was inaccurately counted as one item per bundle. For 1980 and 1981 this was accounted for by subtracting out the number of packages. 1979 volumes were not adjusted but the resulting over-statement is expected to be very small. Volumes for all years are adjusted to account for double-counting of other Fed items since two FR offices process these items. In 1979, 9.4% of total volume was processed at two offices and 10% of processed volume was assumed for the remaining years.

-The two market share figures differ because of different denominators. Potential market volume is based on 30% of all written checks being deposited by bank customers at the payor bank. These items, therefore, do not enter the clearing process. See "A Quantitative Description," pages 285, 277, and 158 for a discussion of the basis for these assumptions.



**Table 3**  
**Federal Reserve check market share\***

	<u>Written check volume</u> <i>(billions)</i>	<u>Estimated total** FRB volume</u> <i>(billions)</i>	<u>FR market share</u>	<u>FR market- share of potential volume</u>
1979	32.0	13.7	42%	60%
1980	34.0	14.8	44	63
1981	35.0	17.1	49	70
1982	37.0	13.9	37	53
1983	39.0	14.6	37	53
1984	41.0	15.2	37	53

\*See Table 2 for sources and the basis for the assumptions.

\*\*Volumes include processed and package sort items and have been adjusted for double counting of other Fed items. Package volume for 1980 and 1981 is calculated based on 150 items per package. 1979 volume includes fine sort packages only (instead of items) and is therefore slightly understated.

- Assumes 30% of all written checks are initially deposited by customers at the payor bank.

spondent costs and prices. This obviously cannot continue over the long run unless abnormal profits are being made.

**Market share.** When evaluating the extent of the Fed's presence in the correspondent market the amount of check service activity is most commonly used as a barometer.<sup>16</sup> Before discussing the estimates, the precise definition of market share should be clarified. Estimates based on the number of items processed will differ substantially from the ones presented here because checks are commonly processed at more than one bank or Fed office. Past studies indicate that checks are handled by an average of nearly two-and-one-half institutions before reaching the payor bank. The figures considered here are based upon the Fed's involvement in processing the total number of checks written. The resulting market shares are presented in column 3 of Table 2. While the percentage of total checks written in which the Fed was involved is a good indication of its payment system presence, that figure does not indicate how successful the Fed has been at marketing its services. Some written checks never enter the correspondent network clearing process. Many are deposited by customers at the bank on which they were drawn and, therefore, do not need to enter the collection process. Checks initially deposited at the payor bank, therefore,

should not be considered part of the potential correspondent business market. Column 4 in Table 2 accounts for this difference by excluding these items from the potential market, and presents the Fed's share of checks written that entered the collection process.

The results in Column 3 indicate that pricing did have a significant impact on the Fed's market share. In 1982, the first full year of check pricing, the Fed processed 30 percent of all checks written.<sup>17</sup> While still a substantial share, this represented a 29 percent relative decline from the 1980 pre-pricing level (42 to 30 percent). The 1983 and 1984 figures suggest that the competitive efforts of the Fed helped it to maintain its position relative to that immediately after pricing began. The estimates in Column 4 obviously suggest similar findings, and give a better indication of the Fed's competitive posture in the market place. They indicate that the Fed was involved in processing 60 percent of the potential check market in 1980 and 42 percent after pricing.

While Table 2 presents market share estimates, it still underestimates the Fed's role in the clearing process. As discussed earlier, large correspondents continued to utilize the Fed for clearing checks after pricing began. However, they significantly increased their use of the package sort deposit option in which they would perform all the machine processing and



would utilize the Fed only for transporting the checks and performing the accounting function. This deposit option was seldom used prior to pricing. Table 3 presents market share estimates that include package items in Fed volumes. Given the assumptions, the Fed's involvement in check clearing is shown to have decreased with pricing but still to be substantial. Indeed, a comparison of Tables 2 and 3 indicates that the package sort program helped the Fed maintain a significant market share. While the processed shares fell 29 percent between 1980 and 1982 (Table 2), estimates including package sort volumes indicate total shares fell only 16 percent (Table 3).

While the methodology, assumptions, and data used to generate Tables 2 and 3 are appropriate, it should be emphasized that the findings are approximations. Changes in the behavioral variables over time could bias the projections, but this bias is not expected to be very great. The results indicate that Fed involvement is substantial enough to allow it to guide the payment system in the direction it considers most desirable.

**Federal Reserve performance.** The performance of the Federal Reserve in the correspondent business since 1981 is presented in Table 4. The first two years were rather difficult ones and the Fed realized that changes needed to be made if it expected to continue in the correspondent business. The results of these efforts are indicated in the net positions for 1983 and 1984. The System would be capable of lowering prices for certain services if current profit trends continue.

In summary, DIDMCA has had a major impact on the Fed as a provider of financial services, and also on the correspondent industry. From the discussions here a number of interesting points can be made regarding the Fed's experience with priced services:

- The Fed has had a long tradition as a major participant in the provision of financial services. While services were initially priced when the Fed Act was passed in 1913, the volumes did not become significant until the Fed began giving the services away free of charge in 1918.
- In enacting DIDMCA, which required the Fed to price its services, Congress sought to impose market discipline and force the Fed to become more innovative and efficient, and to

recoup revenue losses resulting from the lowering of reserve requirements.

- Most institutions paid little attention to the pricing provisions of DIDMCA because they were busy adjusting to other aspects of the Act such as universal reserve requirements, and potential new products. The larger correspondents that were interested in the pricing provision believed they stood to benefit as past users of Fed financial services shifted to private correspondents.

- The initial impact of pricing was, as one would expect, to shift significant volume and market share from the Fed to private correspondents and local clearinghouses. The Fed responded by significantly improving product offerings and committing itself to remain in the correspondent business. The changes resulted in improved collection services, a new viable correspondent alternative, and successful efforts to curtail the benefits of controlled disbursement and other activities aimed at slowing the funds collection process.

- Private correspondents argued that the Fed was not responding to the mandate of DIDMCA and was using its regulatory powers to survive in the correspondent business. A number of law suits were filed and the Congress held hearings to determine whether the Fed was competing fairly and whether it was performing its proper role.

- The Fed has strong congressional support for the continuation of its current market activities and expansion into new ones. Unless significant changes occur, the Fed will maintain a dominant role in the provision of non-credit correspondent services.

- In the three years immediately following DIDMCA the Fed appears to have been the price leader for certain check clearing services. However, if wage indexes are indicative of production expenses, the Fed competitive presence may have induced private correspondents to deviate from prices based on costs.

- Given the position of the Congress in recent hearings on correspondent banking, some private correspondents seem to be taking a less aggressive marketing position. Conversations with industry personnel indicate that they are not reinvesting in capital equipment, choosing to wait and see what role the Federal Reserve takes and how operational issues concerning float, daylight overdrafts, and the DSS service are resolved.



**Table 4**  
**Federal Reserve income statement—priced services\***  
*(millions of dollars)*

	<u>Total</u>	<u>Commercial check</u>	<u>EFT</u>	<u>ACH*</u>	<u>Definitive safekeeping &amp; noncash</u>	<u>Cash services**</u>
<b>Total cost</b>						
1984	461.8	345.2	48.3	10.4	37.0	21.0
1983	450.0	335.9	48.8	5.4	33.6	26.4
1982	420.9	304.0	47.9	1.9	36.5	30.6
1981	168.8	122.4	33.9	3.3	6.8	—
<b>Cost + PSAF</b>						
1984	519.2	388.6	55.6	11.8	42.0	21.1
1983	506.3	378.3	56.6	6.2	38.8	26.3
1982	475.3	344.7	55.6	2.2	42.0	30.9
1981	192.7	138.9	39.3	3.8	10.7	—
<b>Total revenue</b>						
1984	560.9	423.0	60.1	11.4	42.8	21.6
1983	493.7	368.8	57.4	6.6	34.8	26.0
1982	390.9	284.0	49.3	1.3	27.8	28.4
1981	156.3	118.9	30.2	.4	6.8	—
<b>Net profit [revenue - (cost + PSAF)]</b>						
1984	41.8	34.4	6.5	-.4	.9	.5
1983	-12.6	-9.5	.8	.4	-3.8	-.6
1982	-84.5	-60.7	-6.3	-.9	-14.1	-2.5
1981	-36.3	-20.0	-9.1	-3.5	-3.7	—

\*Float expenses and clearing balance earned credit revenue are not included in the totals. Totals may not sum due to rounding.

\*\*The ACH service was subsidized by 80% in 1982, 60% in 1983 and 40% in 1984. The cost figures include the subsidy. A revenue subsidy is included in the cash service figures.

<sup>1</sup> There are, however, some unique services occasionally offered to develop and maintain a banking correspondent relationship. For example, a correspondent can assist visiting bankers in obtaining hotel reservations, sporting event tickets, etc. For a discussion of correspondent banking, see Robert Knight, "Correspondent Banking: Part I—Balances and Services (November 1970); Part II—Participations and Fund Flows (December 1970); Part III—Account Analysis" (December 1971); *Monthly Review*, Federal Reserve Bank of Kansas City.

<sup>2</sup> *Federal Reserve Act*, paragraph 14, Section 16 (12 USC 248(0)).

<sup>3</sup> MICR encoding involves the imprinting of machine readable information on a check (dollar value, etc) to allow the clearing process to be significantly sped up. Many people would argue that the Fed would not have to be a market participant to affect the payments system. The regulatory role would be sufficient. Others argue that while enhancements may have been introduced without di-

rect Fed involvement, the timing would have been significantly later.

<sup>4</sup> Float is the equivalent of an interest-free loan because the Fed credits the account of one institution prior to debiting another (the collecting bank and paying bank, respectively.) It should also be mentioned that since member banks held idle reserves they actually incurred a cost to utilize Fed services. However, the cost was fixed instead of variable, thus, the marginal cost was zero. The new RCPCs were also unique in that the Fed even allowed non-member banks, which held no reserves with the Fed, to utilize their services.

<sup>5</sup> In addition to, or in lieu of, lower reserve requirements, most states allowed interest-bearing assets to be counted as reserves. It has been estimated that non-member bank net incomes would have declined by 9 to 17 percent had they been subject to Fed reserve requirements; see L. Goldberg and J.T. Rose, "The Effects on Non-member Banks of the Imposition of Member Bank Reserve Requirements—With and Without Federal Reserve Services," *Journal of Finance*, 31, (December



1976), pp. 1457-69. The role of standardized reserve requirements in controlling the monetary aggregates is not universally accepted. See Robert Laurent's article in this issue.

<sup>6</sup> The changes in reserve requirements were actually phased in with member bank ratios being lowered to the new level over a four-year period, and non-member institution ratios being phased upward over eight years. Thus, Fed balances, and Treasury revenue, would be affected most in the early years of the phase-in period.

<sup>7</sup> For a discussion of Fed wire transfer volume and its determinants (including substitutes), see A. Reichert, W. Strauss, and R. Merris, "An Economic Analysis of Short Run Fluctuations in Federal Reserve Wire Transfer Volume," *Journal of Bank Research* (Winter 1985) pp. 222-28; for a discussion of check clearinghouse arrangements, see J. Frodin, "Fed Pricing and the Check Collection Business; The Private Sector Response," *Business Review*, Federal Reserve Bank of Philadelphia (January/February 1984) pp. 13-22.

<sup>8</sup> An "adequate" level of service is obviously difficult to define. Using economic criteria, institutions located in these areas receive an inferior level of service because it is uneconomical to provide better service. Daily postal service to all areas is another example of service not economically justified, but provided because it is felt an "adequate" level of service is needed.

<sup>9</sup> Being a merit good implies that the product will not be consumed in "sufficient" quantities if left to the forces of the marketplace. This occurs because of incomplete information, distorted preferences, etc. Other merit goods, also receiving subsidies and legal support, include education and certain in-kind subsidizations (low-cost housing or school lunches). Demerit goods would include pornography and alcoholic beverages.

<sup>10</sup> The float is indirectly charged back to taxpayers because the monetary authority will move to offset the float for monetary control purposes by selling securities via open market operations. This sale leads to a smaller Fed portfolio resulting in decreased earnings, and fewer receipts to present to the Treasury at the end of the fiscal year. To obtain the same revenues as would have occurred without the decreased payment from the Fed, the Treasury must increase tax revenues.

<sup>11</sup> Joint hearings were held by the Commerce, Consumer, and Monetary Affairs Subcommittee of the Committee on Government Operations; and the Domestic Monetary Policy Subcommittee of the Committee on Banking, Finance, and Urban Affairs.

<sup>12</sup> "The Role and Activities of the Federal Reserve System in the Nation's Check Clearing and Pay-

ments System"—Report of the Subcommittee on Domestic Monetary Policy; Committee on Banking, Finance, and Urban Affairs; U.S. House of Representatives (November 19, 1984).

<sup>13</sup> This last recommendation is intended to stem the mixing of commerce and banking functions resulting from the creation by non-financial firms of *pro forma* depository entities for the sole purpose of accessing payment services. However the entities' powers also included deposit taking and other depository functions. By developing a means of access without requiring the utilization of an intermediary, Congress believed the distinction between banking and commerce could be preserved.

<sup>14</sup> For a discussion of ECC's benefits, operational problems, etc., see "A Review of Electronic Check Collection as a Potential Service to the Financial Community." Federal Reserve Bank of Chicago (1982, unpublished report).

<sup>15</sup> For an analysis of all Fed services compared to private sector services in 1980 see D. Evanoff and A. Reichert, "An Analysis of Federal Reserve and Correspondent Bank Prices," Federal Reserve Bank of Chicago (January, 1981). A number of factors could cause the lack of a close association between Fed or private correspondent prices and the wage index. These include non-labor-intensive production, different protection techniques, and different scale economies at various facilities across the country. However, the check production process is labor intensive and it is not obvious that unique production techniques and scale economies fully explain the failure to find the expected relationship.

<sup>16</sup> For an alternative discussion of market shares see D. Humphrey, *The U.S. Payment System: Cost, Pricing, Competition and Risk*. Monograph Series in Finance and Economics, New York University (1984), pps 74-77. Summarizing the findings, he estimates 1983 Fed market share for the ACH and wire transfer service to be 95 percent and 67 percent respectively. Data for the current estimates are from (1) R. Knight, "Account Analysis charges for Selected Correspondent Banking Services," Robert Knight Associates, 1983. (2) Federal Reserve Bank of Atlanta, *A Quantitative Description of the Check Collection Process*, Volume 1 Atlanta (1979). (3) Bureau of Labor Statistics, "Wage Differences Among Selected Areas, 1983," U.S. Department of Labor (1984). Alternative wage indexes resulted in nearly identical results.

<sup>17</sup> The 1981 volumes and market shares may appear somewhat surprising since check pricing began in August of that year. However, volume for the first two quarters exceeded that from the previous year. While a quarterly analysis of market share would indicate a much larger impact on Fed check volume in 1981, the impact is not as pronounced on the annual figures until 1982.



# Private prices, public insurance: The pricing of federal deposit insurance

*Herbert Baer*

In *Garn-St Germain*, the U.S. Congress called on each deposit insurance agency to produce a blueprint for deposit insurance reform.<sup>1</sup> This article discusses the problems associated with one aspect of the reforms proposed by these reports: the price paid by banks and other institutions to their respective federal insurance agencies.

Under the current system, all banks pay the same fee per dollar of deposit, despite the fact that some banks are more likely to experience the kind of failure that is costly to the FDIC. This approach to deposit insurance is called a flat fee system. Flat fees create incentives for banks to increase the riskiness of their portfolios.<sup>2</sup> The insurance authorities, in their reports, hoped to reduce or eliminate this incentive by linking the insurance fee to the riskiness of each bank's portfolio. Less risky banks would pay lower fees, more risky banks would pay higher fees.

It is important to understand the nature of the risk faced by the deposit insurers. If monitoring of bank asset values is perfect and costless, neither depositors nor insurers need suffer a loss. When the value of assets declines to the point where they are just sufficient to pay off depositors' future claims, the bank can be closed and depositors paid off. No premium is needed since no risk is incurred. But monitoring is neither costless nor perfect.

Consequently, as pointed out by Paul Horvitz, George Kaufman, and Gerald Bierwag, deposit insurance premiums are designed to price the risk that regulators will fail to detect an insolvent bank.<sup>3</sup> These risks have more to do with monitoring costs than with the sorts of risks with which we normally deal.

Thus, mispricing of deposit insurance does not encourage banks to load up on any and all types of risk; rather, it encourages banks to take risks where the value of the underlying asset is difficult for regulators to monitor.

After discussing various proposals for the public and private pricing of deposit insurance, I describe here a proposal that would permit government insurers to use financial markets to

price deposit insurance contracts. The operation of this plan is discussed and compared with recent proposals to require banks to increase their reliance on subordinated debentures.

## Background

Under the system of deposit insurance developed in the 1930s, small depositors were protected from loss while larger depositors were left largely uninsured. This type of limited coverage has two consequences. First, in the event of a bank failure, uninsured depositors would be able to help the FDIC absorb any losses. Second, this exposure to loss would give uninsured depositors an incentive to closely monitor the banks, making risky behavior, and hence failure, less likely.

As long as regulators act in a quick fashion to close economically insolvent banks, such a system can be relatively without cost. However, as Table 1 illustrates, the two components of uninsured deposits—time deposits over \$100,000 and foreign deposits—make up a relatively small portion of deposits at all but the largest banks. Thus uninsured deposits provide little cushion to absorb losses and provide banks with little market discipline to control risk.

More importantly, regulators, perhaps for valid reasons, have shown a great reluctance to impose losses on uninsured depositors, particularly in larger institutions. This reluctance was a matter for speculation prior to the failure of United States National Bank of San Diego in 1973 and Franklin National Bank in 1974. Subsequent treatment of First Pennsylvania and Continental Bank of Illinois have reinforced this conclusion. The policy of protecting uninsured depositors has severely reduced market-imposed constraints on risk-taking.

The current system of deposit insurance produces two undesirable consequences. Neither the price of the deposit insurance nor the

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**Table 1**  
**The importance of large time deposits**  
**and foreign deposits**

Bank asset size	As a % of deposits
Less than \$100 million	13.2%
\$100 million to \$1 billion	19.9%
\$1 billion to \$10 billion	33.3%
Over \$10 billion	61.0%

SOURCE: September 30, 1984 Report of Condition

rate on insured deposits varies greatly with the monitoring risk of the underlying assets. Insured depositors are not at risk and the government insurer does not choose to vary the premium. Banks holding relatively riskless portfolios will be paying too much for deposit insurance, while banks holding relatively risky portfolios will be paying too little. Banks thus will have an incentive to increase the riskiness of their asset portfolios. This is the fundamental problem with a flat fee insurance system.

This mispricing of deposit insurance has a second consequence. In a deregulated environment some banks will attempt to take advantage of the mispricing by increasing their holdings of risky assets. In an attempt to attract the necessary funds, they will drive up deposit rates and draw deposits away from more conservative insured institutions without compensating the FDIC. The complete removal of interest rate ceilings mandated by DIDMCA in 1980 made it easier for risky institutions to attract funds from less risky institutions. Brokered deposits provide the most obvious example of this sort of behavior, but it is also occurring in less dramatic ways all across the country.<sup>4</sup> Flat fee deposit insurance will also permit insured institutions as a group to grow at the expense of uninsured financial intermediaries.<sup>5</sup> The real culprit here is mispriced deposit insurance, not deregulation.

### **Criteria for evaluating deposit insurance schemes**

Despite the recent attention paid to deposit insurance, little research has been devoted to establishing why deposit insurance should be provided by the federal government or what

the system should be trying to prevent. Do all depositors need to be insured or only small depositors? Is deposit insurance even necessary? Is a Federal Reserve policy of accommodating a flight to currency sufficient, or do flights to quality and asset recycling also pose problems?<sup>6</sup>

Given that some form of deposit insurance is optimal, how do we price it? In order to evaluate possible pricing methods, it is first necessary to accept a set of criteria describing the goals of deposit insurance. Of course, the success of a system depends not only on its ability to mimic an ideal system, but also on the costs of operating the system.

The ideal deposit insurance system should have three characteristics. First, it should eliminate bank runs. The elimination of runs would avoid most of the negative consequences associated with bank insolvency, including flights to quality and asset recycling, and remaining incentives for flights to currency.

Second, the ideal system should cause banks to be declared insolvent and recapitalized as soon as the expected present value of assets exceeds the promised present value of liabilities. Closer links between the bank's net worth calculated on a present value basis and decisions to recapitalize a bank will limit the losses borne by insurers and uninsured depositors. This will keep insurance costs to a minimum and discourage the development of uninsured substitutes for insured accounts.

Finally, the ideal system should set relative premiums that do not differ significantly from those that would be set by a free market. If these premiums are too low the market will encourage financial institutions to take too much risk. If the premiums are too high, banks will find themselves at a disadvantage against uninsured intermediaries.

It would be presumptuous to claim that these criteria are universally accepted. Nevertheless they provide a useful yardstick for measuring various reform proposals.

### **Problems with public sector pricing**

Most participants in the deposit insurance debate presume that the insurance premiums will be set by the governmental insurers. Eugenie Short and Gerald O'Driscoll have argued that there are several problems with this proposal.<sup>7</sup> First, the federal insurer will possess



a monopoly which will be enforced by governmental powers. In free markets, prices are the result of bargaining between sellers and buyers. But, as Short and O'Driscoll point out, governments tend to order and enforce, not bargain. This makes it difficult for a government insurance system to create relative premiums that correspond to the relative premiums that would be set by the private market.

Second, because the buyers would have no recourse if displeased with the government's terms, Short and O'Driscoll argue, the government insurer would be overly sensitive to the overpricing of risk.<sup>8</sup> This sensitivity would be reinforced by industry pressures to keep premiums as low as possible. But, an overt bias against overpricing will inevitably lead to underpricing of insurance, undermining the rationale for introducing variable insurance premiums. Third, even if the government insurer is not excessively sensitive to overpricing, how will it judge whether deposit insurance is priced correctly.

Examples of government mispricing are numerous. Federal Crop Insurance, which is based on average county yields rather than individual farm yields, has created incentives to bring low quality land into production. Publicly operated water projects in the Southwest and Northeast have traditionally underpriced water, leading to excess demand, water shortages, rationing, and overproduction of certain agricultural products. Before the introduction of competitive bidding for Treasury bonds and notes, it was not unusual for the announced coupon to attract total bids that were three or four times the actual amount of bonds for sale. As a final example, many countries find it difficult to choose and maintain fixed exchange rates that are consistent with their monetary policies. When the exchange rate is set too high, the inevitable result is a massive capital outflow. Once the central bank has exhausted its reserves, it is compelled to lower the exchange rate until the capital outflows cease.<sup>9</sup>

With the exception of crop insurance, most of these products are homogeneous and hence, by comparison to deposit insurance, relatively simple to price. One wonders how federal insurers could ever successfully price a heterogeneous product like deposit insurance.

## **The private sector solution**

Short and O'Driscoll propose private deposit insurance as an alternative to federal deposit insurance. In their world, all deposits would be insured competitively, with all terms of the contract determined solely by the banks and the private insurer. Slightly different proposals have been made by Bert Ely, Katherine England, and Art Rolnick and Evelyn Carroll, among others.<sup>10</sup> Most of the evidence on the efficiency of private insurance comes from the experience of state-sponsored insurance schemes. While there are exceptions, these "private" systems have generally failed to charge risk-related premiums, have been under-capitalized, and have exercised little supervisory control. Also, while historical evidence suggests that the "private" insurance schemes generated by the market do a good job protecting against isolated instances of fraud, they have done a poor job of protecting depositors against systemwide catastrophes. The Depression destroyed the eight state-sponsored schemes then in existence. More recently, deposit insurance schemes in Ohio and Maryland have also been bankrupted.<sup>11</sup> As long as private insurance funds are subject to failure in a crisis, they will not serve to prevent runs to currency or flights to quality.

## **100 percent reserves as a solution**

Constant monitoring excepted, the only way that private insurers could provide truly failure-proof insurance would be to hold riskless securities of the same value as the deposits that were being insured. In the last half of the 19th century the United States came close to adopting this sort of system. National banks could issue bank notes by pledging Treasury securities as collateral. These securities were held by the Treasury and used to pay off a bank's national bank notes if it failed.

In 1867 these 100 percent insured "deposits" accounted for 21 percent of the total money stock (currency plus bank deposits). Another 25 percent of the total money stock was made up of notes issued directly by the Treasury. In this period, the supply of Treasury securities placed no effective limit on the issuance of national bank notes. In 1867, national bank note issues consumed only 20 per-



cent of available collateral. However, the relative importance of these notes fell over time, and by 1914 they accounted for only 3.5 percent of the money stock while all currency held by the public accounted for 9 percent of the money stock. However outstanding issues consumed 80 percent of available collateral.<sup>12</sup>

Many monetarists have long argued that all deposits making up the monetary aggregate should be subject to a system of 100 percent reserve requirements.<sup>13</sup> However, the experience in the Greenback period suggests that individuals will not voluntarily create a monetary aggregate completely composed of riskless non-interest bearing instruments. Even when these deposits bear interest, the existence of externalities guarantees that under a 100 percent reserve system the quantity of riskless deposits demanded by the market will be less than the amount that is socially optimal. Moreover, if only transaction accounts, savings deposits, and money market deposit accounts were insured, the implied increase in the demand for Treasury securities would exceed the existing stock of Treasury bills by a factor of three and would just equal the total supply of marketable securities. Thus, imposition of a system of 100 percent reserve or full collateralization would drive up the price of Treasury securities and create incentives for individuals to find uninsured alternatives, destroying the integrity of the monetary aggregate.

### **Reassessing the insurance problem**

In the previous section we examined three forms of deposit insurance—risk-rated government-priced insurance, risk-rated private insurance, and 100 percent reserves—all of which were found wanting. The preceding analysis suggests that a government insurance system that sets its own prices is likely to underprice insurance and create a serious moral hazard problem. If history is any indication, a private insurance system will generally be subject to failure. It can reduce its exposure to failure by pledging government securities, but there is still no guarantee that the insurer would be able to protect itself against changes in the market value of the collateral. Systems employing either private insurance or 100 percent reserves will tend to ignore externalities in setting the relative returns on uninsured deposits. This will cause society to hold suboptimal amounts

of deposit insurance. Finally, given current supplies of Treasury securities, it would only be possible to insure a portion of existing bank liabilities under a system of 100 percent reserves.

There is one alternative which we have not explored—a system in which the government provides most of the insurance, but at prices determined by the private market. Using such a system, it might be possible to create premiums that reflected both private market risk assessments and the government's estimate of the externalities. Such a system could also take advantage of the government's ability to conserve on capital by using its powers of taxation and seignorage. Such a separation of pricing from production is not unprecedented. Once again the Treasury auction provides an example.

Many individuals wish to purchase Treasury securities at the "market" rate of interest. However, they find it difficult to make accurate predictions concerning the rate that will be revealed in the auction. Rather than forego the purchase of these securities, these individuals have the option of submitting a noncompetitive bid and accepting the average of the bids needed to sell the remaining securities. In this way, an individual with little knowledge about the value of Treasury securities can assure himself a fair rate of return. The system would break down only if the government began bribing competitive bidders to make their bids artificially low.

There is a clear analogy between the position of the noncompetitive bidder at the Treasury auction and the position of a government insurer in the market for deposit insurance. Like the noncompetitive bidder, the government insurer's major concern is coming up with a price that is not dramatically at odds with the market price. Also like the noncompetitive bidder, the government insurer encounters certain difficulties in setting accurate prices. However, there are also some differences. The problems of the noncompetitive bidder are a result of a lack of information; the problems of the government insurer have less to do with information availability than with the need to interpret the information in an objective fashion. The relative importance of noncompetitive bidders also differs. Noncompetitive bids account for 20 to 25 percent of Treasury bill sales; the government's role in the



larger; it would back perhaps 90 percent of the insurance.

While the government insurer finds itself in a position that is similar to a noncompetitive bidder, the solution to the insurer's problems is more difficult and less obvious. In order to use the price generated by the private insurer, he must make sure that the private insurer faces the same losses and incentives. There have, in fact, been some proposals that the government insurer should simply use the risk assessments embodied in existing stock, bond, or deposit market data.

There are, however, two problems with these proposals. First, the interests of shareholders and subordinated bondholders differ from the interests of a government insurer. Under the current system, losses are imposed in a serial fashion. Shareholders cover losses until their equity is eliminated. Additional losses are then covered by subordinated bondholders until their positions are wiped out. Only then does the deposit insurer—and perhaps the uninsured depositor—begin to suffer losses. The deposit insurer and uninsured depositors share the remaining losses on a *pro rata* basis. But, if the uninsured depositors believe that they will be exposed to losses, they will react by exercising withdrawal options or by taking out loans with the troubled bank. The ability to evade losses, together with the short maturity of uninsured bank deposits, also gives uninsured depositors a risk structure which differs radically from that of the FDIC.<sup>14</sup>

Under these circumstances, shareholders, bondholders, and uninsured depositors will misprice the risks borne by the government insurer. Shareholders and bondholders do not care whether the FDIC pays out 10 cents on the dollar or 20 cents on the dollar. What matters is that the FDIC only begins making payouts after the positions of the shareholders and bond holders have been eliminated. Uninsured depositors do care about FDIC payouts, but their concern is tempered both by their ability to flee a troubled bank and by the possibility that the insurer will choose purchase and assumption over payout. If the FDIC frequently uses purchase and assumption transactions, then uninsured depositors are at even less risk. This will be reflected in lower deposit risk premiums. If depositors believe that the FDIC will always use purchase and assumption

transactions, then risk premiums will completely disappear. But, if the FDIC frequently employs P & A transactions, it is at greater risk although market risk premiums are reduced. Thus, the market's assessment of the risk associated with the use of purchase and assumption is in direct conflict with the reality of the FDIC's financial position.

### **An alternative proposal**

These considerations suggest that in attempting to develop a system where the government insurer can rely on the private market to set insurance premiums, care must be taken to ensure that the structure of private insurance contracts is consistent with the government insurer's actions and true risk position. The provisions of such a public-private scheme are summarized in the adjacent box. Each of these provisions plays an important role in forcing private markets to generate deposit insurance premiums that can be used by the government insurer. These provisions are compatible with profit maximizing behavior of perfectly competitive firms. In fact, the ability of perfectly competitive markets to eliminate excess profits is used to reduce the possibility of mispricing deposit insurance.

### **What is insured?**

As the first step in designing the public-private coinsurance scheme, the government insurer must decide what types of deposits it wants to be insured. Given the goal of stopping runs, the logical decision would be to insure any short-term deposit plus those long-term deposits with provisions for early withdrawal.<sup>15</sup> Of course, given different goals, different types of deposits would be subject to insurance.

### **The allocation of losses**

The provisions for sharing losses between the various insurers is addressed in the second point. Under the public-private scheme, private insurers write policies for banks to pay for X percent of their depositors' losses, while the public insurer writes a matching policy to pay for 100 *minus* X percent of the losses. The governmental insurer sets its premium equal to the premium charged by the private insurer, taking a position analogous to the noncompet-



itive bidder in a Treasury bill auction. This sharing of all losses on a *pro rata* basis helps ensure that the private insurer is taking into account all the losses to which the public insurer will be exposed.

There is an important difference between this *pro rata* approach to insurance and the usual proposals involving higher equity capital, increased use of subordinated debentures, or private insurance. These latter proposals simply increase the losses by the stockholders and bondholders before the government insurer begins to pay out money. Under these schemes, market discipline only serves to limit losses of private funds. The private participants are indifferent between outcomes in which the value of their securities is just exhausted and outcomes where, in addition, the governmental insurer suffers significant losses. Under the public-private scheme, private insurers care about *all* possible losses. Each percentage increase in losses for the public insurer generates an equal percentage increase in losses for the private insurer. Because private insurers and government insurers face an identical pattern of risks, the private insurance premiums will accurately reflect the value of the government insurance.

The different properties of these contracts are illustrated in Figures 1, 2, 3, and 4 for a bank with  $A$  dollars of assets, and  $E$  dollars of equity capital. All deposits,  $F$ , are assumed to be insured—for which the insurer charges an arbitrary premium  $p$ . The following discussion assumes that  $p$  is set *below* the correct rate. Figure 1 shows the wealth position of shareholders and the changes in the FDIC's wealth position, assuming no other form of capital is held.<sup>16</sup> The solid black line shows the relationship between bank losses and shareholder wealth. Every dollar lost reduces equity by one dollar until losses reach  $E$ . At this point the bank is bankrupt and shareholders are indifferent to additional losses.

The solid red line in Figure 1 shows the relationship between bank losses and the change in FDIC wealth. The FDIC does not begin suffering losses until the shareholders are wiped out. Thereafter, every dollar lost comes out of the FDIC's pocket. Initial FDIC losses are covered by the premium  $pF$ . However, when bank losses rise above  $E + pF$ , the FDIC is forced to draw on other funds.

### Provisions of the public-private coinsurance scheme

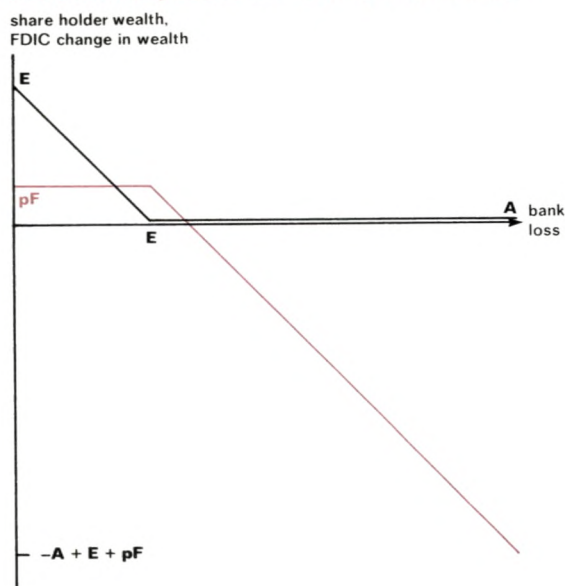
1. The government insurer decides which classes of deposits will be insured and which will not.
2. Private insurers cover  $X$  percent of depositor losses while public insurers cover  $100-X$  percent of depositor losses. The public insurer sets its premium equal to that charged by the private insurer.
3. Private insurers fully collateralize their maximum loss exposure with short-term Treasury securities.
4. The private insurer can alter its premiums at any time. When a private insurer alters its premium, the government insurer follows.
5. A bank's private insurance contract can only be cancelled if the bank can find a new insurer. If the bank fails to find a new insurer, it is declared insolvent and its insurers take control.
6. After the insurers take control, the bank is sold off in open auction to the highest bidder.
7. The private insurer must permit other investors to take short positions against its insurance contracts. All possible losses that can occur in such transactions must also be fully collateralized.

Shareholders lose control of the firm when losses equal or exceed equity. But, they are indifferent between situations in which the bank fails and the FDIC pays nothing, and situations where the bank fails and the FDIC suffers significant losses. Because FDIC premiums do not accurately reflect its true risk exposure, market discipline will only encourage managers to take advantage of the mispricing. While shareholder wealth is maximized, FDIC losses will not be minimized.

In liquidation, holders of subordinated bonds only receive payment after all depositors' claims have been met. Some observers have argued that subordinated bonds would reduce the risk position of the FDIC. Figure 2 illus-



Figure 1  
FDIC loss exposure with equity capital only



trates the risk profiles of shareholders, bond holders, and the government deposit insurer after the introduction of subordinated bonds with face value of  $B$  and interest rate  $r$ . The broken black line shows the risk profile of the bondholders. Bondholder wealth is flat unless

losses exceed  $E$ . After the shareholders are wiped out, bondholders suffer losses until bank losses fall below  $(1 + r)B + E$ . At this point the FDIC begins to suffer losses. The introduction of subordinated bonds reduces the FDIC's maximum exposure from  $-A + E + pF$  to  $-A + (1 + r)B + E + pF$ .

Of course, banks that take greater risk will have to compensate subordinated bondholders by offering a higher coupon. This obviously makes it more difficult for shareholders to engage in risky behavior. After all, concerned bondholders are being substituted for an unconcerned insurer. However, shareholders will have strong incentives to compensate bondholders in order to continue taking advantage of the mispricing of federal deposit insurance. And since bondholders are indifferent to losses which more than bankrupt them, bond rates do not provide the insurer with the right kind of information for setting its own deposit premiums.

The addition of a private *pro rata* insurance contract is more useful than additional equity capital or subordinated debt. Figure 3 substitutes a private *pro rata* insurance contract with value  $I$  (equal to  $X F$ ) and a premium  $i$  for conventional bonds of equal value ( $X$  is the proportion of deposits covered by the private insurers). The dotted black line depicts the wealth position of the private insurers while the dotted red line depicts the wealth position of the FDIC, assuming that it continues to charge the arbitrary premium  $p$ . Both insurers begin suffering losses once shareholders are wiped out. Comparing the two lines, it should be apparent that for every additional loss borne by the FDIC, there is a corresponding additional loss for the private insurer. This makes the position of the private insurer less risky than the position of the bondholder in the previous example, but it also ensures that private insurers will price exactly those risks that are faced by the government insurer. In this situation, market discipline will work to minimize FDIC losses.

However, as shown in Figure 4, if the FDIC continues to charge the arbitrary premium  $p$ , substitution of the *pro rata* insurance contract (dotted red line) for the subordinated bond (solid red line) actually increases the possible FDIC loss associated with any level of bank losses. This results not from an absence or misdirection of market discipline by private

Figure 2  
FDIC loss exposure with subordinated debt

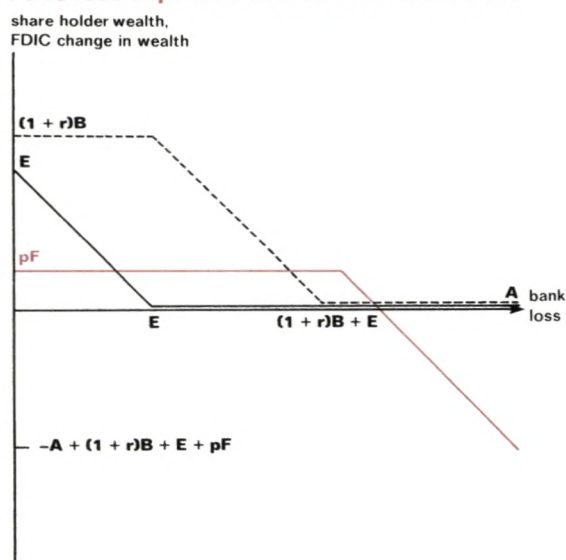
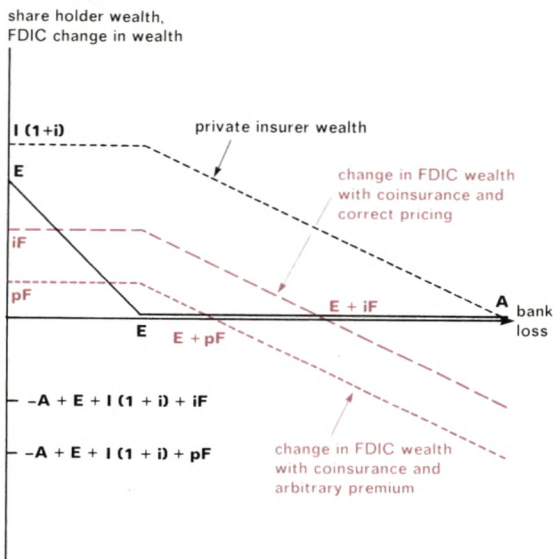




Figure 3  
FDIC loss exposure with public-private insurance



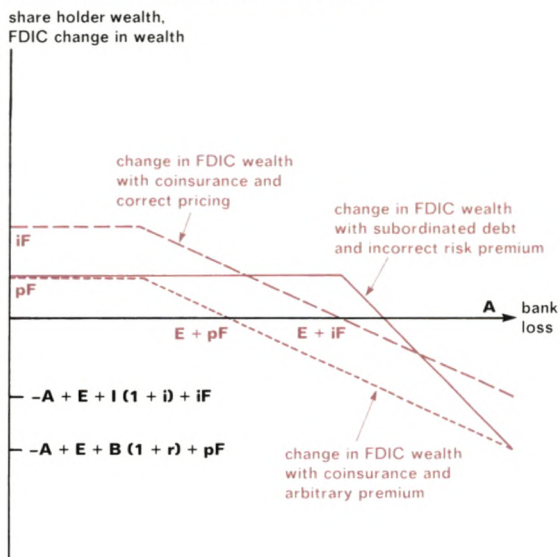
insurers, but from the failure of the FDIC to protect its own position by charging an appropriate premium. While market participants are trying to limit FDIC losses, the FDIC is doing nothing. However, since the market now bears the same type of risk as the FDIC, the market-generated premium  $i$  will now be an appropriate one for the FDIC policy.

If the FDIC were to charge this correct, presumably higher premium  $i$ , its change in wealth would be shown by the red broken line. Comparing the broken red and the solid red lines, we see that the private-public insurance scheme is preferable to subordinated bonds in both the best and the worst outcomes. The only time when payouts are larger is when losses are moderate. However, because the market sets premiums on the basis of expected loss, when the FDIC charges the private premium, its *expected* losses under the public-private scheme would *always* be less than under a scheme with a flat premium.

### Full collateralization of policies

The third provision of the public-private scheme requires all private insurers to post collateral in the form of short-term Treasury securities capable of completely covering the private insurer's exposure. The amount of

Figure 4  
FDIC loss exposures compared



collateral would vary with the size of the bank being insured and the proportion of losses that the private insurer is guaranteeing. If a private insurer were picking up 10 percent of depositor losses for a bank with \$100 million in insured deposits, the private insurer would post \$10 million dollars in collateral. Thus, from the private insurer's viewpoint, the public-private scheme is in fact a 100 percent reserve system. But, from society's point of view it requires fewer Treasury securities to implement. The private insurer would have two sources of income, the interest on the Treasury securities and the premiums on its insurance policies.

The posting of collateral plays three important roles in the structure of the scheme. First, together with the *pro rata* loss sharing, it guarantees that the private insurer cannot go bankrupt. Hence insured depositors will never have an incentive to run. Second, because it is fully collateralized, the private insurer will be exposed to the same losses as the government insurer. Finally, the inability of the private insurer to bankrupt itself means that it has little incentive to gamble on the recovery of a client. Because the insurer can never escape its losses and always has sufficient funds to meet its obligations, it will never engage in end-of-game play.



## The mix of public and private capital

So far, little has been said about the factors determining X, the proportion of insurance that should be provided by the private sector. Assuming that the elasticity of substitution between Treasury securities and other securities is not infinite, increased demand for Treasury securities will raise their price. Increases in X will leave the relative rankings of premiums unchanged but will affect their absolute value. Thus, the public sector indirectly determines the level of premiums by choosing X while the private sector sets the relative premiums.

The mix of public and private insurance will be determined in part by the magnitude of the externalities associated with the provision of deposit insurance. These externalities are associated with the prevention of runs, asset recycling, and reduced need for the public to monitor an individual bank's behavior. If policymakers feel that these externalities are small, the government should provide only a small part of the insurance. In this case, average premiums will probably be close to the current level. These higher premiums would cause funds to flow from depository institutions to other financial market participants. If the government feels that the externalities are very important, the government ought to provide most of the insurance. In this case, average premiums would probably be below the current level, reflecting both the government's desire to encourage the use of insured deposits and the decreased losses due to reduced incentives for risktaking.

The choice of X will also be governed by other factors. In particular, increases in X will lead to deeper markets which will in turn lead to more accurate pricing. On the other hand, there are very clear limits to the aggregate amount of private insurance because all private insurance policies must be fully collateralized with riskless securities.

## Price changes and policy cancellation

Because the insurance could not be cancelled, it is likely that the price would be quoted in terms of the expected value of the policy. Changes in bank risk would lead to changes in expected policy cost, and hence to increases or decreases in the amount of money owed the private insurer. If the insurer feels

that the expected value of the contract has declined, he would reduce the lump sum fee by returning a portion of the funds held. If the policy were cancelled by the bank it would receive all moneys currently on deposit with the private insurer. Under the fourth provision of the scheme, the private insurer would be permitted to alter its fee at any time. This reduces the chances that the bank will alter its behavior once the terms of the insurance contract are set.

The fifth provision makes it impossible for a private insurer to escape liability by cancelling a contract, unless the bank manages to find a new insurer. Failure to find a new insurer would be cause for its previous insurers to take control of the bank. This provision is important for two reasons.

First, it makes it impossible for an insurer to run from a bank. Thus the private insurer will face the same risks faced by the government insurer. This identity of interest is the major difference between the public-private scheme and a system based on penalizing subordinated bondholders.

Second, by giving the private insurers the power to close the bank when they want, it would be possible to implement a policy which comes close to the Horvitz-Bierwag-Kaufman proposal that the insurer take control of the banks as soon as the market value of assets is less than the present value of promised liabilities. Such an approach would greatly reduce the size of the premiums demanded by the private insurer.

Such a policy is also more easily implemented in a competitive market. Under regulatory directed market accounting there would always be opportunities for litigation. Under the public-private scheme, failure to get new private insurance from a new insurer would be *prima facie* evidence that the current private insurer's evaluation was correct.

## Disposal of insolvent banks

The sixth provision is that all insolvent banks be sold at open auction. This provision is important for several reasons. First, it minimizes the losses to the insurers. FDIC data indicate that the costs of a purchase and assumption decrease as the number of bidders increases.<sup>17</sup> The best way to maximize the number of bidders is to permit all solvent fi-



financial institutions to participate in the auction. This approach also helps avoid the inconveniences associated with liquidation. Credit relationships are not destroyed and the possibility that the community is deprived of an independent supplier of financial services is reduced.

### **Fraud prevention**

It may seem that the preceding provisions are sufficient to ensure the accurate pricing of deposit insurance. Unfortunately, as it now stands, there can be significant incentives for the private insurer and the bank to engage in fraud. If the bank could secretly bribe its insurer to lower the premium, payments to the government insurer would also decline. The bank and the private insurer would both be better off while the government insurer would be worse off. The incentives to engage in this sort of behavior increase as the proportion of insurance provided by the private sector,  $X$ , decreases. There are three possible reasons why  $X$  might remain relatively small. First, sufficient Treasury securities may not be available. Second, in the beginning, insurers may be reluctant to commit large quantities of funds to an untried product. Third, the premium demanded for coverage would be above the social optimum.

This fraud problem is the same sort of problem that would arise if homeowners were asked to value their own homes for the purposes of real estate assessment. Inevitably, homeowners would attempt to reduce their tax payments by reporting artificially low property values. However, there is a way to induce these homeowners to properly value their houses. The assessor could require them to sell the house to the assessor at the price reported by the homeowner. This would force owners to quote something approximating a true market value, eliminating the problem.

A similar approach can be used to eliminate the potential for fraudulent mispricing of deposit insurance. Private insurers would be required to sell contracts promising to pay the holder one dollar for every dollar paid out to the bank's insured depositors. These contingent contracts would also have to be fully collateralized with riskless securities. The price of this contingent contract would be identical to the bank's insurance fee. These contracts

could be redeemed at any time for the fee currently being quoted by the private insurer.

The private insurer would find itself behaving much like a central bank trying to maintain a misvalued exchange rate. If a private insurer sets an artificially low fee, perhaps in return for secret compensation, other market participants would find it profitable to purchase the claims.

The private insurer, forced to accept the unprofitable contingent claims, would have to raise more capital to provide the needed collateral. As this became more difficult he would be forced to raise his premiums. Speculators would begin cashing in their contracts as the price rose. This sort of behavior would make it impossible for the private insurer to retain the profits from his fraudulent activities. Hence, it would have no incentive to engage in such activities.

There are two other solutions to this problem. One solution would have the governmental insurer retaining the right to set a higher price on its share of the insurance. In this case, the market price would simply provide a floor.<sup>18</sup> Another solution would permit the governmental insurer to penalize private insurers guilty of fraud. However, the first solution presumes that the government insurer can recognize the problem while it is occurring, while the second requires a standard of proof which might be difficult to sustain in a court of law.

### **The operation of the public-private scheme**

The proposed scheme has several interesting properties. First, it operates as if it were a 100 percent reserve system. There is no question of the private insurer failing. Thus, if all short term deposits are covered by this insurance, the threat of runs should be completely eliminated.

Because runs are eliminated, market discipline must exert its influence in one of two ways. First, the prospect of a premium schedule which is sensitive to changes in risk will dissuade managers or shareholders from taking risks that the market believes unwarranted.

While runs would be eliminated, this type of market discipline could still lead to deposit outflows. The increase in insurance premiums brought on by changes in the market's opinion



about a bank would affect the bank much like a tax. Unless the supply of funds were perfectly elastic, some of the burden would be borne by shareholders in the form of lower profits and some would be passed on to depositors in the form of lower rates. This decline in deposit rates would precipitate a limited outflow of funds. But, unlike a run, not all depositors would have an incentive to withdraw their funds. Since all deposits are insured, withdrawals would only be made by customers who valued higher interest rates more than the inconvenience of changing banks. In addition to instilling market discipline, those premium changes could also be used as a trigger for more intense regulatory scrutiny.

Market discipline would also be exerted through a market enforced version of the Horvitz-Bierwag-Kaufman proposal to eliminate shareholder control of the bank as soon as the bank becomes insolvent. However, the market-enforced version has one advantage. Market value determination by regulators would inevitably be subject to litigation. Under the public-private scheme, insurers would not be forced to provide objective methods of asset valuation. They would be free to use all available information. If they used this information in a capricious manner, banks would be able to search out other insurers. Insurers that developed a reputation for closing banks too quickly would soon find their customers fleeing to more reasonable competitors.

The existence of competition also means that a bank will not have to worry about its insurance being overpriced. If a bank believes that its premiums are being unfairly set, it is free to search out more favorable terms from other insurers.

This system of insurance pricing will also benefit the government insurer. Because the premiums will reflect the market's assessment of risk, the incentives for bank managers to engage in unwarranted risk-taking will be greatly diminished. This, in turn, will reduce both the amount of cross-subsidization within the banking industry and the amount of wealth transferred from taxpayers to bank depositors and shareholders.

While any statements concerning the structure of the premiums would be purely speculative, estimates by Robert Avery, Gerald Hanweck, and Myron Kwast provide an upper bound for the premium estimates.<sup>19</sup> Under their

system of risk-related premiums, 84 percent of banks would pay premiums below those currently paid. However, their estimates are likely to overstate premium levels in a private-public scheme. First, six and a half basis points were added to all premium estimates to raise revenues to their current level, of this only four basis points represent actual examination costs. Second, their estimates are based on losses incurred when insolvency is determined using accounting data, not market data. Private insurers would use something closer to market value in valuing a troubled bank. This would tend to eliminate end-of-game play and reduce the total exposure of the insurer. Third, Avery, Hanweck, and Kwast have restricted themselves to using balance sheet data. Private insurers might encourage banks to develop better reporting schemes in exchange for lower premiums.

### **Implications for proposals to increase use of subordinated debentures**

The scheme developed in the previous sections also sheds some light on the impact of the FDIC's recent proposal to have banks increase their capital by issuing subordinated debentures.<sup>20</sup> Under the current FDIC proposal, banks would be encouraged to issue subordinated debentures with maturities of 1 to 3 years. The relatively long maturities of these securities would make it possible to impose losses without fear of starting a run. However, the securities would need to be rolled over on a regular basis. This would force banks to take into account market valuations of their risk.

As it now stands, the FDIC proposal will increase the FDIC's cushion. But, as discussed above, under a tiered payout structure, the risks priced by the bond market will differ from the FDIC's risk. Thus market discipline will not be complete. Moreover, there is the danger that, in the absence of risk-based insurance premiums, banks may actually take more risks, exposing the FDIC to even greater losses.<sup>21</sup> Finally, such a scheme is only useful if regulators are willing to close insolvent institutions. However, with several changes, the FDIC proposal could closely approximate the public-private scheme outlined in the preceding pages.



Two important changes would be needed. First the payout structure would have to be changed from a tiered structure, in which debenture holders are junior to the FDIC, to the *pro rata* structure laid out in this paper. This would insure that market discipline will enforce actions that are beneficial to the FDIC. Second, the FDIC would need to charge some sort of risk-rated premium. If the premium were based on the secondary market yield on the subordinated debentures, the system would come close to approximating the public-private scheme outlined in the previous section. Failure to charge a premium would create a continual tug-of-war between banks and the FDIC. Banks would invent new ways to economize on capital in an attempt to get the full benefits of the mispriced deposit insurance.

Troubled banks would find themselves unable to raise new debentures. This would force a bank to shrink in order to continue meeting its capital requirement. Under this modified system, closure would be under the control of the regulator. If this were to result in deviations from the market value closure rule, losses and hence premiums would be higher. Private debenture holders would also be at greater risk since they would not be able to extract higher premiums for changes in risk that occurred after the issuance of the debentures.

## Conclusions

Financial markets provide a powerful mechanism for developing a consensus evaluation of a firm's riskiness. As it is currently formulated, deposit insurance eliminates the need for depositors to make such assessments but substitutes no other source of discipline. The preceding pages have outlined a coinsurance scheme to remedy this problem. It permits prices to be set in the private sector while most of the insurance is provided by the public sector. Such a scheme combines a financial market's advantage in information processing with the government's superior access to capital, both through the printing press and through contingent claims on taxpayers. In such a scheme moral hazard is reduced, private insurers are unable to go bankrupt, and insured depositors have no incentive to run. Though much of the discussion presumes that

private sector exposure takes the form of an insurance contract, it is argued that similar results can be achieved through the issuance of a particular type of subordinated debenture. Thus, the FDIC's proposal to increase the issuance of subordinated debentures represents a possible first step in adopting a public-private approach to deposit insurance.

Some observers have argued that there would be no market for either the insurance contract or the debentures. However, neither the insurance contract nor the modified debenture is inherently more risky than current bank equity, conventional debt, or, prior to the creation of the FDIC, uninsured deposits.

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<sup>1</sup> See Federal Deposit Insurance Corporation, *Deposit Insurance in a Changing Environment*, (Washington, D.C.: Federal Deposit Insurance Corporation, 1983), Federal Home Loan Bank Board, *Agenda for Reform* (Washington, D.C.: Federal Home Loan Bank Board, 1983); and National Credit Union Administration, *Credit Union Share Issuance* (Washington, D.C.: National Credit Union Administration, 1983). For a summary of the three reports on deposit insurance see Larry Wall, "Deposit Insurance Reform: The Insuring Agencies' Proposals," *Economic Review*, Federal Reserve Bank of Atlanta, 69 (January, 1984) pp. 43-57 and "The Future of Deposit Insurance: An Analysis of the Insuring Agencies Proposals," *Economic Review*, Federal Reserve Bank of Atlanta, 69 (March 1984) pp. 26-39.

<sup>2</sup> For a brief but informative discussion of the incentive problems created by flat fee deposit insurance see Mark J. Flannery, "Deposit Insurance Creates a Need for Bank Regulation," *Business Review*, Federal Reserve Bank of Philadelphia, (January/February 1982) pp. 17-27.

<sup>3</sup> See Paul M. Horvitz, "A Reconsideration of the Role of Bank Examination," *Journal of Money, Credit and Banking*, 12 (November 1980) pp. 654-59. G.O. Bierwag and George G. Kaufman, "A Proposal for Federal Deposit Insurance with Risk Sensitive Premiums" in *Proceedings of a Conference on Bank Structure and Competition* (Chicago: Federal Reserve Banks of Chicago, 1983), pp. 223-242. This proposal is also made in George G. Kaufman, "Implications of Large Bank Problems and Insolvencies for the Banking System and Economic Policy," *Issues in Bank Regulation* 8 (Winter 1985).

<sup>4</sup> Regular features such as "Top Savings Deposit Yields." in *Barron's* suggest that small investors are extremely interested in earning supernominal returns on riskless deposits.



<sup>5</sup> The banking industry's increasing share of total credit to nonfinancial corporations may reflect this phenomenon.

<sup>6</sup> See Ben S. Bernanke, "Nonmonetary Effects of the Financial Crises in the Propagation of the Great Depression," *American Economic Review* 73 (June 1983), pp. 257-276.

<sup>7</sup> See Eugenie Dudding Short and Gerald P. O'Driscoll, "Deregulation and Deposit Insurance," *Economic Review*, Federal Reserve Bank of Dallas (September 1983), pp. 11-22.

<sup>8</sup> This problem could be lessened by introducing competing government insurers. It will create alternative sources of supply; however it will not solve the mispricing problem since none of the government insurers will have an incentive to minimize losses.

<sup>9</sup> For a discussion of the impact of inappropriate pricing of water projects see U.S. Congressional Budget Office, *Efficient Investments in Water Resources: Issues and Options* (Washington, D.C.: Congress of the United States, 1983), pp. 27-43 and Jennifer Zamora, Allen V. Kneese, and Erick Erickson, "Pricing Urban Water: Theory and Practice in Three Southwestern Cities," RFF Reprint No. 199 (Washington D.C.: Resources for the Future, 1982).

<sup>10</sup> See Evelyn Carroll and Arthur Rolnick, "After Penn Square: The Insurance Dilemma" in *Proceedings of a Conference on Bank Structure and Competition*, (Chicago: Federal Reserve Bank of Chicago, 1983), pp. 243-267. Bert Ely, "Yes—Private Sector Depositor Protection is a Viable Alternative to Federal Deposit Insurance" and Catherine England, "A Proposal for Introducing Private Deposit Insurance," both forthcoming in *Proceedings of a Conference on Bank Structure and Competition* (Chicago: Federal Reserve Bank of Chicago, 1985).

<sup>11</sup> Five antebellum insurance schemes were successfully terminated in 1866 with the passage of the National Banking Act. However, the oldest of these schemes had only been in operation for 37 years. For a summary see "Insurance of Bank Obligations Prior to Federal Deposit Insurance," *Annual Report of the Federal Deposit Insurance Corporation, 1952* (Washington, D.C.: Federal Deposit Insurance Corporation, 1952).

<sup>12</sup> Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States, 1867-1960*

(Princeton: Princeton University Press, 1963), pp. 20-25.

<sup>13</sup> See Albert G. Hart, "The 'Chicago Plan' of Banking Reform" *The Review of Economic Studies* (1935), pp. 104-116; Milton Friedman, *A Program for Monetary Stability*, (New York: Fordham University Press, 1960), Chapter 3; Arthur Rolnick, "Bank Regulation: Strengthening Friedman's Case for Reform," *Federal Reserve Bank of Minneapolis Quarterly Review*, 1 (Summer 1977), pp. 11-14.

<sup>14</sup> For a detailed description of procedures for dealing with creditors of failed banks see Chayim Herzig-Marx, "Bank Failures," *Economic Perspectives*, Federal Reserve Bank of Chicago, 2 (March/April 1978), pp. 22-31.

<sup>15</sup> For the purposes of deposit insurance a deposit should be considered "short term" if its minimum maturity is less than the length of time required for the insurer to accurately value the bank's portfolio.

<sup>16</sup> Given the possible existence of full backing by the U.S. government, it is not clear what the FDIC's wealth is, hence the focus on changes in wealth.

<sup>17</sup> See Christopher James and Peggy Wier, "Bidder Eligibility and the Wealth Effects of FDIC Auctions" forthcoming in *Proceedings of a Conference on Bank Structure and Competition*, (Chicago: Federal Reserve Bank of Chicago, 1985).

<sup>18</sup> The government insurer would then have to use a statistical model of losses similar to that proposed by Robert Avery, Gerald Hanweck, and Myron Kwast in "An Analysis of Risk-Based Deposit Insurance for Commercial Banks," forthcoming in Federal Reserve Bank of Chicago, *ibid.*

<sup>19</sup> *Ibid.*

<sup>20</sup> For an early version of this proposal see Chapter 3 of *Deposit Insurance in a Changing Environment* (Washington, D.C.: Federal Deposit Insurance Corporation, 1983).

<sup>21</sup> See Michael Koehn and Anthony M. Santomero, "Regulation of Bank Capital and Portfolio Risk," *Journal of Finance*, 35 (December 1980) pp. 1235-1244, and Chun H. Lam and Andrew H. Chen, "Joint Effects of Interest Rate Deregulation and Capital Requirements on Optimal Bank Portfolio Adjustment." *The Journal of Finance*, 40 (June 1985), pp. 563-576.



# Bank and thrift performance since DIDMCA

*Diana Fortier and Dave Phillis*

The financial services industry has changed dramatically over the past five years. The consumer, the regulatory agencies, and the financial services industry have influenced and been influenced by these changes. However, it is unclear how much of this change is attributable to the new laws and how much to other economic and technological factors. The liberalization of FHLBB policies on advances and adjustable mortgage instruments, the decline in interest and inflation rates, technological developments, and the generally improved economy may have contributed as much, if not more, to the current status and future prospects of the financial services industry.<sup>1</sup>

The changes initiated by the acts have affected the source and cost of funds, the asset powers and use of funds, and hence the growth and profitability of banks and thrifts. This article examines the acts' impact on these factors for commercial banks and thrifts by looking at their performance during selected pre- (1975-1979) and post- (1980-1984) legislation periods. Are these institutions net winners or losers in the changing game of deregulation? Is size an important determinant of an organization's ability to adjust and react to the changing and more competitive financial services industry in the post-legislative period?

## Sources of funds

Designed to promote competitive equality among depository institutions, the acts authorized depository organizations throughout the nation to offer interest-bearing transaction accounts, and to expand their deposit offerings and servicing capabilities. As short-term interest rates continued to rise in the late 1970s and Regulation Q became more and more binding, pressures mounted for a consumer deposit instrument at depository institutions that, like the money market mutual fund ( MMMF ), yielded a market rate of return. This led Congress, in 1980, to legislate a phase-out of Regulation Q. This process was accelerated with the introduction of the money market deposit account ( MMDA ) in December 1982. The MMDA was created to bring competitive equality to

banks, thrifts, and nondepository financial institutions. This savings instrument, along with the NOW and Super NOW accounts, although not significantly altering the growth rate of total deposits, altered the composition of the liability portfolio of both banks and thrifts in the post-legislation period. (See Table 1 and Figures 1 and 2.)

## Banks

The deposit-to-asset ratio for banks, on average, and for all but the largest banks, has remained approximately the same or risen only slightly from 1975 to 1984.<sup>2</sup> (See Table 2.) Looking at the types of deposit liabilities held by banks, transaction deposits since 1975 have gradually become less significant as a source of funds. However, one component of transaction deposits, other checkable deposits, has become increasingly important. (See Table 1.) The introduction of the automatic transfer savings (ATS) account in 1978 and the negotiable order of withdrawal (NOW) account in 1980 contributed to this transition. By 1983-1984 a significant shift is apparent with Super NOWs making up approximately one-quarter of other checkable deposits.

Commercial bank funding from savings accounts also decreased continuously over the past decade due to below market rates on savings. This trend corresponded with a continual increase in banks' reliance on small and large time deposits as a source of funds. This trend was reversed by the introduction of the MMDA. The increasing reliance on small and large time deposits had been in large measure driven by the changing structure of interest rate ceilings. These shifts in funding sources (particularly from 1979 to 1982) also reflected the flow of retail funds away from banks to MMMFs and other savings instruments bearing market rates of return.

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**Table 1**  
**Source of funds: percentage of total deposits by institution type**

Year	Banks				Thriffs				
	Transaction			Total	Nontransaction				Total deposits
	Demand deposits	Other checkable deposits Except Super NOW	Super NOW		Savings	MMDA	Small time	Large time	
1975	33.9	.04	NA	33.9	24.0	NA	21.5	20.6	623.5
1980	28.4	1.8	NA	30.2	20.1	NA	28.5	21.2	929.8
1982	21.1	6.5	NA	27.6	14.5	.2	33.9	23.8	1107.5
1984	18.4	5.4	2.2	26.0	9.5	18.4	27.6	18.5	1342.2

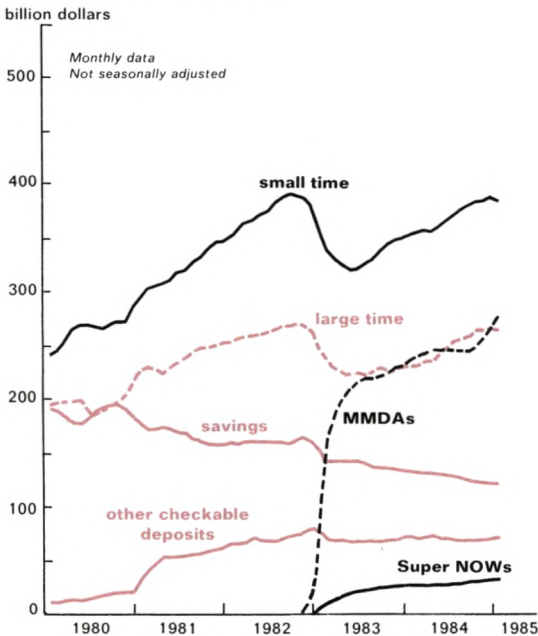
Year	Banks				Thriffs				
	Transaction			Total	Nontransaction				Total deposits
	Demand deposits	Other checkable deposits Except Super NOW	Super NOW		Savings	MMDA	Small time	Large time	
1975	*	.1	NA	.1	53.6	NA	44.7	1.5	403.2
1980	*	.8	NA	.8	31.9	NA	61.6	5.7	683.9
1982	*	2.5	NA	2.5	25.1	.2	64.2	8.0	752.3
1984	*	2.8	1.2	4.0	17.9	15.6	48.9	13.6	954.5

\*Demand deposits for thriffs are not available separately and are included in other checkable deposits.  
 Note: Percentages may not add to 100% due to rounding.  
 SOURCE: Federal Reserve Board H.6 Release, various years.

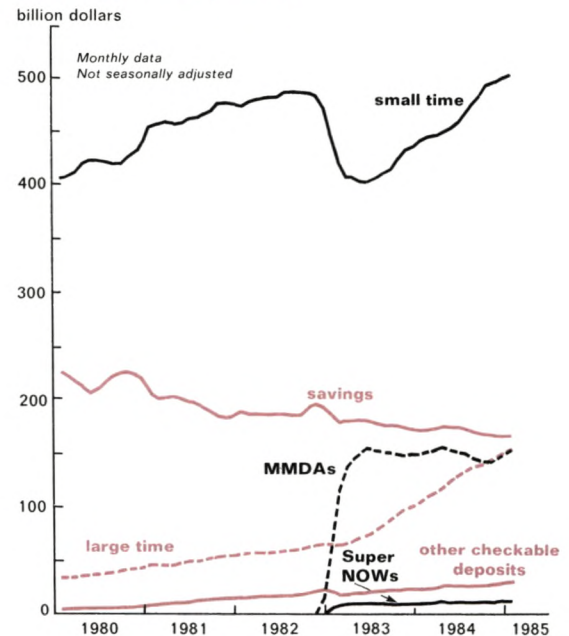
The introduction of the MMDA at banks significantly decreased the percentage of banks' total deposits from small and large time deposits, from 57.7 percent in 1982 to 46.1 percent in 1984. Initially, banks experienced substan-

tial and rapid growth of MMDAs. They regained direct access to the retail deposit market that had been lost to the MMMFs. Yet a significant portion of the funds flowing into these new accounts were simply shifted from small

**Figure 1**  
**Deposit components at commercial banks (post-legislation period)**



**Figure 2**  
**Deposit components at thriffs (post-legislation period)**





**Table 2**  
**Assets and liabilities of banks and thrifts**  
**(in percent of total assets)**

	Banks			Thrifts		
	1975	1980	1984	1975	1980	1984
<b>Assets</b>						
Cash	10.5	9.5	8.3	1.7	1.6	2.0
Investments <sup>1</sup>	36.7	35.5	34.8	12.9	14.6	23.1
Loans	49.8	53.5	54.0	81.8	80.1	67.1
<i>Residential mortgages</i>	9.3	10.4	10.1	66.8	66.2	52.9
<i>Commercial mortgages</i>	6.6	8.2	8.1	12.8	10.5	9.6
<i>Consumer loans</i>	14.1	14.2	12.2	2.1	3.2	3.8
<i>Commercial loans</i>	10.4	11.5	13.2	0.1	0.1	0.8
<i>Other loans</i> <sup>2</sup>	9.4	9.2	10.4	NA	NA	NA
Subsidiaries	0.0	0.0	0.0	0.2	0.3	0.6
Other	3.0	2.0	2.9	3.4	3.4	7.2
<b>Total assets</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Liabilities</b>						
Total deposits	87.7	87.9	87.4	87.5	85.9	87.7
<i>transaction</i>	33.4	27.7	23.9	0.1	0.5	NA
<i>savings</i>	20.2	15.6	19.1	40.0	19.8	NA
<i>time</i>	34.1	44.7	44.4	48.5	65.6	NA
Borrowed funds <sup>3</sup>	0.8	1.7	1.9	3.3	5.0	5.6
Other liabilities	2.1	1.2	1.5	2.8	2.6	1.5
<b>Total liabilities</b>	<b>90.6</b>	<b>90.8</b>	<b>90.8</b>	<b>93.6</b>	<b>93.5</b>	<b>94.8</b>
<b>Capital</b>						
Subordinated debt	0.2	0.2	0.1	0.0	0.0	0.0
equity <sup>4</sup>	8.5	9.0	9.2	6.4	6.5	5.1
<b>Total capital</b>	<b>8.7</b>	<b>9.2</b>	<b>9.3</b>	<b>6.4</b>	<b>6.5</b>	<b>5.1</b>

<sup>1</sup>Mortgage backed securities held by thrifts were: 1975=3.0% 1980=3.6% 1985=9.0%

<sup>2</sup>Other loans by thrifts are included in commercial loans.

<sup>3</sup>Federal Home Loan Bank advances used by thrifts were: 1975=4.5% 1980=3.2% 1984=3.7%

<sup>4</sup>Regulatory equity provided to thrifts was .2% in 1984.

SOURCE: Report of Condition and Semiannual Financial Reports as of December 31, 1985, December 31, 1980, and June 30, 1984.

time deposits within the banking system and large CDs held by MMMFs. (See Figure 2.)

In the pre-legislation period, banks' savings account deposits were a greater share of total deposits than were small time deposits. This trend was reversed in the post-legislation period and remained so until the introduction of the MMDA. For 1983 and 1984, MMDA deposits plus traditional savings deposits accounted for 28 percent of funding, approximately the same percentage of banks' overall funding as savings deposits provided prior to the acts (1976-1978). They accounted for approximately one-half of the nontransaction funds from accounts under \$100,000 (that is, savings, MMDAs, and small time deposits).

The introduction of the MMDA has led to a rapid decline in the share of large time deposits at banks. Large time deposits as a percentage of total deposits at banks declined by 5.4 percentage points from 1982 to 1983 but changed only minimally from 1983 to 1984. With the renewed ability to compete aggressively for retail deposits, banks, particularly the

largest ones, were able to rely less on the more costly and less stable wholesale deposits.

The period following the acts not only saw an overall reduction in the use of uninsured domestic deposits (i.e; large time deposits over \$100,000, excluding Eurodollars) by banks, but also saw a shift in the share of uninsured deposits from money center banks to other banks.<sup>3</sup>

### Thrifts

The ratio of total deposits-to-assets for thrifts has approximately equaled that for banks and has also remained relatively stable over the pre- and post-legislation periods. (See Table 2.) However, the two types of institutions differ in that borrowed funds have been a greater percentage of assets for thrifts and continue to grow more rapidly at thrifts than at banks.<sup>4</sup> This primarily reflects differing FHLBB and Fed lending policies. FHLBB advances, especially in the post-legislation period, have come to be viewed as a legitimate funding



source and liability management tool, particularly for the restructuring and lengthening of liability portfolios. (For example, an adjustable rate advance was developed for thrifts to match with adjustable-rate loans).<sup>5</sup>

The availability of consumer transaction accounts at thrifts gave them the opportunity to increase their core deposit base by providing a more complete array of deposit services that were previously only available at banks. After the acts, transaction deposits increased substantially as a proportion of total thrift deposits, particularly in 1983 and 1984 when Super NOWs became available. (See Table 1 and Figure 2.) Moreover, after a slow start in 1980 and 1981, other checkable deposits have grown faster at thrifts than at banks. This was primarily attributable to the more rapid growth rate of NOWs at thrifts than at banks, in spite of the removal of the traditional 25-basis-point interest rate differential.

NOWs filled the need for an unlimited transaction (interest bearing) account at thrifts. For banks, the attractiveness of NOWs over non-interest bearing demand deposits led to a decline in demand deposits outstanding in 1981 and 1982. But, the net growth of NOW and demand deposit balances at banks was substantially less than the growth of NOWs alone at thrifts.

However, the growth of NOWs at thrifts and banks declined significantly with the introduction of the \$2,500 minimum balance Super NOW account. (This minimum balance was lowered to \$1,000 on January 1, 1985.) The absence of an interest ceiling on the unlimited transaction Super NOW proved to be its drawing card at both banks and thrifts, but especially at banks where Super NOWs grew nearly twice as fast as they did at thrifts. Although still falling short of the comparable commercial bank percentage (7.6) by almost one-half, thrifts' ratio of total deposits in transaction accounts increased (at a decreasing rate) in a four-year period from .8 percent to 4.0 percent. (See Table 1.)

Although savings deposits have historically been a more significant part of thrifts' total liabilities than of commercial banks', the relative importance of the savings and small time components of nontransaction funds of thrifts paralleled that of banks over the pre- and post-legislation periods. For thrifts this trend is, in part, a result of account shifting

occurring with the introduction of various money market certificates.

Thrifts most closely resembled banks in their ability, at least in the first year, to attract MMDAs. (See Figure 2.) MMDAs at thrifts amounted to 16.6 percent of total deposits and at banks to 16.3 percent in 1983. But in the second year (1984) the growth rate of MMDAs at banks was three times that at thrifts and MMDAs decreased as a percentage of thrifts' deposits. This reduction may have been a result of an attempt by thrifts to hold back the growth of short-term (market rate) liabilities.

The growth of MMDAs affected thrifts' liability portfolios somewhat differently than banks'. Thrifts' percentage of deposits from small time deposits decreased more rapidly than at banks. In contrast to banks, thrifts' reliance on large time deposits continued to increase, despite the worsening condition of the industry. The MMDA experience at thrifts and banks is further differentiated in that thrifts appear to have gained a smaller proportion of their MMDA deposits from new accounts (rather than from account shifting).

In contrast to the experience at banks, thrifts' reliance on large time deposits was minimal in the pre-legislation period and has increased significantly since then, rising from 3.6 percent in 1979 to 13.6 percent of total deposits in 1984. FSLIC-insured S&Ls' reliance on managed liabilities (large time deposits, FHLBB advances and other borrowings) has risen continuously and significantly in the post-legislation period from 16.7 percent in 1980 to 24.6 percent of assets in 1984. Moreover, large time deposits have become a greater proportion of this funding—38.3 percent in 1980 and 46.3 percent in 1984.<sup>6</sup>

Thrifts, on average, have made little progress in lengthening the maturity of their liability portfolio. The introduction of the NOW, Super NOW, and MMDA has increased thrifts' core deposits but has not aided in lengthening the maturity of their liability portfolio. As of 1979, 38.8 percent of thrifts' total deposits were in transaction and savings accounts. As of June 1984, that category stood at 25.9 percent and, including deposits in MMDAs, equaled 37.5 percent.<sup>7</sup>

As the data indicate, the MMDA did prove to be a competitive substitute for MMMFs in the eyes of the consumer, who benefited from market competitive rates of re-



turn on insured funds at local depository institutions. Additionally, the higher yielding and functionally similar NOW and Super NOW accounts proved to be preferable to the consumer than the traditional demand deposit account. The attraction for consumers of NOWs and Super NOWs was the reduced opportunity costs of holding funds as checkable deposits. Seventy-five percent of funds initially deposited in NOWs were previously non-interest paying transaction balances.<sup>8</sup>

### Cost of funds

Two major elements of an institution's use and cost of funds—reserve requirements and interest expenses—were also influenced by the acts. When combined with the changes in liability portfolios this had the potential to alter significantly an institution's cost of funds.

### Reserve requirements

Title I of DIDMCA was intended to improve monetary control and equalize its cost among all depository institutions. A major element in accomplishing this goal was the imposition of uniform reserve requirements on transaction and nonpersonal time and savings deposits at all depository institutions. The expansion of the reserve base and the equalization of the reserve burden was to be

accomplished over a transitional period of four years for member banks and eight years for nonmember banks and thrifts. The transitional period for member banks was completed in February 1984, while for nonmember banks and thrifts the transitional period ends in 1987. However, reserve requirements on new accounts (introduced after April 1, 1980), such as NOWs, Super NOWs and MMDAs, were not included in the transitional period.<sup>9</sup>

Using data from reports filed with the Fed, reserve costs (deposits held on reserve multiplied by the Fed funds rate) and reserve ratios (reserves as a percentage of total deposits) were calculated by institution size. (See Table 3.) The effect of changes in reserve requirements were separated from changes in the distribution of deposit liabilities. In that reserves are calculated based on net transaction deposits, any change in the amount of items deducted from transaction accounts, namely demand balances due from depository institutions and cash items in the process of collection, would also play an important role in altering the distribution of reservable liabilities and hence the cost of reserves.

The DIDMCA-induced changes in reserve requirements reduced the reserve burden the most—by 76 percent—for small member banks. In comparison, reserve requirements for large member banks fell by 55 percent. This significant disparity primarily results from the

**Table 3**  
Impact of DIDMCA on reserve requirements of banks and thrifts

	Large institutions			Small institutions		
	Banks			Banks		
	Member (n=167)	Nonmember (n=89)	Thrifts (n=27)	Member (n=673)	Nonmember (n=925)	Thrifts (n=36)
<b>Reserves as a percentage of total deposits</b>						
Pre-DIDMCA reserves (12/80) (%)	4.66	0.00	0.00	4.08	0.00	0.00
Effect (as of 6/84) from:						
Change in reserve requirements (%)	-2.67	.86	.10	-3.11	.58	.10
Shifts in deposits (%)	-.18	.08	.05	-.07	.09	.08
Post-DIDMCA reserves (6/84) (%)	1.81	.94	.15	.90	.76	.18
Complete phase-in (%)	1.81	1.32	.18	.90	.88	.23
<b>Reserve cost for average institutions (\$mil)</b>						
Pre-DIDMCA (12/80)	\$4.963	\$0.0	\$0.0	\$.292	\$0.0	\$0.0
DIDMCA requirements (12/80)	\$4.370	\$0.061	\$0.009	\$.218	\$0.038	\$0.002
DIDMCA requirements (6/84)	\$1.732	\$0.224	\$0.054	\$.050	\$0.089	\$0.014
<b>Institution size (\$mil)</b>						
Average total deposits (12/80)	\$515.540	\$156.230	\$193.822	\$36.123	35.429	\$59.807
Average total deposits (6/84)	\$587.335	\$199.797	\$327.737	\$49.031	\$48.065	\$76.950

<sup>1</sup> Includes reporting banks and thrifts in the 7th Federal District. Small institutions are those with total deposits less \$100 million and large institutions are those with deposits equal to or greater than \$100 million. Data do not take into account the Garn-St Germain reserve calculation exemption (currently \$2.4 million).



reduced number of steps in the reserve requirement schedule (from five to two) and the 3 percent versus the old 7 to 11.75 percent requirement applied to the lowest deposit interval, the threshold of which was increased from \$2.0 million to \$28.9 million. This effect combined with deposit shifts led to a reduction in large and small member bank reserves by approximately 4 percent and 2 percent, respectively. The institutions losing the most from the change in reserve requirements were the large nonmember banks, which are now required to hold reserves against their sizeable deposit bases.

At the end of the transition period, only bank size will significantly influence reserve requirement costs among banks; large banks will continue to carry a greater reserve burden than small banks. The relative reserve burden prior to DIDMCA was 14 percent higher for large member banks than small member banks, whereas in the post-legislation period (as of June 1984) that burden is 100 percent higher.

The impact of the varying distribution of deposit liabilities—the larger percentage of transaction deposits held by banks than thrifts—is apparent in the differing reserve burdens for nonmember banks and thrifts. As a result of DIDMCA, thrifts gained direct access to the payments mechanism and gained new asset powers to become more bank-like. But as long as thrifts' net transaction deposits remain relatively low they will continue to bear the smallest reserve burden, particularly the smallest thrifts.

### **Interest expense**

Garn-St Germain's introduction of the non-interest ceiling MMDA and Super NOW account was an immediate move toward the ultimate goal of the elimination of all depository rate ceilings by 1986. Currently, only corporate demand deposits, savings deposits, MMDAs and NOWs less than \$1,000, and 7- to 31-day time deposit accounts of less than \$1,000 are subject to interest rate ceilings.

To control costs associated with reserve requirements (i.e., foregone income), banks and thrifts have priced their deposit instruments relative to the instrument's reserve requirements. For example, banks' interest rates on Super NOWs have consistently been lower than MMDAs by approximately 12 percent of the

rate paid on MMDAs. This serves to compensate for the reserve requirements, and any additional costs associated with the unlimited transaction nature of the Super NOW.<sup>10</sup>

Liability adjustments in the post-legislation period have left banks and thrifts with significantly more funds in market-rate-bearing accounts. As of December 1984, 84 percent of the nontransaction component of M2 was in interest-ceiling-free accounts. The institutions benefit from this composition through the increased stability associated with the nontransaction market rate accounts. That is, the availability of competitive market rates of return on bank and thrift nontransaction accounts has decreased the interest rate sensitivity of M2.<sup>11</sup> Indeed, subsequent to the short-term interest sensitivity exhibited with respect to its own rates and the rates of substitute assets (e.g., MMMFs) in its initiation period, the MMDA has stabilized with a relatively low long-run interest rate sensitivity.<sup>12</sup>

### **Effect on total expenses**

Recent studies on the implicit and explicit cost of savings deposits have shown that under binding interest rate ceilings, depository organizations have paid implicit rates of return that move with the rate on MMMFs and 3-month T-bills, both in periods of rising and falling interest rates. The implicit component of interest rates was highest in periods when Regulation Q was most binding. With the removal of binding interest rate ceilings institutions would not need to substitute implicit interest payments in the forms of increased convenience, service, and other means of non-price competition for explicit interest.<sup>13</sup> Thus, the removal of binding interest rate ceilings would not only benefit the consumer with competitive market yields, but may not decrease depository institutions' profitability, because the increase in explicit interest cost may be partially or completely offset by lower operating expenses.

The recent behavior of banks and thrifts substantiates this analysis. Banks have in fact contained salary and other expenses since 1980.<sup>14</sup> However, despite the fact that salary expenses remained stable and market rates fell, the ratio of banks' total operating expenses to assets rose by 20.0 percent between 1980 and



1984. Although thrifts' deposit interest expense has been consistently higher than that at banks, by controlling interest expenses substantially better than banks, thrifts have been better able in the post-legislation period to slow the growth of total expenses, which rose 15.0 percent from 1980 to 1984. This suggests that the acts have had a more adverse impact on total operating expenses of banks than thrifts. Nonetheless, total operating expenses of thrifts are, on average, still greater than banks at all size classes. (See Table 4.)

However, salary and other expenses grew faster at thrifts than at banks.<sup>15</sup> Thrifts' inability to contain salary expenses may have been influenced by thrifts' need to develop expertise in the provision of new products (e.g. commercial loans) and the restructuring of asset/liability portfolios to diminish the previous maturity mismatch. The increasing other expenses of thrifts basically represent the increased use of FHLBB advances and other borrowed funds.

Technological developments and the substitution of explicit for implicit interest have contributed to a significant decline in branch offices in the post-legislation period. The rate of growth in bank and thrift branch offices in the pre-legislation period was seven times as high as in the post-legislation period. The number of new branch offices established by banks and thrifts across all branching status categories (statewide and limited branching and unit banking states) fell dramatically in the post-legislation period—17,120 branch offices were established in the pre-legislation period, while only 3,350 have been established in the past five years. Even statewide-branching and unit-banking states, each of which had the greatest growth in number of banks in the post-legislation period, experienced a substantial drop in the number of branches opened from 1980 to 1984. Despite this decreased growth rate of branch offices, customer convenience as measured by population per branch office has not been diminished. Rather, population per branch office for banks and thrifts combined has declined across all branching categories from 1975 to 1984.

However, this decline may not simply be the result of the elimination of interest rate ceilings. It may also reflect changes in banking technology. As the growth in branch offices has declined, the number of automated teller ma-

chines (ATMs), shared ATM networks, and the number of ATM transactions have all increased significantly in the past few years. From 1982 to 1984 the number of ATMs nationwide grew by 80.3 percent to 39,921. They are operated by 7 national networks, 211 shared regional networks, and 389 proprietary regional networks. Although legally not branches unless established (owned or rented) by a bank, ATMs may be viewed as improved branch substitutes. ATMs may be operated free of federal branching restrictions to provide consumers convenient regional or nationwide access to deposits. ATMs, particularly shared networks, provide more efficient and less costly direct access to retail deposit markets and establish the technological framework for future direct linkage among networks and point of sale terminals, which will further reduce transaction costs. Merchants, especially supermarket chains and oil companies, as well as depository institutions, will benefit from the reduced check, credit card, and cash handling costs associated with such networks.<sup>16</sup>

### **New asset powers and use of funds for thrifts**

Title IV of DIDMCA and portions of Garn-St Germain also focused on the expansion of federally chartered S&Ls' asset powers. The expansion of such powers was intended to aid the return to profitability of the thrift industry by expanding opportunities to increase the interest rate sensitivity of their asset yields, and thus, reduce the maturity mismatch associated with their predominantly long-term asset portfolios (primarily fixed-rate mortgage loans) and short term liability portfolios.<sup>17</sup>

Thrifts still maintain their traditional character even though mortgage loans as a percentage of total loans has decreased from 97.3 percent in 1975 to 93.4 percent in 1984. Although thrifts' portion of assets in investments has increased as their loan-to-asset ratio has fallen, much of the increase in investments are mortgage backed securities.<sup>18</sup> This provides thrifts with more liquidity without their significantly diversifying out of the mortgage market.

Balance sheet data indicate that, in absolute terms, the growth of nontraditional lending at thrifts has been impressive. However, taking into account the growth of total assets, thrifts have a relatively small percentage of as-



**Table 4**  
**Composition of operating ratios for banks and thrifts**

	Operating income to total assets				Operating expense to total assets				Net income to total assets (¢/\$)
	Loans (%)	Investments (%)	Other (%)	Total* (¢/\$)	Salary (%)	Deposit interest (%)	Other (%)	Total* (¢/\$)	
<b>Banks</b>									
1975	61	32	8	6.84	24	49	26	5.89	.78
1980	62	31	7	9.87	20	57	23	8.41	1.09
1984	59	34	7	11.25	16	61	23	10.10	.90
<b>Thrifts</b>									
1975	87	9	4	7.57	10	76	15	6.89	.50
1980	81	17	2	9.43	8	78	14	9.28	.11
1984	74	23	3	11.21	8	77	15	10.73	.31

\*Total refers to the ratio of operating income (expense) to total assets in cents per dollar of assets.

SOURCE: Reports of Condition and Semiannual Financial Reports for periods ending December 31, 1975, December 31, 1980 and June 30, 1984.

sets in nontraditional lending and are far below the maximum allowable percentages for all classes of nontraditional lending. (See Table 2.)

The extent to which individual thrifts are using their new asset powers varies widely. Besides financial factors, size and location (i.e.; the influence of liberalized asset powers of state-chartered thrifts, which has occurred primarily in the South and West) seem to have an important influence on the aggressiveness of thrift institutions in expanding into nontraditional lending.<sup>19</sup>

Survey results of S&Ls in Illinois and Wisconsin indicate that few S&Ls, mostly the largest ones, are willing to take the associated risks and are able to surmount the start-up costs of entering the business of commercial lending.<sup>20</sup> Only 41.8 percent of thrifts held commercial and industrial (C&I) loans as of June 1984, and 30.6 percent of total C & I loans at these thrifts were held by the top ten institutions. This contrasts with the same concentration measure for total thrift assets—13.8 percent and traditional thrift assets—residential mortgages 14.1 percent and commercial mortgages 14.8 percent.

In becoming providers of bank-like services, thrifts are more likely to enter the business of consumer lending, which unlike commercial lending, has fewer barriers to entry for thrifts, i.e., it is more familiar and less costly to enter. In fact, the smallest thrifts (under \$100 million total assets), which account for 52.8 percent of all thrifts, win the honors for growth of consumer loans. Their consumer loan-to-asset ratio increased from 2.1 percent in 1975 to 4.0 percent in 1984 and is the highest ratio of all thrift size classes. (See footnote 20.)

In contrast with the limited participation in commercial lending, 88.6 percent of all thrifts made consumer loans in 1984 and 17.0 percent of the total consumer loans made by thrifts were held by the top ten thrifts. Moreover, thrifts as a group have made significant inroads in the consumer loan market, particularly in the submarket for mobile home loans. Such moves are reflected in decreased market shares for commercial banks. (See Table 5.)

The most dramatic change in thrifts' asset portfolio in the post-legislation period has not been their use of new asset powers but rather the increased flexibility in yields on their most prominent asset—mortgages. The FHLBB's authorization (April 1981) of adjustable mortgage loans (under regulatory limitations) and the standardization of AMLs by Freddie Mac has increased the availability and market acceptance of flexible mortgage instruments—particularly, adjustable rate mortgages (ARMs).<sup>21</sup>

In January 1985, ARMs, balloons, and other adjustable mortgages accounted for 71 percent of thrift mortgage originations. These mortgages also made up 37.9 percent of thrifts' mortgage portfolios. Also, almost all S&Ls (91.4 percent as of Dec. 1984) offered ARMs.

The improved economy and increased mortgage demand, and thrifts' ability to offer new types of mortgage instruments, especially ARMs, has diminished their need to turn to new, unfamiliar, and nontraditional lending powers to alter their asset portfolio. With 22 percent of their assets in variable rate mortgage instruments (as opposed to 1.4 percent in 1980), thrifts have substantially increased their ability to reduce interest rate risk exposure.



**Table 5**  
**Percentage of consumer installment credit by institution type<sup>1</sup>**  
**(1975-1984)**

Total credit	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
<b>Amount outstanding</b>	\$164.9	\$185.5	\$230.8	\$275.6	\$311.1	\$314.9	\$335.7	\$355.8	\$396.1	\$460.5
Commercial banks	47.7	48.3	48.7	49.4	48.1	46.7	44.0	43.0	43.4	44.5
Thrifts	NA	NA	4.1	4.0	4.1	4.4	4.9	4.7	7.0	8.4
Credit unions	15.6	16.4	16.3	16.7	15.4	14.0	13.7	13.3	13.5	14.2
Other	32.7	31.1	30.9	29.9	32.4	34.9	37.4	38.0	36.1	32.9

<sup>1</sup> Other includes finance companies, retailers, auto dealers and gasoline companies for the years 1977-1984. For 1975 and 1976, other includes finance companies and retailers (except 30-day charge credit). Amounts of credit outstanding are at end of period and are in billions of dollars.  
 SOURCE: *Federal Reserve Bulletins*, Domestic Financial Statistics-Consumer Installment Credit, various issues.

## Impact on Income

The rate of growth in total operating income was lower in the post- than the pre-legislation period for both banks and thrifts, only more so for banks. For all bank and thrift size categories the percentage of income attributed to loans and the rate of growth of loan income declined in the post-legislation period. The decline in income share from loans was twice as great for thrifts as for banks. (Unlike banks, thrifts had experienced a similar decline in the pre-legislation period.) But thrifts still obtain, on average, 15 percent more of their income from loans than do banks.

The growth of bank and thrift investment and loan income varied in relation to changes in interest rates in the pre- and post-legislation periods. The differing maturities of bank and thrift loan portfolios is reflected by the fact that the rate of growth of loan income fell much more dramatically for banks (40 percentage points) than for thrifts (7.3 percentage points) from the pre- to the post-legislation period. However, the rate of growth in investment income fell for both thrifts and banks, although more for thrifts, in the years 1980 to 1984. Also offsetting the declining share of income from loans, was an increased proportion of income from "other" income except for the smallest banks and the largest thrifts.

## The final score: net income

In an environment of deregulation, on average, banks in every size class except the smallest (less than \$100 million) were able to maintain their 1980 level of net income. However this smallest size group accounts for 83.9 percent of all banks. Thus, banks as a whole had a lower level of net income at the

end than at the beginning of the post-legislation.

Although thrifts continued to post substantial losses in the years following the acts, on average, thrifts in each size class experienced significant increases in net income levels by June 1984. Interestingly, on average, the rate of increase in net income for thrifts was approximately equal to the rate of decrease in net income for banks from 1980 and 1984. Despite these gains, 833 thrifts or 24 percent of all thrifts experienced losses in the first half of 1984. This compares favorably to the 34.3 percent of thrifts that had negative net income in 1980.

The net worth of thrifts as a group worsens only marginally (for 1984) when regulatory net worth (income capital certificates, Garn St Germain net worth certificates, and appraised equity capital) is eliminated. The impact of regulatory net worth is substantial for the largest thrifts for it was these thrifts that had, and still have, the lowest levels of net income and were the heaviest users of these methods of net worth enhancement.<sup>22</sup> As with banks, the smallest thrifts gained the least with respect to improved performance in the post-legislation period. This size category composes over half (52.8 percent) of all thrifts. The improved levels of net income were most significant for the larger size categories of thrifts—the over \$1 billion group (6.0 percent of all thrifts) and the \$100-\$500 million size group (34.9 percent of all thrifts).

## Conclusion

The effect of the acts on bank and thrift performance cannot be quantified separately from other factors. Declining interest and inflation rates and the generally improved econ-



omy, and more liberal FHLBB policies (e.g., on advances and flexible mortgage instruments) may be attributed equal, if not more, importance than the acts themselves for the current status and future prospects of the financial services industry. Managerial expertise and institution size have also played a large role in the ability of and manner in which institutions have reacted to the deregulated environment. Well managed institutions performing well in the more regulated environment are likely to perform well in the less regulated environment. Regulatory and statutory restrictions which had imposed inherent differences in the balance sheets of thrifts and banks also can not be overlooked in the ability of these institutions to react to the more level playing field.

Nonetheless, an analysis of average bank and thrift balance sheets and income statements across size classes for the pre- and post-legislation periods gives an indication of the absolute and relative impact of the acts on banks and thrifts, and the influence of size on the manner in which an institution adjusts to the new environment.

The consumer of financial services has gained from the more competitive environment created by the acts. There are increased alternatives for commercial and consumer loans and insured deposit instruments with competitive market rates of return. As a whole re-regulation resulting from the acts has thus far had a positive or, at worst, neutral impact on all parties, except perhaps the smallest banks. Further deregulation of product lines and geographic barriers, if adequately monitored, should be viewed favorably.

<sup>1</sup> Throughout the article thrifts refer to savings and loan associations (S&Ls) and mutual savings banks (MSBs). Ratios for banks and thrifts presented in this article were derived by calculating ratios at the institution level, summing those ratios and dividing by the appropriate number of observations for each size class.

<sup>2</sup> Deposit-to-asset ratios for banks by size group:

	All Banks	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil-\$1 bil.	Assets > \$1 bil.
1975	87.7	88.0	86.0	81.8	78.4
1980	87.9	88.4	85.6	81.6	73.9
1984	87.4	87.8	86.8	83.3	75.8

<sup>3</sup> Large time deposits as a percentage of total large time deposits, by size group and year for banks:

	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil-\$1 bil.	Assets > \$1 bil.
1980	13.7	14.8%	7.0%	64.4%
1984	15.2%	16.9%	6.4%	61.5%

<sup>4</sup> The use of borrowings is particularly important for the largest thrifts and varies directly with thrift size. Listed are borrowings-to-asset ratios.

	All thrifts	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil-\$1 bil.	Assets > \$1 bil.
1975	3.3	2.9	4.7	5.2	5.2
1980	5.0	3.8	6.6	9.1	9.8
1984	5.6	3.2	6.9	11.7	13.5

<sup>5</sup> "Advances Grow for Old and New Uses," M. Kulczycky, *Savings Institutions*, April 1985. For recent major FHLBB regulatory changes per thrifts, see *Savings Institution Sourcebook*, U.S. League of Savings Institutions 1981, 1982, 1983, and 1984.

<sup>6</sup> "The Thrift Industry in Transition," P. Mahoney, A. White and D. Goodman, 71 *Federal Reserve Bulletin* (137) March 1985. (Also see footnote 4.)

<sup>7</sup> Maturity structure of liabilities of FSLIC insured S&Ls and thrifts for 1981 and 1984, respectively. (Percentage of total deposits.)

	Large CDs	Accounts with no fixed term MMDAs, passbook savings, other	Small Denomination CDs Term 1 yr. or less	Term over 1 yr.
July 1981	8.9	19.4	39.7	31.6
Dec. 1984	14.8	24.8	29.0	31.3

<sup>8</sup> "NOWs and Super NOWs: Implications for Defining and Measuring Money," B. Higgins and J. Faust, *Economic Review*, Federal Reserve Bank of Kansas City, January 1983.

<sup>9</sup> For detail on changes in reserve requirements, see: 70 *Federal Reserve Bulletin* Table A6 1.15 "Reserve Requirements of Depository Institutions," December 1984.

<sup>10</sup> *Bank Rate Monitor*, Advertising News Service, Inc., Miami Beach, Florida.

<sup>11</sup> "Lasting Effects of Deregulation on Monetary Policy," H. Roth *Economic Review*, Federal Reserve Bank of Kansas City, March 1985.

<sup>12</sup> "Money Market Account Competition," L. Wall and H. Ford, *Economic Review*, Federal Reserve Bank of Atlanta, December 1984; and "Competition For Money Market Deposits Accounts," M. Keeley and G. Zimmerman, *Economic Review*, Federal Reserve Bank of San Francisco, Spring 1985.

<sup>13</sup> "Cost of Savings Deposits: The evidence from Illinois and Wisconsin Savings and Loan Associations," unpublished paper, Elijah Brewer, Federal Reserve Bank of Chicago; and "Financial Change and Monetary Targeting in the United States," John P. Judd and John L. Scadding, Asilomar



Conference Proceedings, Federal Reserve Bank of San Francisco, November 28-30, 1982.

<sup>14</sup> Percentage change in expense categories for banks for pre- and post-legislation periods. Other expenses include the purchase of Fed funds, provisions for loan losses, and occupancy expenses.

	Expenses			
	1975-1980			
	Salary	Deposit interest	Other	Total
All Banks	14.6	66.3	26.3	42.8
Assets < \$100 mil.	14.5	65.4	24.2	42.1
Assets \$100-\$500 mil.	10.0	65.4	23.2	40.0
Assets \$500 mil.-\$1 bil.	10.1	75.9	34.5	45.6
Assets > \$1 bil.	16.8	102.4	58.2	66.8
	1980-1984			
	Salary	Deposit interest	Other	Total
All Banks	.6	28.6	15.7	20.1
Assets < \$100 mil.	.6	29.9	16.8	21.1
Assets \$100-\$500 mil.	2.6	23.2	2.6	14.1
Assets \$500 mil.-\$1 bil.	3.7	19.5	1.6	10.8
Assets > \$1 bil.	16.3	10.2	4.6	9.1

<sup>15</sup> Percentage change in expenses for thrifts.

	Expenses			
	1975-1980			
	Salary	Deposit interest	Other	Total
All Thrifts	11.8	38.1	31.0	34.7
Assets < \$100 mil.	15.7	38.9	29.2	34.9
Assets \$100-\$500 mil.	15.3	39.5	24.1	34.7
Assets \$500 mil.-\$1 bil.	16.4	35.7	30.7	33.0
Assets > \$1 bil.	13.5	41.2	28.6	36.6
	1980-1984			
	Salary	Deposit interest	Other	Total
All Thrifts	11.8	15.0	20.6	15.6
Assets < \$100 mil.	13.6	16.9	13.7	16.2
Assets \$100-\$500 mil.	16.2	15.0	15.8	15.3
Assets \$500 mil.-\$1 bil.	20.3	12.1	30.7	16.0
Assets > \$1 bil.	16.9	9.3	35.7	14.8

<sup>16</sup> "From ATM to POS Networks: Branching Access, and Pricing," S. Fedgram, *New England Economic Review*, Federal Reserve Bank of Boston, May/June 1985.

<sup>17</sup> For a summary of new S&L powers granted by state and federal legislation, see: S&L Use of New Powers: "A Comparative Study of State- and Federal-Chartered Associations," R. Goudreau, *Economic Review*, Federal Reserve Bank of Atlanta, October 1984.

<sup>18</sup> Percentage of thrift assets in investments by size group and year.

	All thrifts	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil.-\$1 bil.	Assets > \$1 bil.
1975	12.9	12.4	14.3	18.4	19.3
1980	14.6	14.5	14.0	17.7	18.7
1984	23.1	22.8	22.5	25.3	26.6

Percentage of thrift assets in mortgage-backed securities by size group and year.

	All banks	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil.-\$1 bil.	Assets > \$1 bil.
1975	3.0	2.9	3.0	3.6	2.2
1980	3.6	3.3	4.0	5.8	4.9
1984	9.0	7.7	9.9	11.8	13.3

<sup>19</sup> Commercial and consumer loans as a percentage of assets for thrifts by size group (June 30, 1984).

	All banks	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil.-\$1 bil.	Assets > \$1 bil.
Consumer	3.8	4.0	3.7	3.8	3.3
Commercial	.8	.6	.8	1.3	1.3

<sup>20</sup> "Cautious Play Marks S&L Approach to Commercial Lending," C. Pavel and D. Phillis, *Economic Perspectives*, Federal Reserve Bank of Chicago, May/June 1985.

<sup>21</sup> The national average for ARMs as a percentage of the number of total conventional home mortgages closed for S&Ls since 1982: 1982Q4 = 39.3%, 1983Q4 = 61.3% and 1984Q4 = 66.0%. *FHLB News*, May 7, 1985 and January 10, 1984.

<sup>22</sup> Net income for thrifts:

	All Banks	Assets < \$100 mil.	Assets \$100-\$500 mil.	Assets \$500 mil.-\$1 bil.	Assets > \$1 bil.
1975	.50	.50	.47	.47	.40
1980	.11	.14	.09	.02	(.06)
1984	.31	.34	.30	.33	.17



# A deregulated rerun: Banking in the Eighties

*Randall C. Merris and John Wood*

The story of commercial banking during the past 25 years has been one of rapid and sometimes radical change. The more significant changes include the shift from demand deposit sources of funds toward interest-sensitive money market liabilities such as federal funds and certificates of deposit; the payment of interest on checking accounts; the growth of variable-rate loans and the shortening of loan maturities; the decline of the prime rate convention; the growth of consumer and real estate lending; the development of automatic transfer services between different types of accounts; the rapid growth of branch banking and bank holding companies both within and between states; and the infringement of traditional commercial banking functions (such as the creation and servicing of checking accounts) by nonbank institutions, accompanied by infringements in the opposite direction (such as underwriting and brokerage activities by banks), with complaints on both sides. The legality of many of these innovations has been questioned but they have for the most part been accommodated by the regulators, courts, and Congress.

All these developments are important and the publicity they have received is deserved. But they are not unprecedented. Almost entirely they represent returns to practices that were well-established by the 1920s or the resumption of trends that were underway in that decade but were interrupted by the Great Depression and World War II. The similarities between the years since 1960 and those preceding 1930 are not difficult to understand and may be explained in terms of interactions between the profitable lending opportunities that go with high interest rates and the restrictive regulatory framework that has long been imposed on the American banking system.

The most severe of these restrictions, especially when compared with the nationwide branch-banking systems of Canada and Great Britain, are the limitations on branching. Branching across state lines has been almost completely prohibited and most states either prohibit or severely limit branching within their boundaries. For many years national

banks (that is, banks chartered by the Comptroller of the Currency under the National Bank Act of 1863<sup>1</sup>) were limited to a single office. Americans have denied themselves the principal means by which in other countries funds are sent from net lending to net borrowing sections of the country, that is, between branches of truly national banks. The portfolio diversification, the protection against excessive reliance upon the fortunes of particular sections, that naturally arises in such a national system has also been impeded by the American system of small, geographically concentrated banks.

Other restrictions that have in various times and degrees been imposed on commercial banks include prohibitions or severe limits on real estate loans, interest payable on deposits, and brokerage, underwriting, investment advisory, and trust services. But rules are made to be broken, and frequently have been in the financial sphere, where there appears to be no natural separation of functions, no obvious criteria governing who should lend in what form to whom. In a prosperous and expanding economy with abundant profit opportunities it is inevitable that many firms and individuals will seek to extend their activities in a variety of directions, even into areas that by tradition or law had been reserved to others or prohibited altogether.

Recent innovations in banking are widely known and have been discussed in many places.<sup>2</sup> The purposes of this paper are to document the innovations of the 1920s and previously and, along the way, to indicate the similarities between old and new banking trends. Before proceeding to our list of pre-1930 developments it may be worthwhile to look at the interregnum that lasted from the early 1930s until well into the 1950s. The

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Great Depression halted and reversed nearly all extensions of financial institutions into new areas for the simple reason that profit opportunities had virtually been extinguished. In a world of massive industrial and financial failures the overriding thought was not expansion but survival, principally by retrenchment.

Although the Great Depression's trough is usually dated in 1933, a strong recovery was not mounted until World War II and the entire decade of the 1930s was characterized by deep depression. The unemployment rate, which had risen from 3 percent to 25 percent between 1929 and 1933, was still 17 percent in 1939. Industrial production and real per capita gross national product remained lower in 1939 than in 1929, and real gross private domestic investment in 1939 was only 61 percent of its value 10 years earlier. Interest rates fell throughout the decade and the average yield on corporate Aaa bonds was 2.92 percent in June 1939, compared with 4.73 percent in June 1929. The rate on 4- to 6-month prime commercial paper fell from 6.00 percent to 0.56 percent during the same period. (Changes in the commercial paper rate are compared with developments in banking in Figures 1 to 3). This decade of bank failures and depressed loan demands and interest rates saw member bank excess reserves as a percentage of deposits rise from one-tenth of one percent to 10 percent, a hundredfold increase. Loans fell from 69 percent to 29 percent of deposits.

The demand for bank credit picked up during the war, but almost entirely in the form of government borrowing, which the Federal Reserve enabled the banks to finance by supplying unlimited reserves through open market purchases of government securities that were designed through an agreement with the Treasury to maintain stable and low interest rates—three-eighths of 1 percent on Treasury bills and about 2 percent on long-term Treasury bonds. This pegging operation continued until mid-1947 and the Federal Reserve did not cease active support of bond prices until 1953. Private investment and loan demands had begun to rise immediately upon the end of the war but interest rates did not return to pre-1930 levels until the 1960s. Now let us compare developments during the earlier period with those of today.

## **Commercial bank loans, investments, and reserves**

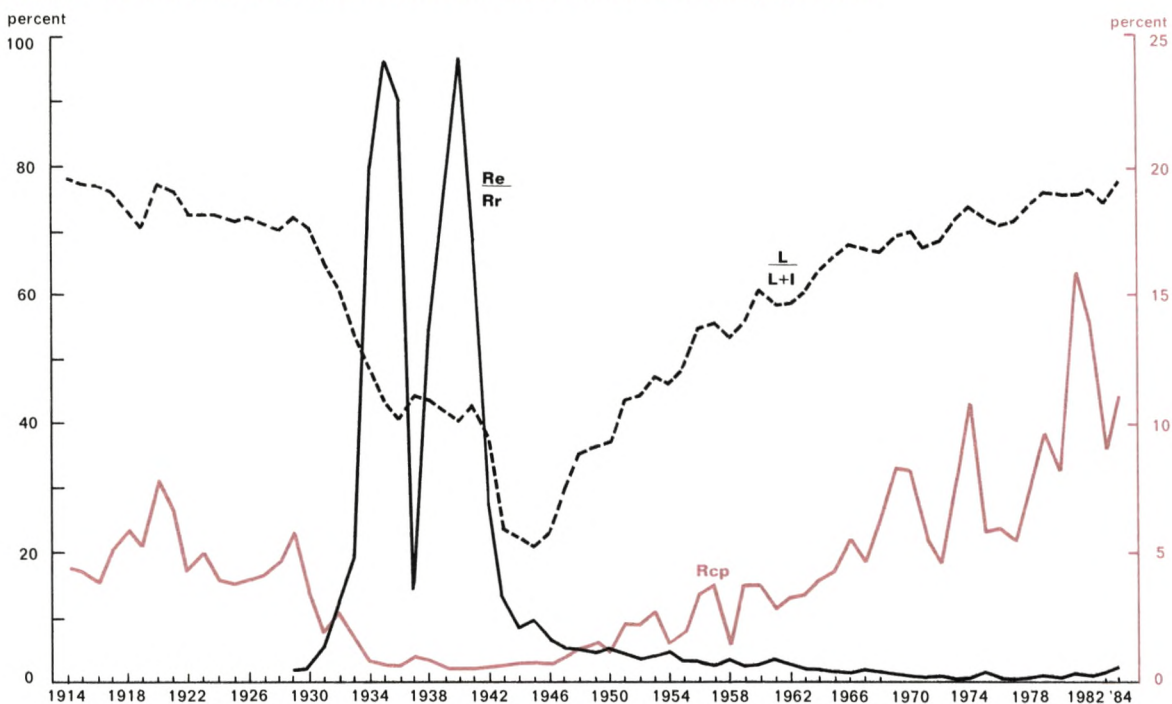
In 1914, commercial bank loans made up 78 percent of bank earning assets, that is, of total loans and investments. (See Figure 1.) U.S. government securities constituted only 5 percent of bank earning assets. Bank securities purchases reduced the loan-to-earning-asset percentage to 70 and raised the percentage for U.S. securities to 16 by the end of World War I. There was some movement toward the pre-war figures during the 1919-1920 expansion, and again during 1928-29, but loans were only 73 percent of earning assets in 1929, after which there was a dramatic decline in loans (which fell 56 percent between 1929 and 1936) and an equally dramatic rise in bank holdings of U.S. securities (which more than tripled between 1929 and 1936). Loans and U.S. securities each made up about 40 percent of bank earning assets in 1936. These proportions were fairly stable between 1936 and 1941. Large-scale purchases of U.S. securities during World War II, accompanied by only a slight rise in loans, resulted by 1945 in banking earning assets consisting of 73 percent U.S. securities and 21 percent loans. Perhaps the most striking feature of bank portfolios during the past 40 years has been their strong and almost continuous movement toward the loan/investment ratio that existed before World War I. Loans as a percentage of earning assets rose from 21 percent in 1945 to 61 percent in 1960, 70 percent in 1970, 73 percent in 1980, and in 1984 to 78 percent, which is where we came in.

Commercial bank excess reserves have varied inversely with profit opportunities and the availability of liquid, low-risk sources of reserves. It is convenient to express the excess reserves of Federal Reserve member banks as a percentage of their required reserves, as in Figure 1. Beginning in 1929, the first year for which data on excess reserves are available, excess reserves were 1.8 percent of required reserves. Excess reserves rose sixtyfold between 1929 and 1936, to become 90 percent as large as required reserves.

Excess reserves were reduced by administrative action to 14 percent of required reserves when the Federal Reserve doubled reserve requirement ratios in a series of steps between August 1936 and May 1937. But nearly all



Figure 1  
Loans and investments, excess reserves, and the commercial paper rate



DEFINITIONS:

$\frac{L}{L+I}$ : Loans as a proportion of loans and investments, all commercial banks, end of June.

$\frac{R_e}{R_r}$ : Member bank excess reserves as a proportion of required reserves, average of daily figures for June.

$R_{cp}$ : 4-6 month prime commercial paper rate (1914-79) or average of 3- and 6-month prime commercial paper rates (1980-84), average of daily figures for June.

SOURCES: *Banking and Monetary Statistics, 1914-41* and *1941-70* and various issues of *Annual Statistical Digest* and *Federal Reserve Bulletin*, all published by the Board of Governors of the Federal Reserve System, Washington, D.C.

NOTE: Some of these series (particularly those pertaining to commercial bank assets and liabilities) have been revised from time to time, so that the data are not perfectly comparable over time. However, the revisions have not been so great as to affect the principal movements shown in the charts and discussed in the text.

additions to reserves during the next three years were kept as excess reserves and by 1940 excess reserves were 97 percent of required reserves. That is, by the end of the 1930s nearly one-half of member bank reserves were in excess of legal requirements. Although interest rates remained low during World War II, the Fed's bond support program meant that banks could convert their excess reserves into highly liquid short-term governments without fear of loss and excess reserves had fallen below 10 percent by 1945. Rising interest rates induced further economies in reserves during the

postwar period and excess reserves as a percentage of required reserves fell below 3 percent in 1956, below 2 percent in 1963 (returning to their 1929 relation), and below 1 percent in 1970.

**Liability management**

In the 1920s most of the liabilities of large banks paid interest that varied closely with other money market rates. Of vital importance to the money center banks and to their correspondents in outlying areas was interbank



lending in the form of bankers' balances, either as time or demand deposits. Competition for these interbank deposits was one of the most important means by which funds were induced to flow from surplus to deficit regions of the country. During the 1920s about 20 percent of the deposits of New York City and Chicago banks consisted of balances owed to other banks, principally interest-bearing demand deposits. Federal funds and repurchase agreements were also significant sources of funds for the more aggressive banks.<sup>3</sup> In 1922, for example, the average daily purchases of fed funds in New York City were about 6 percent as large as the interbank deposit liabilities of New York City banks, a figure that rose to 12 percent in 1925 and 18 percent in 1928.<sup>4</sup> The fed funds market virtually disappeared during the 1930s and 1940s in the face of low interest rates, massive excess reserves, and easy Federal Reserve credit.

However the prohibition of interest on demand deposits by the Banking Act of 1933<sup>5</sup> meant that renewed competition for reserves in the form of interbank lending in the 1950s and afterward had to shift its emphasis from bankers' balances to federal funds. By the 1980s the liabilities of New York City banks in the forms of federal funds and repurchase agreements were more than seven times as large as their interbank deposit liabilities and about 45 percent as large as their total deposits. The competition for nondeposit funds that was resumed in the 1950s has gone far beyond the point at which it was interrupted in 1930. Again, rising interest rates, and the resulting increased cost of idle reserves helped induce this behavior.

Until the 1930s many banks also paid interest on the demand deposits of their nonbank customers, with the minimum required balance for interest-earning demand deposits ranging from \$100 to \$10,000.<sup>6</sup> Interestingly, service charges on deposits, which had not been common before the 1920s, became widely used during that decade. A 1929 survey by the New York State Bankers Association showed that about 35 percent of banks imposed service charges on small accounts.<sup>7</sup> High interest rates and the growing competition for funds had resulted in greater cost consciousness and a desire to set prices of services in line with costs.<sup>8</sup>

The competition for funds in the 1920s was also reflected in increasing interest rates on

time and savings accounts, a development that was stimulated by reductions in reserve requirements on those accounts. The National Bank Act had not distinguished between types of accounts in setting reserves requirements, and the same was true of the laws under which most state banks operated. But in 1913 the Federal Reserve Act reduced the reserve requirement ratios on time and savings deposits to less than one-half of those on demand deposits, and most states followed suit in order that state banks would not be placed at a competitive disadvantage.<sup>9</sup> The resulting reduction in the marginal cost of time and savings accounts, in combination with generally rising interest rates and growing competition for funds, led to increases in time and savings accounts as a percentage of total national bank deposits from 19 percent in 1914 to 23 percent in 1919 and 41 percent in 1929. The percentages for all commercial banks in these three years were 31, 33, and 46 respectively. (See Figure 2.)

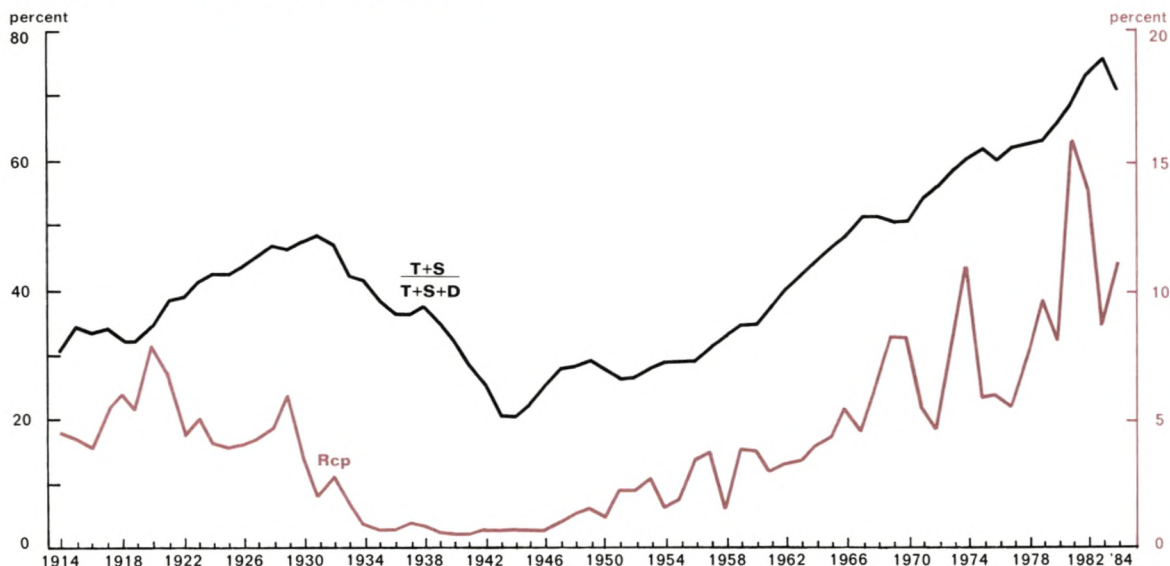
Savings and loan associations and mutual savings banks, supported by their regulators, complained about the growing competition from commercial banks. Time and savings accounts in S&Ls and MSBs as a percentage of those in commercial banks fell from 77 percent in 1915 to 43 percent in 1925. In New York, Massachusetts, and Connecticut, the strongholds of mutual savings banks, commercial bank time and savings deposits grew from less than one-fifth to more than one-half of those in mutual savings banks.<sup>10</sup> The Commissioner of Banks of Massachusetts and the Superintendent of Banks of New York both wrote the following in their reports for 1918:

If in any state there has been created a great system of mutual savings banks, in that state the national banks, although not mutual but operated for the profit of shareholders, will be authorized to call their interest departments savings departments, and so appropriate a word which has for a generation or more been synonymous in this State with mutual institutions created under State laws. These deposits, moreover, will not be segregated, nor will the entire net income from investments be distributed among the depositors.<sup>11</sup>

The New York Superintendent also wrote:



Figure 2  
**Time and savings deposits as a percentage of total bank deposits, and the commercial paper rate**



**DEFINITIONS:**

$\frac{T + S}{T + S + D}$ : Time and savings deposits as a proportion of total commercial bank deposits, end of June.

$R_{cp}$ : See Figure 1.

SOURCES: See Figure 1.

NOTE: See Figure 1.

It is not surprising, in view of the extension of Federal control over various classes of business and industry as a result of the necessities of the war, that the attention of the advocates of centralization and Federal domination should be attracted by the prosperity and success of State banking institutions. In their desire to bring under Federal control all classes of banking institutions, they seem, in the first instance, to have conceived the idea of conferring all the multifarious powers of the different classes of State institutions in all the States upon National Banks and to create a Federal system of department banks into which all banking institutions would ultimately be driven. Such a bank would closely resemble one of our great department stores. . . Instead of having a uniform system of National Banks consisting of strictly commercial banking institutions and needing no other definition than the name, we would have heterogeneous varieties of hybrid institutions of as many kinds perhaps as there are States

or possibly of as many types as there are classes of State banking institutions in all the States.

Later the Federal Reserve Board expressed concern over the growing tendencies of banks to provide automatic transfers between savings and demand deposits and to allow depositors to draw checks against savings deposits.<sup>12</sup> The Federal Advisory Council (a citizens advisory group) recommended to the Board that Regulation D, which governs reserve requirements, "might be amplified to prevent some of the abuses which have developed, such as the withdrawal by check of savings and time deposits and the lack of a clear distinction between demand and time deposits."<sup>13</sup> Savings associations also allowed drafts, or checks, to be drawn against savings accounts.<sup>14</sup>

These trends were reversed by the great decline in interest rates and the virtual disap-



pearance of bank competition for funds in the 1930s and 1940s. Time and savings deposits as a percentage of total commercial bank deposits in the United States fell from 46 percent in 1929 to 36 percent in 1939 and 20 percent in 1944, which was the low point, well below the 1914 figure of 31 percent. Postwar prosperity and rising rates saw the figure rise to 47 percent (about the 1929 figure) in 1965, 62 percent in 1975, and 75 percent in 1983.

The resumption of interest-rate competition for funds was eventually also reflected in the effective resumption of interest payments on checking accounts and the ability to write checks on savings accounts. Congress had attempted to end these practices by the banking laws of the 1930s, but as soon as they once again became profitable, financial institutions, accommodated by their regulators or the courts, found ways of implementing them—including repurchase agreements and automatic transfer services by commercial banks, negotiable order of withdrawal (NOW) accounts by New England savings institutions, and share draft accounts by credit unions. However, in 1979 the last three practices were enjoined by a U.S. Court of Appeals.<sup>15</sup> The court expressed the following views in its ruling on suits filed by the American Bankers Association (with the Tioga State Bank) against the National Credit Union Administration, the Independent Bankers Association against the Federal Home Loan Bank Board, and the U.S. League of Savings Associations against the Federal Reserve Board:

It appears to the court that the development of fund transfers . . . utilized by . . . commercial banks with “Automatic Fund Transfers,” savings and loan associations with “Remote Service Units,” and federal credit unions with “Share Drafts,” in each instance represents the use of a device or technique which was not and is not recognized by the relevant statutes, although permitted by regulations of the respective institutions’ regulatory agencies.<sup>16</sup>

The court pointed out that these procedures amounted to “the practical equivalent of checks drawn on . . . interest-bearing time deposits” in violation of laws governing the institutions concerned.

The history of the development of these modern transfer techniques reveals each

type of financial institution securing the permission of its appropriate regulatory agency to install these devices in order to gain a competitive advantage, or at least competitive equality, with financial institutions of a different type in services offered to the public. The net result has been that three separate and distinct types of financial institutions created by Congressional enactment to serve different public needs have now become, or are rapidly becoming, three separate but homogeneous types of financial institutions offering virtually identical services to the public, all without the benefit of Congressional consideration and statutory enactment.

The court recognized that the statutes had been rendered obsolete by events and also appreciated that “enormous investments” had been made in the new technology. The court also recognized the disruptions that would result from the sudden withdrawal of these services, upon which the financial community had “rapidly grown to rely.” Therefore, about 7 months, until January 1, 1980, were allowed for compliance with the court’s ruling. The lag would also give Congress time to decide whether it wanted to override the court by changing the law. Spurred to action, Congress began hearings in June, enacted legislation in December that temporarily authorized the devices found illegal by the court, and granted those devices statutory approval in the Depository Institutions Deregulation and Monetary Control Act of 1980. And financial institutions were thereby enabled to continue to compete for funds in the 1980s in much the same way as in the 1920s.

### **Risk management**

The liquidity and interest-rate risks to which banks were exposed by their short-term, interest-sensitive liabilities were offset in the 1920s, as in the 1980s, by the use of these liabilities to fund short-term and variable-rate loans. During the earlier period between 25 and 30 percent of the loans of large banks were call loans, mainly to brokers and dealers in securities, with rates that were subject to daily revision. About 45 percent of the loans of large New York City Banks were call loans. Most of the remaining loans were business loans with maturities less than 90 days.<sup>17</sup> Although the liquidity of many of these loans was doubtful



because they were repeatedly renewed as parts of long-term customer relationships,<sup>18</sup> their short-term contractual nature permitted the frequent adjustment of loan rates in line with the costs of funds.

However, these characteristics of bank loans, which had evolved in response to volatile interest rates and increasingly competitive conditions over several decades, were greatly modified by the events of the 1930s and 1940s—especially by the low and stable interest rates, enormous excess reserves, and easy Federal Reserve credit discussed above. Short-term loans were no longer necessary for liquidity purposes, which were met by excess reserves and large holdings of short-term government securities, or to hedge interest-rate risk, which was virtually nonexistent. Furthermore, the great decline in stock market activity greatly reduced the demand for call loans. One of the consequences of this combination of events was the increased use of explicit long-term loans. Business loans with maturity of one year or more (term loans) rose from almost nothing in 1929 to nearly one-third of business loans in 1940, a trend that continued until well into the 1950s.<sup>19</sup>

The high and volatile interest rates, very low excess reserves, and more volatile money stock changes in recent years have induced a return to the loan practices of the 1920s. For example the Federal Reserve's *Survey of Terms of Bank Lending* indicates that during the 6 years following 1977 (the first year of the survey in its present form) term loans fell from 16 percent to 9 percent of commercial and industrial loans, the percentage of term loans with floating rates rose from 49 to 73 percent, and the average maturity of short-term loans fell from 2.2 months to 1.1 months.<sup>20</sup> Recent data on bank loan rates show that these rates have become as variable as, perhaps more variable than, rates on short-term money market instruments such as commercial paper.<sup>21</sup> Apparently, "sticky" loan rates were peculiar to the 1930s to 1960s.

### **Investment banking by commercial banks**

The so-called "tradition" of the separation of commercial banking and investment banking functions, including the idea that the former's credit ought to be limited to short-

term, self-liquidating commercial loans, is unique to the English-speaking peoples and even there the tradition has been honored more in the breach than the observance. The Bank of England, the First and Second Banks of the United States, and most early state banks were chartered with the express goal of helping to float government debt. Commercial banks were especially active in underwriting government bonds during the Civil War and World War I, and had become heavily involved in corporate issues during the nineteenth century. It is likely that commercial banks first "became partners in underwriting syndicates . . . in order to obtain newly issued bonds at favorable prices. Acquisition of securities for the bank's own portfolio led to purchases on behalf of customers, particularly correspondent banks. In a few cases, that eventuated in a full range of investment banking activities."<sup>22</sup>

In 1902 the Comptroller of the Currency ruled that commercial banks were prohibited by the National Bank Act from underwriting or distributing equities. But the First National Bank of Chicago organized a state bank, owned by the same shareholders as First National, to carry on its securities activities. The First National Bank of New York and the National City Bank of New York soon followed suit.<sup>23</sup> Later, in the 1920s, official hostility toward securities underwriting by commercial banks changed to support, or at least acquiescence, in order to prevent defections from the national banking system, and the McFadden Act of 1927 legalized a wide range of securities activities by national banks. "For all practical purposes, adoption of the McFadden Act represented an abandonment of traditional banking theories and a recognition of a natural economic development. By the end of the decade, there was no longer any institutional separation of banking functions."<sup>24</sup> In 1929, 591 commercial banks were underwriting securities directly or through affiliates. These institutions originated 45 percent of all new bond issues in 1929, up from 22 percent in 1927.<sup>25</sup>

Commercial bank performance of what some people thought were not proper commercial banking functions did not prevent these firms from complaining about the invasions of their turf by others. Private investment banking houses paid interest on deposit liabilities and in 1912 the largest house, J. P. Morgan, had deposits of \$160 million, compared with



\$252 million in National City Bank, the largest commercial bank.<sup>26</sup>

Trust companies had also become major competitors of commercial banks. Trust companies originally specialized in the management of property for others but by 1900 "the range of financial services they offered increased until, apart from their fiduciary function, they became indistinguishable from commercial banks"<sup>27</sup>—except, as bankers bitterly pointed out, in their virtual freedom from regulation, including legal reserve requirements. However New York State and some other states began to subject trust companies to reserve requirements during the early years of this century and commercial banks received a further equalizing concession in 1913 when the Federal Reserve Act extended trust powers to national banks. In 1910 a trust officer forecast that "we shall have but one kind of financial institution, which will combine all the functions of the commercial bank, savings bank, and trust company."<sup>28</sup> He might also have included "investment bank," but perhaps he meant that function to be comprehended by "commercial bank."

The banking laws of the 1930s attempted to turn back the clock by divorcing commercial banking and investment banking and in other ways separating financial activities between different types of institutions.<sup>29</sup> But the hands have resumed their forward motion as banks have increased their involvement in the securities business and securities firms have reentered the deposit business, so that it has once again become difficult to answer the question "What is a bank?"<sup>30</sup>

### **Group and branch banking**

Branch banking has from time to time been prohibited or severely restricted in most states, and national banks were not allowed to open branches until well into the twentieth century. These restrictions gave rise to a variety of evasive devices during the 30 years of rapid bank expansion preceding the Great Depression, when the number of bank offices grew from about 9,000 (in 1900) to about 27,000 (in 1929).<sup>31</sup> Chief among these evasions was the exchange of national for state charters in those states in which branching was permitted. Another device was the bank holding company.

Virgil Willit described the future of banking as the proponents of branching saw it in 1930:

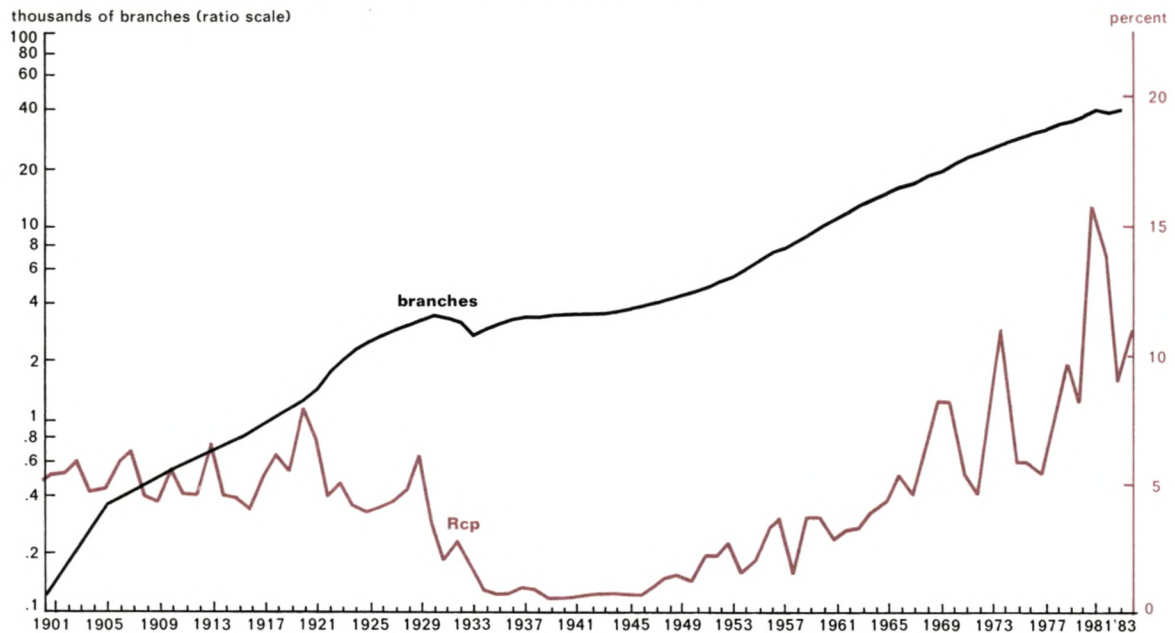
Group banking is simply the result of the introduction into the banking field of the holding company device, which has been long known and much used in other businesses. Through the holding company a number of banks can be operated as practically one institution. Such an institution is very closely akin to a branch bank. Indeed, the opponents of group banking maintain that it is simply a device for evading the legal restrictions on branch banking.

In spite of much criticism and opposition, group banking is developing with amazing rapidity. At the present time group banks control one-fifth of the bank resources of the country. The movement is not localized, for groups are found throughout the country. A few states have attempted to check it by legislation but as yet no adequate means have been found to stop its growth. Thus group banking constitutes a greater menace to the unit system than does branch banking, which is easily amenable to legislative control. This situation has fortified the advocates of branch banking with a new and powerful argument. Unit banking, they contend, is doomed. The question no longer is whether we shall have unit or branch banking; the issue lies, rather, between group and branch banking.<sup>32</sup>

Between 1900 and 1929 the number of banks operating branches rose from 87 to 764, the number of branches rose from 119 to 3,533, and the assets of banks with branches rose from 2 percent to 43 percent of total bank assets. In 1921, "to meet the challenge of state branch banks" the Comptroller of the Currency "authorized national banks to open tellers windows limited to accepting deposits and cashing checks where a state permitted its banks to branch."<sup>33</sup> The National Bank Consolidation Act of 1918 had earlier made full-service branching by national banks a little easier by allowing them to keep the offices of the state banks that they acquired.<sup>34</sup> Further moves "designed to place the national banks on a more equal competitive plane with the state banks,"<sup>35</sup> or in the parlance of the 1980s, to "level the playing field," came in the McFadden Act, which relaxed restrictions on the real estate lending of national banks<sup>36</sup> and allowed them to open full-service branches. However, these branches were confined to the



Figure 3  
**Commercial bank branches and the commercial paper rate**



**DEFINITIONS:**

**Branches:** Number of commercial bank branches, ratio scale, end of year. Before 1920, data are available only for selected years.

**R<sub>cp</sub>:** Same as Figure 1, but note the longer time span.

**SOURCES:** See Figure 1.

head-office city in states that allowed branching by state banks.

The number of branches fell 20 percent between 1929 and 1933, to 2,784. But unit banks declined even more rapidly so that by 1933 the assets of branch systems made up 50 percent of total bank assets. Political opposition to branch banking declined markedly during the early 1930s, when the number of unit banking states was reduced from 22 to 10 and the Banking Act of 1933 permitted national banks to open branches on the same geographical basis as state banks. However the onerous capital requirements imposed on Fed member banks that opened branches outside their head-office cities retarded branching by those banks until 1952, when their capital requirements were reduced to the same level as those of nonmember competitors.<sup>37</sup>

Branching resumed its growth after 1933. But this growth was for a while much slower than during the first 30 years of the century. By 1940 the number of branches had recovered their 1929 level of about 3,500, and then rose to about 4,700 in 1950. But during the next decade the number of branches more than doubled, reaching 10,200 in 1960, again more than doubled to 21,400 by 1970, and rose to 38,400 in 1980. Group banking has not been left far behind. The proportion of all commercial bank deposits in multibank holding companies rose from about 10 percent in the mid-1950s to 16 percent in 1970 and 34 percent in 1980. It seems that, after some delay, the forecast of the banking industry offered by Professor Willit in 1930 is about to be realized.



## Concluding comment

The financial services industry, including commercial banking, is once again on the expansive and competitive path that was temporarily blocked in the 1930s and 1940s—and regulation and legislation, as during the early years of this century, have accommodated the profit-seeking goals of financial firms and their clients. Branching, bank holding companies, interest on checking accounts, and securities activities by banks are responses to profit opportunities, which constitute the only effective deregulatory force. As in the 1920s, de jure deregulations—new legislation and new interpretations of existing laws—merely follow de facto deregulations that have already been instituted by the public in search of the most efficient means of carrying on financial transactions.

<sup>1</sup> Actually the 1863 law that provided for national bank charters was called The National Currency Act. That act was amended and renamed The National Bank Act in 1864. For the history of these acts see Ross M. Robertson, *The Comptroller and Bank Supervision: A Historical Appraisal*, (Washington, D.C.: Comptroller of the Currency, 1968).

<sup>2</sup> For example, see discussions of the events leading to the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St Germain Act of 1982 in *Leveling the Playing Field: A Review of the DIDMCA of 1980 and the Garn-St Germain Depository Institution Act of 1982* (Chicago: Federal Reserve Bank, Chicago, 1983); and also in Federal Reserve Bank of Chicago, *Proceedings of a Conference on Bank Structure and Competition, April 12-14, 1982*, (Chicago: 1982).

<sup>3</sup> For discussions of bank transactions in federal funds and repurchase agreements before 1930, see Parker B. Willis, *The Federal Funds Market: Its Origin and Development*, 4th ed., (Boston: Federal Reserve Bank of Boston, 1970), pp. 3-13; and H. G. Moulton, "Commercial Banking and Capital Formation," *Journal of Political Economy*, 26 (July 1918) pp. 705-731.

<sup>4</sup> These percentages are based on estimates in Willis, *The Federal Funds Market*, p. 12.

<sup>5</sup> This prohibition is still in force for demand deposits. However, a number of alternative interest-bearing personal transactional accounts have been introduced. Historically, including the 1920s, over 90 percent of interbank deposits have been demand deposits.

<sup>6</sup> See James M. Boughton and Elmus R. Wicker, "The Behavior of the Currency-Deposit Ratio during the Great Depression," *Journal of Money Credit and Banking*, 10 (November 1970) pp. 405-418.

<sup>7</sup> *Ibid.*, p. 408.

<sup>8</sup> Service charges were retained and generally increased when interest rates fell during the 1930s. Total annual service charges grew 80 percent between 1929 and 1933 even though total deposits fell 40 percent and demand deposits fell 36 percent. (*Ibid.*)

<sup>9</sup> These changes are discussed by Charles M. Linke, "The Evolution of Interest Rate Regulation on Commercial Bank Deposits in the United States," *The National Banking Review*, June 1966, pp. 449-69 and Eugene N. White, *The Regulation and Reform of the American Banking System, 1900-1929* (Princeton: Princeton University Press, 1983), pp. 27-33, 98-102.

<sup>10</sup> Weldon Welfing, *Mutual Savings Banks: The Evolution of a Financial Intermediary*, (Cleveland: Case Western Reserve University Press, 1968) p. 77.

<sup>11</sup> This and the next quotation are from Welfing, *Mutual Savings Banks*, pp. 78-79.

<sup>12</sup> See the discussions and references in Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton: Princeton University Press, 1963), p. 277; and, Benjamin J. Klebaner, *Commercial Banking in the United States: A History*, (Hinsdale, IL: Dryden Press, 1974), p. 123.

<sup>13</sup> Federal Reserve Board, *Annual Report, 1928*, p. 228.

<sup>14</sup> See William H. Kniffen, *The Savings Bank and its Practical Work* (New York: Bankers Publishing Company, 1928), p. 258.

<sup>15</sup> The following discussion is taken from John H. Wood and Norma L. Wood, *Financial Markets* (New York: Harcourt Brace Jovanovich, 1985), pp. 61-63.

<sup>16</sup> This and the following quotation are from United States Court of Appeals for the District of Columbia Circuit, September term 1978, nos. 78-1337, 78-1849, 78-2206.

<sup>17</sup> For summaries of bank loans during the 1920s and recently, see John H. Wood, "Familiar Developments in Bank Loan Markets," *Economic Review*, Federal Reserve Bank of Dallas (November 1983) pp. 1-13.

<sup>18</sup> For a discussion of customer relationships before the 1930s, see Davis R. Dewey and Martin J. Shugrue, *Banking and Credit* (New York: Ronald Press Company, 1922), pp. 176-178.

<sup>19</sup> See Neil H. Jacoby and Raymond Saulnier, *Term Lending to Business* (New York: National Bureau of



Economic Research, 1942); and George S. Moore, "Term Loans and Interim Financing," in Benjamin H. Beckhart, ed., *Business Loans of American Commercial Banks* (New York: Ronald Press Company, 1959).

<sup>20</sup> See Wood, "Familiar Developments," table 3. For a discussion of the growth of variable-rate loans during the 1970s see Randall C. Merris, "Business Loans at Large Commercial Banks: Policies and Practices," *Economic Perspectives*, Federal Reserve Bank of Chicago, (November/December 1979), pp. 15-23.

<sup>21</sup> See Wood, "Familiar Developments," table 2.

<sup>22</sup> Klebaner, *Commercial Banking*, p. 82.

<sup>23</sup> For accounts of this and other early episodes of investment banking by commercial banks see Klebaner, *Commercial Banking*, pp. 80-84; and Larry R. Mote, "Banks and the Securities Markets: The Controversy," *Economic Perspectives*, Federal Reserve Bank of Chicago (March/April 1979), pp. 14-20.

<sup>24</sup> Edward J. Kelly, "Legislative History of the Glass-Steagall Act," in Ingo Walter, ed., *Deregulating Wall Street: Commercial Bank Penetration of the Corporate Securities Market* (New York: John Wiley & Sons, 1985).

<sup>25</sup> Mark J. Flannery, "An Economic Evaluation of Bank Securities Activities before 1933," in Walter, *Deregulating Wall Street*.

<sup>26</sup> Klebaner, *Commercial Banking*, p. 82.

<sup>27</sup> Klebaner, *Commercial Banking*, p. 83. Also see White, *Regulation and Reform*, pp. 38-42, for a discussion of the banking activities of trusts during this period.

<sup>28</sup> Quoted from Klebaner, *Commercial Banking*, p. 84.

<sup>29</sup> In fact commercial banks were never completely forced out of the securities business. The Banking Act of 1933 expressly authorized them to buy and sell securities for customer accounts, to purchase some types of securities for their own accounts, and to underwrite Treasury issues and general obligation municipal bonds. (See Mote, "Banks and the Securities Market," p. 17.)

<sup>30</sup> John J. Di Clemente, "What is a Bank?" *Economic Perspectives*, Federal Reserve Bank of Chicago (January/February 1983), pp. 20-31. Also see Walter H. Wriston, "Bank 'n' Burger" *Euromoney* (October 1981), pp. 53-54; and Jean M. Lovati, "The Growing Similarity Among Financial Institutions," *Review*, Federal Reserve Bank of St. Louis (October 1977), pp. 2-11.

<sup>31</sup> The peak number of offices (above 31,000) actually occurred in 1922, before widespread failures of banks in agricultural areas.

<sup>32</sup> Virgil Willit, "Introductory Note," in Willit, ed., *Chain, Group and Branch Banking* (New York: The H. W. Wilson Company, 1930), pp. 10-11.

<sup>33</sup> Klebaner, *Commercial Banking*, p. 126.

<sup>34</sup> The number of national bank branches rose from 26 in 1915 to 318 in 1925. (White, *Regulation and Reform*, p. 161) The 26 branches existing in 1915 were possible because in the early years of the National Bank Act the Comptroller of the Currency had allowed newly chartered national banks to keep their branches, a policy reversed after 1870.

<sup>35</sup> Virgil Willit, "The Rise of Multiple Banking in the United States," in Willit, *Chain, Group and Branch Banking*, p. 102.

<sup>36</sup> The Comptroller's office had in the preceding years adopted an increasingly lenient attitude toward national bank evasions of restrictions on their real estate loans, prompting the following analysis and criticism by the Deputy Comptroller:

Banking today is conducted upon widely different lines to what it was when the Bank Act of 1864 was enacted, and the law has not kept pace with the constantly changing conditions. Competition with trust companies and other banking institutions operating under State authority, more liberal in the scope of corporate powers conferred, forced many competing national associations doing business in the same locality into undertakings not contemplated by the national banking laws and foreign to the legitimate functions of a commercial bank. The powers conferred upon trust companies and savings banks to make loans upon real estate security, induced many national associations to make loans upon like security by resorting to indirect methods to evade the restrictions of the statute . . .

While the national banking laws should be construed as broadly and as liberally as possible consistent with the intent and spirit of the statutes, it is the sworn duty of an administrative officer to enforce an observance of the law as it exists and not endeavor to twist it out of shape either to meet his own views or the wishes of bankers as to what it should be.

(Thomas P. Kane, *The Romance and Tragedy of Banking*, New York, The Bankers Publishing Company, 1922, p. 90)

<sup>37</sup> For histories of legislation and regulations affecting branch banking and bank holding companies, see Klebaner, *Commercial Banking*; and Gerald C. Fischer, *American Banking Structure* (New York: Columbia University Press, 1968).



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