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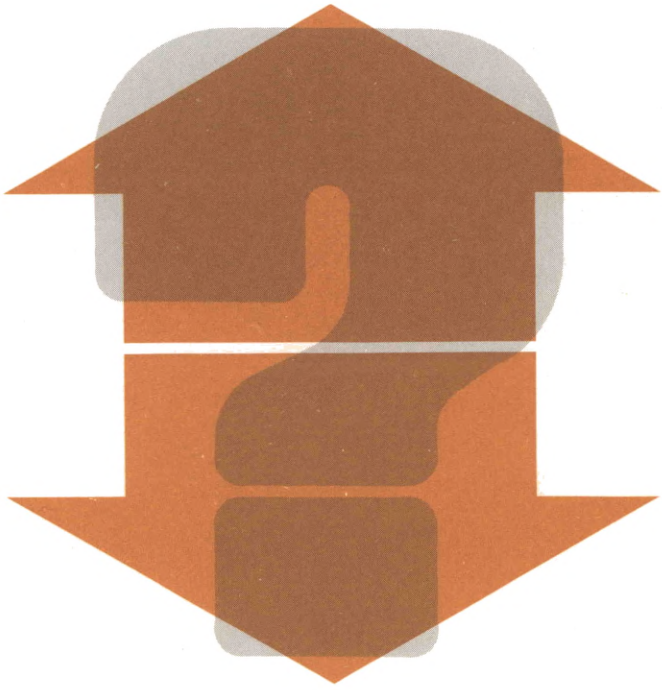

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Janice M. Moulton

. . . Thrifts have impacted the implementation of the MCA at the discount window and in merger analysis.

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The Federal Reserve Bank of Philadelphia is part of the Federal Reserve System—a System which includes twelve regional banks located around the nation as well as the Board of Governors in Washington. The Federal Reserve System was established by Congress in 1913 primarily to manage the nation's monetary affairs. Supporting functions include clearing checks, providing coin and currency to the banking system, acting as banker for the Federal government, supervising commercial banks, and enforcing consumer credit protection laws. In keeping with the Federal Reserve Act, the System is an agency of the Congress, independent administratively of the Executive Branch, and insulated from partisan political pressures. The Federal Reserve is self supporting and regularly makes payments to the United States Treasury from its operating surpluses.

Interest Rates: How Much Does Expected Inflation Matter?

by Herbert Taylor*

Many business analysts blame today's high interest rates on the public's anticipation of continued high inflation. Policymakers seem to share this view. The Reagan Administration contends that once people realize that its programs will reduce inflation, interest rates will drop. The Federal Reserve argues that its restrictive monetary policy will ultimately lower interest rates by demonstrating the Fed's resolve to maintain noninflationary money growth in the future. What is the nature of the link between interest rates and expected inflation? Is a decline in the expected rate of inflation likely to produce substantial reductions in interest rates?

According to one popular rule of thumb, market interest rates respond point for point to changes in the expected rate of inflation. So if everyone became convinced that inflation would decline from, say, 10 percent to 6 percent next year, interest rates on one-year securities would drop by four percentage points. But many analysts suspect that the relation of inflation expectations to interest rates is not that simple. Some argue that any change in the expected inflation rate works through the Federal income tax structure to change interest rates by even more. Others maintain that business taxes and other economic forces blunt the impact of inflation expectations on interest rates so that the change in interest rates is smaller than the change in the expected inflation rate.

Economists have examined the link between interest rates and expected future inflation using many different methods, and their estimates of interest rates' responsiveness to changes in the expected rate of inflation vary. On balance, though, the evidence suggests that interest rates rise and fall by somewhat less than changes in the expected inflation rate.

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INTEREST RATES HAVE BEEN RISING STEADILY . . .

SOURCE: Average six-month-ahead CPI inflation forecast from the Livingston Surveys, compiled at the Federal Reserve Bank of Philadelphia.

RECENT EXPERIENCE

Interest rates have been rising steadily since the late 1950s. Though both long-term and short-term rates have declined during recessions (see INTEREST RATES . . .), each subsequent expansion has carried them to still higher levels. Economists have often attributed the secular rise in interest rates to rising inflation expectations. Confirming the influence of inflation expectations on interest rates is difficult because the public's expectations are not directly observed. But available data do support a direct relation between interest rates and expected inflation: interest rates have risen in tandem with measures of expected inflation.

One widely used measure of the expected rate of future inflation is provided by Joseph A. Livingston, business columnist for the *Philadelphia Inquirer*. Every June and December, Livingston surveys a group of about 50 economists for their forecasts of inflation. The average of economists' six-month-ahead inflation forecasts shows a close correlation with the average interest rate on six-month Treasury bills for the survey month (see . . . INFLATION EXPECTATIONS). The six-month Treasury bill rate has been more volatile than Livingston's expected inflation measure, but the two have risen together over the last 20 years.[1]

The evidence suggests that changes in inflation expectations are at least partly responsible for movements in interest rates. But economists have used the tools of economic theory and statistical analysis to assess this linkage more precisely. In doing so, they have built upon the work of Irving Fisher, an American economist of the early twentieth century. Fisher clarified the basic link of interest rates to inflation expectations by distinguishing nominal from real rates of interest.[2]

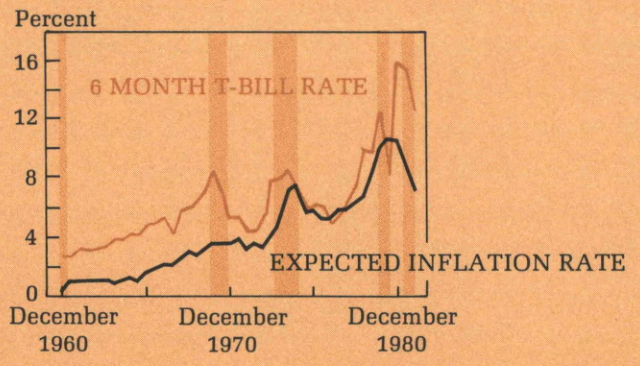
NOMINAL AND REAL RATES

Almost everybody borrows at one time or another. When consumers buy new homes, they borrow the money by taking mortgages.

[1]The simple correlation between the six-month Treasury bill rate and Livingston's six-month-ahead inflation forecast is 0.9.

[2]This discussion of Fisher is based on his book, *The Theory of Interest*, New York: Macmillan, 1930.

. . . ALONG WITH INFLATION EXPECTATIONS*



*Shaded areas indicate recessions.

When a business decides to purchase more modern equipment, it may issue notes or bonds to raise the money. When the Federal government's expenses outrun its tax revenues, the Treasury obtains the funds by selling securities.

Financial instruments such as Treasury bonds, commercial paper, and home mortgages are evidences of loans to the issuers of the securities. The borrower agrees to pay specified amounts of money later in exchange for use of the lender's money today. The nominal, or market, interest rate on these instruments states the rate at which the borrower must pay future dollars to get the current dollars. For instance, a corporation marketing one-year notes with a 15-percent interest rate is agreeing to pay $115 after one year for every $100 that the note-buying public lends it now.

But people are not as concerned about dollars, present or future, as they are about the goods and services those dollars command. Inflation erodes the purchasing power of money. Each percentage point of inflation means one percentage point less in goods and services that lenders will be able to purchase when a loan bearing a particular nominal interest rate matures. Consequently, lenders consider not only an asset's nominal rate of interest, but also the rate of inflation likely to prevail over the loan's term to maturity.

Fisher put the matter succinctly. He said that, in evaluating a loan, people do not consider the nominal rate of interest—the rate at which current and future dollars are exchanged. They consider the expected real rate of interest—the rate at which they expect to exchange current for future *goods and services*. The nominal rate of interest that an asset promises can be decomposed into the real rate of interest lenders expect plus an adjustment for the rate of inflation they expect over the asset's term to maturity:[3]

$$\begin{array}{ccccccc} \text{nominal} & & \text{expected} & & \text{expected} \\ \text{rate} & = & \text{real rate} & + & \text{future rate} \\ \text{of interest} & & \text{of interest} & & \text{of inflation} \end{array}$$

If, for example, everyone expects 10-percent annual inflation, then the corporation's 15-

[3]This breakdown of an instrument's nominal return allows for the impact of inflation on the value of the principal but not on the value of the interest. To be

percent one-year notes carry an expected real interest rate of 5 percent. Both the borrowing business and the lending public view the notes as offering roughly the same opportunity to exchange present for future goods as would notes with a 5-percent nominal interest rate were no inflation expected.

Fisher's argument underlies the view that nominal interest rates adjust point for point to changes in the expected rate of inflation. For when the public revises its inflation expectations, only an identical revision in prevailing nominal interest rates can preserve the expected real interest rate. And financial markets work to preserve the expected real interest rate, *provided* that the revised inflation expectations affect neither the willingness to borrow nor the willingness to lend at that expected real rate.

THE MARKET-CLEARING REAL RATE

The role of the financial markets is to settle on the expected real rate of interest at which the amount that savers are willing to lend is exactly equal to the amount that investors find worthwhile to borrow. Economists call this rate the *market-clearing* expected real rate of interest. The nominal rate of interest at which the loans are actually made, in turn, reflects this market-clearing real rate and the expected rate of inflation. For example, suppose that at an expected real rate of 5 percent savers are willing to lend, and investors are willing to borrow, $400 billion. If inflation is expected to run at 10 percent, the nominal interest rate will settle at 15 percent. This establishes the 5-percent expected real rate at which the $400 billion will be exchanged.

What happens when inflation expectations change? Suppose that the public suddenly anticipates a decline in the future rate of inflation from 10 percent to 9 percent. If the nominal rate stays at 15 percent, the expected real rate of interest on loans jumps from 5 percent to 6 percent. At a 6-percent expected real rate, lenders would want to lend more than $400 billion, but borrowers would want to take down *less* than they did at 5 percent. The excess supply of loanable funds puts downward pressure on the nominal rate of interest. In order to make loans, some potential lenders accepted lower interest rates and nominal rates begin to slip below 15 percent. If the change in inflation expectations has not changed people's willingness to borrow and lend $400 billion at the 5-percent expected real interest rate, then the nominal rate settles at 14 percent. This restores the expected real rate to 5 percent (14 percent minus 9 percent) and eliminates the excess supply of loanable funds. Generally, any change in the expected rate of future inflation would result in an equal change in the current nominal interest rate, *provided the market-clearing expected real interest rate remains the same.*

What complicates the relationship between nominal interest rates and inflation expectations is that when inflation expectations change, the market-clearing expected real interest rate *is not likely to remain unchanged.* People's willingness to borrow and lend at any particular expected real interest rate depends on many factors, such as savers' income and wealth, the potential productivity of investment projects, taxes, and uncertainty. If a change in expected inflation were to alter any of these factors, the expected real rate which at first had equated the supply and demand for loanable funds might no longer do so. The expected real rate would have to change in order to reestablish consistency between the plans of borrowers and lenders.

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precise, a $1 security bearing nominal rate n over a time when the inflation rate is expected to be p^e has an expected real return of r^e where

$$1 + r^e = (1 + n)/(1 + p^e).$$

This can be rearranged to

$$n = r^e + p^e + r^e p^e.$$

Since the product of two rate terms is relatively small, $r^e p^e$ is usually dropped.

Nominal interest rates would then have to adjust both for the change in expected inflation itself and for the movement in the market-clearing expected real rate that it induced. So nominal interest rates would no longer move one for one with changes in the expected inflation rate.

Since Fisher's early work, economists have discerned several channels through which a change in the expected rate of inflation affects the market-clearing expected real rate of interest. They have found that a change in the expected rate of inflation alters economic agents' willingness to borrow and lend at the original expected real rate, both because the change in expectations leads to changes in savers' income and wealth and because of tax laws.[4]

Changes in Income and Wealth. When the public's inflation expectations change, economic factors other than interest rates also adjust. Several economists have investigated how these adjustments could ultimately influence people's income and wealth, thereby affecting the expected real rate of interest.[5] They have shown that if a decrease in the expected rate of inflation were to lower real income or raise real (inflation-adjusted) wealth, the market-clearing expected real interest rate would rise. Nominal rates, therefore, would wind up falling by less than the decrease in expected inflation.

How do these income and wealth effects arise? Initially, a percentage point decline in the expected rate of inflation increases the expected real rate of interest associated with the original nominal rate. Savers are suddenly willing to lend more funds than investors want to borrow. In the financial market example, the nominal interest rate was the only variable that changed. Thus, the nominal interest rate had to decline by a full percentage point to restore the original market-clearing expected real rate and close the gap between the amount of funds demanded and supplied. But a change in inflation expectations also opens up a gap between the volume of goods and services demanded and supplied at the original interest rate. Depending on how the economy adjusts to close this gap, there could be changes in other determinants of borrowing and lending.

When anticipated inflation dips and the

[4] In this section, and throughout the article, the impact of changes in the expected future rate of inflation is discussed without any explanation of what changes people's inflation expectations. Two important issues should be mentioned in this regard.

First, people consider a diverse set of factors when they try to predict future inflation. Among these factors, the expected future course of monetary and fiscal policy is likely to play an important role in people's forecasts. The current stance of government economic policy, in turn, is likely to provide them a strong signal about the future direction of that policy. But the precise linkage between current policy actions and expected future inflation is not examined here.

Second, current policy actions do not affect current interest rates *only* by affecting inflation expectations. Shifts in policy can affect the market-clearing real interest rate, too, by altering the desired amount of private borrowing and lending at any particular real rate of interest. A complete analysis of the impact of monetary and fiscal policy on interest rates requires an analysis of policies' direct effects on interest rates as well as their expectations-related effects. Only the expectations-related changes in nominal rates are discussed here.

[5] The possibility of a wealth effect on expected real rates of interest was demonstrated by Robert A. Mundell, "Inflation and Real Interest," *Journal of Political Economy* 71 (June 1963), pp. 280-283. The conditions under which an income effect could arise have been clearly laid out by Thomas J. Sargent. See Thomas J. Sargent, "Rational Expectations, the Real Rate of Interest, and the Natural Rate of Unemployment," *Brookings Papers on Economic Activity* (1973:3), pp. 429-472, especially pp. 430 and 437-438; and also see "Anticipated Inflation and the Nominal Rate of Interest," *Quarterly Journal of Economics* 86 (May 1972), pp. 212-225, especially pp. 220-225. The process of adjustment of the economy to a change in expected inflation is also discussed in Martin J. Bailey, *National Income and the Price Level: A Study in Macrotheory*, second edition (New York: McGraw-Hill, 1971), especially pp. 74-82.

expected real rate rises at first, households want to increase their net supply of loanable funds; they would do that by economizing on their own purchases of goods and services. At the higher expected real interest rate, businesses want to cut back on their demand for funds, so they trim their expansion plans and, likewise, purchase fewer goods and services. In short, when the expected inflation rate falls, the excess supply of loanable funds at current nominal interest rates is accompanied by an excess supply of both consumption and investment items at current levels of output. Just as the excess supply of loanable funds puts downward pressure on interest rates, the excess supply of goods and services puts downward pressure on the output and prices of those goods and services. Suppliers of goods and services must choose between selling less of their products and lowering the prices they charge for them.[6]

Many economists argue that, at least in the short run, businesses tend to stand their ground on prices and cut their output. Workers' hours are shortened, overtime is eliminated, and if sales decline enough, some workers are laid off. Production facilities are used less intensively as second or third shifts are dropped, and perhaps some plants are shut down completely. As a result, the purchasing power that flows from businesses to households in the form of wages, rents, and profits falls. Faced with a reduction in income and unwilling to reduce current consumption by an equal amount, households reduce saving. In other words, they make smaller amounts of funds available for loans at any expected real rate of interest. Consequently, the expected real rate of interest need not drop *back to its original level* in order to choke off the excess supply of loanable funds. A higher expected real rate of interest now clears the market. Therefore, nominal interest rates decline by less than the drop in the expected inflation rate.

Of course, when faced with a drop in demand for their products, businesses could choose to maintain their output of goods and services by lowering prices or, at least, by reducing the rate at which their prices increase. Indeed, this is the response economists predict more businesses would make in the long run, once they have had a chance to adjust to a less inflationary environment. At that point, the reduction in expected inflation would leave real output, and hence real income, relatively unchanged, so the income effect would be smaller. But there could be a wealth effect on interest rates associated with the decline in actual inflation.

Lower prices for goods and services increase the purchasing power of money and, therefore, may make people already holding money in their portfolios feel substantially wealthier. The greater an individual's wealth, the less incentive he has to accumulate still more by buying securities or making loans. So increased wealth, like decreased income, reduces the supply of loanable funds at any expected real rate of interest. And the reduced supply of funds raises the market-clearing expected real interest rate. If the wealth effect is significant, a decline in the expected rate of inflation would be associated with a rise in the prevailing expected real rate of interest even if real income did not change. So nominal rates still would fall by less than the expected rate of inflation does.

In sum, a decline in the expected rate of inflation, to the extent that it reduces income or raises real wealth, tends to increase the market-clearing expected real rate of interest. With the expected real interest rate rising as the expected inflation rate falls, the nominal

[6]The precise combination in which nominal interest rates, the prices of goods and services, and the output of goods and services adjust to changes in the expected inflation rate also depends on how economic agents decide how much of their funds to hold in the form of money. For either the income or wealth effects to occur, the public's demand for money must be sensitive to nominal interest rates. We assume that this is the case here.

interest rate—the sum of the two—winds up declining less than point for point with expected inflation.

The Tax Angle. In this era of supply-side economics we routinely hear about the complicated maze of economic incentives and disincentives that the Federal tax code creates. So it comes as little surprise that changes in expected inflation work through the tax structure to alter the decisions of borrowers and lenders. But sorting out the role of taxes is no simple task. Different provisions of the tax system have contrary effects on the relation of interest rates to expected inflation. While Federal tax treatment of interest income and expenses tends to amplify the impact of changes in inflation expectations on nominal interest rates, for example, the tax treatment of depreciation on business plant and equipment tends to dampen this impact.

Because interest income is taxed, lenders are concerned about the expected real rate of interest *after taxes.*[7] But when the expected rate of inflation rises, an *equal* increase in the nominal rate preserves only the before-tax expected real rate of interest. That increase will not be sufficient to preserve the expected real rate of interest *after taxes* because part of the increase in the nominal interest income will be taxed away. The nominal rate would have to rise by *more than* any increase in expected inflation to keep the after-tax real rate unchanged. Conversely, when the expected rate of inflation falls, an equal decrease in nominal rates would preserve the lender's expected real rate of interest before taxes. Nominal rates would have to fall by more than the drop in expected inflation to keep the *after-tax* real rate unchanged. In other words, lenders have to lose in interest what they gain in smaller tax liabilities if their expected after-tax real rate is to remain the same when expected inflations falls (see INFLATION AND THE AFTER-TAX REAL RATE OF INTEREST overleaf).

To summarize: taxes on lenders' interest incomes tend to amplify the size of changes in nominal rates associated with changes in expected inflation.[8]

Other tax laws, particularly those concerning depreciation, dampen nominal rates' response to changes in expected inflation, however. Historical cost depreciation rules reduce businesses' incentives to invest and, hence, tend to depress expected real interest rates when the expected rate of inflation rises.

A profit-seeking business undertakes only those investment projects where the after-tax real returns are expected to exceed the after-tax real rate of interest it must pay for financing. Increases in the expected inflation

[7]The importance of the distinction between savers' expected real rate of interest before and after taxes was emphasized by Michael Darby, "The Financial and Tax Effects of Monetary Policy on Interest Rates," *Economic Inquiry* 85 (June 1975), pp. 266-276.

[8]Of course, what the expected real rate and the volume of lending will be when expectations change also depends on how borrowers are affected. But the income tax effects on borrowers complement those on lenders. The interest that lenders count as taxable income, borrowers count as a tax-deductible expense. So if, for example, borrowers and lenders are subject to the same tax rate, the after-tax real rate of interest that lenders earn is equal to the after-tax real interest rate that borrowers pay. In that case, when the expected inflation rate rises, borrowers are willing to pay the more than proportionate increase in nominal rates that lenders require to maintain their original level of lending. When the expected rate of inflation falls, lenders are willing to accept precisely the lower expected real rate that borrowers require to maintain their original level of borrowing. If borrowers and lenders are subject to different tax rates, then, whatever the expected before-tax real rate of interest, each faces a different expected after-tax real rate. Nonetheless, the tax provisions for interest income and expense allow borrowers to pay a higher real rate of interest when expected inflation rises and allow lenders to accept a lower real rate when expected inflation declines.

For a detailed discussion, see Niels Christian Nielson, "Inflation and Taxation," *Journal of Monetary Economics* 7 (1981), pp. 261-270.

rate work through depreciation laws to reduce the after-tax real return expected on each potential investment project (see INFLATION AND DEPRECIATION). That lower expected after-tax return reduces the incentive to finance the acquisition of new plant and equipment by borrowing at any particular expected real rate of interest. And the reduced willingness to borrow puts downward pressure on the market-clearing expected real rate of interest. With the expected inflation rate higher but the prevailing expected real rate lowered by the decreased demand for funds, nominal interest rates wind up rising by less than the expected rate of inflation. Conversely, a decrease in expected inflation raises the after-tax real return on investments through this depreciation channel. This, in turn, increases businesses' willingness to borrow and raises the market-clearing real rate. As a result, nominal interest rates fall by less than the decline in the expected rate of inflation.[9]

[9]Some of the ways in which inflation affects investment via tax rules are discussed by Richard W. Kopcke, "Why Interest Rates Are So Low," *New England Economic Review*, July/August 1980, pp. 24-33.

INFLATION AND THE AFTER-TAX REAL RATE OF INTEREST

Since nominal interest income is taxed, a lender's expected real rate of interest after taxes is roughly

expected real rate of interest after taxes	=	(1 - tax rate)	x	nominal rate of interest	-	expected rate of inflation

where the tax rate is the percentage of his income that he would have to pay in taxes.* Consider the individual earning 15-percent nominal interest on a loan and anticipating 10-percent inflation, so that he expects to earn a 5-percent real rate before taxes. If he is in the 20-percent tax bracket, his expected real return after taxes is 2 percent [=(1 - .2) x 15 percent - 10 percent].

Suppose that his view of the future changes and he expects 11-percent rather than 10-percent inflation. Now a loan bearing a 16-percent nominal interest rate would offer him the same 5-percent expected real rate before taxes but it would provide only 1.8-percent [=(1 - .2) x 16 percent - 11 percent] after taxes. In order to maintain his original 2-percent after-tax real return, the individual would have to make a loan with a 16.25-percent nominal interest rate.

On the other hand, suppose that the individual's inflation expectations fall and he anticipates 9-percent rather than 10-percent inflation. A loan with a 14-percent nominal yield would offer him the same 5-percent expected before-tax real return that a 15-percent nominal yield did previously, but it would offer a higher real return after taxes at 2.2 percent [=(1 - .2) x 14 percent - 9 percent]. In fact, this saver could settle for a loan bearing only a 13.75-percent nominal yield, and still maintain his original expected after-tax real rate of interest at 2 percent [=(1 - .2) x 13.75 percent - 9 percent].

In short, maintaining expected after-tax real interest rates in the face of changing inflation expectations requires more than equal changes in nominal interest rates.

*When deciding on the purchase of an asset, the lender must consider his marginal tax rate, that is, the additional tax liability as a percentage of the additional interest income. How much of his interest income a taxpayer must surrender at the margin depends upon the precise source of the income and his overall income level, among other factors. The present discussion assumes that the saver does not expect inflation to alter his marginal tax rate. In reality, of course, higher inflation raises nominal income and hence pushes people into higher tax brackets. Allowing for so-called bracket creep would only reinforce the argument presented here.

INFLATION AND DEPRECIATION

The firm's net return from an investment project is the increased sales revenue that it generates less the increased production costs it creates. The net real revenues from the project would not be affected by a general inflation; both sale and production costs would rise at the same rate. Theoretically, with a fixed tax rate, real net revenues after taxes would not be affected either; both the portion of net revenue paid in taxes and the portion left after taxes would grow at the rate of inflation. But, in fact, inflation does reduce real net revenues after taxes because the depreciation laws preclude the firm from fully adjusting its production costs for inflation when computing its tax bill.

As a piece of capital—such as a new machine, a new truck, a new plant—is being used, its ability to produce is being run down (depreciated) and, ultimately, will be exhausted. The cost to the firm of using up the capital's stream of productive services is the price it will have to pay to replace the capital when it has worn out completely. But in computing its taxable income, the business is allowed to deduct an amount based on the original purchase price of the capital. If inflation is high over the course of the capital's useful life, its replacement cost will be high relative to its original or historical purchase price, so the taxable income from the project will be overstated and the project's after-tax real return will be cut. If inflation is low, capital's replacement cost will be closer to its historical purchase price and depreciation rules will not distort after-tax real return as much. So, the higher the rate of inflation a business expects, the lower the after-tax real rate of return it expects on any particular project, and, consequently, the lower the expected after-tax real rate of interest it is willing to pay for financing.

In short, historical cost depreciation rules for tax computations tend to push expected inflation and the market-clearing expected interest rate in opposite directions. So depreciation rules, by themselves, imply less than a point-for-point adjustment of nominal rates to changes in expected inflation. On balance, the tax system may, as some argue, foster a more than point-for-point response of nominal rates to changes in expected inflation. Because of depreciation rules, however, the response is not as great as the income tax rules *alone* imply.

HOW MUCH INFLUENCE DO INFLATION EXPECTATIONS HAVE ON INTEREST RATES?

When the public expects a decline in the future rate of inflation, Federal income tax provisions work toward a more than equal reduction in nominal rates. On the other hand, income and wealth effects and the tax laws concerning depreciation work toward less than equal reduction in nominal interest rates. What is the net result? According to most empirical studies, the latter set of forces dominates.

Economists have made many attempts to estimate just how much of an impact changes in the expected inflation rate have on interest rates. Some investigators have found that inflation expectations have a substantial impact. For example, a 1979 study by John Carlson suggests that each percentage point change in the expected rate of inflation alters nominal interest rates by as much as 1.3 percentage points. In a 1975 study, Eugene Fama found that nominal rates respond point for point to changes in inflation expectations. Most often, though, analysts have found that nominal interest rates respond less than point for point to changes in the expected rate of inflation. According to investigations by Tanzi, by Yohe and Karnosky, and by Anderson and others, for example, each percentage-point change in the expected inflation rate generates a change in nominal rates between .8 and .9 of a percentage point. Benjamin Friedman reports in a 1980 study that a percentage-point change in expected inflation

produces as little as a .65 percentage-point change in nominal interest rates.[10]

These findings support the view that when the expected rate of inflation changes, the income, wealth, and depreciation effects of the change dominate the income tax effects, and, as a result, the expected real rate of interest changes in the opposite direction. So when the expected rate of inflation falls, the expected real rate of interest rises at least for a while. The nominal rate, the sum of the expected real interest rate and the expected inflation rate, falls, but not by as much as expected inflation.

CONCLUSION

Everyone would like to see lower interest rates. Both the Administration and the Federal Reserve have attempted to formulate policies which will reduce current inflation and hence people's expectations about future inflation. Lower inflation expectations, it is hoped, will mean lower interest rates.

The path to lower interest rates is not necessarily short or direct. Expectations of high inflation have been building up for 20 years and may not change quickly. Moreover, policy actions do not affect interest rates only by affecting inflation expectations. Monetary and fiscal policy can directly affect the market-clearing real interest rate, too. In fact, many argue that the current mix of fiscal and monetary policies, while intended to lower inflation and inflation expectations over the long run, has driven up market-clearing real interest rates, at least in the short run.

Nonetheless, both economic theory and statistical evidence give reason to believe that interest rates are closely related to inflation expectations. When the expected rate of inflation is revised downward by a percentage point, interest rates should fall by nearly a percentage point. So if the public comes to expect inflation of 5 percent instead of 10 percent—and if other factors do not drive up real interest rates—nominal interest rates should decline by about 4 or 4 1/2 percentage points. Compared to the level of interest rates in 1981 and early 1982, that would be a welcome change.

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[10]References in this section are to:

Paul A. Anderson, Thomas Sargent, and Carol Thistlethwaite, "The Response of Interest Rates to Expected Inflation in the MPS Model," *Journal of Monetary Economics* 1 (1975), pp. 111-115.

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Implementing the Monetary Control Act in a Troubled Environment for Thrifts

by Janice M. Moulton*

Since the Federal Reserve was created in 1913, it has been a major regulatory and supervisory body of the banking system. In this role, the Fed has helped to assure the safety and soundness of the banking system by lending to institutions with liquidity needs and by regulating merger activity in banking markets.

The Fed's traditional role in lending and regulation has been altered, however, by the Depository Institutions Deregulation and Monetary Control Act (MCA) which was passed by Congress in March 1980. This legislation had several broad objectives, which included improving the Fed's monetary control procedures, expanding thrift institution powers, and opening the financial markets to more competition. The latter two considerations, in particular, have raised some interesting implementation issues.

The MCA became law during a period of sustained high interest rates and fast-changing financial markets. These developments were quite troublesome for thrift institutions, especially savings and loan associations and mutual savings banks. Indeed, the plight of the thrifts has had a noticeable impact on the Fed's implementation of certain aspects of the MCA.

There are two broad areas—discount window access and mergers among financial

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institutions—where the problems of the thrifts have been particularly relevant to the Fed's post-MCA decisions.[1] The MCA opened the discount window to all depository institutions—commercial banks, savings and loans, mutual savings banks, and credit unions—that maintain reserves at the Fed, and the Fed has established a new extended credit program for longer term loans to financially troubled institutions. The financial weakness of the thrifts has raised some tough issues concerning the administration of the Fed's lending program. In the merger area, the Fed has been forced to rethink the question of the extent of competition between banks and thrifts. The MCA allowed expanded powers for the thrifts, making them more like commercial banks. At the same time, the financial problems of the thrifts have resulted in a spate of thrift mergers. While the question of bank holding company acquisition of thrifts would have inevitably surfaced in light of the MCA, the sense of urgency surrounding the difficulties in the thrift industry forced the Fed to face the bank-thrift merger question in short order.

AN EXPANDED LENDING RELATIONSHIP AT THE DISCOUNT WINDOW

The Federal Reserve has a long history of lending to member commercial banks. The Fed extends assistance, possibly for an extended period of time, when a commercial bank finds that its usual sources of funds are not available. Under the MCA, borrowing privileges have been extended as well to nonmember commercial banks (CBs), savings and loans (S&Ls), mutual savings banks (MSBs), and credit unions (CUs). The relevant provision states that "any depository institution in which transactions accounts or nonpersonal time deposits are held shall be entitled to the same discount and borrowing privileges as member banks." Moreover, the Fed is to "take into consideration the special needs of savings and other depository institutions for access to discount and borrowing privileges consistent with their long-term asset portfolios and the sensitivity of such institutions to trends in the national money markets." In other words, the Fed is directed to open its discount window to nonmember depository institutions on the same basis as to member banks.[2] Further, the thrifts appear to be singled out by the language of MCA as eligible for longer term borrowing from the Fed.

Current Status Report. The Fed has reformulated discount window guidelines to allow thrift access to its various programs: adjustment credit, seasonal credit, and other extended credit (including special assistance). To date, most thrift borrowing has been focused in the last program.[3]

Short-term credit (adjustment credit) has traditionally encompassed the bulk of discount window borrowing. The district Reserve banks can grant adjustment credit at their discretion to a bank or thrift which temporarily does not have access to its usual source of funds.[4] In the August-March period,

[1] Another major area of the MCA—Fed pricing and provision of services—was less affected by the troubled financial environment and is not covered in this article.

[2] See page 1 of "The Federal Reserve Discount Window," published by the Board of Governors of the Federal Reserve System in October 1980. I would like to thank Bill Stone, Vice President and Lending Officer, and Bernie Beck, Manager, Credit, at the Philadelphia Fed for helpful discussions on the discount window.

[3] The official language used in the pamphlet "The Federal Reserve Discount Window" labels the programs as follows: (a) short-term adjustment credit and (b) extended credit, including (1) seasonal credit and (2) other extended credit (special assistance to a particular depository institution and "other extended credit" to a class of institutions).

[4] Guidelines for adjustment credit state that appropriate reasons for borrowing include an unexpected loss of deposits, a surge of credit demands, or a shortfall in

short-term borrowing from the Fed (about 70 percent of total borrowing) has averaged about $850 million nationwide and $50 million for the Third District. Commercial banks have accounted for nearly all of the adjustment borrowing; short-term borrowing in the system by thrifts has averaged less than 1 percent. Although short-term borrowing in the Third District has been modest, several local MSBs, S&Ls, and CUs have completed the necessary paperwork and could borrow on short notice.

One of the more difficult aspects of discount window policy under MCA has been deciding what the Act means by the "same" borrowing privileges for nonmember institutions. It has long been a basic tenet of adjustment discount policy that a borrower normally should seek other reasonably available sources of funds before turning to the window for assistance. In the case of S&Ls, MSBs, and CUs, the Fed has interpreted the available sources of funds to include credit from special industry lenders, such as the Federal Home Loan Bank System, credit union centrals, or the Central Liquidity Facility of the National Credit Union Administration (NCUA).[5] An S&L in Philadelphia that is a member of the Federal Home Loan Bank System, for example, would be expected to seek assistance from its regional Federal Home Loan Bank in Pittsburgh before approaching the Philadelphia Fed's discount window. But if the S&L needs funds on short notice and cannot gain access to the FHLB in timely fashion, the Fed may grant credit on a temporary basis. The Fed would expect to be repaid the next business day once the institution again has access to its usual sources of funds. Thus, effectively, most nonbank depository institutions are limited to overnight loans from the discount window for adjustment credit.

Although adjustment credit accounts historically for the great bulk of discount window borrowing, extended or longer term credit has increased significantly since thrifts have gained access to the discount window. Three types of extended (longer term) credit are granted by the Fed—seasonal credit, special assistance credit, and what the Fed calls "other extended credit." Seasonal credit is available to institutions with earnings that vary at different times of the year, such as banks at the seashore or in agricultural areas. These institutions often experience large seasonal fluctuations in flows of funds that they can't deal with in another way. To date, thrifts have not used seasonal credit. The seasonal credit program is available, however, should they qualify. Special assistance credit is available to an *individual* bank or thrift institution in exceptional circumstances. Commercial banks have been the only borrowers under special assistance to date, but this program is also available to thrifts with problems unique to a particular institution.

The other extended credit program, in contrast, is targeted toward a *class* of institutions affected by a general situation, such as changing money-market conditions or deposit disintermediation. This program was implemented by the Fed in August 1981 when many thrifts appeared to be facing serious financial problems. Though, in principle, other extended credit is available to banks, the Fed contended that S&Ls and MSBs faced special difficulties as a class of institutions

reserve requirements. Reasons not considered appropriate include supporting a program of aggressive loan expansion or taking advantage of a differential between the discount rate and other rates for alternative sources of funds. Nor is it considered appropriate to substitute discount borrowing for other short-term liabilities that are sensitive to interest rate changes, such as money-market certificates.

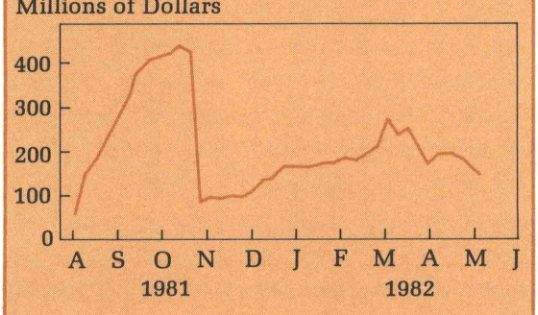
[5] S&Ls and MSBs that are members of the Federal Home Loan Bank System are eligible to borrow from one of their regional banks, such as the Federal Home Loan Bank in Pittsburgh. S&Ls and MSBs that are *not* members of the Federal Home Loan Bank System now have the Fed as their primary industry lender. Credit unions have access to the Central Liquidity Facility or to credit union centrals, which serve a similar function and have been formed recently in many areas of the country.

because of their long-term asset portfolios and their sensitivity to yield trends in national money markets. Since the program has been inaugurated, thrift borrowings from the Fed under the other extended credit program have fluctuated considerably, from a high of around $450 million to a low of about $60 million (see WEEKLY THRIFT BORROWINGS . . .); MSBs have borrowed more than S&Ls. Thrift institutions in the Third District have borrowed a substantial portion (about 20 percent) of this long-term credit.

The protocol for borrowing under extended credit is similar to that for adjustment credit: nonbank depository institutions are expected to make a reasonable effort to seek alternative sources of funds before coming to the discount window. When the Fed considers such applications, it consults with the appropriate regulatory agency—say, the regional FHLB. The thrift institution is evaluated in terms of its particular circumstances and ability to repay. Typically the Fed will share the loan on, say, a 50-50 basis with the FHLB. But if a check with the FHLB shows that the thrift is close to insolvency, the Fed may be reluctant to participate and may suggest that the FHLB take full responsibility for the loan. Thus far, the individual Reserve banks appear to be administering the other extended credit program on a flexible case-by-case basis.

What Comes Next? As the Fed tries to further implement the provisions of the MCA and to anticipate thrift borrowing needs, it will face a range of issues that will require ongoing consultation with other regulatory bodies.[6] One such issue is the *extent* of Fed lending under the other extended credit program: will this lending grow or shrink? Fed lending to thrifts thus far is small compared to the volume that thrifts may want should their condition continue to worsen. Weekly thrift borrowing at the discount window amounted to $450 million at its peak, most of it to MSBs. This amount is a little smaller than the $630 million weekly average in short-term funds (one year or less) lent by the FHLBs during their peak month to the S&Ls. Over the August-March period, these FHLB short-term advances to members totaled about $12 billion, nearly twice the $7 billion the Fed lent to thrifts. The limits of the Fed's commitment to lend to troubled thrift institutions will depend partially upon the

WEEKLY THRIFT BORROWINGS OF EXTENDED CREDIT FROM THE FED VARY WIDELY



SOURCE: Board of Governors, System "Weekly report of discount window borrowing."

[6]The Fed also communicates directly with thrifts via advisory boards. Each district Reserve bank already has a nine-person Board of Directors—three bankers elected by member banks, three business people also elected by members, and three nonbankers appointed by the Board of Governors to represent the public interest. These district boards vote on discount rate changes and oversee the district Reserve banks' activities. But in addition, the district Reserve banks have established their own communication networks with thrifts. The Philadelphia Fed has established four Advisory Boards—one for nonmember commercial banks, one for S&Ls, one for MSBs, and one for credit unions—to enhance communication and feedback between the Philadelphia Fed and each group.

availability of funds from other primary industry lenders. In this regard, the FHLBB and the Fed have established a basis for consultation, albeit an evolving one. As yet, the Fed and the Central Liquidity Fund—the primary industry lender for national credit unions—have not established a formal consulting relationship. But even if credit unions should become active borrowers, they probably would account for only a small portion of long-term borrowings because of their smaller average size.

Another lending issue concerns the potential conflicts that might arise from the different lending rates and policies of the primary lenders. S&Ls consider the Fed to be a more restrictive lender than the FHLB; the Fed lends primarily for temporary liquidity purposes whereas the FHLB lends for loan-expansion purposes as well. Despite the restrictions, however, thrifts at times will have a strong incentive to borrow from the Fed. The Fed's discount rate moves up and down, but it is not tied in any mechanical way to a market rate. Overall considerations of monetary policy play the fundamental role. Especially during periods of high interest rates, the Fed's discount rate often is below market (but on some occasions the discount rate has been above the market rate). In contrast, the district FHLBs sell bonds and borrow in the market at close to a competitive rate and then advance the monies with a 1/4-percent premium or so to the S&Ls. Thus if the Fed frequently maintains the discount rate well below market rates, thrifts will argue for relaxing Fed guidelines to allow them greater borrowings.

In sum, the Fed has made substantial progress in implementing access to the discount window for all depository institutions. Guidelines have been established for the other extended credit program, and the Fed has developed a consulting relationship with the FHLBs. The program is basically in place. The difficulties of the thrift industry, although the catalyst for the extended credit program, have not resulted as yet in massive borrowings. Nor are large borrowings likely to occur, because the Fed is concerned that its money-growth targets not be jeopardized. Large borrowings could create money-supply control problems that would conflict with the Fed's monetary policy. Still, the Fed is ready to cooperate with other primary industry lenders and has established a continuing basis on which to work toward resolving differences among the regulatory agencies. These relationships should prove useful as financial institutions and markets become more closely integrated.

THRIFT PROBLEM PROMPTS A QUICK RECONSIDERATION OF MERGER QUESTIONS

By opening the discount window to thrifts, the MCA acknowledged that these institutions have become more like commercial banks. But the Act went considerably further in this regard. Thrifts received expanded asset powers; they also faced a dismantling of their regulation-preserved ability to pay higher rates on deposits than banks. These provisions of the MCA clearly set in motion forces that increased financial integration. Eventually, all these factors would have forced the Fed to face up to a host of new regulatory issues. But once again the plight of the thrifts forced the Fed's hand in these matters.

One major way that the Fed is involved in regulation of financial institutions is through its role in the merger process. The Fed has responsibility for approving bank mergers in which the surviving bank is a state member bank, for approving bank holding company formations and the acquisition of banks by holding companies, and for approving nonbank activities of bank holding companies. Prior to MCA, the Fed for the most part deemphasized the presence of thrift institutions in reaching these decisions. But now there are two kinds of mergers in which the Fed might need to take account of thrifts and their

new powers: bank-thrift mergers and bank-bank mergers.

Bank-Thrift Mergers. Both the expanded asset powers of the thrifts and their generally troubled financial state have created new incentives for mergers of banks with thrifts. These mergers can be accomplished when banks or bank holding companies acquire thrifts or when savings and loan holding companies acquire banks. Currently, federally chartered S&Ls can branch statewide in all states. State chartered S&Ls can branch according to state law, which allows statewide branching in most cases, such as Pennsylvania. Moreover, they may merge across state lines under emergency conditions. Several mergers among S&Ls spanning large geographical areas have taken place.[7]

The Fed began to reconsider bank-thrift mergers when the thrift industry became distressed. As the regulator of bank holding companies, the Fed has statutory authority under the 1970 Amendments to the Bank Holding Company Act of 1956 to permit bank holding companies to acquire thrifts. Fed policy to date, however, states that the operation of a thrift, while an activity closely related to banking, is not an activity that is a proper incident to banking. Thus the Fed has not listed acquisitions of thrifts among the permissible activities of bank holding companies. In April 1981 the Fed asked for comment on whether savings and loan activities might be considered a proper incident to banking. The response from the Justice Department stated that the activities of thrifts are indeed closely related to banking. They also supported bank purchases of thrifts in localities other than a bank's home state. The Fed studied the matter further at the request of Senator Garn, Chairman of the Senate Banking, Housing, and Urban Affairs Committee, and released a staff report which suggested that "in general, policy and economic considerations that have been the basis for precluding bank holding companies from acquiring thrifts have diminished or are relatively insignificant."[8] More recently, the Comptroller and FDIC submitted studies favoring cross-industry acquisitions. At this point, however, the Board's policy does not favor acquisitions of thrifts except under restricted circumstances.[9]

This issue of bank-thrift mergers has surfaced in one form or another in practically every piece of recent U.S. banking legislation. In testimony so far the Fed has tried to make a distinction between emergency circumstances and normal times. Because of the distressed condition of the thrifts (and some banks), the *Fed did support the cross-industry acquisition of thrifts under emergency circumstances.* If the emergency should recede, however, the issue of bank-thrift mergers will still be with us. The Fed is reluctant to address this issue on its own and is looking to Congress for guidance and clarification. Many pieces of legislation have been proposed, both at national and state levels, to relax the branching constraints of the McFadden Act or the product constraints of the Glass-Steagall Act (see LEGISLATIVE INITIATIVES).

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[7]For example, Citizen Savings and Loan of San Francisco, a subsidiary of National Steel Corporation, acquired an S&L in New York City and an S&L in Miami Beach.

[8]Cover letter from Paul Volcker to Chairman Garn, September 21, 1981. The study, titled "Bank Holding Company Acquisition of Thrift Institutions," was written by Eisenbeis, Cleaver, Bleier, Savage, and others on the staff of the Board of Governors.

[9]On April 5, 1982 the Federal Reserve Board approved the emergency merger of Scioto Savings Association, Columbus, Ohio, and Interstate Financial Corporation, owner of the Third National Bank and Trust Company, Dayton, Ohio. The merger was approved under Section 4(c)(8) of the Bank Holding Company Act, which allows bank holding companies to operate nonbank subsidiaries. Scioto will continue to operate as an S&L, except for some restrictions, such as adherence to Ohio bank branching laws.

LEGISLATIVE INITIATIVES

The Fed has a strong interest in legislation that affects its policies, and the Chairman testifies frequently before Congress on such legislation. The Fed also consults with other regulatory authorities on different legislative approaches. On the *national level,* the Fed supported the so-called Regulators' bill. This bill had provisions to facilitate mergers of troubled S&Ls across state lines and across industries, including bank acquisitions of thrifts in emergencies, provided a particular sequence is followed. Other provisions authorized the FDIC and FSLIC to aid a broader class of distressed institutions, increased the drawing authority of these insurance funds from the Treasury, and required both FSLIC and Reserve Board approval of a bank holding company acquisition of an S&L. The Regulators' bill has met with considerable opposition from various industry groups.

An alternative approach under consideration by Congress is embodied in the Garn bill (Restructuring bill). This broader, more comprehensive bill evolved from two major perspectives. The first was the FHLBB's desire, backed by the Administration, to provide thrift institutions with full banking powers. The second was to give more powers to banks to enable them to compete better with nonbanks. The Garn bill is wide ranging: it permits bank acquisitions of distressed thrifts; it allows banks and S&Ls to operate mutual funds and grants federally chartered thrifts the power to make commercial loans and buy commercial paper; it preempts state consumer usury ceilings and state due-on-sale clauses; it increases the insurance on IRA/Keogh accounts. Before this bill makes much progress, however, there will have to be many compromises made on all sides.

The Fed also is watching closely the Bank Holding Company Deregulation Act of 1982, introduced by the Administration. This bill expands the powers of banks and securities firms to enter each others' traditional lines of business. Bank holding companies could enter the securities business through securities affiliates subject to the same regulations as other participants in those markets. Hearings on this blockbuster bill will encompass all the issues of Glass-Steagall.

On a *statewide basis,* changes are also occurring on the legislative front in the Third District. The Pennsylvania legislature has just passed a bill relaxing the state's one-bank holding company and contiguous-county branching laws. The new bill permits bicontiguous county branching and allows multibank holding companies statewide.* The holding company provision is phased in. It allows bank holding companies to control up to four banks within the first four years and to acquire up to four banks in the second four-year period, with unrestricted acquisition thereafter. Home office protection is accorded some banks in small towns. In New Jersey, which permits statewide branching, multibank holding companies already exist. In Delaware, the Financial Center Development Act, passed in early 1981, allows out-of-state bank holding companies to enter *de novo* as brand new institutions. New banks created by out-of-state holding companies must meet certain requirements and not compete directly in the local retail banking markets. The attraction to Delaware stems from the elimination of all usury ceilings and a graduated tax system which favors larger banks. So far, several institutions based outside Delaware, including several large New York banks, have established operations in Delaware or have announced plans to move there.

*Contiguous county branching allows a bank headquartered in a given county to branch into all adjacent counties. Bicontiguous county branching would extend branching to the next adjacent county as well.

Bank-Bank Mergers. Even in cases of bank or bank holding company mergers, thrifts and their expanded powers under the MCA have influenced Fed merger policy. When the Fed considers the regulatory approval of *bank merger applications,* it is both bound by legislation and constrained by court precedent. Banks are formally subject to state branching laws under the McFadden Act and require the approval of the proper regulatory authority, Federal and state, to merge within a state. The existing court

cases address important concepts, such as potential competition, and sometimes raise questions about the rationale for the existing institutional restrictions.[10] To date, however, the courts have not fully reflected the rapid changes in the financial scene; concepts like banking as a separate line of commerce still are upheld by the courts and thus may constrain the Fed.[11] The line of commerce definition was enunciated in the *United States versus Philadelphia National Bank* decision in 1963, when the Court ruled that commercial banking is sufficiently distinct that other financial institutions are not able to compete with banks in the same markets. Thus in the past, consideration of the competitive effects of a bank acquisition has focused primarily on the relevant *commercial bank* market data, with market shares of deposits used as measures of concentration. Other institutions, financial or otherwise, have not been considered to be significant bank competitors. The courts have been moving somewhat in the direction of including thrifts as competitors. In the Connecticut National Bank case of 1974, for example, the Connecticut court specified the terms on which thrifts might be included in the regulatory decision process.[12] But the courts have not set a strong or systematic precedent for explicitly considering the importance of thrifts in the relevant market. Few recent cases have addressed directly the presence of thrift competition in banking markets, but the issue is sure to come up again.

Although the absence of definitive court cases since 1974 has increased uncertainty over how to assess thrift competition with banks, the regulatory authorities have felt compelled to move ahead on their own. The Fed has considered several alternative ways to include competition from thrifts in the market analysis. One approach taken was to include thrifts in the markets when thrifts are substantial competitors in certain product lines or for particular customer classes.[13] The Fed also has begun to make subjective judgments to identify some markets where thrifts should be included in market-share data, citing the size and deposit-taking role of thrifts as well as their expanded powers.[14]

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[10]Fed guidelines for bank acquisitions, for example, are being reevaluated to streamline the applications process. A market extension acquisition (acquisition of a bank in a market in which the acquiring firm is not already represented) would be subject to intensive scrutiny when all of the following circumstances are met: (1) the three-firm deposit concentration ratio is 75 percent or higher in the market of the firm to be acquired; (2) there are six or fewer probable future entrants into the market; (3) the market of the firm to be acquired is in an SMSA and is attractive for entry; (4) the firm to be acquired is one of the three largest in the market and has 10 percent or more of deposits. New Justice Department merger guidelines will be a factor in this reevaluation.

[11]For further discussion, see Robert A. Eisenbeis, "Regulatory Agencies' Approaches to the 'Line of Commerce'," *Economic Review*, Federal Reserve Bank of Atlanta, April 1982.

[12]In United States v. Connecticut National Bank, 418 U.S. 656 (1974), the Supreme Court acknowledged that savings banks were "fierce competitors" of commercial banks in some markets. Yet it overturned a lower court ruling that thrifts should be included in the line of commerce. The Court reaffirmed that commercial banks offer a unique cluster of services and that banks and mutual savings banks do not compete significantly for *commercial* accounts. The Court also stated, however, that it may be "unrealistic to distinguish them from commercial banks for purposes of the Clayton Act" at a later stage when "savings banks become significant participants in the marketing of bank services to commercial enterprises." For further discussion on the general topic of thrift competition see Michael Trebing, "The New Bank-Thrift Competition: Will It Affect Bank Acquisition and Merger Analysis?" *Review*, Federal Reserve Bank of St. Louis, February 1981, and the April 1982 *Economic Review*, Federal Reserve Bank of Atlanta.

[13]Bank Holding Company Letter #198, issued by the Board of Governors in June 1980, states the Board's position on consideration of thrifts in competitive analysis.

[14]The difficulty with including thrifts in market share data is that concentration of total deposits would remain the key competitive factor in considering whether mergers of any two banks would restrain trade. This

Essentially the Fed has taken the first step in recognizing that commercial banks may respond to the way thrifts price their product lines and in assessing the significance of alternative suppliers of financial services.[15]

Thus the Fed is reconsidering its position on mergers of bank holding companies with thrifts or banks and it is attempting to develop new analytical tools and concepts of competition in market analysis.[16]

CONCLUSION

Financial institutions and markets have changed so fast that the Fed has faced many difficult questions when implementing the provisions of the MCA and responding to today's financial environment.

The S&Ls, MSBs, CUs, and nonmember commercial banks that make up the Fed's expanded constituency have been given access to the discount window. Given the recent high inflation rates and the difficulties of the thrift institutions, the other extended credit program of the discount window probably will be operating for some time. The *extent* of the Fed's involvement still remains to be worked out, but the basic commitment to all depository institutions has been established.

In assessing mergers, the Fed has moved to include consideration of bank competitors, particularly thrifts, in banking markets. The implications of cross-industry mergers are being explored. The evolution of the different regulatory approaches and the issue of how to treat thrift competition also may be shaped by the courts. And the Fed is working closely with other regulatory agencies and with Congress. Many different legislative and regulatory approaches have been suggested, and it will take time to sort them all through. With continued change expected in financial institutions and the markets they serve, one thing is certain—life at the Fed won't be dull.

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approach implicitly lumps all the product lines of banks and thrifts into a single aggregate deposit measure of market share. A second approach under consideration would be to include thrifts, and possibly other competitors, and to disaggregate the product lines. For example, in addition to demand deposits and savings deposits, there might be consumer loans, commercial loans, NOW accounts, trusts, and other product lines in which banks compete. Although the unbundling of products inherent in this second approach may be more accurate in looking at banks and thrifts as multiproduct institutions, an overall assessment of competition could be difficult. Weights would have to be given to the different product lines; how restrictive the regulatory stance is would depend partially on the weights chosen. This procedure has the merit of considering several different types of participants in a given market.

The Justice Department divided the line of commerce into retail (including thrifts) and wholesale banking (excluding thrifts) in its complaint filed February 28, 1982 in the *U.S. v. Virginia National Bankshares* case.

[15]Evidence from a study in Pennsylvania supports the hypothesis that, even before the MCA, substantial competition between banks and thrifts existed for certain product lines, such as passbook savings. Measures of market structure, as defined by an index covering CBs, S&Ls, MSBs, and CUs, contributed significantly as a determinant of bank performance. See Timothy Hannan, "Competition Between Commercial Banks and Thrift Institutions: An Empirical Examination," Research Paper No. 70, Federal Reserve Bank of Philadelphia, April 1981. Contradictory evidence is provided in a more recent study by William N. Cox and Joel R. Parker, "Do Banks Price as if Thrifts Matter?" *Economic Review*, Federal Reserve Bank of Atlanta, April 1982. They found that banks in the Sixth Federal Reserve District did not respond to thrift NOW account pricing.

[16]The far-reaching implications for the Fed of bank-thrift mergers and increasing financial integration have still to unfold. The Fed and the other regulatory authorities were established when each type of institution had its own niche in the financial markets. Now that financial services overlap to a great extent and nonbanking conglomerates are becoming strong competitors, the lines previously drawn between different types of institutions have become fuzzy. When carried to its conclusion, this argument states that it is no longer useful to separate the different regulatory authorities. The Fed, FHLBB, FDIC, Comptroller, and FSLIC, so the argument goes, could be consolidated and grouped according to function. One agency would be responsible for insurance, one would group together the supervision and regulatory functions, and one would handle the money supply control function.

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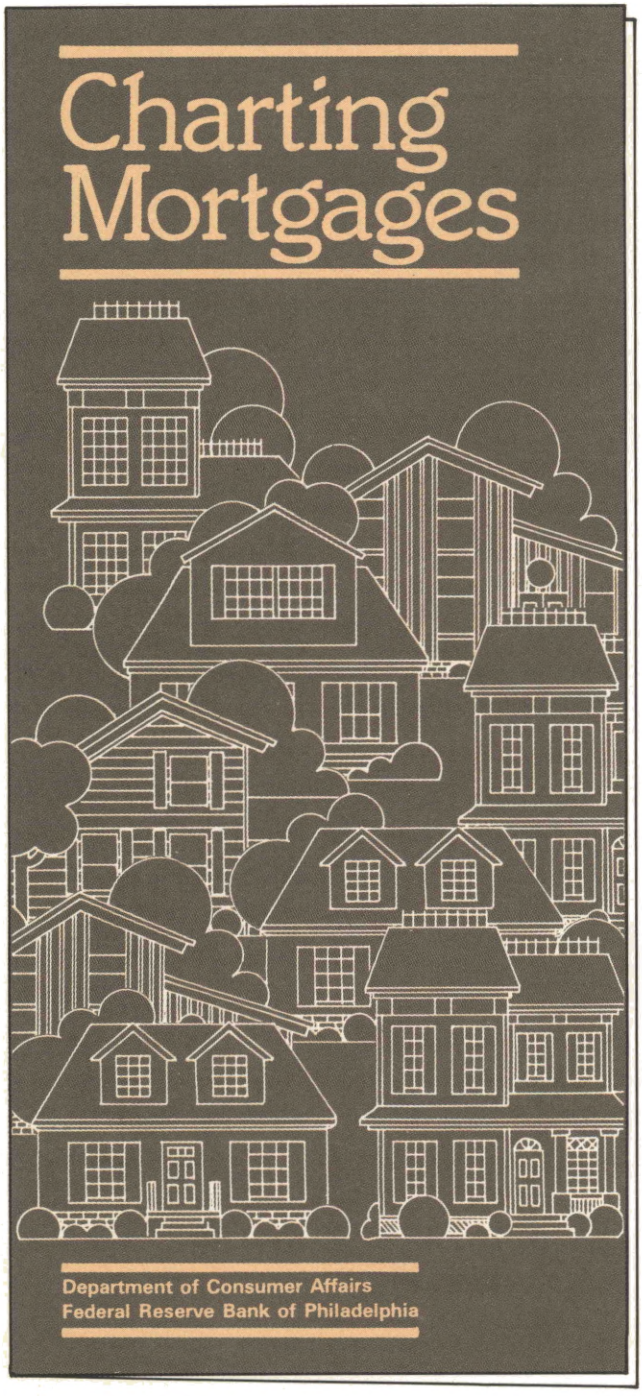

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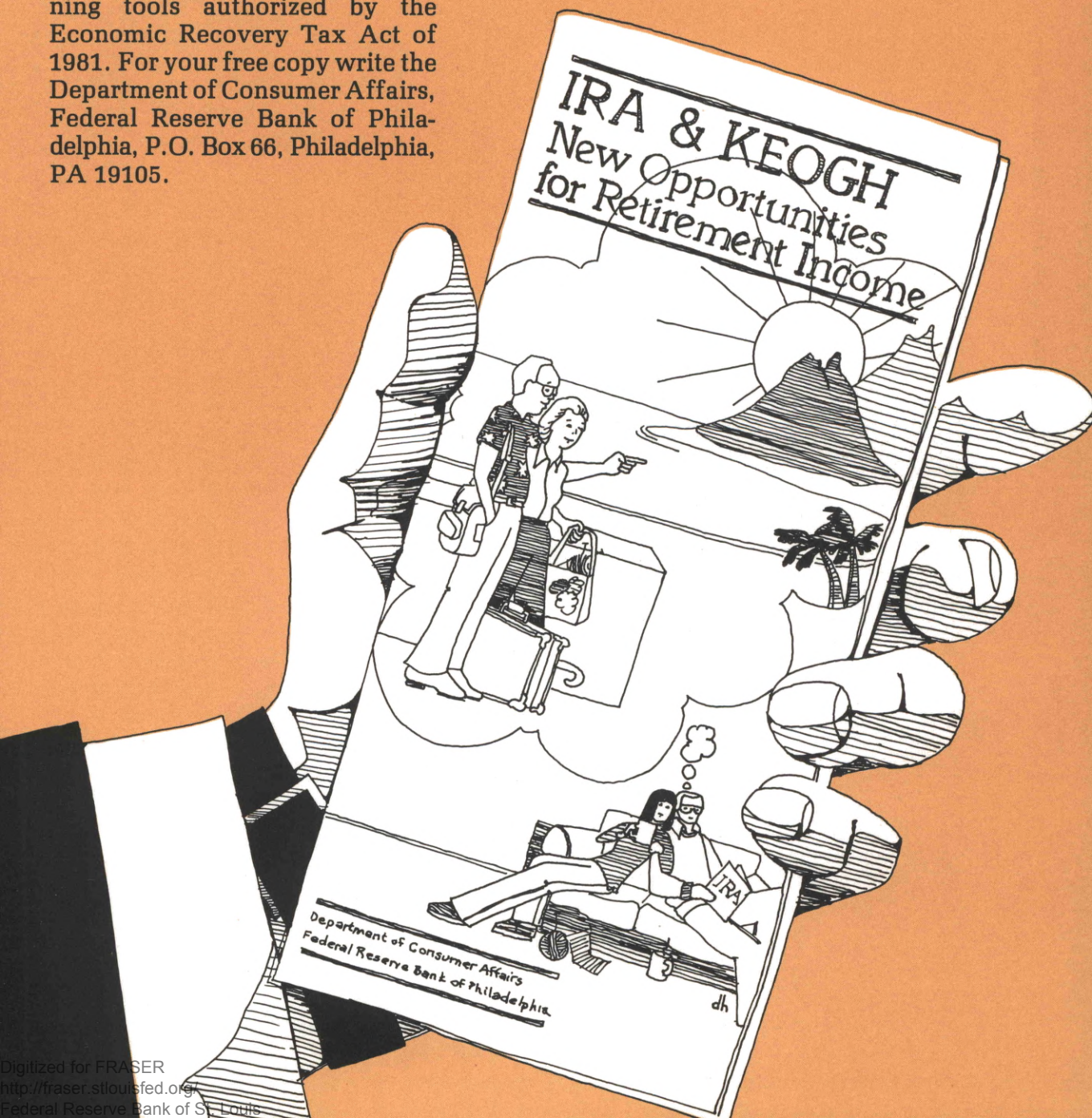

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