Regulation Q and Savings Bank Solvency — The Connecticut Experience

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Thrift institutions have traditionally borrowed short term and lent long term at fixed interest rates. This maturity pattern of assets and liabilities exposes these institutions to the risks of unexpected increases in interest rates. If open market interest rates rise, the thrift institutions' ability to pay competitive rates is limited because their assets are of long maturity at fixed rates. The severity of this problem was illustrated in the mid-1960s when unanticipated increases in inflation and the active use of monetary policy to fight the inflation led to substantial increases in interest rates (see Figure 1) and reductions in thrift earnings.

In 1966 the combination of rising interest rates and increased competition from commercial banks stimulated Congress to extend regulation Q ceilings to the federally insured thrift institutions while also granting these institutions the right to pay slightly higher deposit rates – the differential. The original Congressional authority to extend regulation Q ceilings was temporary, but in the intervening years Congress has continually renewed this authority. These renewals have come in spite of the fact that regulation Q ceilings and the differential are very controversial. At various times it has been argued that the ceiling rates have: 1. Provided thrifts with an incentive toward inefficient operation; 2. Sacrificed the interest income of the small saver; 3. Caused greater instability in the supply of funds to housing over the course of the business cycle; 4. Threatened the long-run viability of the thrift industry by encouraging competition for consumer deposits from other institutions (i.e., money market mutual funds) not shackled by regulation Q ceilings. Others contend that regulation Q ceilings are the only reason thrift institutions were able to survive the most recent experience of highly volatile interest rates.[1]

[1] For discussion of these issues, see: R. Taggart, Jr., "Effects of Deposit Rate Ceilings: The Evidence from Massachusetts Savings Banks," *Journal of Money, Credit, and Banking*, Vol. 10 (May 1978); R. Taggart, Jr. and G. Woglom, "Savings Bank Reactions to Rate Ceilings and Rising Market Rates," *New England Economic Review*, September/October 1978; C. Clotfelter and C. Liberman, "On the Distributional Impact of Federal Interest Rate Restrictions," *Journal of Finance*, Vol. 33 (March 1978), pp. 199-213; E. McKelvey, "Interest Rate Ceilings and Disintermediation," Board of Governors of the Federal Reserve System Staff Studies, April 1978; and E. Ettin and B. Opper, "Consumer Savings and Thrift Institutions," Board of Governors of the Federal Reserve System Staff Studies, June 1970.

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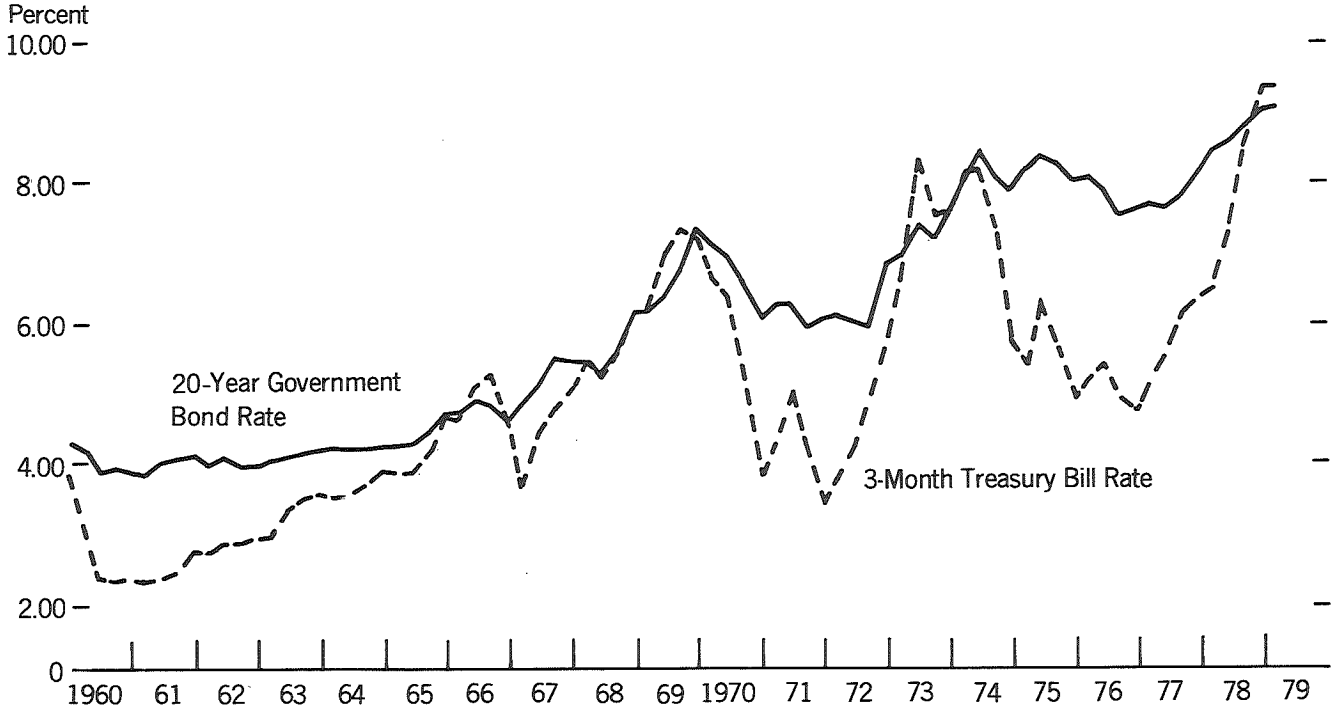
Figure 1 Yields on Treasury Bills and Treasury Bonds



Source: *Federal Reserve Bulletin*

While regulation Q and the differential have survived a number of Congressional attempts at financial reform, various inroads have been made against the ceilings: the 1973 experiment with "wild card" certificates, proposals to eliminate the ceiling on special accounts such as I.R.A. accounts, and finally and most dramatically the introduction of money market certificates with ceiling rates tied to Treasury Bill rates. It is likely that in the not too distant future thrift institutions will not be protected by the regulation Q ceilings, either because of the formal removal of the ceilings or because of financial innovations such as the money market certificates that make the ceiling rates increasingly irrelevant. Given the growing possibility of a financial environment for thrift institutions without ceiling rates, two questions are particularly important: 1. Has the extension of regulation Q, for all of its possible flaws, enabled the thrift institutions to weather the storm of the wildly gyrating interest rates? 2. To what extent have thrift institutions adapted to the new environment of volatile rates to protect themselves should regulation Q lapse?

In attempting to answer these questions some care must be taken in analyzing the impact of rising interest rates and regulation Q ceilings on thrift institutions. In particular, current accounting measures of earnings and net worth may give a distorted picture of the solvency of thrift institutions. Rising interest rates and rate ceilings affect current earnings and also expected future earnings. Current accounting procedures ignore the latter effects. It is our view that the latter effects are quite important in judging the solvency of thrift institutions. The importance of changes in expected future earnings can best be illustrated by examining the effects of different patterns of rising short- and long-term interest rates.

Savings Bank Earnings and the Yield Curve

A useful aid for studying the possible patterns of changes in interest rates is the yield curve. The yield curve plots the average annual yield to maturity against time to maturity for a similar class of assets, Treasury securities for example. The yield curve can assume a variety of shapes, but its most frequent shape is an upward sloping or ascending curve as depicted in Figure 2. The usual positive slope of the yield curve is explained by the preference of lenders for short-term assets and the preference of borrowers for long-term liabilities. The difference in maturity preference gives rise to a liquidity premium, the tendency for short-term rates to be below long-term rates. In other words, borrowers must pay a premium in terms of higher interest rates to induce lenders to accept longer term assets.

The yield curve is not always positively sloped, however; at times it has been descending (negatively sloped throughout) and at other times humped (first positively sloped and then negatively sloped). The most common explanation of these alternative shapes is provided by the expectations hypothesis: arbitrageurs will buy and sell securities of different maturities until the expected return adjusted for liquidity premiums is the same for all maturities. While a descending yield curve shows that yields on today's short-term securities exceed those on long-term securities, this curve also reflects the market expectation that, in the

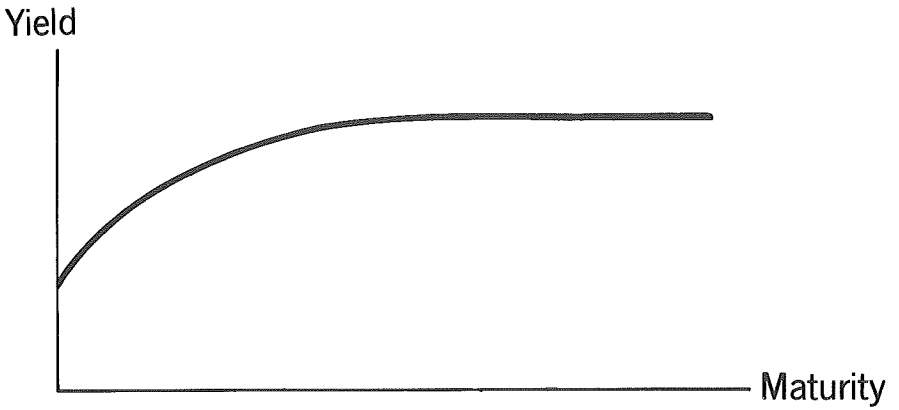


Figure 2

future, the yields on short-term securities will be below the current long-term interest rate. Thus the shape of the yield curve provides important information about financial market expectations of future interest rates.[2]

In analyzing the effects of rising interest rates on the earnings of a savings bank two special cases of upward shifts in the yield curve for Treasury securities will be analyzed. While the yield curve has never moved exactly in the way assumed in these two extreme cases, any upward movement in the yield curve can be described by some combination of the two. When rates on short-term Treasuries rise, the competitive deposit rates at a savings bank unprotected by ceilings would rise as well, and any change in Treasury bond yields will be reflected in newly issued mortgage yields. While these relationships do not hold exactly nor do the changes occur simultaneously, the approximation will not affect the qualitative results of the analysis.

First, consider a uniform upward shift in the yield curve, the yields on all maturities increase by the same amount. Under the expectations hypothesis this shift implies the expected rate of return on future securities has also risen so that the rise in short-term interest rates is not expected to be reversed. The early part of the most recent surge in interest rates provides an example of a uniform shift in the yield curve. From 1977:3 to 1978:2 the short-term bill rate rose 98 basis points to 6.48 percent while the 20-year government bond rate rose 83 basis points to 8.43 percent.

A savings bank that paid competitive rates on its short-term deposits would suffer an increase in interest expense following the rise in rates of Figure 3. Similarly, it would find it could charge higher rates on newly issued mortgages. The net impact of the rise in rates, however, is a substantial reduction in earnings, at least initially, because all of the savings bank's liabilities bear higher yields

[2] See for example, J.C. VanHorne, *Financial Market Rates and Flows* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1978).

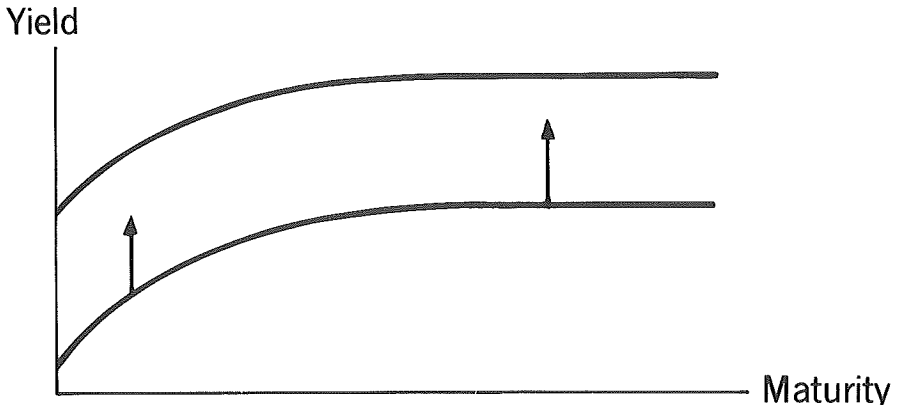


Figure 3

while only the newly issued mortgages are earning the higher rate.[3] Thus, the average rate of return on assets would not rise as much as the average deposit rate. Over time the earnings of the bank would improve as all the old mortgages were replaced with new mortgages at the higher interest rate.

The earnings reductions suffered by the unprotected savings bank can cause liquidity and solvency problems. The bank becomes insolvent if its losses exhaust its accumulated surplus. Even if the bank remains solvent, the rising rates may cause severe liquidity problems. The largest earnings reductions come in the first year of the higher rates, and the savings bank must find a way to finance interest expense in excess of interest income. It may be difficult for the bank to liquidate long-term assets to finance its cash flow problems in the initial years of rising rates.

The second type of shift in the yield cure is the case where short-term rates rise but long-term rates do not, so the yield curve changes from being ascending to descending (Figure 4). Under the expectations hypothesis, the expected rate of return adjusted for liquidity premiums should be equal for all maturities over any holding period. Thus the expected rate of return adjusted for liquidity premiums from continually rolling over short-term securities should equal the rate of return on the long-term security. Because the rate of return from holding the long-term security to maturity is unchanged, the expected return from continually rolling over short-term securities must also be unchanged. Thus the rise in the current short-term interest rates implies that these rates are expected to fall in the future.

It is difficult to find examples where short-term rates rise and long-term rates are unchanged. There are, however, a few instances where the rise in short-term rates far exceeds the rise in long-term rates. Between 1978:2 and 1979:1

[3] Throughout this section it is assumed that all savings bank deposits are passbook accounts. This assumption is relaxed later.

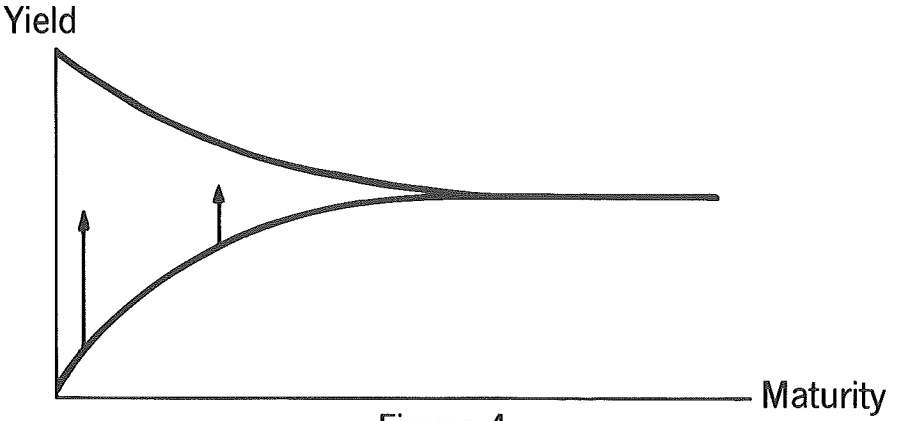


Figure 4

the short-term bill rate rose 290 basis points to 9.38 percent while the 20-year government bond rate rose 60 basis points to 9.03 percent. Initially, the rise in rates depicted in Figure 4 has the same impact on a savings bank's earnings as the uniform rise in rates of Figure 3. Interest expense on deposits rises with the short-term rates while the average return on assets is unaffected. However, a rise in short-term rates unaccompanied by a rise in long-term rates implies a market expectation of short-term rates below the original level sometime in the future. If this expectation is correct, the interest expense eventually will fall below its original level. The relatively high current interest expense is expected to be redressed by relatively low interest expense in the future. Thus a rise in short-term rates unmatched by a change in long-term rates implies a decline in current earnings matched by an expectation of an offsetting rise in future earnings.

A rise in short-term rates, therefore, unaccompanied by a rise in long-term rates implies no expected solvency problem, in spite of the reduction in current earnings. At times some argue that thrift institutions are in trouble whenever the rate paid on deposits approaches or exceeds the rate earned on new mortgages, as has been the case with the money market certificates. Though thrift institutions, once they are allowed to compete with the open market for funds, will pay high deposit rates during periods of high short-term open market rates, this is not necessarily evidence of the "irrationality" or "destructiveness" of a free market for deposits. Institutions that are only willing to pay competitive rates when short-term rates are low may have a high and stable spread between the return on assets and liabilities, but they are unlikely to attract a large volume of deposits.

Rising short-term rates with constant long-term rates pose problems of illiquidity, rather than insolvency for savings banks. Those paying competitive rates still must find a way to finance the earnings reduction during the period of relatively high short-term rates. Just because the yield curve implies higher than normal earnings in the future does not solve the problem of financing current

deficits. In fact, the initial liquidity problem is likely to be just as severe if both short-term and long-term rates increase by the same amount.

The severity of any expected solvency problems faced by a savings bank in a period of rising rates depends to a large extent on the pattern of rate increases. The most severe solvency problems occur when long-term rates rise unexpectedly. If only short-term rates rise, financial markets anticipate that today's depressed earnings will not threaten savings bank solvency. The analysis also indicates that one cannot estimate the potential solvency problems of savings banks by looking solely at current income or current spreads between interest expense and interest income. While short-term rates above long-term rates imply deficits today, they may hold the promise of above normal earnings in the future. Current earnings and current interest spreads are, however, appropriate measures of possible liquidity problems faced by thrifts in the face of rising short-term rates.

Ceiling Rates and Savings Bank Earnings

Imposing ceiling rates on savings banks to solve the problems of rising interest rates certainly helps the initial liquidity problems. As soon as the deposit rate is at the ceiling, any further rise in rates will have no impact on interest expense. Thrifts unable to pay competitive rates on deposits, however, will experience slower deposit growth. If, on the other hand, below-market deposit rates encourage withdrawals, or if ceilings cause disintermediation, a potentially more dangerous form of liquidity problem may result.

The ceilings have a number of effects on the current and future earnings of savings banks that affect their solvency. Not having to pay competitive deposit rates tends to raise earnings by holding down interest expenses during periods when short-term rates exceed the ceiling rates. Interest rate ceilings, however, may also depress savings bank earnings. For example, ceiling rates can act as a floor on deposit rates as well as a ceiling. While the ceilings hold down interest expense during the periods of high short-term rates, they may support interest expense in the periods of low short-term rates. In addition, ceiling rates undoubtedly have slowed the growth in deposits at savings banks. While ceilings make each deposit more valuable, the savings banks are limited in their ability to attract or retain deposits if they cannot offer competitive yields. Slower deposit growth prevents the savings bank from taking advantage of profitable investment opportunities, particularly given the growing sophistication of savers and increased competition for consumer accounts – money market mutual funds, for example, do pay market rates of return.

Finally, because the ceiling rates have predominantly been below competitive rates, savings banks have sought other means to compete for funds. Nonrate forms of competition such as increased advertising, additional branches, longer hours, are not as efficient as rate competition in attracting deposits. Therefore, to the extent that nonrate competition increases expense, but does not yield the same volume of additional deposits as higher rates would, savings bank earnings are depressed. A study by Taggart and Woglom estimated that nonrate competition at mutual savings banks in Massachusetts and Connecticut led to an increase

in operating expenses of as much as 25 percent by 1975 and the percentage of additional expenses was rising over time.[4]

In summary, not only may ceiling rates on deposits support savings bank earnings, they may also depress earnings. The effects of ceiling rates do not happen all at once and their impact on earnings changes over time. Conventional accounting measures of earnings and net worth do not measure expected future earnings and may be a poor guide in gauging savings bank solvency either in the presence or absence of regulation Q.

Section II: Measuring Savings Bank Performance

Ironically, though the problems of managing a mutual savings bank are commonly recognized, there is no consensus about measuring earnings and net worth when the level and pattern of interest rates are changing. While some believe that current accounting and reporting conventions provide the most relevant measures of bank earnings and net worth, others contend that significant reform is needed before depositors, management, or regulators can adequately assess savings bank performance. Even those who would reform banking financial statements do not agree.

Two general reform proposals have attracted substantial attention: general purchasing-power reporting (GPPR) and current value reporting (CVR).[5] Each recognizes that financial statements reporting the book value of bank assets and liabilities can be misleading; however, as the conflict between the proponents of these approaches reveals, the appropriate restatement is not evident. The traditional appeal of conventional accounting practice arises from its use of objective numbers – the par value of a mortgage or bond, for example –, not equivocal assessments of asset values; nevertheless, these reforms are attracting attention because "book values" may no longer provide an accurate, objective measure of bank performance when the level and pattern of interest rates vary.

Strictly speaking GPPR and CVR are not rivals. GPPR adjusts the unit of measure in financial statements so that entries reflect units of purchasing power, "real dollars." Even though a bank may report higher earnings, due to higher asset yields, the bank's real net worth may be growing no faster than it had before earnings apparently rose if the high asset yields are accompanied by a high inflation rate. CVR attempts to adjust financial reports to represent the

[4] R. Taggart, Jr., and G. Woglom, "Savings Bank Reactions to Rate Ceilings and Rising Market Rates."

[5] See, for example, Financial Accounting Standards Board *Exposure Draft*, "Financial Reporting in Units of General Purchasing Power," December 31, 1974 and *Exposure Draft*, "Financial Reporting and Changing Prices," December 28, 1978; *FASB Discussion Memorandum*, "Conceptual Framework for Accounting and Reporting: Elements of Financial Statements and Their Measurement," December 2, 1976; Securities and Exchange Commission, *Accounting Series Release No. 190*, "Notice of Adoption of Amendments to Regulation S-X Requiring Disclosure of Certain Replacement Cost Data," 1976; and Touche Ross, *Economic Reality in Financial Reporting* (New York, 1975).

current market prices of the bank's assets and liabilities. Although CVR and GPPR could be combined so that financial statements report earnings and net worth in purchasing-power units that also embody the relative price changes of assets and liabilities, these reforms, unfortunately, often are introduced as mutually exclusive alternatives.

General Purchasing-Power Reporting (GPPR)

With GPPR, bank financial statements would reflect the changing "value of money" by restating financial data in units of general purchasing power. Proponents stress that GPPR, by itself, represents a change in the unit by which earnings, assets, and liabilities are valued; no changes in other accounting principles are entailed.

To best understand how GPPR affects mutual savings banks' earnings and net worth, consider the hypothetical bank described in Table 1. According to the upper panel, the bank has earned $2 million on its $200 million of assets, enabling it to expand its capital and, ultimately, its assets by 10 percent. Apparently the bank enjoys the rewards of successful investment strategies. The lower panel, however, presents a less encouraging description of the bank's performance. The bank not only earned the reported $2 million but, according to GPPR, the bank also must consider the holding gains and losses on its financial assets and liabilities. Assuming the inflation rate is 10 percent, the bank's real debt burden to its depositors has declined $18 million while the real value of its mortgage assets has dropped $19.5 million – the holding loss on *net* financial assets, therefore, has been $1.5 million. According to GPPR, the real net worth has risen only 2.5 percent, suggesting, in turn, that the bank is not expanding so dramatically – the real assets the bank can finance may be growing only one-fourth as fast as conventionally reported net worth.

GPPR, unlike conventional reporting alone, facilitates the year-to-year comparison of financial statements because it attempts to record performance in terms of the bank's command of real assets. For example, a savings bank may be able to earn a return large enough to pay competitive deposit yields, but if the growth of its surplus does not comfortably offset its holding losses on net financial assets, in time a greater share of its community's real estate will be financed by other lenders. When prices are rising, GPPR can show whether earnings have risen enough to attain management's goals or earnings are barely adequate to compensate the bank for its purchasing power losses on net financial assets.

Despite its attributes, GPPR, coupled with conventional reporting, still has its faults. The adequacy of a bank's earnings or its solvency are questioned most often when the level or pattern of interest rates changes. Yet, according to conventional accounting principles, assets and liabilities are appraised as though interest rates do not change; curiously, a bank's mortgages, for example, are valued at par even though they bear many different rates of return. Financial reports using conventional accounting principles and GPPR therefore cannot provide the best measure of a financial institution's solvency when interest rates are changing. A more substantive reform is needed.

Table 1

Financial Statements for a Hypothetical Savings Bank
(in millions of dollars)

Conventional Reporting		
Assets		$ 200
Mortgages	$ 195	
Real Estate	$ 5	
Liabilities		$ 200
Deposits	$ 180	
Surplus	$ 20	
Income		$ 2
General Purchasing-Power Reporting Adjustment		
Income		$ 2
Inflation Rate = 10%		
Purchasing-Power Loss on Financial Assets $19.5		
Purchasing-Power Gain on Financial Liabilities $18.0		
Net Purchasing-Power Gain		$–1.5
Income After Net Purchasing-Power Gains		$ .5

Current Value Reporting (CVR)

The second proposal, CVR, attempts to record the "current" market value of assets and liabilities in financial reports, not par values or acquisition prices (book values). The current value of a security is the present value of its stream of payments. Unfortunately, this current value is not always well defined. Despite the sizable and expanding secondary mortgage market, for instance, there is no unique market value quoted for each mortgage contract in a savings bank portfolio. Not only may mortgage indentures differ, but each savings bank may possess special information about the nature of its loans. Nevertheless, existing markets do provide benchmarks for estimating the current value of existing mortgages, and this alternative measure is less arbitrary than book values when interest rates are changing.

An example of CVR is provided in Table 2. Once again the hypothetical bank earns $2 million. At the beginning of the year it held $195 million of mortgages yielding 8 percent, and its deposits cost 6.5 percent. At year end, however, the competitive deposit rate rose to 7.5 percent and the mortgage rate rose from 8 to 9 percent – a rise in interest rates accompanying a uniform upward shift of the yield curve described in Figure 3. If the bank's deposits are of very short maturity, depositors will earn competitive yields, so the higher interest rates will not depress the value of these deposits. The current value of the bank's

Table 2

Financial Statements for a Hypothetical Savings Bank
(in millions of dollars)

Conventional Reporting		
Assets		$ 200
Mortgages	$ 195	
Real Estate	$ 5	
Liabilities		$ 200
Deposits	$ 180	
Surplus	$ 20	
Income		$ 2
Current Value Reporting Adjustment		
Income		$ 2
Net Change in Market Value of Assets and Liabilities		$ −12
Assets		
Value of Mortgages Jan. 1 $195		
Value of Mortgages Dec. 31 $183		
Income After Net Capital Gains		$ −10

assets, however, will decline by $12 million because these assets are invested in mortgages yielding 8 percent while similar securities yielding 9 percent are available. According to CVR, then, the savings bank's net worth fell $10 million during the year – $12 million capital loss on mortgages plus $2 million operating income.

Many critics of CVR believe that the $12 million capital loss should not be recorded in the bank's balance sheet; unless the bank is to be liquidated, the mortgages eventually will be paid, and the bank's capital will be $20 million plus accumulated earnings. Indeed, had mortgage rates risen to 11 percent, the decline in asset values would exceed the reported $20 million of net worth. If the 11 percent mortgage rate were accompanied by a 9.5 percent deposit rate – borrowers and lenders believe that all interest rates will be 300 basis points higher from now on –, the institution would be bankrupt if these rates prevailed. The bank will not be able to meet its expenses without exhausting its surplus.

The $12 million loss shown in Table 2 cannot be ignored for it is the present value of the bank's lost earning opportunities. Given current market rates of interest, the value of the bank to its trustees and depositors has fallen substantially. Another bank with $20 million of capital holding $195 million of mortgages yielding 9 percent would be able to pay higher dividends and grow more rapidly than the bank shown in Table 2. Strictly speaking, both these banks cannot be worth $20 million; according to current market valuation, the

hypothetical bank in the table is worth only $10 million at year-end while its competitor is worth twice that much. In other words, if, in the absence of regulation Q restrictions, the bank holding mortgages yielding 8 percent attempts to maintain its market share by paying competitive dividends, then it must sell mortgages to cover its added interest expense. The present value of this drain on surplus is $12 million, and, of course, the bank eventually must acquire an equal amount of new reserves if it is to avoid depressing its capital-asset ratio.

With CVR, the net worth of the bank holding 9 percent mortgages exceeds that of the bank holding 8 percent mortgages, even though conventional financial statements may show that both have $20 million of net worth. The difference in net worth – the present value of the first bank's opportunities for greater earnings and growth at existing interest rates – is $12 million which equals the decline in current value of the second bank's assets due to their below-market yields. Should regulation Q ever be modified permitting more competition among banks, the information provided by CVR would be essential for managers, regulators, and insurers.

For a second example of CVR, consider two banks of equal size holding identical assets, but the first bank has issued many more long-term deposit liabilities than the second. If interest rates should rise, the first bank, for a time, may report lower earnings (longer term deposits tend to pay higher yields) and net worth than the second bank, with conventional accounting. According to CVR, however, the market value of the first bank's liabilities declines more than that of the second bank – the first bank's depositors are "locked in" and cannot withdraw their funds or negotiate higher yields as soon as the second bank's depositors. Accordingly, the net worth of the first bank does not decline as much as that of the second, reflecting the market value of the first bank's opportunities for greater earnings at prevailing interest rates.

A principal advantage of CVR, then, is to report each bank's comparative net worth given prevailing interest rates. Although CVR's critics claim that interest rates and, therefore, financial statements will be ever changing, CVR's proponents welcome these revisions because they provide timely descriptions of each bank's competitive position. Because the par values or acquisition prices of a bank's assets and liabilities were appropriate for conditions that prevailed when these securities were obtained, conventionally reported net worth for each bank embodies an arbitrary blend of past credit market conditions. Not only is this blend, perhaps, irrelevant for today's structure of interest rates, but, with conventional accounting, the reported net worth of banks cannot be compared easily because they are measured according to different yardsticks; the blend of credit market conditions embodied in each bank's balance sheet is unique. CVR attempts to remedy these failings by reporting the current value of assets and liabilities so that prevailing market conditions become a common standard of measurement.

In fact, CVR's extensive use of prevailing interest rates to value securities may encourage longer run earnings analysis. Should short-term interest rates rise well above long-term rates, as illustrated in Figure 4, savings banks paying competitive yields on money market certificates may complain that their losses imperil the well-being of their industry. Yet, according to the argument of the

previous section, the term structure of interest rates suggests that today's losses will be redressed by tomorrow's gains when short-term rates decline. (Indeed, falling short-term interest rates are frequently accompanied by declining yields on bonds and mortgages. In these cases, the strategy of having issued money market certificates to acquire high-yielding mortgages would be extremely lucrative.) In Figure 4, then, the current higher-than-average short-term yields presage lower-than-average short rates in the future, and, according to the expectations hypothesis, a savings bank is not courting insolvency by paying competitive yields on its short-term deposits that temporarily exceed the return on its long-term assets.

A uniform upward shift in the yield curve, however, may depress CVR net worth. If all interest rates rise uniformly, as shown in Figure 3, not only have current interest rates risen, but, according to the expectations hypothesis, investors believe that future interest rates will remain high. Accordingly the expected earnings for a savings bank paying competitive rates on its short-term deposits will decline because this bank holds mortgages bearing below-market yields. The present value of this earnings loss is measured by the drop in the market value of the bank's mortgage portfolio that in turn depresses CVR net worth by an equal amount. Unless interest rates drop unexpectedly, restoring the market value of mortgages, a bank experiencing declining CVR net worth cannot accumulate surplus as rapidly as it had planned previously if it attempts to maintain its market share without raising new capital. Any decline in CVR net worth, then, indicates the need to raise new capital if the bank is to maintain both its market share and its capital-asset ratio.

A savings bank may be insolvent when the market value of its liabilities exceeds the market value of its assets so that its CVR net worth is negative. In the unlikely event depositors attempt to withdraw all their funds, a bank with negative CVR net worth would be unable to satisfy their claims by selling its assets. Of course, deposit insurance essentially has eliminated panic withdrawals; nevertheless, insurors examine banks to rectify these problems before they create substantial risks.

Should the interest rates implied by the term structure prevail, then a bank with negative CVR net worth may be insolvent because it ultimately may sell assets whose face value exceeds conventionally reported net worth. The bank is not necessarily insolvent, however. First, interest rates are volatile, and though a bank may report negative CVR net worth today, tomorrow's yields may restore its capital. Even so, today's term structure reveals the prevailing forecast of future yields, and it is risky to presume that future yields will depart fortuitously from this forecast to restore CVR net worth. Second, because depositors value the convenience of short-term accounts and because savings banks may enjoy local market advantages due to limited competition for depositors' funds, the yields on long-term assets may exceed the average expected deposit rate by more than enough to cover operating expenses. Accordingly, even though all interest rates may rise uniformly and the bank is locked into low-yielding mortgages, producing negative CVR net worth, the new deposit rate still may not exceed the bank's return on assets. Therefore, the bank can still pay its expenses without exhausting its net worth. Though negative CVR net worth in this case does

not imply insolvency, the bank is no longer able to accumulate surplus as rapidly as it had planned, so it must either lose market share or tolerate declining capital-asset ratios. Of course, this initial gap between long-term yields and expected short-term yields may not be very large, so a modest rise in interest rates may overcome the cushion it affords.

In summary, CVR net worth provides a particularly useful measure of savings bank solvency. A bank with declining net worth is confronted with the need to raise new capital, and should its capital-asset ratio fall excessively, the bank's ability to serve the public safely may be questioned.

Section III: The Performance of Connecticut Savings Banks

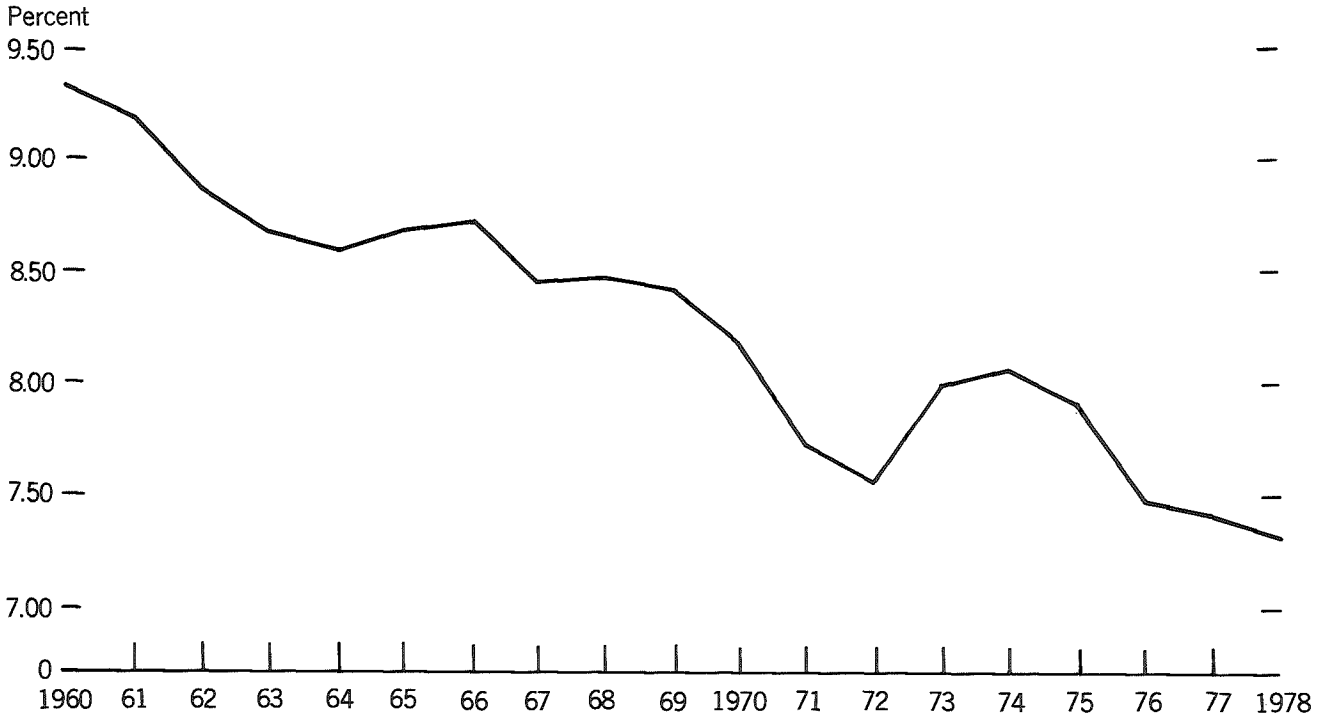
Within every debate on the merits of interest rate ceilings resides a question whose answer often decides the controversy, frequently by default: Do thrift institutions still require the protection of interest rate ceilings to survive? It is often presumed that these ceilings enabled thrifts to endure when interest rates rose sharply in the middle and late 1960s. By estimating the CVR net worth of Connecticut savings banks, one can appreciate the importance of interest rate ceilings for maintaining savings bank solvency since 1970.

Reported Net Worth

Figures 5 and 6 describe the capital-asset ratios of savings banks reported in the *Annual Report of the Bank Commissioner of the State of Connecticut* from 1960 to 1978. The first chart reports the aggregate ratio of net worth to the book value of assets for all savings banks in the state. The capital-asset ratio fell almost steadily from approximately 9.4 percent in 1960 to 7.4 percent by 1978. The pattern of annual declines was interrupted in only a few years – the increases in 1973 and 1974 are most notable.

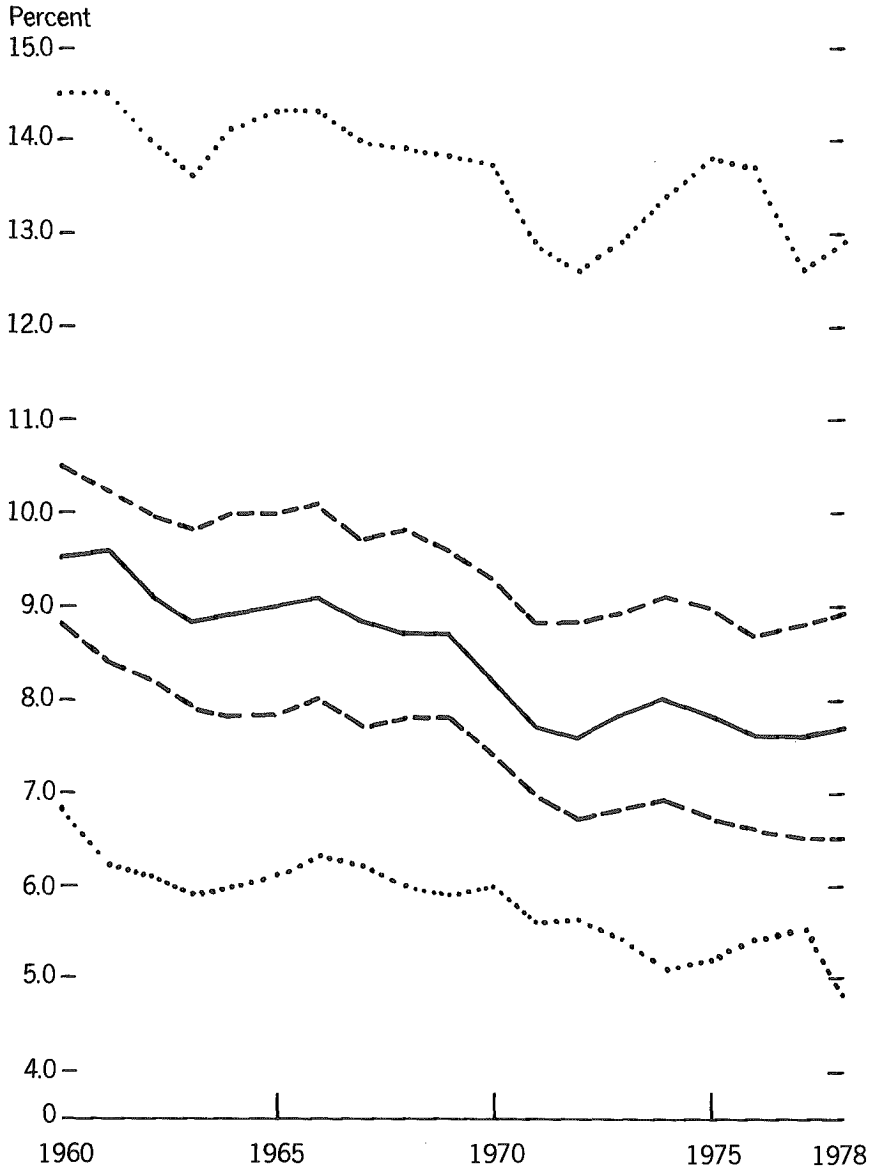
Figure 6 describes the distribution of capital-asset ratios for the various chartered savings banks. The solid line is the median ratio of net worth to reported assets – half of the banks in each year have more capital and surplus relative to assets, half have less. Like the average ratio for the state, the median falls from 9.3 percent in 1960 to 7.3 percent by 1978. The two dashed lines represent the median ratios for those banks having the highest and lowest net worth – of all banks with capital-asset ratios exceeding the state-wide median in each year, for example, half have ratios exceeding the upper dashed line, half have ratios falling between the dashed line and the solid line. Finally, the two dotted lines mark the minimum and maximum capital-asset ratios reported by Connecticut savings banks for each year. Although, the ratios for most banks tend to cluster around the median (half of all the chartered savings banks fall between the two dashed lines), the range of capital-asset ratios is very great: in 1978, for example, the highest ratio was 13.0 percent, the lowest was 4.8 percent. The banks with the highest capital-asset ratios tend to be relatively small banks: in 1978, only 13 percent of the state's deposits were held by those banks ranked in the top 25 percent of all the state's savings banks in Figure 6.

Figure 5 Ratio of Net Worth to Assets



Source: See Technical Appendix

Figure 6 Distribution of Net Worth to Asset Ratios



Source: See Technical Appendix

In summary, the net worth of most Connecticut savings banks has deteriorated steadily since 1960. The banks reporting the highest capital-asset ratios, however, have increased their net worth more rapidly than their assets; yet, these banks generally are roughly half the size of the average state savings bank. This steady decline in the mean statewide capital-asset ratio worries many who consider relaxing or abolishing deposit rate ceilings: savings bank net worth is being eroded in spite of deposit rate regulation; perhaps more, not less, assistance is warranted.

CVR Net Worth: Revaluation of Assets

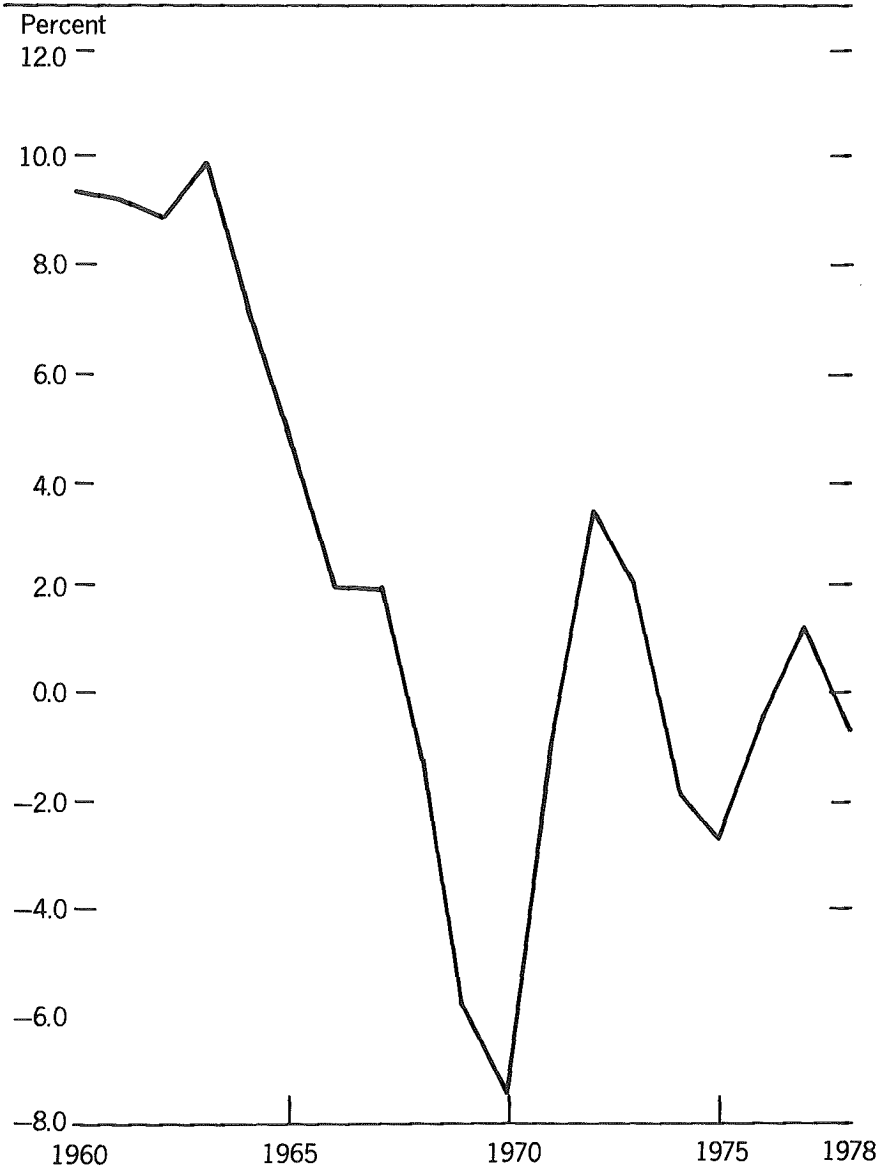
Figure 7 reports the aggregate ratio of CVR net worth to the market value of assets for all state savings banks. For this chart, CVR net worth is the difference between the current value of assets and the reported value of liabilities. This chart, therefore, estimates savings bank solvency had these banks paid competitive yields or their liabilities. Because the state's savings banks had issued certificates of deposit, thereby locking depositors into term liabilities with a fixed yield, Figure 7 shows the minimum capital-asset ratio that the abolition of deposit rate ceilings may have produced in each year. This minimum does not markedly underestimate net worth in these circumstances because CDs accounted for only 40 percent of the deposits at Connecticut savings banks in 1977, for example, and many of these CDs had average maturities less than two years.

Figure 7 shows that the CVR capital-asset ratio fell almost without interuption from 1960 to 1970, dropping from 9.4 percent to -7.5 percent. Unlike reported net worth, however, CVR net worth then oscillated about zero since 1971. The behavior of the CVR capital-asset ratio in Figure 7 is explained by the pattern of long-term interest rates shown in Figure 1. The ratio's peaks in 1963, 1972 and 1977 are matched by troughs of the 20-year government bond rates in the same years. Conversely, the ratio's troughs in 1970 and 1975 coincide with bond rate peaks. The two principal declines in the CVR capital-asset ratio – 1963 to 1970 and 1972 to 1978 – are not equally great partly because long-term interest rates increased more during the former period, 340 basis points, than during the latter, 250 basis points.

Figure 8 describes the distribution of CVR capital-asset ratios for the various Connecticut savings banks. In this figure, as in Figure 6, the solid line shows the median capital-asset ratio of all Connecticut savings banks for each year, in turn, the dashed lines show the median ratios for those banks having the highest and lowest net worth, and, finally, the dotted lines show the extreme capital-asset ratios. The ratios for most banks are clustered about the statewide median, and, like the average shown in Figure 7, they fall sharply from 1960 to 1970 then oscillate around zero until 1978. The lowest capital ratios are generally closer to the statewide median than the highest ratios – in 1977, for example, the lowest ratio was -3.4 percent while the highest was 14.9 percent, the median was 1.5.

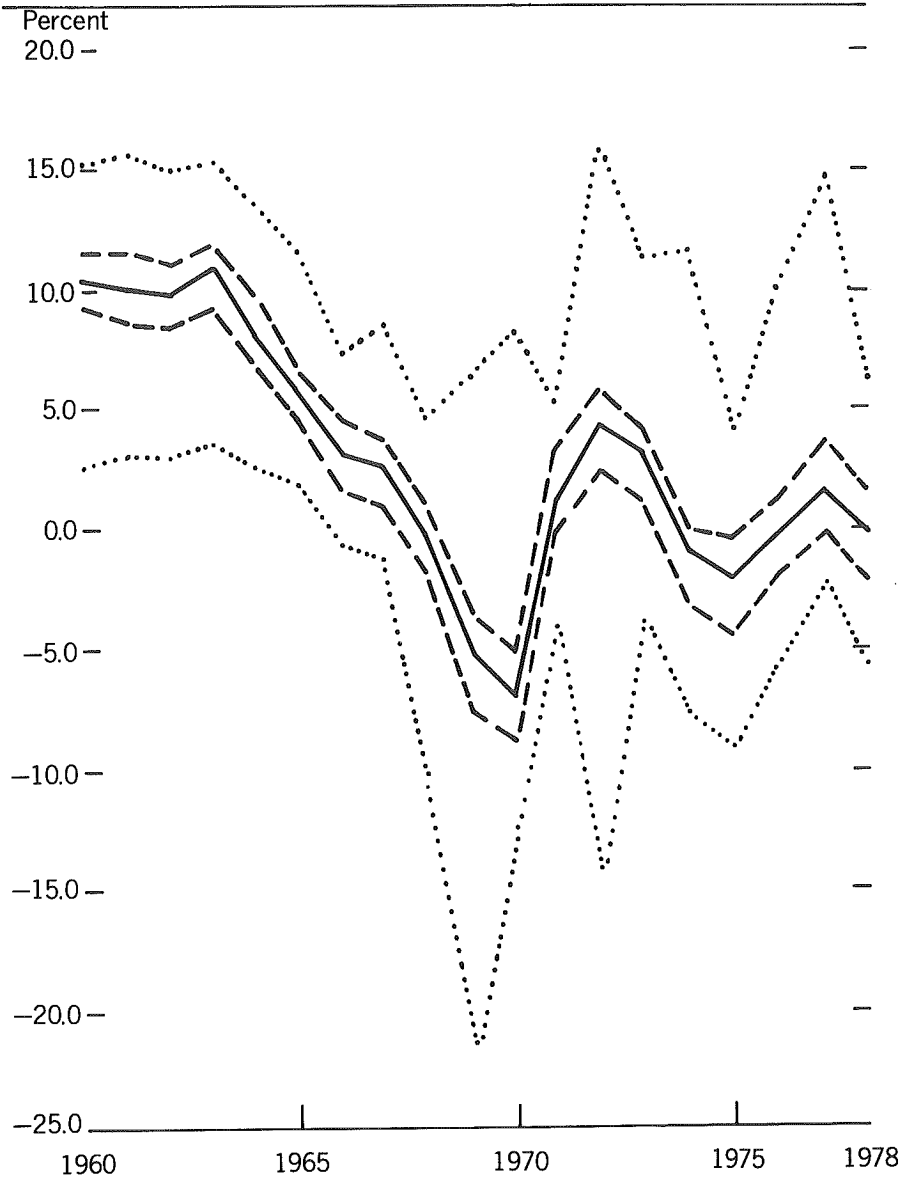
Therefore, if Connecticut savings banks had been required to pay competitive yields on all their deposits at any time during the past decade, most would

Figure 7 Ratio of CVR Net Worth to Assets - Asset Revaluations Only



Source: See Technical Appendix

Figure 8 Distribution of CVR Net Worth to Asset Ratios - Asset Revaluations Only



Source: See Technical Appendix

not have been able to maintain their share of household savings without seriously depleting their accumulated capital and surplus; many banks eventually would have become insolvent. Only a few of the state's savings banks have had high CVR net worth throughout the period; these banks could have maintained, or increased, their market shares by paying competitive deposit rates. Of course, these estimates may understate savings bank net worth to a degree because many deposits are secured for a fixed term, and banks may benefit from holding these deposits at below-market yields when interest rates rise.

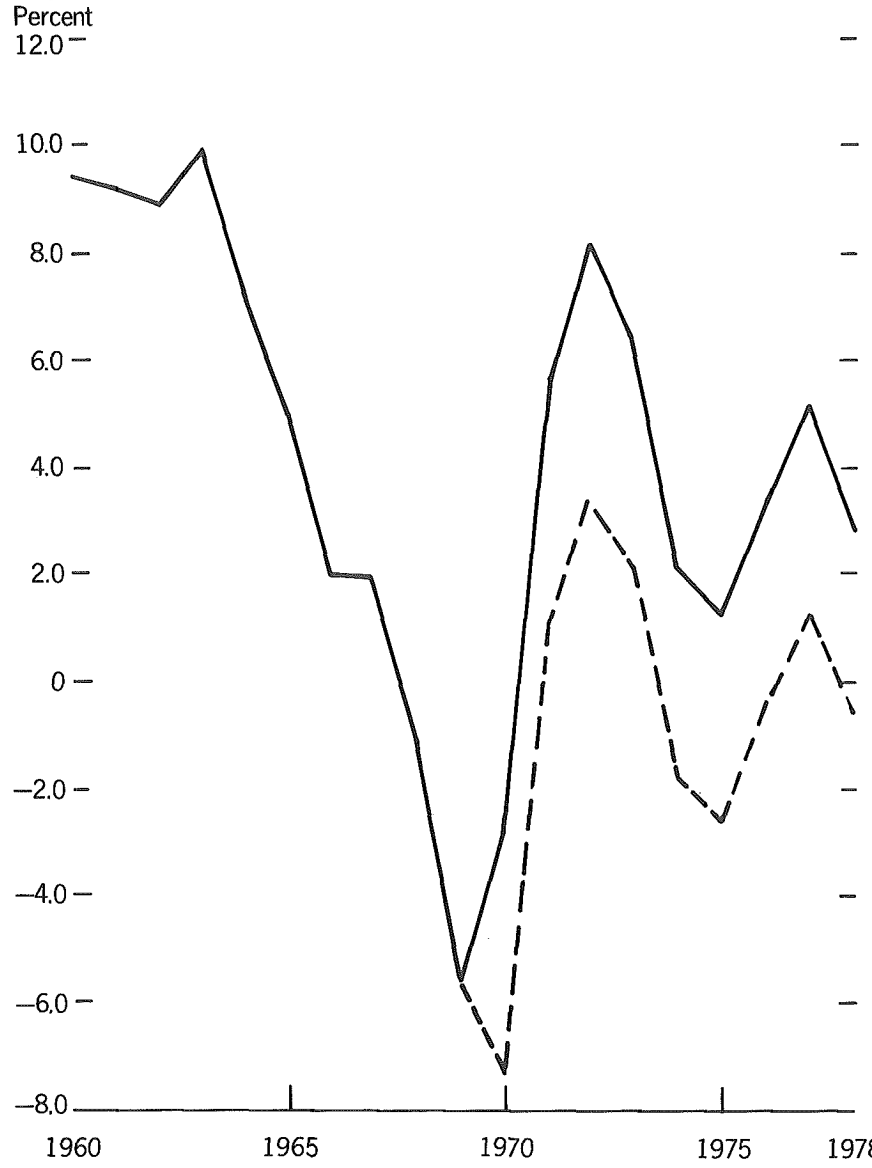
CVR Net Worth: Revaluation of Liabilities

Because interest rate ceilings and term deposits permit savings banks to pay below-market yields on deposits, the market value of liabilities should fall along with the market value of assets when interest rates rise. When ceilings hold deposit rates well below what they otherwise might have been and depositors cannot easily purchase high-yielding open market securities, interest rate regulations support savings bank net worth considerably. The more accessible are open market investment alternatives – money market mutual funds – or the closer deposit rates are to competitive yields – money market certificates – the less interest rate regulation can bolster savings bank net worth. Figures 9 and 10 show how ceiling rates may have assisted savings banks during the past 10 years; however, these charts do not estimate how the growing competition from open-market investment alternatives may have depressed net worth by reducing savings bank growth when interest rates were high. Therefore, though the charts show a considerable benefit from ceiling rates, the benefit can be smaller and it may shrink with each passing year.

These charts omit another relevant adjustment, however, that would tend to bolster estimated CVR net worth. Connecticut savings banks have issued certificates of deposit; these liabilities secure funds for a specific term, bearing a fixed yield until they mature. When interest rates unexpectedly rise, a savings bank that had issued long-term certificates of deposit would enjoy higher earnings and greater CVR net worth than a bank that had relied on short-term deposits. To the extent the Connecticut savings banks have locked in low-yielding deposits, the charts understate CVR capital-asset ratios. Since the early 1970s, roughly 40 percent of these banks' liabilities are certificates of deposit. Although Individual Retirement Accounts and Keogh plans may have attracted many depositors to certificates with maturities of six years or more, many of these term deposits have average maturities not exceeding one year. Therefore, the estimates shown in Figures 9 and 10 are not badly biased for this omission.

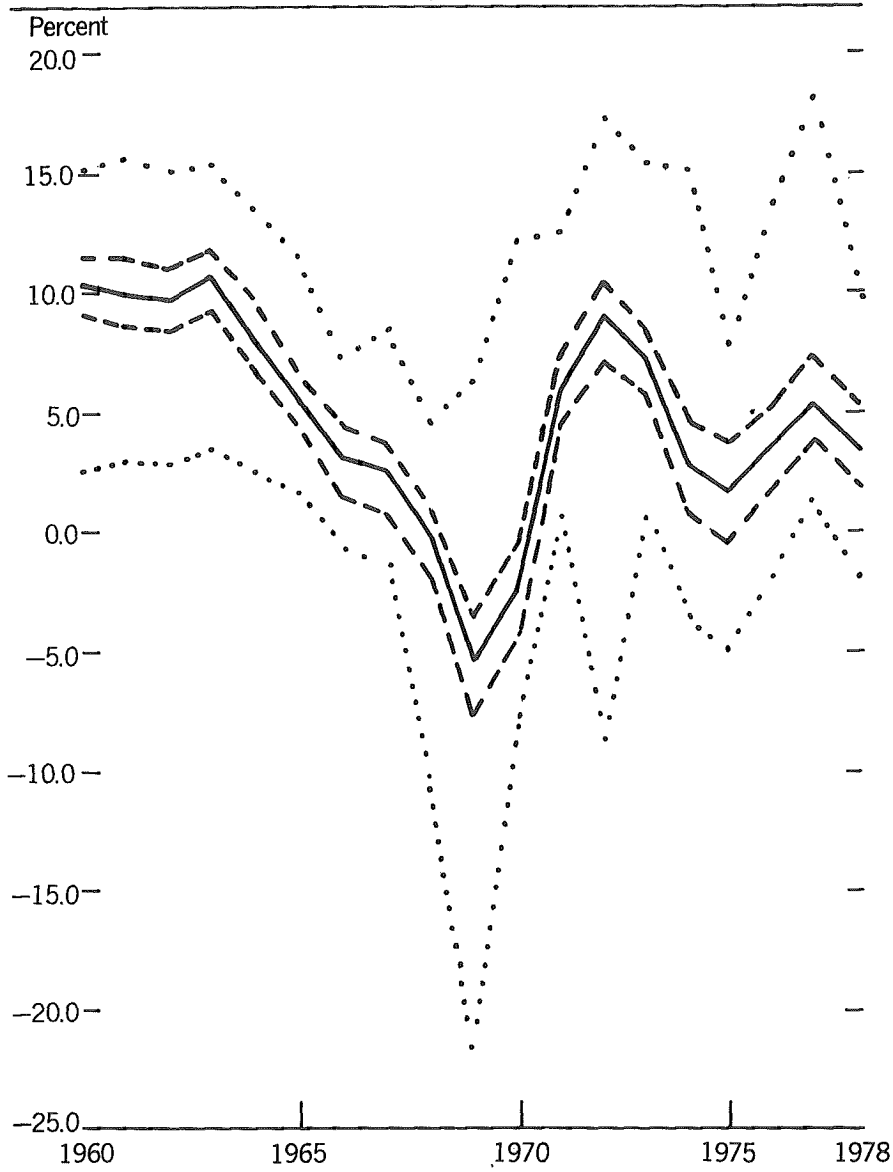
Figure 9 compares the aggregate CVR capital-asset ratio from Figure 7 (the dashed line for which assets alone have been reappraised) with the ratio after reported liabilities have been revalued as well (the solid line). For this chart, and Figure 10, we assume that all savings banks would have paid yields 35 basis points higher, on average, than their actual deposit rates to maintain their

Figure 9 Ratio of CVR Net Worth to Assets - Asset and Liability Revaluations



Source: See Technical Appendix

Figure 10 Distribution of CVR Net Worth to Asset Ratios - Asset and Liability Revaluations



Source: See Technical Appendix

existing deposits had ceiling rates not restricted them.[6] This advantage of lower deposit yields uniformly raises the CVR capital-asset ratios approximately 4 percentage points after 1969. Accordingly, from 1960 to 1970, the fully adjusted ratio falls from 9.4 percent to -7.5 percent, it then oscillates around 4 percent.

Figure 10 describes the distribution of fully adjusted CVR capital-asset ratios for the state's savings banks. In this figure, as in Figures 6 and 8, the solid line shows the statewide median capital-asset ratio for each year, the dashed lines show the median ratios for those banks having the highest and lowest net worth, and finally the dotted lines show the extreme ratios. Once again, the ratios for most banks are clustered about the statewide median, and, like the average shown in Figure 9 they fall sharply from 1960 to 1970, they then oscillate around 4 percent until 1978. The lowest capital-asset ratios generally are much closer to the statewide median than the highest ratios – in 1977, for example, the lowest ratio was -1.5 percent, the highest was 18.3 percent, and the median was 5.5 percent.

The low CVR capital-asset ratios in Figures 7 and 9 help explain the steady deterioration of reported savings bank net worth shown in Figure 5. Rising open-market interest rates have depressed prospective earnings and, in turn, CVR net worth. Therefore, savings banks have not been able to compete for deposits without reducing their contribution to surplus accounts. Unless interest rates fall unexpectedly, the persistent drop in reported capital-asset ratios will continue for several more years, perhaps falling below 5 percent eventually.

It is difficult to estimate exactly what open-market interest rates would have been in the absence of regulation Q, and thus it is also difficult to measure exactly how much the ceilings have raised CVR net worth. At least one effect, however, that has not been accounted for in Figures 9 and 10 suggests these estimates overstate the benefits of the Q ceilings. As noted earlier, Taggart and Woglom found that ceiling rates on deposits induced savings banks to compete for funds using nonrate methods, such as remaining open for longer hours and opening more branches. According to this study the additional expenses associated with nonrate competition may have dissipated up to half of the benefits of deposit rate ceilings to savings banks.

Although interest rate ceilings have bolstered savings bank solvency by reducing interest expense during the past decade, rising yields and increasing competition from open-market securities will erode this support as interest expense rises or savings banks lose depositors seeking higher yields elsewhere.

[6] See also D. Pyle, "Losses on Savings Deposits from Interest Rate Regulation," *The Bell Journal of Economics and Management Science*, Vol. 5 (Autumn 1974), pp. 614-22; R. Taggart, Jr. and G. Woglom, "Savings Bank Reactions to Rate Ceilings and Rising Market Rates." A deposit equation, described in the Technical Appendix, was estimated from 1951 to 1969; after 1969, Connecticut savings banks were subject to deposit rate ceilings. The average spread between the equation's projected deposit yield and the actual yield has been 35 basis points during the 1970s. Now that savings banks are issuing more term accounts that, on average, are more expensive than passbooks, this estimated spread may understate the true gap between potential and actual deposit yields.

Interest rate ceilings, therefore, have maintained the solvency of most Connecticut savings banks for the past 10 years, but these ceilings constitute a temporary remedy only. When open market yields exceed the ceilings, saving banks competitors – principally investment funds and life insurance companies – are seizing the opportunity to offer attractive alternative investments to all savings bank depositors. With the growth of mutual funds and investment trusts as well as single- and multi-payment deferred annuities, savings banks not only lose potential deposits when interest rates are high, they may not regain their share of household savings when open-market yields decline.

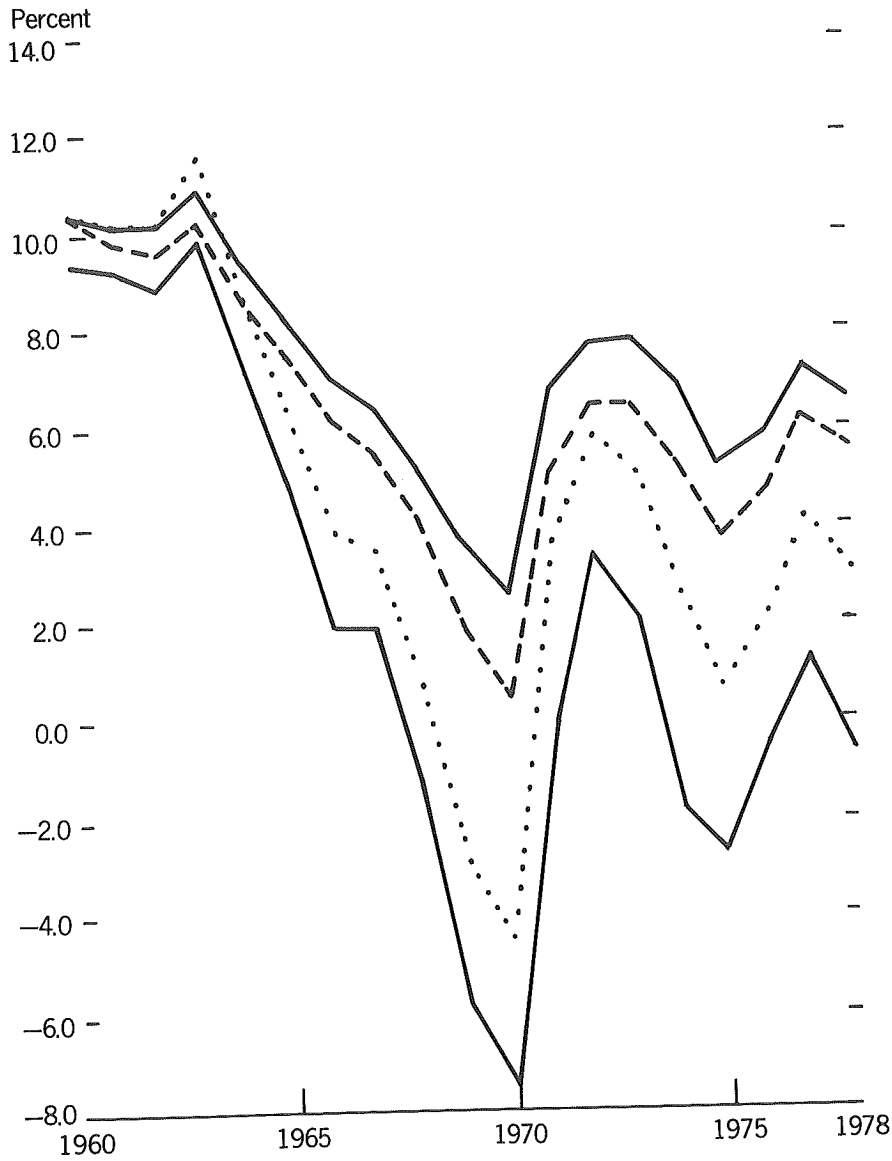
Volatility of CVR Net Worth

Perhaps the most striking feature of Figures 7 to 10 is the volatility of the CVR net worth of Connecticut savings banks. As explained earlier, these charted swings in the capital-asset ratio are due to varying mortgage interest rates that change the market value of bank assets, and, in turn, CVR net worth, because the bank's assets no longer provide competitive earnings. Of course, if the bank had secured long-term, fixed-yield liabilities, an unexpected rise in market yields need not reduce CVR net worth because the below-market yield on mortages would be matched by a low cost of funds – the low market value of mortgages would be matched by a low CVR value of liabilities thus CVR net worth would not decline.

Savings banks, therefore, can reduce the volatility of their CVR net worth if they match the effective maturity of their liabilities to that of their assets. This may entail either issuing more long-term certificates of deposits or holding shorter term assets including variable rate loans. By taking these steps, savings banks can reduce or eliminate the risk of unexpected changes in market yields altering expected earnings and CVR net worth.

The heavy solid line in Figure 11, taken from Figure 7, represents the aggregate CVR capital-asset ratio of Connecticut savings banks. The dotted line, however, simulates this ratio assuming that the average duration of savings bank liabilities was four years. The dashed line simulates the ratio assuming that the average savings bank had purchased mortgages of five years duration. Finally, the light solid line simulates the capital-asset ratio assuming that savings banks had issued liabilities with an average duration of four years and had purchased mortgages of five years average duration. It is evident that any of these alternative asset and liability management strategies would have done much to protect savings banks during the past 20 years of rising interest rates. While a close matching of mortgage and deposit maturities eliminates most of the volatility in net worth, even a modest effort to lengthen the duration of liabilities or shorten the duration of assets reduces the risk substantially. Of course, issuing longer term liabilities or holding shorter term assets may have reduced the bank's earnings margins somewhat, but, in retrospect, this insurance would have been inexpensive.

Figure 11 Effect of Selected Financial Strategies on the Net Worth to Asset Ratio



Source: See Technical Appendix

Section IV: Conclusion

Any attempt to estimate a financial institution's economic performance from conventional accounting reports, designed for other purposes, is subject to error. Our analysis is no exception. Nevertheless, the results depicted in Figures 5-11 are striking, and they suggest four general conclusions:

1. Regulation Q ceilings have provided only limited, but critical, aid to savings banks in Connecticut, and the benefits have decreased over time. Because savings banks have held long-term assets during a period of rising interest rates, their capital losses have been large compared to the benefits offered by Q ceilings. Increasingly, though, the competition from open-market investment alternatives has eroded the value of deposit rate ceilings.

2. With or without Q ceilings the prospects for many savings banks in Connecticut are not promising. CVR net worth, shown in Figures 9 and 10, describes the performance of Connecticut savings banks more discouragingly than reported net worth. The two measures, however, are not totally unrelated. If interest rates do not decline unexpectedly, the low value of CVR net worth during 1978 for most banks implies a continuing decline in reported net worth, shown in Figure 6.

3. Connecticut savings banks bear considerable risks by financing long-term assets at fixed yields with short-term deposits. Figure 11 shows, however, that these risks can be reduced substantially if savings banks, perhaps through regulatory reform, compete more for longer term liabilities while reducing the maturity of their asset portfolios.

4. Although rising interest rates have seriously eroded the expected earnings of Connecticut savings banks, not all thrift institutions have experienced similar losses. Newly chartered banks or savings and loan associations and thrift institutions in rapidly growing localities hold relatively more new, higher yielding mortgages than the average Connecticut bank. Without regulation Q ceilings, then, these relatively new institutions could safely offer depositors higher deposit yields than established banks. By more closely matching the maturities of their assets and the maturities of their deposits, however, established savings banks can compete with relatively younger institutions.

Technical Appendix

Figures 5 and 6

The ratio of net worth to assets equals the total of reported surplus accounts divided by reported total assets. All data are taken from the *Annual Report of the Bank Commission of the State of Connecticut*, 1960 to 1978. Figure 5 reports the aggregate ratio for all savings banks; Figure 6 describes the distribution of the ratios for the various banks.

Figures 7 and 8

The ratio of CVR net worth to assets equals the total of surplus accounts divided by the estimated market value of total assets. For these charts, surplus equals the market value of assets less reported liabilities (other than reported surplus).

The market value of all mortgages and loans is estimated as follows: For each bank and for all banks, the nominal annual loan rate (RN) equals the interest and fees received on loans divided by the reported value of these loans (MLPAR). The market loan rate (RM) is a constructed series. For the years 1960 to 1962, RM equals the three-year average of RN for all savings banks; for 1963 and later years, the annual change in RM equals the annual change in the average national conventional mortgage rate for newly issued mortgages on existing homes. Assuming the average duration of mortgage loans is 10 years, the market value of all mortgages and loans (MLCVR) equals

$$(1 - 10^* (RM - RN) / (1 + RN)) * MLPAR.$$

The market value of investments is estimated as follows: For each bank and for all banks, the nominal bond rate (RBN) equals the interest and dividends received on investments divided by the reported value of all bonds and equity (BPAR). The market bond rate (RBM) is a constructed series. For the years 1960 to 1962, RBM equals the three-year average of RBN for all savings banks; for 1963 and later years, the annual change in RBM equals the annual change in the three to five-year Treasury note rate. Assuming the average duration of investments is five years, the market value of all investments (BCVR) equals

$$(1 - 5 * (RBM - RBN) / (1 + RBN)) * BPAR.$$

The remaining assets are not revalued. Figure 7 reports the aggregate CVR net worth to asset ratio; Figure 8 describes the distribution of the ratios for the various banks.

Figures 9 and 10

Assuming that savings bank liabilities bear below-market yields, the reported value of these liabilities exceeds their market value. Consequently, the capital-to-asset ratios in Figures 7 and 8 are underestimated. The capital-asset ratios in Figures 9 and 10 equal

$$CA + (DEP/ACVR) * (.0035/RM)$$

from 1970 and later years. CA is the corresponding capital asset ratio from Figures 7 and 8; DEP is the reported value of deposit liabilities; ACVR is the market value of assets; and .0035 is the average difference between the unconstrained deposit yield and the constrained deposit yield. The unconstrained yield is estimated by the following equation, fitted from 1951 through 1969:

$$\begin{aligned} RDEP = &-.584 + .166 * RDEP(-1) + .009 * R3M \\ &\quad (.238)\ (.228) \qquad\qquad (.029) \\ &+ .786 * RRA, \\ &\quad (.233) \end{aligned}$$

standard error of estimate = .067

serial correlation coefficient = −.109,

where RDEP is the deposit rate offered by Connecticut savings banks, R3M is the three-month Treasury bill rate, and BRA is the rate of return on assets of Connecticut savings banks. See R. Taggart, Jr., and G. Woglom, "Savings Bank Reactions to Rate Ceilings and Rising Market Rates," *New England Economic Review*, September/October 1978, p. 30, equation (A.4).

Figure 11

The solid line is taken from Figure 7. For the dashed line, MLCVR (from Figure 7) is re-estimated assuming the average duration of loans is five years:

$$MLCVR2 = (1 - 5 * (RM - RN)/(1 + RN)) * MLPAR.$$

For the dotted line, MLCVR is used instead of MLCVR2, but the market value of deposits is re-estimated as follows:

$$DEPCVR = (1 - 4 * (RDM - RDN)/(1 + RDN) * DEP.$$

RDM is the predicted deposit rate from the Taggart-Woglom equation; RDN is the nominal deposit rate paid by savings banks. Assuming all deposits have a four-year duration maturity,

$$RDN_t = \sum_{i=0}^{4} RDM_{t-1} * (1+g)^{-i} / \sum_{i=0}^{4} (1+g)^{-i}$$

RDN is a weighted average of past offering rates, RDM; the weights depend on the growth rate of deposits, g.

The light solid line uses both MLCVR2 and DEPCVR to simulate the capital-asset ratio.

Discussion

Donald P. Tucker*

As many of you know, I spent several years at the Board of Governors in Washington, but I am now on Capitol Hill doing Congressional oversight on banking issues, including oversight on Federal Reserve System activities. It is an opportunity that I really enjoy because I no longer have to come up with the answers: I get paid for asking questions, and that is a relief.

When Bob Eisenmenger asked me to come up and comment on this paper I couldn't help wondering whether he was hoping that I would drop some hints about where the Congressional oversight spotlight was going to fall next on the Federal Reserve. I wish I could take advantage of that opportunity since the Fed, like any good bureaucracy, looks for ways to defuse an oversight hearing in advance if it can. I would be delighted if some hint from me could scare the Federal Reserve into getting us out of the Regulation Q morass quickly, so we could get to more juicy topics such as how the Boston Fed gets to spend taxpayers' money year after year at this resort. I will do my best with Kopcke's and Woglom's paper as my starting point.

I wish I could say that the paper was a dynamite paper. It isn't really dynamite, but it is a thorough piece of research on what is an extraordinarily difficult problem: trying to quantify the financial soundness and viability of thrift institutions. To give you a capsule of where I am going to come out, everybody knows that the current accounting methodologies give a badly distorted picture, not only for financial institutions but for nonfinancial corporations as well. Getting more meaningful and informative accounting statements of both income and financial condition is really crucial for a number of purposes including, of course, the regulatory purposes of the financial agencies in determining when and by how much to adjust their Regulation Q ceilings. Thus this paper addresses an area which is very central to policy concerns, and I fully endorse the efforts that have been put into it.

The current value reporting (CVR) framework that this paper presents is, in principle and conceptually speaking, the right way to look at financial institutions, especially thrift institutions. However, as is true of any accounting approach, CVR accounting involves a number of thorny conceptual issues and inherently arbitrary conventions that must be worked out, and doing this right so that everyone can accept the results is difficult. I don't think that this paper,

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as it now stands, has resolved all these issues and come up with numbers that we can truly believe.

My reservations on the results presented in the paper are of a somewhat technical nature, so I will try to summarize them fairly quickly and move on to other more general comments on accounting and its role in the policy arena.

I have three reservations about the charts showing the current value of Connecticut savings banks' surplus accounts, two of which have to do with the valuation of the mortgage portfolios. The appendix has a formula stating the market value of a portfolio of mortgages is the par value of all the mortgages, minus two correction terms times the par value. The two correction terms are, first, a rate differential term based on the differentials between the current market rate and the original contract rates and, second, a duration term showing the average duration of mortgages in the portfolio.

My first reservation is with the 10-year duration used in this formula. I have no qualms about a 10-year duration period for *new* mortgages, but I need to be convinced that an entire portfolio including both new and old mortgages has a duration of 10 years. Maybe it's true in Connecticut – I do not have contrary evidence – but it is something about which I would want to see more evidence in the paper before I could believe it. If the duration of a whole portfolio in Connecticut is really only eight years, then that would alter the results fairly significantly.

My second and most serious reservation is that I do not believe it is correct methodologically to calculate the correction for the whole portfolio in a single formula treating the whole portfolio as a unit. I want to give you a quick numerical example to illustrate the problem that I see with how they have done it. I have not recalculated any actual portfolios, but if my example holds up, the implication is that the net worth position of the savings banks is probably not nearly as bad as these charts look.

Let's assume an institution that has a $100,000 portfolio made up of two sets of mortgages. The first set is $60,000 of mortgages that have just been issued at an 11 percent current market rate, with a 12-year average duration. Then suppose that they issued $60,000 of mortgages several years ago but that now, through pay-downs and early repayments, only $40,000 is left. Those earlier mortgages were issued at 7 percent, and their current average duration is seven years. Thus the average duration of the portfolio is 10 years, and the average yield is 9.4 percent.

If you apply the single formula correction to the combination, noticing that the current market rate is 11 percent but the average nominal rate on the portfolio is 9.4 percent, then the correct market value using their formula is a little over $85,000. If, on the other hand, you do the correction separately to the two pieces, you will get a total of $89.5 thousand. There is no correction on the $60,000 because its yield is the same as the current market rate. Then applying the correction to the $40,000 portion and adding the corrected value of $40,000 to the uncorrected $60,000 gives a substantially higher market value than is obtained from the method employed by Kopcke and Woglom.

The reason, in conceptual terms, is that the correction is based not just on a rate differential only but on a rate differential times a duration. Those mortgages

with the large rate differentials are generally those with a shorter duration and therefore smaller weight in the adjusted value than the mortgages with the small rate differentials. Thus treating the mortgages all together as a single composite results in an overstatement of the market value loss. Correcting this methodological problem can cause a fairly major alteration to the numerical results, and so it is possible that Kopcke's and Woglom's numbers significantly overstate the seriousness of the capital account deterioration in the savings banks.

My third reservation is with revaluations on the liability side, the deposit side. I do not know how you are supposed to value liabilities when they are not things you can trade in the market place. You are not in fact simulating an actual market value for something for which there is a market. This is one of the areas where inherently one has to be engaged in putting together arbitrary accounting conventions, and there is ample precedent for that. I am not saying that making an arbitrary convention is the wrong thing to do, but I am not convinced that they have done it the right way.

Ideally what you want, as Jeff himself said, is something which represents the present discounted value of anticipated future cash inflows and outflows. That implies that, if you are evaluating the liability side separately, you want to set up conventions that take account of how the expenses for nonrate competition are different under rate ceilings than they are without rate ceilings. But the numbers in this paper don't do that – in fact, the authors acknowledge that they don't do that. This omission means that the liability valuations in this paper tend to be too optimistic.

Let me turn to some more general comments on accounting and how we use it. Because of the arbitrary nature of accounting, the question of having confidence in the statements is very central, very crucial. If you think of the people who sit on the Interagency Coordinating Committee and must decide what to do about Regulation Q, they have to feel in their guts that they really believe numbers like these before they can act on them. They can't make policies on the basis of numbers derived from novel accounting theories of current value correction until that kind of confidence is created.

At present people have lost confidence in the conventional accounting numbers but they have not yet arrived at a point where they can feel confidence in the more modern or radical or unconventional types of accounting. So I believe that we definitely need to pay a lot more attention to polishing up and solidifying the technique for correct current value reporting, and I would be delighted to see the Federal Reserve put a high priority on that project. I think it is an excellent project.

But let me point out that only one of the several purposes of accounting is to make policy decisions on Regulation Q. Another related arena in which current value reporting potentially can be very valuable is for the investment market place to value the equity shares of stockholder-owned institutions. Of course there are no such things as stockholder-owned savings banks, but there are stockholder-owned S&Ls which are similar, and if current value accounting can be refined to the point where people can feel confidence in the numbers, they should not be kept locked up just for the regulators. They should be out where the public can see them, and then the regulators in turn should be very

interested in how the market place values the equities on the basis of that information.

The point is that a market evaluation given by the investment community when it has good information is really an independent aggregate judgment on the going-concern value of those institutions, as opposed to their liquidation value, and the going-concern value is what the regulators are most concerned about in setting the Regulation Q ceilings. I do not happen to believe that the regulators are inherently better than the market place in making that judgment about going-concern value. I don't say they are worse either; they simply ought to know what the market valuation is and take it into account.

Current value accounting reporting has not much value, I think, as a basis for deriving income statements. Its focus is on financial and balance sheet conditions. Current value income statements are basically dominated by unrealized capital gains which I think are a poor measure of management success and a poor basis for income taxation. Here I think general price level accounting has a unique role as the basis for income statements to reflect the impact of inflation. That, however, is somewhat more remote from the particular concerns of the financial regulatory agencies.

Now, getting back finally to the policy arena and the oversight interest of the Congress, as many of you know my subcommittee and Senator Proxmire's committee in the Senate (the Senate Banking Committee) and some other committees as well have held hearings within the past few months on the Regulation Q ceilings and especially on the plight of the small savers. From these hearings I developed a fairly strong perception of what homework the various regulatory agencies had done and what homework they had not done in deciding what to do about Regulation Q ceilings. Speaking personally, I am convinced that the agencies, in their background research work, simply never worked through the technical analysis of the consequences of a program of gradual future changes in Regulation Q. In preparing for the hearings they seem to have analyzed only how the *current* income of financial institutions would be affected by a once-and-for-all change in the ceilings. They have no methodology for working through a program of future changes that would enable them to say, for example, that because of what current value reporting could tell, we know we might be able to tolerate a program of such and such a rate of increase in the ceilings in the future. I will also say on the side that I do not believe that even in their homework on the consequences of a once-and-for-all immediate change in the ceilings, they really looked hard and thoughtfully at how the expenses for nonrate competition would be altered, i.e., *reduced* by a lifting of the ceilings.

So I think there is important uncompleted homework that needs to be done to really get the best handle on Regulation Q ceilings, and this homework is very centrally connected to the work that Jeff and Dick have done. What I am saying is that although the paper isn't dynamite now, it is just possible that the paper may be dynamite when it is done correctly. It just might show that the capital problems of the savings industry really aren't as bad as we've thought.

Chart 7, which shows the average adjusted capital of the savings banks using the asset corrections, basically confirms the common expectations. It shows what

people have been telling themselves for a long time about what is happening to the market value or current liquidation value of those institutions. But if the numbers are done right, the results really might *violate* those expectations. If that were to happen, the bottom just might fall out of the support for the Regulation Q ceilings.