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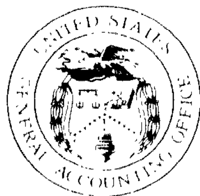
THRIFTS AND HOUSING FINANCE

Implications of a Stricter Qualified Thrift Lender Test



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The Honorable Donald W. Riegle, Jr.
Chairman, Committee on Banking,
Housing and Urban Affairs
United States Senate

The Honorable Henry B. Gonzalez
Chairman, Committee on Banking,
Finance and Urban Affairs
House of Representatives

This report presents the results of our review of the implications of a stricter qualified thrift lender test. As part of our ongoing responsibility to monitor the savings and loan industry, we evaluated the implications of the Financial Institutions Reform, Recovery, and Enforcement Act's more stringent qualified thrift lender test on the availability of residential mortgage finance and the safety and soundness of thrift operations. We are providing copies of this report to the federal regulators and other interested parties.

This report was prepared under the direction of Craig A. Simmons, Director, Financial Institutions and Markets Issues, who may be reached on (202) 275-8678 if you or your staff have any questions. Contributors are listed in the appendix.

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Executive Summary

Purpose

The widespread failure of savings and loan (thrift) institutions during the 1980s led to a serious reevaluation of the purpose and regulation of the industry. The Financial Institutions Reform, Recovery, and Enforcement Act helped put the industry back on more solid footing by (1) providing the funding and administrative means to close insolvent thrifts and (2) redefining the conditions by which an institution could qualify to operate as a thrift.

One new condition is a stricter qualified thrift lender test that, effective July 1991, will require thrifts to hold an increased percentage of their assets in housing-related investments, such as residential mortgages and mortgage-backed securities. A stricter qualified thrift lender test is meant to promote the availability of mortgage credit and the safety and soundness of thrift operations. As part of its ongoing responsibility to monitor the industry, GAO evaluated the implications of a stricter qualified thrift lender test.

Background

For over 150 years, the United States has had financial institutions that have specialized in supplying funds for housing. Since the 1930s, thrift institutions have used federally insured deposits to fund mortgages. For much of their history, thrifts received tax advantages and other benefits in return for concentrating their activities on residential mortgage lending. This proved to be a successful arrangement for thrifts for many decades when interest rates were generally stable and housing demand strong. (See pp. 14-17.)

There are three aspects of mortgage finance—(1) originating or making the mortgage, (2) holding or investing in mortgages, and (3) servicing or collecting the payments. While some institutions specialize in just one phase of the mortgage lending process, thrifts have generally been involved in all three phases. A thrift, however, cannot meet the QTL test solely by originating and servicing mortgages. It must hold a specified percentage of its assets in residential mortgages and/or mortgage-backed securities.

Following the thrift crises of the last decade, Congress passed the Financial Institutions Reform, Recovery, and Enforcement Act. The act raises the proportion of housing-related assets that a thrift must have in its portfolio to qualify as a qualified thrift leader from 60 percent to 70 percent and also establishes a more rigorous definition of such assets. Under this stricter qualified thrift lender test, regulators can no longer

broadly interpret those assets that qualify as housing related. The qualified thrift investments are generally restricted to specified mortgage-type assets, such as residential loans to build, buy, or improve a home; home equity loans; mortgage-backed securities; and certain other assets related to residential finance. Short-term liquid assets, such as Treasury securities, no longer qualify under the test.

Results in Brief

For years, thrifts have been a major source of mortgage credit and they continue to remain so. Homeowners still approach thrifts for housing finance. But thrifts' declining share of mortgage debt indicates that they sell a significant proportion of the resulting mortgages to others. As the mortgage-backed security market has grown, the thrift dominance of the mortgage finance market has declined.

The changing business environment, including new competitive pressures, increased operating costs, and difficulty in hedging interest rate risks, have reduced the profitability resulting from the pursuit of the traditional residential mortgage lending strategy. GAO's analysis showed that there was no single strategy, in terms of the types of assets to invest in, that was consistently profitable for all thrifts in the last 13 years. The level of capital in the institution, not its business strategy, was more clearly associated with profitability. Choosing a particular asset strategy did not, in and of itself, determine the level of profitability. Moreover, the success of any particular strategy choice varied over time.

GAO cannot predict with confidence the future evolution of the thrift industry. For some thrifts, the mortgage business may well continue to be a profitable line of activity. GAO believes, however, that many thrifts will have to broaden their activities or transform themselves into different sorts of financial institutions if they are to be profitable in the long term. By forcing thrifts to concentrate in traditional mortgage lending, a more stringent qualified thrift lender test may complicate and impede these necessary adjustments. GAO believes that a more stringent qualified thrift lender test is unnecessary to assure the availability of housing finance or to promote industry profitability and safety.

GAO does not know what level of investment in mortgage lending would assure thrift industry safety and profitability and minimize the risks the industry presents to the taxpayers. At this time, a better alternative may be to keep the qualified thrift lender test at the current 60-percent level, while retaining the Financial Institutions Reform, Recovery, and

Enforcement Act's prospective and more precise language regarding those assets that qualify as housing related. GAO also believes that industry safety and soundness can be promoted by allowing safe and liquid assets, such as short-term U.S. Treasury securities, to be counted as qualified thrift investments.

Principal Findings

The Thrift Industry Has Declined in Importance as a Supplier of Housing Finance

The development and growth of mortgage-backed securities have made the supply of housing finance substantially less dependent on mortgage investment by thrifts. Mortgage-backed securities are the centerpiece of a financing process that unbundles mortgage lending into its component parts—origination, holding, and servicing. This unbundling allows different participants to participate in various aspects of the mortgage process. In particular, mortgage-backed securities have allowed institutions to invest in mortgages without becoming involved in either originating or servicing them. Because the investment portions of a number of mortgages are pooled in a mortgage-backed security, the risk associated with a single borrower or a single region is lowered through diversification. Investors are protected from borrower defaults by a guarantee provided by the issuer of the mortgage-backed security. These features make mortgage-backed securities easier to trade than individual mortgages and more attractive to a wide range of investors. (See pp. 41-42.)

Table 1 shows that the total residential mortgage debt market in 1989 was nine times larger than in 1970. The thrift industry's share of this growing market, including its share of mortgage-backed securities, declined steadily while an increased percentage of the market took the form of mortgage-backed securities rather than whole mortgage loans. (See pp. 42-45.)

Table 1: Shares of Residential Mortgages Outstanding Held by Thrift Industry and by Mortgage-Backed Securities

Dollars in trillions

Year	Total debt	Thrift share including mortgage-backed securities	Mortgage-backed security share
1970	$0.3	56%	0.1%
1975	0.6	53	5.0
1980	1.1	51	11.6
1985	1.7	45	24.7
1989	2.7	36	34.6

With mortgage-backed securities available, a wider range of investors has been willing to increase their participation in the mortgage finance market, helping to offset the decline in the thrift share. The Department of Housing and Urban Development estimates that investors other than thrifts held approximately 80 percent of mortgage-backed securities outstanding at year-end 1989. Nonthrift investors include commercial banks, insurance companies, pension funds, public retirement systems, investment firms, and others. (See p. 45.)

This increasing participation of nontraditional investors indicates that the mortgage market is becoming more integrated into the overall capital market for long-term securities. With an efficient mechanism for buying and selling residential mortgage instruments, the potential suppliers of housing finance have been extended beyond the deposit base of the thrift industry.

As a result, moderate changes in the qualified thrift lender test are unlikely to significantly affect the overall supply of housing finance. While the thrift industry, at the end of 1989, remained the largest single holder of residential mortgage debt, it has become one of many suppliers of housing finance. The availability of residential mortgage credit in today's market depends more heavily on the free flow of funds through the capital market than on the proportion of the thrift industry's assets that are restricted to residential mortgage investments.

The Qualified Thrift Lender Test Leaves the Industry Vulnerable to Economic Cycles

A variety of evidence suggests that concentrating on residential mortgage investment will not ensure industry safety and soundness. In the period from 1979 to 1982, thrift industry profitability turned negative as a result of dramatic increases in interest rates. A recurrence of this sort of episode cannot be ruled out. While a typical thrift can earn profits in the short term by exposing itself to excessive interest rate

risk, if it adequately protects itself from such risk, it may be unable to sustain long-term profitability. (See pp. 55-60.)

Concentrating on residential mortgages was safer and more profitable for thrifts before the late 1970s than it is today for three reasons. First, interest rates have become more volatile, leading to higher risks. Mortgage portfolio lending involves considerable interest rate risk for thrifts. Although thrifts now have a larger menu of hedging instruments to choose among to manage interest rate risk, when interest rates rise, thrifts' mismatched maturity structure—long-term, fixed-rate mortgages funded by short-term, variable-rate deposits—can still cause declining profits or losses. There is no compensating gain when interest rates fall because borrowers tend to prepay higher interest mortgages, and the money cannot be invested as profitably at these lower rates. While interest rates were fairly stable through most of the 1960s and 1970s, rates rose sharply during the late 1970s and early 1980s, as the following table shows.

Table 2: Short-Term Interest Rates (1977 to 1989)

Year	Interest rate
1977	5.3%
1978	7.2
1979	10.0
1980	11.5
1981	14.0
1982	10.7
1983	8.6
1984	9.6
1985	7.5
1986	6.0
1987	5.8
1988	6.7
1989	8.1

In a May 1990 study, two researchers concluded that a repeat of the 1977 to 1986 interest rate cycle would be extremely costly to the thrift industry. If the industry were profitable and adequately recapitalized, these losses could be sustained without loss to taxpayers. Their analysis indicates, however, that under current conditions, such an interest rate episode would impose substantial losses on taxpayers.

A second factor affecting the profitability of mortgage investment for thrifts is the lower returns from mortgage investments. The price of mortgages is now highly influenced by the mortgage-backed securities market. According to recent studies, the development and growth of mortgage-backed securities have lowered the yield on mortgages by as much as 0.3 percent. Furthermore, demographic trends suggest that the demand for mortgages will decline over the next several decades, putting additional downward pressure on mortgage yields. (See pp. 51-54.)

A third factor affecting profitability is rising costs. Thrifts have lost nearly all of their tax advantages and other competitive privileges, such as price controls on interest rates paid on deposits. They now face higher operating costs from increased insurance premiums, additional capital requirements, and increased regulatory assessments. (See pp. 61-62.)

GAO studied the past profitability of thrifts that used various business strategies. GAO found that well-capitalized thrifts (with net worth greater than 6 percent) following nontraditional strategies, such as mortgage banking or real estate development, performed comparably to well-capitalized thrifts following the traditional (fixed-rate, long-term residential mortgages) mortgage lending strategy. Poorly capitalized (insolvent) thrifts tended to do poorly no matter what strategy they undertook. Their losses were particularly dramatic in real estate development and commercial lending. The traditional mortgage lending strategy performed most poorly during periods of high interest rates and better during periods of stable interest rates. (See pp. 63-70.)

Taken together, these findings indicate that there is no simple prescription for ensuring safety, soundness, and adequate profitability in the thrift industry. Requiring the industry to invest heavily in mortgages will limit desirable diversification and leave the industry vulnerable to economic cycles like those the United States experienced in the late 1970s and early 1980s. On the other hand, the large losses incurred by the deposit insurance fund in the 1980s illustrate the dangers that can occur when poorly capitalized or imprudently managed thrifts pursue high-risk diversification strategies.

GAO believes that these dangers have been markedly reduced by the combined influence of many provisions of the Financial Institutions Reform, Recovery, and Enforcement Act. In addition to establishing much needed regulatory and enforcement reform, the act provided funds to deal with insolvent, weak, and failed thrifts and to dispose of

their assets. Also, thrifts are no longer permitted to engage in direct real estate investments or to invest in junk bonds. The Financial Institutions Reform, Recovery, and Enforcement Act compels thrift owners to invest more of their own capital to provide a cushion against losses and to establish an incentive to limit the risks taken with insured depositors' funds. Qualified thrift investments are now defined more closely, as are the other investments permissible to thrifts. Limits have been established on the levels of some types of investments, both qualifying and nonqualifying. (See pp. 30-35.)

Matters for Consideration

Given the results of GAO's analysis, it is not evident that raising the qualified thrift lender test from 60 percent to 70 percent will reduce industry risk. A more stringent test may in fact increase the risk. GAO does not know what the level of the test should be in order to keep the thrift industry safe and profitable and to minimize the risks the industry presents to the taxpayers. However, in view of the possibility that raising the qualified thrift lender test to a higher level may increase risks, at this time Congress may wish to consider amending the Financial Institutions Reform, Recovery, and Enforcement Act to leave the test unchanged at the current 60-percent level. The prospective and more precise language regarding those assets that qualify as housing related should be retained. Congress should also consider allowing safe investments, such as U.S. Treasury securities with less than 1 year to maturity, to qualify without limitation as qualified thrift investments.

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Abbreviations

ARM	adjustable rate mortgage
CD	certificate of deposit
CEBA	Competitive Equality Banking Act
FDIC	Federal Deposit Insurance Corporation
FHLB	Federal Home Loan Bank
FHLBB	Federal Home Loan Bank Board
FIRREA	Financial Institutions Reform, Recovery, and Enforcement Act
FSLIC	Federal Savings and Loan Insurance Corporation
GAAP	generally accepted accounting principles
HUD	Department of Housing and Urban Development
MBS	mortgage-backed securities
NOW	negotiable order of withdrawal
OTS	Office of Thrift Supervision
QTL	qualified thrift lender
ROE	return on equity
ROA	return on assets
SAIF	Savings Association Insurance Fund

Introduction

The widespread failure of thrifts, also known as savings and loans, in the 1980s threatened the industry's identity and survival. In August 1989, Congress responded to the perilous position of the industry and the insolvency of its insurance fund by passing the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA). In the history of the thrift industry, FIRREA became a critical juncture when Congress acted to resolve the problems that had developed in the past and to reform the industry. One FIRREA reform is the more stringent qualified thrift lender (QTL) test that, effective July 1, 1991, will require a thrift to hold at least 70 percent of its portfolio assets in specified housing-related investments such as residential mortgages, home equity loans, and mortgage-backed securities (MBS).

By requiring thrifts to commit a larger portion of their assets to home mortgage lending, Congress

- intended to get thrifts back to their original purpose of financing housing in the belief that the active participation of the savings and loan industry is essential in meeting the housing needs of the country,
- sought to strengthen the industry by requiring it to focus again on housing finance, and
- intended to curtail investments and other activities of savings associations that pose unacceptable risks to the federal deposit insurance funds.

This report examines the implication of continuing to restrict thrifts, as the QTL test does, to a portfolio heavily concentrated in mortgages and housing-related assets.

Background

The Early Role of Thrifts in Housing Finance

For over 150 years, the United States has had a class of financial institutions known as savings and loan associations or thrifts that specialized in housing finance. The historic role of thrifts as specialized housing lenders began with the cooperative building associations that first developed in the 1830s. Initially, such associations were largely unregulated, and their choice to specialize in housing finance was a business decision. As the industry grew, so did state supervision and regulation, which gradually expanded to include limitations of the activities of

these institutions. By 1930, there were 12,000 thrifts nationwide dedicated to the provision of funds for home buyers.

The federal government entered into the regulation and support of the savings and loan industry in response to the Great Depression. In the 1930s, thrifts experienced severe deposit withdrawals and declining net worth as their portfolios, which consisted almost entirely of mortgage assets, suffered due to delinquencies and defaults. The number of thrifts that failed was 1,700. At that time, the federal government was not liable for the costs of these failures. Rather, they were borne by the institutions' owners and by depositors. In addition, there were few alternative sources of housing finance. Thus a contraction of the industry meant a contraction in mortgage lending. As a result, the flow of funds to housing was severely limited during this period.

The modern thrift industry has its roots in three major pieces of Depression-era legislation that tried to remedy this disruption in the housing market and the problems that thrifts experienced during the Great Depression. In 1932, the Federal Home Loan Bank Act created the federal home loan bank system, consisting of the Federal Home Loan Bank Board (FHLBB) and 8 to 12 district Federal Home Loan Banks (FHLB). The intent of this act was to address the problems facing home owners unable to refinance mortgage loans (including those in distress cases) and to financially strengthen member thrifts by providing them with an alternative and steady source of funds from the FHLBs to promote home ownership. In 1933, Congress passed the Home Owners' Loan Act, which gave the FHLBB power to charter and regulate thrifts—a function previously confined to the states. In 1934, the National Housing Act was passed, which created the Federal Savings and Loan Insurance Corporation (FSLIC) to provide federal insurance for savings and loan deposits. It was hoped that this act, which made the federal government the ultimate risk bearer for thrift deposits, would sustain depositors' confidence and thus prevent depositors from withdrawing their funds during economically troubled times.

Privileges in Exchange for a Commitment to Housing Finance

The measures adopted during the 1930s to strengthen the housing finance system created a highly regulated system of specialized mortgage lenders. In exchange for holding a mortgage lending portfolio, which was vulnerable to both housing recessions and the risk of

changing interest rates, thrifts received significant federal assistance and other privileges.[1]

Both banks and thrifts enjoyed the benefits of federal deposit insurance. Banks, however, had a wider range of permissible activities than thrifts. For example, banks could offer no-interest checking accounts and engage in commercial and consumer lending. Thrifts were narrowly constrained to mortgage lending and, in return for such restrictions, thrifts received certain benefits that banks did not enjoy, including

- low capital requirements,
- minimal liquidity requirements,[2]
- access to capital market funding through FHLB advances,
- price controls on interest rates for savings deposits to keep thrifts' cost of funds below market levels,[3]
- special tax benefits,[4] and
- wide-ranging business opportunities for certain kinds of thrift-holding companies.[5]

Generally, under the umbrella of this specialized system, thrifts prospered, and housing finance remained heavily dependent on thrifts.

[1]The early thrift regulation intended to limit lending to local home-mortgage loans. Section 5 of the Home Owners' Loan Act of 1933 states that savings and loan associations "shall lend their funds only on the security of their shares or on the security of first liens upon homes or combination of homes and business property within fifty miles of their home office." However, it was permissible for the associations to invest any portion of their assets in obligations of the United States or the stock or bonds of an FHLB. In 1964, federal thrifts were permitted to make unsecured, personal loans for college or educational expenses—this was the first time thrifts had been allowed to make loans for any purpose other than acquiring real estate.

[2]Thrifts were permitted to hold lower reserve requirements, i.e., liquid assets such as cash and U.S. Treasury securities, as a percentage of savings deposits than banks were required to hold on demand deposits.

[3]The so-called Interest Rate Control Act of 1966 gave the FHLBB the authority to set rate ceilings, nonexistent until then, on member thrifts' savings deposits. The ceiling, initially set at one-half of 1 percent (later reduced to one-quarter of 1 percent) above the ceiling rate that commercial banks were permitted to pay on savings deposits, provided thrifts with a competitive edge in garnering funds for the residential housing sector.

[4]Thrifts' original tax exemption was changed in 1951 to a deduction for additions to a bad debt reserve, which still enabled most thrifts to avoid paying taxes. However, this deduction has been steadily reduced since 1962. The Tax Reform Act of 1986 eliminated all but the most minor thrift (and bank) tax advantages.

[5]The National Housing Act and (post-FIRREA) the Home Owners' Loan Act have provided strict limitations on activities in which savings and loan holding companies and their nonthrift subsidiaries may engage. Holding companies owning a single thrift (and/or owning thrifts acquired through assisted transactions) and their noninsured subsidiaries have been exempted from activity limitations, provided all thrifts in the holding company meet the QTL test.

Thrifts' Role in Housing Finance Grows After World War II Era

The 1950s, 1960s, and early 1970s marked the savings and loan business's golden age in home financing. Buoyed by the strong postwar demand for housing and their privileged status, thrifts' assets grew dramatically. Between 1945 and 1970, thrift industry assets grew nearly twentyfold, from $8.7 billion to $176.1 billion, while the number of thrifts stabilized at around 6,000. Between 1933 and 1965, thrift assets as a percentage of total U.S. financial institution assets doubled from 7 percent to 14 percent. The thrift industry had a sound net worth position during the 1950s and 1960s. For almost all FHLB districts, average thrift net worth as a percentage of assets was well above 6 percent. For many, it was closer to 7 percent.[6]

During this period, housing finance grew more dependent on the thrift industry. From the end of World War II to 1970, thrifts' share of residential mortgage debt grew from 34 to 56 percent of total mortgage debt outstanding. The thrift industry was a major originator of residential mortgages, accounting for 45 percent of residential mortgage debt originations in 1970. Up until the late 1970s, more than 80 percent of thrifts' assets consisted of the traditional thrift asset—fixed-rate, long-term residential mortgages—and MBS, financed primarily by short-term passbook savings deposits.[7] The savings and loan industry was dedicated almost entirely to home mortgage lending, and housing finance depended on the industry.

Objectives, Scope, and Methodology

As part of our ongoing responsibility to monitor the thrift industry, we examined the implications of requiring thrifts to continue to concentrate their lending in the housing finance arena. In particular, we evaluated the implications of a more stringent QTL test for the availability of housing finance and the safety and profitability of the thrift industry. To do this, we answered the following questions:

- How important is the thrift industry to housing? Is a more stringent QTL test needed to assure the availability of housing finance?
- Can thrift institutions operate safely and profitably if they are required to concentrate in mortgage investments? What might be the effect of a more stringent QTL test on the thrift industry?

[6]Currently, the Office of Thrift Supervision judges thrifts with a tangible capital-to-assets ratio (capital minus goodwill) of 3 percent or less to be troubled and thrifts with capital above 3 percent to be strong. Those with a tangible capital-to-assets ratio greater than 6 percent are the healthiest.

[7]MBS are mortgage assets that are pooled, packaged, and resold as capital market instruments.

Thrifts' Role in Housing Finance

To evaluate the importance of thrifts to housing finance, we analyzed the trends in the thrift industry's participation in housing finance over the past 2 decades.

We determined changes in thrift holdings of mortgage debt compared to other financial institutions using data on mortgage debt outstanding from the issues of the Federal Reserve Bulletin from 1970 to 1989. We comparatively assessed the industry's role in originating mortgages using Department of Housing and Urban Development (HUD) data from its annual surveys of mortgage lending activity for 1970 to 1989. Using our thrift industry database, consisting of the financial statements of all FSLIC-insured—now Savings Association Insurance Fund (SAIF)—institutions provided to us by FHLBB—now the Office of Thrift Supervision (OTS)—we analyzed the changing share of mortgage-related assets in thrifts' portfolios. These data are available from 1977 to the present.

Through a literature review, we identified key elements responsible for thrifts' early dominance in the housing industry as well as those factors associated with the changes in their participation, particularly in the past decade.

The Viability of Portfolio Lenders

We approached the question of the safety and profitability of a savings and loan business substantially devoted to mortgage assets from several perspectives. First, after studying the literature on the topic, we identified a number of factors that explain the changes in the mortgage yields. We determined how these factors might impact the future profitability of mortgage lending.

Second, using academic journals, agency studies, and articles from trade journals, we examined the particular risks that confront a thrift concentrating in mortgage lending, particularly the risk of losses due to changes in interest rates. We examined techniques available to thrifts to control such risks.

Third, we used our thrift industry database containing financial information reported by thrifts to regulators to ascertain whether there was any business strategy that was consistently more profitable than others. We analyzed the profitability of six dominant thrift business strategies frequently cited in the literature and determined the relationship between each strategy and profitability. In this analysis, we controlled for the effect of level of capitalization on profitability by subdividing thrifts into four net worth categories. We evaluated the success of these

same strategies from 1979 to 1989 according to both the thrift's level of capital and strategy.

Effects of FIRREA

Finally, reviewing FIRREA and a variety of literature, we examined the current and possible effects of many of FIRREA's provisions on the participation of thrifts in housing finance and their profitability in mortgage lending.

Sources of Information

We obtained our data and information from a variety of sources. We used numerous articles from academic and trade journals and interviewed by telephone a number of individuals knowledgeable in mortgage finance. We also used data from several agencies including the Federal Reserve and HUD. We relied considerably on our thrift industry database consisting of the financial statements (semiannual and quarterly Thrift Financial Reports) of all FSLIC-insured institutions provided to us by the FHLBB. From December 1977 through December 1983, the data are available semiannually; thereafter, they are available quarterly. We did not audit the financial report data, the preparation of the financial statements, or the transcription of financial statements to computerized format. Our work, done between June 1989 and June 1990, was in accordance with generally accepted government auditing standards.

Development of the Thrift Crisis

The thrift industry's historic vitality was sapped when interest rates rose to unprecedented levels in the late 1970s and the early 1980s. A number of thrifts became insolvent at this time because they could not endure the long period of high interest rates. The existing FHLBB forbearance policy that permitted undercapitalized thrifts to remain open, in combination with thrifts' broader asset powers and access to insured deposits, provided both the incentives and the opportunities for many thrifts to behave imprudently. Additionally, other thrifts used the expanded powers they received during the 1980s to move into new businesses that exposed them to more credit risks than traditional home mortgage lending. By the end of the 1980s, more than 750 thrifts, or 26 percent of the industry, were insolvent or poorly capitalized,[1] and the industry's insurance fund was bankrupt.

Congress responded to the thrift industry crisis by passing FIRREA in August 1989. FIRREA represents a critical juncture for the thrift industry. FIRREA sets stricter rules for thrifts with the objective of keeping the industry safe and profitable and avoiding the problems experienced in the 1980s. Under FIRREA, thrifts will need to be better capitalized; will need to concentrate even more on mortgage investments; will be prohibited from making investments considered to be too risky; and will have to pay more for examination, supervision, and insurance. In return, thrifts that satisfy the "thriftiness" test will continue to have access to FHLB advances and receive more favorable tax treatment than banks in the computation of their bad debt deductions. Also, a QTL thrift's holding company will enjoy expanded investment powers if the QTL thrift is the holding company's sole thrift.

Thrifts' Mismatched Maturity Structure Was a Critical Flaw

Based on Depression-era reforms, thrifts settled into the business of using short-term funds, primarily insured deposits withdrawable at will, to make long-term mortgage loans to individuals who were buying homes. A thrift's income depended in part on its funding spread—that is, the difference between the rates it charged for mortgage loans and the rates it paid to depositors. To stay in business, a thrift needed to keep this spread sufficiently positive to pay expenses and earn a profit for its owners (i.e., earn a return on capital), as well as cover the small interest risk and credit risks that it bore. When deposits were inadequate to support the demand for housing, a savings and loan institution could borrow low-cost, short-term funds from its district FHLB and, in turn, profitably lend these funds to the home buyer.

[1] Net worth, or capital, as a percent of assets was less than 3 percent.

However, the Depression-era reforms did not envision the earnings problems that could befall a savings and loan institution as a result of dramatic and unexpected changes in interest rates. A thrift's traditional asset (fixed-rate, long-term mortgage loans) and its liabilities (short-term deposits) reprice or mature at very different intervals. Mortgage loans are often drawn as a 30-year contract but tend to prepay early, usually without penalty. This ability to pay off a mortgage loan early is called a prepayment option. Demand deposits, by contrast, are short term because they can be withdrawn at any time. In an unpredictable and rapidly changing interest rate environment, this mismatched maturity structure combined with the mortgage prepayment option can wreak havoc with a thrift's income.

Because of thrifts' mismatched maturity structure, when interest rates rise—as they did in the early 1980s—a thrift's net interest income (interest income minus interest expense) will decline as the rate of return on its mortgages increases more slowly than the rate of interest paid on its deposits. Because historically, a substantial portion of thrifts' portfolios consisted of fixed-rate, long-term mortgages,[2] the average rate of return that a thrift earned on its portfolio of mortgages differed from the rate of return it earned on its new mortgages. In a rapidly rising interest rate environment, a thrift's portfolio of mortgages will pay an average rate of return far below the higher current rate on new mortgages. Furthermore, when interest rates are rising, home owners are more likely to defer selling or refinancing their home. This extends the life of the thrift's comparatively low-earning mortgage assets. In other words, the portfolio of mortgage assets adjusts very slowly to interest rate increases. By contrast, a thrift must frequently adjust the rates it pays on short-term deposits in a rising interest rate environment or else depositors will take their funds elsewhere. This withdrawal of funds from the thrifts is known as disintermediation.

Thus in a rapidly rising interest rate environment, thrifts' portfolios suffer in two ways: (1) net worth declines as the value of the mortgage assets falls in response to the rise in interest rates, and (2) the proportion of low-earning assets relative to higher cost liabilities increases.

Thrifts' earnings may suffer in a sharply falling interest rate environment as well. As interest rates fall, home owners with relatively high mortgage rates may find it beneficial to pay off their existing mortgages

[2]The industry held 23.6 percent of its portfolio of mortgage assets in fixed-rate mortgages at year-end 1989, down from 36.3 percent at year-end 1987.

and refinance at the lower current rates. Thrifts must reinvest the cash from the prepaying mortgages at current yields that are lower than previous rates. On the expense side, those depositors who have invested in certificates of deposit with fixed interest rates for a specified term will be likely to hang onto this higher than market rate until maturity, keeping the thrift's interest expense marginally higher than the current market rates. Thus in a sharply falling interest rate environment, thrifts' earnings may continue to compare unfavorably with liability costs.

Thrift earnings can be influenced by the level of interest rates as well as by changes in interest rates. Short-term interest rates generally tend to be both lower and more volatile than long-term rates. When interest rates rise, it is typically the case that short rates rise more than long rates. Similarly, when rates fall, the short rates fall more. Thus a period of "high interest rates" is typically one in which short rates are much higher than usual, while long rates are somewhat higher than usual. Similarly, in a period of "low interest rates," short rates are particularly low relative to long rates.

In a fairly stable rate environment, such as the one that generally characterized the U.S. economy from the post-Depression era to the late 1970s, the thrifts' mismatched portfolio structure can perform well. During this period, the interest income earned from the longer term mortgage assets was greater than the interest expenses paid on borrowed funds. The profitability of thrifts was also enhanced because mortgages were relatively illiquid, and thrifts were practically the only institutions willing to hold mortgages to maturity. This meant that thrifts could command rates of return that included a premium to compensate them for the risks they bore. For many years, this premium also contributed to the stability and profitability of savings institutions.

However, the high and volatile interest rates and inflation of the late 1970s and early 1980s made earning profits a difficult if not impossible task for thrifts. Warning signs of the stresses to come had been evident since the mid-1960s.

Early Evidence of Distress in the Industry Exposed the Weakness of a Mismatched Maturity Structure

Thrifts relied on deposit rate ceilings, known as Reg Q, for their earnings spread.[3] Reg Q provided stability in the pricing of deposits. In addition, it permitted thrifts to price their deposits slightly higher than banks, thus assuring thrifts of a steady source of funds. As long as low and stable interest rates and a healthy economy prevailed, and as long as depositors had few alternatives in which to earn interest on short-term funds, Reg Q worked satisfactorily. Thrifts had ample low-cost funds, and their mismatched maturity structure presented no threat. However, beginning in the mid-1960s, periodic bouts of financial instability, higher interest rates, and deposit outflows from thrifts presaged the end of Reg Q and exposed the weakness of the thrifts' mismatched maturity structure.

The relatively short periods of tight money in 1966, 1969, and 1974 drove market interest rates above the Reg Q ceiling. Because the Reg Q interest rate ceilings did not keep pace with the rising market rates, the average rates paid by thrifts were lower than market rates available elsewhere. This motivated depositors to shift out of thrift passbook savings accounts and into equally safe but higher yielding Treasury and other high-quality securities that were not subject to interest rate ceilings. During these times, there were lapses in the ability of thrifts to provide mortgage credit, and thrifts' share of mortgage debt holdings declined during each of these credit crunch episodes.[4] While the decline in the volume of residential mortgage lending naturally reflected the sensitivity of the demand for mortgage credit to rising interest rates, it also reflected the constraint on thrift lending due to a shortage of funds. At the same time, the average rates paid by thrifts on short-term deposits were higher than the average yield on their longer term assets precisely because their liabilities were repricing more frequently than their assets.

These periods of tight money and rising interest rates illuminated the sensitivity of thrifts' mismatched portfolio structure to sudden and dramatic changes in interest rates. When interest rates rose, thrifts confronted the double problem of falling profits (or losses) and eroding deposits. Even with the availability of funds from their FHLBs, it was

[3]The regulation first served the thrift industry when it applied only to commercial banks by limiting interest on bank time and savings deposits to 3 percent from 1933 to 1962. This limitation provided freedom from price competition among banks and gave the thrifts an opportunity to pay higher rates than banks, thus attracting business.

[4]Congress established the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae) after the 1969-70 period to help provide a stable source of mortgage credit.

difficult for thrifts to improve their profitability because they were locked into the lower rates of return on their long-term mortgage assets while they could borrow funds only at the current, higher cost. It was this mismatched maturity structure, burdened by the high interest rates of the late 1970s, that triggered the beginning of the modern thrift crisis.

These difficulties faced by the thrift industry during episodes of rising rates prompted debate on three primary strategies to resolve the problems: (1) elimination of deposit rate ceilings, (2) mortgage contracts with adjustable interest rate features, and (3) broader asset powers for thrifts. All of these strategies were eventually adopted. However, the heart of the weakness in the thrift industry was that thrifts' heavy concentration in long-term, fixed-rate mortgage assets funded by short-term deposits created an underlying mismatched maturity structure that made thrifts vulnerable to major increases in the interest rate.[5] The reforms that were adopted did not directly confront this basic problem.

Ill-Timed Reforms, Moral Hazard, and Other Factors Took Their Toll

Although interest rates had been slowly rising since 1965, in the late 1970s they escalated sharply to unprecedented levels, with dramatic consequences for thrifts' interest-sensitive portfolios. For example, in 1978 thrifts paid an average rate of 7 percent for deposits and other funds they borrowed. At the same time, the average interest rate that they earned from mortgages was 8 percent. By 1982, this positive margin had been wiped out as thrifts paid just over 11 percent to borrow money while they were earning just under 11 percent on their mortgage portfolios. Thrifts suffered substantial losses in this environment.

The rapid rise in interest rates also spurred vigorous growth in money market funds, investment funds offered by securities firms that paid market rates.[6] Depositors, seeking the higher returns available from money market funds, withdrew their money from thrifts. At times these funds were paying 5 percentage points more than the average rate paid by thrifts. As a result, thrifts were hampered in their ability to make new loans and faced the added threat of having to sell assets (whose values were declining with rising interest rates) to cover deposit withdrawals.

[5]Numerous commissions and studies, beginning with the Commission on Money and Credit established in 1961, had pointed out this fact.

[6]Some market rates shot up from under 7 percent in 1978 to 16 percent in 1982.

Liability and Then Asset Powers Changed in an Attempt to Restore Profitability

In June 1978, in response to the serious competitive threat money market funds posed to thrifts, regulators authorized thrifts to issue a new short-term deposit with a moving interest rate ceiling—the money market certificate. This action allowed thrifts to price their deposits more competitively to retain and attract deposits. Within 1 year, 20 percent of all savings and loan deposits were in the form of money market certificates.

Regulatory efforts to slow the outflow of funds in the late 1970s and early 1980s allowed thrifts to compete for deposits by offering market interest rates but inevitably had the effect of increasing thrifts' interest expenses.[7] Thrifts' net interest income fell because there was no commensurate increase in their income. Thrift income continued to fall as interest rates climbed through mid-year 1982, thereby contributing to the weakening of the financial position of many thrifts in the industry.

In March 1980, Congress passed the Depository Institutions Deregulation and Monetary Control Act. In addition to providing for the gradual elimination of interest rate controls, the act gave thrift institutions various asset diversification powers designed to shorten the asset maturity of the thrift industry's portfolio.[8] In 1981, the FHLBB authorized adjustable rate mortgages (ARMS) for federally chartered thrifts to permit them to adjust to rising and volatile interest rates without having to diversify out of home mortgages. The act also raised the ceiling on federally insured deposits from $40,000 to $100,000.

The relief that the asset-side adjustments were expected to bring to the thrift industry never materialized. Caught between their commitments to long-term, fixed-rate mortgages and the unprecedented higher costs paid on deposit accounts with the newly floating rates, thrifts found their financial position greatly weakened. In addition, ARMS, which were intended to enable thrifts to adjust to the rising and volatile interest rates, did not become a significant portion of thrift portfolios until 1984,

[7]In 1981 and 1982, deposit withdrawals at thrifts exceeded new deposits by $32 billion.

[8]FSLIC members could now make loans on the basis of commercial real estate; invest up to 20 percent of their assets in a combination of consumer loans, commercial paper, and corporate debt securities; and invest up to 3 percent of assets in service corporations.

after interest rates had declined substantially.[9] In addition, ARMS provide only imperfect protection. Because the rates charged on many adjustable mortgages change annually, there are significant lags between increases in the funds' cost and rises in yields on mortgages. Also, ARMS typically include provisions that cap the interest rate increase. These provisions protect borrowers but leave lenders exposed to risk from rate increases that exceed the cap. Prepayments are also a problem, especially during periods of falling interest rates when home owners refinance into attractive fixed-rate loans.[10]

The Moral Hazard Problem and Why Reforms Failed to Work

Restrictions on thrifts' investments in assets with short-term maturities were further eased with the passage of the Garn-St Germain Depository Institutions Act of 1982.[11] It was believed that thrifts would use these broadened powers to diversify their portfolios and thereby strengthen their position while they continued to provide housing finance.[12]

What was not foreseen was that granting insolvent and weakly capitalized thrifts expanded asset powers when supervisory capacity was weak was an invitation for further losses. The incentive to take excessive risks, known as the "moral hazard" problem, provides a partial explanation for the poor industry performance. After the interest rate run-up of the early 1980s, there were many thrifts with little or no capital remaining. The existing FHLBB policy permitted many of these thrifts to remain open, mainly because of FSLIC's depleted resources. This policy

[9]At year-end 1982, fixed-rate mortgages accounted for 72 percent of thrifts' assets and ARMs for 7 percent. By year-end 1984, those shares were 48 percent and 24 percent, respectively. The popularity of ARMs varies with interest rates. They are less popular when there are expectations of rising interest rates. During 1988 and 1989, as interest rates rose, ARMs in thrifts' portfolios declined from 38 percent to 30 percent. When rates are expected to rise, borrowers prefer to be locked into a fixed-rate mortgage. When rates are low or falling, ARMs gain in popularity. Early evidence also suggests that ARMs have a higher default rate during periods of rising rates.

[10]As interest rates rose in 1988 and early 1989, many adjustables "capped out." That is, their rates failed to keep pace with rises in market yields because of limits on the size of periodic rate increases. With falling rates, thrifts risk losing a number of their adjustables altogether. Some thrifts have improved their protection against rate rises by originating ARMs. However, this protective measure can backfire if it is used improperly.

[11]The Act permitted federal associations to make commercial, corporate, business, or agricultural loans, which after January 1984 could constitute up to 10 percent of an association's assets; invest as much as 30 percent of assets in consumer loans (up from 20); increase from 20 percent to 40 percent the investment of assets in loans secured by nonresidential real estate; and invest up to 10 percent of assets in personal property for rent or sale (thereby gaining access to the leasing business).

[12]Since the Garn-St Germain Act, the FHLBB imposed some new restrictions on asset powers. Arguing that direct investments and acquisition and development loans were causing failures and increasing the cost to FSLIC, limits were placed on the amount of these loans thrifts could have in their portfolios.

of forbearance, in combination with thrifts' access to insured deposits, provided both the incentives and opportunities for many thrifts to behave imprudently.

Thrifts pay a flat-rate insurance premium regardless of the risks they take. Since the risk of loss to a thrift's owners dwindles as an institution's net worth approaches zero, the incentive for risk-taking can rise as the thrift's condition deteriorates. In a last-ditch effort to recover losses, open insolvent institutions had an incentive to gather low-cost deposit funds to make high-risk investments using their expanded asset powers. As thrifts took greater risks, there were more failures.

Subsequently, a number of other factors also contributed to the deteriorating situation and the continuing escalation of failures in the industry. Inexperience, mismanagement, misconduct, and fraud took their toll.[13] Examiners were in short supply, and supervision became more lax. Weakness in regional economies also played a role. Just as thrifts began to take advantage of their new powers, inflation subsided, interest rates fell, and oil and real estate prices dropped sharply. This contributed to depressed conditions in certain regions of the country. As a result, many thrifts performed quite poorly, and the industry suffered widespread losses.

Thrift Industry Continued to Weaken Throughout the 1980s

The thrift industry suffered from high interest rates as well as losses from high-risk investment strategies. At year-end 1978, the thrift industry's return on assets (ROA) was 0.82 percent based on a net income of $2.1 billion. Thrifts numbered 4,048, of which 37 were insolvent. Industry net worth was $29 billion. From this baseline, losses and insolvencies mounted as interest rates rose through mid-year 1982. By mid-1982 industry conditions had deteriorated severely. Net income had plummeted to -$3.2 billion, and profits as a percentage of assets were -0.97 percent. At year-end 1982, there were 3,287 thrifts in the industry, 235 of which were insolvent. Industry net worth had declined to $21.4 billion. By 1982, the deterioration in profits and net worth resulted in 252 thrift failures.[14] Interest rates began to fall in mid-1982, and the industry's net interest income improved.

[13]See Failed Financial Institutions, statement by Frederick D. Wolf, GAO, before the House Committee on Banking, Finance, and Urban Affairs (Jan. 13, 1989) beginning on p. 11.

[14]The term "failure" refers to all FSLIC-assisted cases as well as institutions merged or liquidated under the supervision of the FHLBB.

Despite subsequent reductions in interest rates followed by a long period of stable rates, the thrift industry has not since regained the rates of profitability or capitalization it enjoyed prior to 1979. (See table 2.1.)

Table 2.1: Year-End Financial Data on All SAIF-Insured Thrifts, December 1977 - December 1989

Dollars in billions

Year	Number of thrifts	Return on assets[a]	Total assets	Capital to assets[b]	Number of insolvents
1977	4,055	0.79%	$434.3	5.70%	38
1978	4,048	0.82	497.3	5.77	37
1979	4,038	0.65	554.4	5.80	34
1980	3,993	0.10	603.8	5.46	42
1981	3,743	−0.95	639.2	4.34	81
1982	3,287	−0.27	686.2	3.12	235
1983	3,146	0.23	814.4	3.23	288
1984	3,135	0.25	978.2	2.84	445
1985	3,245	0.44	1,069.5	3.16	466
1986	3,220	−0.29	1,165.3	3.40	464
1987	3,147	−1.01	1,251.6	2.82	508
1988	2,949	−0.68	1,351.5	3.43	364
1989	2,878	−2.08	1,251.7	2.02	427

Note: Mean values are expressed as a percentage of total assets.

[a]Return on assets is defined as year-end net income divided by year-end assets (annualized).

[b]Capital to assets is defined as year-end capital divided by year-end assets, measured according to generally accepted accounting principles.

Source: FHLBB semiannual and quarterly Thrift Financial Reports.

During the 1980s, regulators departed from the usual regulatory practice of closing insolvent institutions by adopting a policy of forbearance—allowing weak and insolvent thrifts to remain open. Thrifts received regulatory relief in the form of liberal valuation of intangible assets and capital, that is, more lenient accounting standards. Insolvent thrifts were permitted to remain open in the hope that they would recover from what were hoped to be temporary problems due to the extraordinarily high interest rates. In our opinion, the decision by regulators to allow failing institutions to remain in operation during this period (1982 to 1986) amounted to a gamble by the regulators that interest rates would decline and that the industry would return to health.

Interest rates did decline beginning in 1982. Table 2.2 shows the course of interest rates during the decade.

Table 2.2: Short-Term Interest Rates[a]

Year	Interest rate
1977	5.3%
1978	7.2
1979	10.0
1980	11.5
1981	14.0
1982	10.7
1983	8.6
1984	9.6
1985	7.5
1986	6.0
1987	5.8
1988	6.7
1989	8.1

[a]These rates are 3-month U.S. Treasury security rates percent per annum.

Sources: Economic Report of the President (Jan. 1988), table B-17; and Federal Reserve Bulletin (Sept. 1990), table 1.35.

Despite the decline and leveling off of interest rates after 1982, thrifts now faced increasing credit risk problems. As thrifts gained new powers, they expanded into nontraditional activities, such as commercial and consumer lending and direct investment in service corporations. Some thrifts that exercised their new powers performed well, but many others did not. The industry problem changed from that of narrowing or negative interest rate spreads to one of poor asset quality. Though the overall industry ROA improved, many thrifts were still losing money in 1983. At year-end 1983, there were 288 insolvent thrifts with negative—measured according to generally accepted accounting principles (GAAP) capital of $2.4 billion and net income losses of $299.6 million. There were an additional 922 low net worth thrifts (net worth between 0 and 3 percent) with GAAP capital of $5.1 billion and net income losses of $3 million.

Between January 1, 1984, and December 31, 1986, the number of federally insured thrifts requiring FSLIC assistance increased dramatically. By

1986, the deposit insurance fund's reserves were essentially depleted, and the fund was, for the most part, unable to close institutions.[15]

On January 13, 1989, we testified before the House Banking Committee that FSLIC was insolvent by over $50 billion, almost quadrupling its $14 billion insolvency of year-end 1987. Moreover, FSLIC reported an additional liability of over $37 billion incurred from action on the 223 problem thrifts it dealt with in 1988 alone. By year-end 1988, the number of insolvent thrifts had increased to 364. With negative GAAP capital of $13.2 billion and yearly losses over $14.3 billion, the actual magnitude of the problem and the potential liabilities of the insurance fund from insolvent institutions appeared to be massive and increasing at a rapid rate.

FIRREA Designed to Deal With the Crisis and Reform the Industry

In August 1989, Congress responded to the crises of the savings and loan industry and the insurance fund with the passage of FIRREA. The bill has two broad objectives: (1) to deal with the emergency aspect of the widespread failure of thrifts and the insolvency of FSLIC and (2) to reform the thrift industry in an effort to prevent such problems from recurring in the future.

Handling the Emergency: Resolving the Troubled Thrifts and Their Assets

To avoid the hazards that the policy of forbearance poses to the deposit insurance fund, FIRREA provided funds to deal with insolvent, weak, and failed thrifts and to dispose of the assets of these institutions. To help fund the resolution of the crisis, the act created an off-budget, government-sponsored entity, called the Resolution Funding Corporation, which may issue up to $30 billion in securities that will be used to resolve those thrifts that became insolvent after January 1, 1989. The Resolution Trust Corporation is to manage and dispose of up to $400 billion in assets acquired from failed thrifts over the next 7 years. In addition, FIRREA provides up to $16 billion to recapitalize the savings and loan insurance fund between 1991 and 1999. These funding levels are not indicative of the total cost of the thrift industry's collapse. We

[15]According to Dan R. Brumbaugh, Senior Fellow, Center for Economic Policy Research, Stanford University, without deregulation of interest rates and opportunities for portfolio diversification, disintermediation would have caused nationwide insolvencies, and solvent institutions would not have been able to adjust to the high and volatile interest rates of the early 1980s. Losses to FSLIC were magnified, however, because these regulatory and legislative changes took place in a flat-rate deposit insurance regime in which open and operating insolvent thrift institutions took advantage of the opportunities to gamble for survival in nontraditional activities with insured deposits. Opportunities for misconduct and fraud also proliferated. See his book, Thrifts Under Siege (New York: Harper and Row Publishers, 1988).

have estimated that between $335 and $370 billion will be needed over 43 years to resolve the thrift crisis.[16]

Provisions Designed to Reform and Strengthen the Industry

For thrifts that remain in the industry, FIRREA provided much needed substantive capital and regulatory and enforcement reform and established new qualifications for thrifts. While the reforms of the 1980s had given thrifts broader powers, FIRREA attempted to restore the industry to profitability and sound operations by eliminating the lax capital standards and broader asset powers that had been granted in the 1980s and that contributed to problems of moral hazard. FIRREA 's reforms are intended to strengthen the financial condition of the industry; protect the integrity of the deposit insurance funds; and protect against fraud, waste, and insider abuse.

Enhanced Capital and Regulatory and Enforcement

As thrift losses mounted in the 1980s, many thrifts depleted their capital base. To strengthen the financial condition of the industry and to compel thrift owners to invest more of their own capital as a cushion against losses and as an incentive to limit the risks they take with insured depositors' funds, FIRREA set more stringent capital standards. The new requirements are based on the capital standards for national banks established by the Comptroller of the Currency, though in several respects they are more stringent than the Comptroller's standards. FIRREA requires thrifts to meet minimum primary and tangible capital requirements.[17] In addition, OTS is to implement risk-based capital standards generally comparable to those governing national banks.[18]

We have suggested that FHLBB's dual roles as thrift chartering agent and overseer of the deposit insurance fund may have created conflicts of interest that contributed to the size of the crisis.[19] In response to this concern, FIRREA also incorporates a number of organizational reforms of

[16]See Resolving Failed Savings and Loan Institutions: Estimated Costs and Additional Funding Needs, statement by Charles A. Bowsher, GAO, before the House Committee on Ways and Means (GAO/T-AFMD-90-32, Sept. 19, 1990). Costs could reach $400 to $500 billion in unfavorable economic circumstances.

[17]Primary, or "core" capital is composed of common stockholders' equity, noncumulative preferred stock, minority interest in the equity accounts of subsidiaries, and 90 percent of the market value of purchased mortgage servicing rights. To calculate its tangible capital, an institution subtracts the amount of goodwill and other qualifying intangibles from its core capital. Thrifts are required to hold core capital equal to 3 percent of their assets and tangible capital equal to 1.5 percent of assets.

[18]Under OTS regulations, by Dec. 7, 1989, thrifts were required to hold capital equal to 6.4 percent of the risk-weighted value of their assets; this amount increases to 8 percent by Dec. 31, 1992.

[19]See Wolf, p. 33. See also Dan R. Brumbaugh, Thrifts Under Seige, p. 25.

thrift industry regulators to enhance their enforcement powers to protect against fraud, waste, and insider abuse.

FIRREA dismantled the regulatory apparatus of the FHLB system and transferred responsibility for chartering, examination, and enforcement to the newly created OTS in the Department of the Treasury. It also abolished FSLIC and created SAIF within the Federal Deposit Insurance Corporation (FDIC). FDIC and OTS are endowed with enhanced powers to enforce bank and thrift regulations.

Thrift Activities Limited

In an effort to promote thrift stability and to limit the risk of loss to the deposit insurance fund, FIRREA curtailed the power of thrifts to engage in activities considered to be risky. Generally, thrifts are no longer permitted to engage as a principal in any type of activity that is not permissible for a federal savings association. For example, state associations will no longer be able to make equity investments, such as stock investments and direct real estate investments, that are prohibited for federal associations. Saving associations must also divest their holding of junk bonds.

In addition, there are limitations on nonmortgage activities permissible for thrifts including

- commercial loans (limited to 10 percent of assets);
- nonresidential property loans (generally limited to 400 percent of the thrifts' capital);
- consumer loans, commercial paper, and corporate debt securities (limited to 30 percent of assets);
- investments in personal property for rental or for sale (limited to 10 percent of the thrift's assets);
- education or community development investments (limited to 5 percent of assets); and
- direct investment in service corporations (limited to 3 percent of assets).

In addition to the limits set on certain activities, FIRREA requires that thrifts devote a larger portion of their assets to mortgage lending.

More Stringent Thrift Investment Rules Imposed

The QTL test was first established by the Competitive Equality Banking Act of 1987 (CEBA).[20] Thrifts failing CEBA's QTL test faced two consequences: the thrift's holding company could not take advantage of the broad range of business opportunities available to a holding company owning a single thrift, and the thrift's eligibility for FHLB advances was reduced. To meet the QTL test in CEBA, a thrift had to hold 60 percent of its total tangible assets in "qualified thrift investments." These investments could include, without limit, "loans, equity positions, or securities ... related to domestic residential real estate or manufactured housing" and the value of property used in the thrift's business. Subject to a 10-percent limit, a thrift could also include certain liquid assets and one-half of the dollar value of mortgages originated and sold within 90 days. FHLBB regulations broadly defined the types of housing-related investments a thrift could count without limit in meeting the 60-percent test, including such items as FHLB stock, certificates of deposit, and investments in real estate partnerships and corporations.

FIRREA retains the 60-percent QTL test set by CEBA until July 1, 1991, when a new 70-percent QTL test with different qualifying investments will become effective. Starting August 9, 1990, however, FIRREA significantly increases the penalties for a thrift's failure to meet the test. A thrift failing the test must either convert to a bank charter,[21] or it will immediately become subject to a number of restrictions, in addition to those normally imposed on thrifts:

- The thrift may not make any new investment or engage in any new activity that would not be permissible for a national bank.
- It may only establish branches where a national bank of the same home state could branch.
- It may not obtain any new FHLB advances.
- Its dividend payments are subject to the restrictions applicable to a national bank.

Effective 3 years after a thrift's failure to meet the QTL test, it must divest any investment and cease any activity not permissible for a national bank and also must repay any outstanding FHLB advances as quickly as can be prudently done. Finally, the holding company of a

[20]Prior to CEBA, the Garn-St Germain Act tied savings and loan holding companies' ability to engage in a broad range of activities to the thrift subsidiary's ability to qualify as a domestic building and loan association under the Internal Revenue Code. Under the Code's definition, such an association must hold at least 60 percent of its assets in housing-related investments and liquid assets.

[21]A thrift that converts to a bank charter must pay SAIF insurance premiums until Dec. 31, 1993, and must pay the exit and entrance fees generally required for conversion between insurance funds.

thrift failing the QTL test must, within 1 year, register as a bank holding company and comply with restrictions in the Bank Holding Company Act.

The new QTL test that becomes effective July 1, 1991, requires that a thrift hold "qualified thrift investments" in an amount that is at least 70 percent of its "portfolio assets".[22] Qualified thrift investments are divided into two tiers: those assets that are includable without limitation and those subject to a combined 15-percent limit of total portfolio assets. The first tier includes

- loans made to purchase, refinance, construct, improve, or repair domestic residential housing or manufactured housing;
- home equity loans;
- mortgage-backed securities; or
- obligations issued by FDIC or FSLIC to acquirers of troubled thrifts.

Under FIRREA's QTL test, the percentage of assets that must be devoted to residential mortgages, as indicated by the first three categories listed above, has been more rigorously defined. The types of assets that permit a thrift to qualify are listed specifically so that there is little room for regulatory interpretation. Also, the new QTL test is to be based on a daily or weekly average of qualified thrift investments and assets, in a manner yet to be fully specified in OTS regulations. The combined result is restriction of thrifts' opportunities to engage in other activities, even for short periods.

The second tier of assets subject to a 15-percent limit of portfolio assets includes housing-related activities such as

- 50 percent of the dollar amount of residential mortgage loans originated by the thrift and sold within 90 days of origination;
- investments in the debt and equity securities of a service corporation that derives 80 percent of annual gross revenues from activities directly related to purchasing, refinancing, constructing, improving, or repairing domestic residential real estate or manufactured housing;
- loans and investments made to acquire, develop, and construct low-income one- to four-family residences; and

[22]Portfolio assets are defined as the total assets of the thrift minus (1) goodwill and other intangible assets, (2) the value of property used by the thrift to conduct its business, and (3) liquid assets that regulators require the thrift to hold (in an amount not to exceed 10 percent of total assets). See P.L. 101-73 303(a).

- loans for the acquisition or improvement of residential real property, churches, schools, hospitals, and nursing homes.

In sum, FIRREA raises the minimum level of housing- and mortgage-related assets that thrifts must hold to 70 percent and provides harsher penalties for thrifts that fail the QTL test. A thrift that does not meet the QTL test on July 1, 1991, must either become a bank or be subject to a number of restrictions.

FIRREA's QTL test does not require thrifts to invest in long-term, fixed-rate mortgages. Thrifts can satisfy the QTL test by investing in adjustable-rate mortgages, variable-rate home equity loans, and/or MBS with short maturities. A likely result of the QTL test (although not a legal requirement) is that thrifts will continue to invest in long-term mortgages and MBS, a large proportion of which are fixed rate and cannot be easily matched with the maturity of their deposits. Such an investment strategy may offer short-term profitability—but at the cost of exposure to interest rate risk.

FIRREA's requirements will undoubtedly force changes in the industry. According to an OTS analysis of the thrift industry asset holdings as of June 1989, approximately 22 percent of GAAP-solvent thrifts would not have passed FIRREA's more stringent QTL test,[23] and 38 percent of the firms with 61 percent of industry assets would have failed at least one of the three capital requirements. To remain in the industry, many thrifts will have to increase the percentage of their portfolio devoted to housing finance or else fail FIRREA's QTL test.

One potential problem with the more stringent QTL test is that it may prevent thrifts from more carefully diversifying their assets so as to reduce exposure to interest rate risk.

Conclusions

The income difficulties that the thrift industry faced during periods of rising interest rates were due to the industry's mismatched maturity structure, a critical weakness in thrifts' portfolios. Legislative and regulatory efforts to deal with the industry's difficulties included elimination of deposit rate ceilings, the introduction of mortgage contracts with

[23]See Philip R. Wiest and James R. Barth, Consolidation and Restructuring of the U.S. Thrift Industry Under FIRREA, Office of Thrift Supervision, Department of the Treasury, Washington D.C., Oct. 1989, pp. 20 and 24.

adjustable interest rates, and broader asset powers. Nevertheless, the deterioration of the industry continued.

It is generally believed that a major contributing factor to the escalation of thrift woes was the "moral Hazard" problem associated with deposit insurance and low capitalization and made worse by the continued operation of insolvent institutions that used insured deposits and newly created asset powers in a last-ditch effort to gamble for resurrection. Mismanagement, fraud, and adverse regional economic conditions also contributed to the further deterioration of the industry.

FIRREA goes a long way toward dealing with the emergency aspect of the thrift situation by providing funding to resolve failed institutions and much-needed capital, regulatory, and enforcement reform. The objectives and provisions of FIRREA were crucially important to stem the mounting costs of the thrift crisis and reduce the future exposure of the government to rising deposit insurance losses. However, FIRREA's stricter QTL test and other provisions will challenge the ability of many thrift institutions to operate safely and profitably under a thrift charter.

The Thrift Industry Has Become Less Influential in Supplying Housing Finance

The crisis of the thrift industry in the 1980s was a major factor in the thrift industry's declining market share in housing finance. Spurred by new asset powers, forbearance, and eroding benefits related to mortgage lending, thrifts diversified their activities through new business strategies.

Simultaneously, there has been a dramatic growth in the development and widespread use of MBS. This growth has boosted competition and participation in the mortgage lending business. As thrift market share in this business has declined, the supply of mortgage credit has increased through the involvement of a growing number and variety of other investors.

Housing Finance Remains Widely Available Although Thrift Participation Has Declined

As thrifts received authority to diversify their assets during the 1980s, their portfolios became less concentrated in mortgage assets. The residential mortgage market continued to grow in size while thrift share declined relative to other investors.

Thrifts Have Reduced and Others Have Increased Their Proportion of Mortgage Holdings

Table 3.1 shows that during the 1980s, thrifts diversified their holdings to include assets other than mortgage-related investments. By year-end 1989, mortgage loans on the traditional thrift asset, one- to four-family dwelling units, had declined to 40.6 percent of thrifts' assets from the precrisis high of 69.9 percent that occurred in the late 1970s. Including mortgage loans on dwellings of five or more units and MBS, thrift holdings declined to a lesser extent, from 79.9 to 62.7 percent, over the same period.

Table 3.1: Mortgage Asset Holdings of All SAIF-Insured Institutions, December 1977 - December 1989

Year	1- to 4- family dwelling units	Mortgage- backed securities	Mortgage- related assets[a]
1977	69.8%	2.9%	79.7%
1978	69.9	3.2	79.9
1979	69.6	3.6	79.5
1980	67.8	4.4	78.2
1981	66.2	5.1	76.8
1982	58.2	8.9	72.7
1983	52.0	11.4	69.5
1984	46.6	11.5	64.8
1985	44.0	10.7	61.9
1986	40.0	13.5	60.7
1987	37.6	15.9	62.0
1988	37.6	15.8	61.7
1989	40.6	13.7	62.7

Note: Mean values are expressed as a percentage of total assets.

[a]Mortgage-related assets are the sum of mortgages on one- to four-family dwelling units and multifamily dwellings (not in table) plus MBS.

Source: FHLBB semiannual and quarterly Thrift Financial Reports.

While thrift portfolios showed less mortgage-related investment, the portfolios of banks and credit unions showed an increased proportion of mortgage-related assets in the 1980s. In October 1989, OTS reported that the share of mortgage assets in credit unions' portfolios quadrupled between 1986 and 1989 to 20 percent. Simultaneously, residential mortgage-related assets increased as a percentage of banks' assets from 8.2 percent to 11.5 percent between 1985 and 1989.

Thrifts Remain a Major Residential Mortgage Originator

The QTL test does not require that thrifts originate mortgages. Nevertheless, thrifts have been major originators of mortgages, and they continue to remain so. Such a finding means that home buyers still approach thrifts for housing finance; however, thrifts' declining share of mortgage debt indicates that they sell a significant portion of the resulting mortgages to others.

In 1989, thrifts originated 44.7 percent of the dollar volume of residential mortgages issued that year. Thrift originations have ranged from 39.2 percent at the low point in the thrift crisis in 1982 to a high of 59.8 percent in 1976.

In 1978, prior to the sharp upsurge in interest rates, thrifts originated 53 percent of all mortgage debt. During the thrift crisis of the early 1980s, thrift originations of residential mortgage debt declined dramatically to 39.2 percent in 1982. Over this same period, however, commercial banks', mortgage companies', and others' shares of the origination market increased. Though the overall volume of originations increased since 1983, reaching $383.2 billion at year-end 1989, the thrift share of the market has not performed at its precrisis heights. Table 3.2 shows the trend in mortgage originations.

Table 3.2: Share of Dollar Volume of Residential Mortgage Debt Originations, by Lender, December 1987 - December 1989

Year	Thrifts[a]	Commercial banks	Life insurance companies	Mortgage companies	Federal credit agencies	Other[b]
1970	45.1%	18.3%	5.8%	23.3%	5.5%	2.0%
1971	50.9	19.0	2.9	20.6	4.5	2.2
1972	53.7	20.9	2.4	17.6	3.8	1.6
1973	54.3	21.4	2.9	14.6	4.9	1.9
1974	49.7	21.2	3.0	17.1	6.7	2.4
1975	57.1	17.2	1.6	16.7	5.2	2.2
1976	59.8	21.2	0.9	13.1	3.0	2.0
1977	58.1	21.7	0.8	15.5	2.3	1.5
1978	53.0	22.9	1.3	18.0	3.3	1.5
1979	48.2	21.5	1.8	23.4	3.5	1.6
1980	48.0	20.5	2.1	21.2	5.0	3.1
1981	44.4	21.0	1.1	23.6	7.0	2.9
1982	39.2	24.7	0.9	26.7	6.3	2.2
1983	46.0	21.7	1.0	27.0	2.7	1.6
1984	53.7	19.6	1.0	20.8	2.4	2.5
1985	48.4	22.4	1.5	24.0	1.9	1.8
1986	45.5	22.9	1.5	27.5	0.9	1.7
1987	46.6	26.9	1.4	22.7	0.8	1.6
1988	50.1	24.9	1.6	21.8	1.0	0.6
1989	44.7	34.2	1.1	18.3	1.0	0.8

Notes: Mean values are expressed as a percentage of total residential mortgage debt originations.

Residential mortgage loans include loans on one- to four-family and multifamily dwellings. The FDIC-insured savings banks account for an average of 6 percent of originations made from 1985 to 1988.

[a]Thrifts include all FSLIC-insured savings institutions and FDIC-insured mutual savings banks.

[b]"Other" includes private noninsured pension funds, real estate investment trusts, state and local retirement funds, mortgage pools, state and local credit agencies, and private mortgage-backed conduits.

Source: HUD, Survey of Mortgage Lending Activity Annual Tables, table 2 (1970-1979) and table 3 (1980-1989).

With the passage of FIRREA in August 1989, thrift mortgage originations once again declined. In June 1989, commercial banks surpassed thrifts to become the nation's largest originators of home loans, accounting for 38 percent of the one- to four-family mortgages, while the thrifts' share slid to 35 percent.[1] Part of the 1989 decline of thrifts as originators of housing-related debt can be attributed to factors such as a decline in the number and assets of thrifts; heavy deposit outflows, particularly during 1989; the passage of FIRREA; adverse publicity; and a decline in the popularity of ARMS.[2] In February 1990, the thrift industry's share of one- to four-family mortgage originations had dropped to 29 percent—third place. The commercial bank share was 33 percent, and mortgage bankers were second with 32.5 percent.

Whether this trend will continue or reverse itself—as it has in the past—is an open question.

Thrifts' Share of Outstanding Residential Mortgage Debt Has Declined

Over the decade, the volume of residential mortgage debt outstanding nearly tripled from $1 trillion in 1979 to $2.7 trillion in 1989. While the volume of mortgage debt increased, the thrift share of the mortgage market has steadily declined since the late 1970s.

Prior to the thrift crisis of the early 1980s, thrifts were holding more than 50 percent of total residential mortgage debt. By year-end 1989, the thrift share of residential mortgage debt outstanding, including MBS, had dropped to 35.5 percent.

Despite the decline in thrift participation in the mortgage finance market, both as a percentage of thrifts' portfolios and as a share of the housing market, housing finance has remained widely available. This availability is due largely to the development of the market in MBS, whose liquidity and other attractive features make them appealing to a variety of mortgage investors in addition to thrifts.

[1]During this year, mortgage shares became the largest single class of assets in the portfolio of federally insured banks. Residential real estate increased as a share of banks' total assets from 8.3 percent in Dec. 1984 to 11.5 percent in Dec. 1989.

[2]Thrifts that prefer adjustable over fixed-rate mortgage loans generally lose market share in periods when borrowers favor fixed rates.

Securitization Has Made Mortgages a More Widely Attractive Investment

Before the growth of securitization and the MBS market, competition among financial institutions in the mortgage lending field was limited.[3] Generally, investors found long-term mortgages unattractive because of the prepayment risk, the sensitivity of the value of the mortgage asset to interest rate changes, and the difficulty in assessing the credit quality of a borrower. Furthermore, in the absence of securitized mortgages and a well-developed secondary mortgage market, it was not easy to trade mortgages and shift them in and out of portfolios.[4] Also, the privileges accorded thrifts discouraged the entry of other mortgage market participants that could not compete with thrifts' more favorable cost structure.

By creating a standardized capital market instrument and diversifying the risks once associated with the holding of the whole mortgage, securitization transformed whole mortgage loans that few wanted to hold into MBS that many institutions and people want to hold. This transformation increased the attractiveness and liquidity of MBS, allowing them to be traded more easily. This development also helped to undermine thrifts' dominant position on the holding of mortgages.

With securitization, mortgage lending is "unbundled" into its component parts. These parts are

- origination, that is, the borrower's application and lender's determination of creditworthiness that results in a mortgage;
- servicing, that is, the collection of monthly payments due from the borrower; and
- investment, that is, the holding of the mortgage as an asset in one's portfolio.

This unbundling allows different participants to specialize in the various aspects of the mortgage process. An MBS allows investors to "own" the principal and interest payment streams from pooled mortgages and mortgages placed in trust. Monthly payments from borrowers are collected by the institution that services the mortgages, and the payments to the investors are guaranteed against losses if the underlying mortgages default or if the servicer fails to collect payments from the borrower. Relieved of worries about credit quality and servicing responsibilities, investors found MBS to be more attractive than whole

[3]Securitization of mortgages is the process by which illiquid mortgage assets are pooled, packaged, and resold as capital market instruments or MBS that can be readily resold.

[4]The secondary mortgage market connects mortgage originators who lend money to home buyers with investors who buy mortgage loans.

mortgages. As a result, many others are willing to hold mortgages, and thrifts no longer perform such a unique service.

Before the advent of MBS, mortgage origination, holding, and servicing were generally performed by the same institution—typically thrifts. However, with the growth in the MBS market, the thrift industry's importance in the housing market has diminished.

Under these circumstances, the QTL test has become less influential in making housing finance available for two reasons. First, since the QTL test is concerned with the "holding" of mortgages, thrifts can satisfy the QTL test without ever originating or servicing a mortgage or without ever increasing their share of mortgage investment, provided that they continue to satisfy the QTL requirement. Second, the QTL test applies only to thrifts and not to the many other mortgage market participants that now play an increasingly large and important role in the availability of housing finance. To the extent that thrifts increase their holdings of mortgage investments because of a stricter QTL test, the test's effect on the overall supply of housing finance will be limited because of the thrifts' declining share of that supply.

The Growth of Mortgage-Backed Securities

In 1970, the Government National Mortgage Association (Ginnie Mae)[5] created the first publicly traded mortgage-backed security in order to reach investors located in other sections of the country as well as those who had not traditionally provided mortgage credit. As the volume of activity picked up, other innovative mortgage-backed security programs were created.

During the period of inflation and high and volatile interest rates of the late 1970s and early 1980s, mortgage securitization and secondary markets in mortgage assets experienced tremendous growth. The column labeled "mortgage pools and trusts" in table 3.3 shows the share of outstanding mortgage debt held by various investors. From 1979 to 1989, the volume of mortgage pools and trusts—that is, securitized residential

[5]In 1968, Congress enacted legislation to partition the Federal National Mortgage Association (Fannie Mae) into two continuing corporate entities—a federally chartered corporation owned by private shareholders that retained the Fannie Mae name and a wholly owned governmental corporation within HUD, known as the Government National Mortgage Association. Ginnie Mae assists that segment of the housing market for which conventional financing is not readily available. The agency guarantees MBS representing interests in the mortgages of the Federal Housing Authority, Veterans Administration, and Farmers Home Administration, and channels new sources of funds into residential financing through the sale of privately issued securities carrying a Ginnie Mae guaranty.

mortgage debt—increased from 10.6 to 34.6 percent of outstanding mortgage debt.

Table 3.3: Share of Total Residential Mortgage Debt Directly Held, by Lender, December 1970 - December 1989

Dollars in billions

Year	Total debt	Thrifts[a]	Commercial banks	Life insurance companies	Federal and related agencies[b]	Mortgage pools and trusts[c]	Other holders[d]
1970	$338.2	55.8%	13.5%	12.6%	7.4%	0.1%	10.6%
1971	374.6	56.8	13.9	11.1	7.4	0.8	10.0
1972	422.1	58.0	14.9	9.4	7.2	1.4	9.1
1973	509.8	53.2	14.7	7.6	7.0	2.8	14.7
1974	549.8	52.3	15.0	7.0	8.1	3.5	14.1
1975	591.4	53.0	14.0	6.3	8.5	5.0	13.3
1976	661.1	53.9	14.3	5.3	7.2	6.7	12.6
1977	768.4	54.2	14.9	4.4	6.3	8.3	12.1
1978	883.9	53.3	15.6	3.8	6.4	9.1	11.8
1979	1,019.5	50.5	15.8	3.5	6.5	10.6	13.2
1980	1,124.1	48.2	15.4	3.3	6.8	11.6	14.7
1981	1,201.9	46.2	15.4	3.0	6.8	12.3	16.3
1982	1,220.4	41.9	15.6	2.9	7.4	16.5	15.7
1983	1,349.6	40.3	14.9	2.6	7.3	19.9	15.0
1984	1,502.9	40.5	14.5	2.2	7.2	20.9	14.6
1985	1,702.5	37.8	13.9	1.9	7.2	24.7	14.5
1986	1,946.4	33.7	13.7	1.7	7.6	29.0	14.3
1987	2,199.0	32.1	14.1	1.6	6.5	32.6	13.1
1988	2,479.8	31.8	14.0	1.6	6.3	32.7	13.6
1989	2,690.7	29.2	14.7	1.5	6.3	34.6	13.7

Notes: Residential mortgage loans include loans on one- to four-family and multi-family dwellings.

Percentage shares may not sum to 100 because of rounding. However, percentage shares do not sum to 100 from 1985 to 1988 since the sum of holders of one- to four-family loans do not sum to the totals for those years in the Federal Reserve Bulletin.

The FDIC-insured savings banks account for an average of 8 percent of the total holdings of residential mortgage debt for the years 1980-84. In 1985, this source combines them with FSLIC-insured savings institutions.

[a]Thrifts include FSLIC-insured savings institutions and FDIC-insured mutual savings banks. Figures do not include mortgage debt indirectly held through MBS. Mortgage pools and trusts are the direct holders of mortgages represented by MBS.

[b]Federal and related agencies include Ginnie Mae, Farmers Home Administration, Federal Housing Administration, Veterans Administration, Federal National Mortgage Association (Fannie Mae), Federal Land Banks, and Federal Home Loan Mortgage Corporation (Freddie Mac).

[c]Mortgage pools and trusts include (1) private pools and (2) various mortgage pools or trusts with outstanding principal balances of mortgage pools backing securities that are insured or guaranteed by various federal agencies.

[d]Other holders include mortgage companies, real estate investment trusts, state and local credit agencies, state and local retirement funds, noninsured pension funds, credit unions, other U.S. agencies, and finance companies, (assumed to be entirely one- to four-family loans), mutual funds, and investment funds.

Source: Federal Reserve Bulletin, table on Mortgage Debt Outstanding, various issues.

The extraordinary growth in the secondary mortgage market in the 1980s has been accompanied by the increased presence of federal and related agencies. The principal agencies in the secondary market include Ginnie Mae, the Federal National Mortgage Association (Fannie Mae),[6] and the Federal Home Loan Mortgage Corporation (Freddie Mac).[7] In December 1989, Ginnie Mae securities accounted for 41 percent of the total residential debt MBS market, Fannie Mae for 25.3 percent, and Freddie Mac for 25.1 percent. Private mortgage pools accounted for the remaining 8.6 percent.

The MBS backed by these mortgage pools and trusts are distributed among a number of holders. One-third of them are held by banks and thrifts. Thrifts held 20 percent of this debt as of December 1989, and banks held 13 percent.

Table 3.4 shows thrifts' and commercial banks' shares of total residential mortgage debt with MBS included. Their inclusion provides a more complete estimate of the changing importance of these institutions in financing residential mortgages.

[6]Fannie Mae was chartered by Congress in 1938 as a wholly owned government corporation to provide additional liquidity to the mortgage market. In 1968, it was partitioned into Ginnie Mae and Fannie Mae, with Fannie Mae owned by private shareholders. Initially, Fannie Mae provided a secondary market for Federal Housing Administration and Veterans Administration mortgage loans only, but it was authorized in 1970 to purchase conventional mortgage loans also. Fannie Mae purchases and holds single family and multifamily mortgages.

[7]Freddie Mac was created by Congress in 1970 as a stockholder-owned corporation to create a link between the capital and mortgage markets. The company buys mortgages—principally from thrifts—packages them, and uses them as collateral to back mortgage pass-through securities, which are then sold on the capital markets.

Table 3.4: Thrifts' and Commercial Banks' Percentage Shares of Total Residential Mortgage Debt, Including Mortgages Held Indirectly Through MBS

Year	Thrifts[a]	Commercial banks
1980	50.5%	[b]
1981	48.9	[b]
1982	46.9	[b]
1983	47.2	[b]
1984	48.0	16.2%
1985	44.6	15.3
1986	41.8	16.3
1987	41.1	17.3
1988	40.5	17.5
1989	35.5	19.3

[a]The shares for thrifts and banks are computed by summing the dollar volume of whole residential mortgages held and the dollar volume of MBS held as a fraction of the total dollar volume of residential mortgage debt.

[b]Not applicable.

Source: FHLBB semiannual and quarterly Thrift Financial Reports and Federal Reserve Bulletin, table on Mortgage Debt Outstanding, various issues.

While systematic data are not available to account for the rest of the holders of this securitized debt, HUD estimates that, by December 1989, another third of the securitized mortgages was held by private pension funds, public retirement systems, and life insurance companies. According to HUD, other holders that account for the remaining third of the securitized mortgages include mutual funds and other investment firms, personal trusts and estates, endowment funds, households, and foreigners.

The Development and Growth of the Market for Securitized Mortgages Has Attracted a Variety of Investors to the Mortgage Finance Market

The adequacy of the supply of mortgage credit has been an ongoing concern of policymakers in the housing finance system. If the traditional sources—especially the thrifts—do not provide funds, who will fill the gap?

The declining participation of the thrift industry in the residential mortgage finance market since the late 1970s has been offset by an increasing participation of a wide variety of nontraditional investors. Between 1984 and 1987, thrift institution holdings of mortgages and MBS accounted for only about one-quarter of the total increase in mortgages outstanding. By far the biggest net acquirers of mortgage investments in 1989 were commercial banks.[8] Credit unions have also increased their

[8]Commercial bank MBS holdings increased by more than 30 percent in the 9 months ending Sept. 1989.

holdings of mortgage assets. In addition to commercial banks, other nontraditional investors—including private pension funds, life insurance companies, state and local retirement funds, investment firms, mutual funds, Fannie Mae, and Freddie Mac—have contributed to the increasing breadth and depth of the mortgage market.

The increasing participation of nontraditional investors in the mortgage finance business indicates that the mortgage market is becoming fully integrated into the overall capital market.[9] Because of the growth of an efficient mechanism for buying and selling residential mortgage instruments, numerous suppliers of mortgage finance have come forth. These developments provide greater assurance that the supply of mortgage finance is no longer as dependent on the fortunes of the thrift industry as it once was and that continued reductions in the level of mortgage investments at thrift institutions are not nearly as likely to affect the overall supply of residential mortgage credit as was the case in the earlier years of the thrift industry. The integration of mortgage finance into the capital market helps maintain the availability of the supply of mortgage credit at the going market rates.[10]

The Impact of FIRREA on Thrift Industry Participation in Housing Finance

As shown in table 2.1, both thrift industry assets and the number of thrifts have shrunk. We expect this trend to continue for a number of reasons. Many thrifts will disappear or depart as a result of FIRREA's higher capital requirements and more severe investment restrictions. Some thrifts may become banks, either as a voluntary strategic choice or as a consequence of failure to meet the new QTL test. Still other factors, such as the growing stigma of the savings and loan business, the intense scrutiny by federal examiners, and the added cost of FIRREA's higher deposit insurance premiums, may further reduce the number of thrifts in the industry. Informed observers, including a number of thrift industry executives, analysts, and consultants, expect another 1,000 thrifts to leave the industry over the next 5 years. This departure may further diminish the industry's role as an investor in the mortgage market.

[9]The capital market is the market for long-term securities.

[10]See Report of the President's Commission on Housing, 1982, The President's Commission on Housing, Washington D.C., p. 120.

Shrinking the Industry to Meet Capital Rules

Part of the shrinkage of the industry will occur as a result of the regulators closing a large number of insolvent thrifts. When the assets of these institutions are sold to nonthrift investors, the thrift industry's market share of mortgage assets will decline. In addition, many financially weak thrifts are under threat of regulatory takeover and may ultimately fail.

FIRREA's higher capital requirements, while desirable, have forced many thrifts to shrink their assets quickly in an attempt to meet the new minimum capital standards. Since it is difficult or impossible for undercapitalized thrifts to raise capital by retaining earnings or issuing debt or equity, one of their few remaining options is to shrink their assets and their deposit liabilities, thereby increasing their capital ratio. This can be done by cutting back on new mortgage lending, selling off liquid assets such as MBS, and competing less vigorously for deposits.

The industry assets have been shrinking for the first time since the years immediately following the Great Depression. From December 1988 to December 1989, assets of thrift institutions fell by $100 billion. Yet more than 800 thrifts could not meet the new threshold capital requirements that went into effect on December 7, 1989. Mandatory restrictions on growth and possible restrictions on compensation and dividends will be imposed on thrifts that cannot meet the standards by January 1991. The overall impact of these standards could be the possible closure of hundreds of undercapitalized thrifts. Should these thrifts' mortgage assets be purchased by nonthrifts, the role of the industry as a key housing investor would diminish further.

Thrifts May Become Banks and May Be Acquired by Bank Holding Companies

FIRREA creates new opportunities for thrifts to convert their charter to a bank charter and gives bank holding companies more flexibility in acquiring thrifts. Some, perhaps many, thrifts and bank holding companies will take advantage of these opportunities.

FIRREA permits thrifts to become banks. By converting to a bank, a thrift can escape the QTL test but continue to have access to FHLB advances. It cannot, however, escape the higher insurance premiums. It must remain in SAIF and pay the higher insurance rates until 1994. Also, thrifts that convert to banks lose the more favorable tax treatment that they enjoy relative to banks in the computation of their bad debt deductions.

According to OTS director Timothy Ryan, since FIRREA was enacted, OTS has approved dozens of conversions and mergers of thrifts into banks.[11]

A more popular FIRREA provision provides opportunities for bank holding companies to acquire thrifts. FIRREA now allows bank holding companies to acquire healthy thrifts in addition to failing thrifts, which they could acquire before FIRREA's passage. With approval from appropriate regulatory authorities, bank holding companies may consolidate the assets and liabilities of the acquired thrift with those of a bank subsidiary. Deposits in the merged institution that are attributable to the thrift continue to be subject to the higher SAIF assessments until 1994. On January 24, 1990, American Banker reported that 60 thrift acquisitions had been announced since the passage of FIRREA. However, we do not know at this time how many of the acquired institutions are continuing to operate as thrifts or have been merged with banks.

Acquisition of a healthy thrift, i.e., one not under government receivership or conservatorship, may be attractive to bank holding companies when the acquisition allows them to acquire a significant market share in a new geographic market. The acquisition of a thrift may also be the only way for a bank to enter a market that has state or interstate branching restrictions. Finally, the acquisition may represent a relatively less expensive source of deposits, residential mortgage loan assets, and mortgage origination capabilities.[12]

We speculate that other thrifts may leave the industry because FIRREA's higher QTL test and more restrictive lending practices may make being a thrift less attractive. For example, some state-chartered thrifts have expressed interest in becoming state savings banks. While OTS has opposed such "charter flipping," FDIC issued proposed regulations on November 29, 1990, to require that thrifts that chose to convert to savings banks conform to certain investment restrictions imposed by FIRREA

[11]Savings institutions have been attempting to convert to state savings bank charters, but OTS has blocked these "charter flips." According to U.S. League President Fred Webber, charter flips are motivated by a desire to escape the high cost of OTS regulation, to gain the additional investment flexibility enjoyed by savings banks, and to avoid the FIRREA-revised QTL test. See Washington Notes, Vol. XLIV, No. 41, Oct. 12, 1990, p. 2.

[12]Acquisition of a thrift is not without some potential disadvantages, however. The acquirer may incur the liability for previously deferred taxes and responsibility to cross guarantee deposit insurance losses in the event the thrift fails in the future. The cross guarantee provision of FIRREA empowers the FDIC to exact restitution from all of a holding company's healthy institutions in the event that any of a company's weak units require federal assistance. In addition, the FIRREA provisions that saddle thrifts with higher costs, reduced revenues, and a more restricted portfolio have diminished the value of the thrift charter and eroded thrifts' competitive position vis-a-vis other financial institutions. This may reduce their value to potential acquirers.

(e.g., restrictions against junk bonds, direct real estate investments, etc.). Thrifts that convert to savings banks would be exempt from FIRREA's 70-percent QTL test while continuing to qualify for favorable tax treatment by meeting the 60-percent test in the tax code. According to an article in American Banker, adoption of the proposed FDIC regulation may lead to OTS withdrawing its opposition to such conversions.[13] Thus, charter flipping may be both an available and attractive option for thrift institutions because of the resulting freedom from the stricter QTL test and also because regulatory costs would be reduced. State savings banks pay supervision fees to the state and OTS, whereas state-chartered thrifts pay fees to state regulators, FDIC, and OTS.

To the extent that these provisions are used to convert or merge thrifts into banks, the assets of the industry will shrink further, resulting in an even more diminished role for the thrift industry in mortgage finance.

Conclusions

Before the development and widespread use of MBS, the thrift industry's concentration in housing finance may well have served to increase the availability of housing finance. In these earlier years, mortgage lending was not broken down into its component parts—origination, servicing, and holding. A thrift would execute all the steps associated with making a mortgage, as well as hold the loan in portfolio. Investors other than thrifts generally were unwilling to invest in mortgages. Thrifts, with their favored status and their specialized knowledge of mortgage finance, dominated the mortgage markets and committed a large portion of their deposits to mortgage lending. Thrifts originated more mortgage loans and held a greater share of these loans than any other type of investor.

However, the housing finance business has changed considerably in the past 2 decades. The development and growth of MBS have weakened the link between the thrift industry and the availability of housing finance. The unbundling of mortgage lending into its component parts has created a capital market instrument—the mortgage-backed security—that is attractive to a growing number and variety of nontraditional mortgage market participants, including those who previously were unwilling to invest in mortgages. In effect, this development has extended the potential suppliers of housing finance far beyond the bounds of the deposit base of the thrift industry. Furthermore, the QTL

[13]DiNuzzo, Joseph A., "Charter Rule Might Block Escape from OTS Oversight," American Banker, Feb. 12, 1991.

test affects only one of the many suppliers of housing finance—the thrifts—and only one phase of the mortgage finance process—the holding of a mortgage. A thrift can satisfy the QTL test without ever originating a mortgage or increasing its holdings of mortgage assets as long as it holds the required percentage of mortgage-related assets in its portfolio. These changes in the mortgage markets have reduced the influence of the QTL test on the availability of housing finance.

The empirical evidence of the 1980s shows that the availability of the supply of mortgage credit is not as dependent on the thrift industry as it was previously. When asset restrictions on thrifts were lifted in the early 1980s, thrifts broadened their investment activities and their share of the residential mortgage debt market steadily declined. However, the mortgage debt market continued to expand, indicating that others were picking up the share formerly held by thrifts. Furthermore, with the exception of some unusual factors at work since 1989, thrifts have remained major originators of mortgages, even though the QTL test did not require them to do so. In our opinion, the evidence indicates that a tightening of the QTL test by the amount enacted in FIRREA is unlikely to have a significant effect on the supply of housing finance.

Interest Rate Risks and Declining Profitability Leave the Industry More Vulnerable to Economic Cycles

A number of factors have made it increasingly difficult for many thrifts to succeed with portfolios highly concentrated in residential mortgage assets: stiffer competition, adverse housing trends, increased costs of operating as a thrift, and ongoing exposure to interest rate risk—all of which have contributed to narrower profit margins. Compared to earlier times, the returns from mortgages have been lowered by the development of MBS, the risk is higher because of volatile interest rates, and thrift costs have been increased by postcrisis reforms. While there are some thrifts that will continue to succeed under these circumstances, the average thrift may have great difficulty operating both profitably and safely over the long term if required to invest primarily in mortgage assets.

Our retrospective review of thrift business strategies suggests that, for a thrift, concentrating heavily in mortgage investment is not consistently more profitable than strategies that involve more portfolio diversification. During the 1980s, no single business strategy, including a heavy concentration in residential mortgage assets, has proved consistently profitable, or consistently more profitable, than other strategies. This evidence suggests that confining thrifts to a portfolio heavily concentrated in residential mortgages may not guarantee the industry's future profitability or the security of the deposit insurance funds.

Mortgage Investing Has Become Less Profitable

The profits to be made from investing in mortgages have narrowed with the development and growth of MBS and the participation by enterprises sponsored by the federal government. Furthermore, demographic trends suggest that the demand for mortgages may decline in the next several decades, putting additional downward pressure on profits for mortgage investors.

Securitization Has Narrowed Mortgage Spreads

The profitability of mortgage lending has been reduced by the development and growth of securitized mortgages, which have boosted competition and participation in the mortgage lending business. Mortgage-backed securities are extremely liquid assets because of their relative homogeneity and large volume. Over the past 7 years, the development of derivative MBS, which split mortgage cash flows into several maturity classes, has added additional features to the ordinary MBS. These innovations in MBS enhance investor choice and attract into the market additional participants who otherwise might avoid mortgage investment. With numerous investors demanding these highly liquid MBS, their price has risen, and the mortgage rates, or yields, on such securities have

fallen relative to the rates on unsecuritized or less widely traded mortgages.

While securitized mortgages attract more capital into the mortgage lending market, making it easier and cheaper for home buyers to obtain financing, the increased competition squeezes earnings spreads on mortgage lending.

As discussed in chapter 3, agencies such as Fannie Mae, Freddie Mac, and Ginnie Mae have been responsible for the large volume of growth in MBS. Originally, these entities were created by Congress to provide liquidity to the secondary residential mortgage market. Their role was intended to be supplemental to the basic system in place. However, their increased presence in the secondary mortgage market has been one of the major driving forces behind the increased securitization of mortgages. This, in turn, has contributed to a reduction in mortgage rates, which substantially squeezes thrifts' profit margins.

MBS, particularly those issued by the government-sponsored enterprises, are attractive to depositories and other financial institutions. In times of slack demand for loanable funds, they are a readily available repository for funds; institutions need hold less risk-based capital against MBS than they would be required to hold against the whole mortgages themselves;[1] also, MBS have relatively higher yields than comparable Treasury securities and a high degree of liquidity due to the active secondary market. Because of the ties that Fannie Mae and Freddie Mac have to the U.S. government (investors expect that the federal government would assist them out of financial difficulties, thereby protecting investors from default losses), investors perceive that MBS guaranteed by these government-sponsored enterprises are among the safest of investments.[2] Consequently, investors view MBS as less risky and more marketable than fully private securities. This perception leads to higher prices and lower yields on MBS. Some experts conclude that in more than half the residential mortgage market, mortgage yields have been reduced by

[1]While thrifts are required to hold 4 cents of risk-based capital for every dollar of residential mortgages, they need hold little or nothing against MBS.

[2]For a fuller discussion of the status of securities issued by government-sponsored enterprises, see Government-Sponsored Enterprises: The Government's Exposure to Risks (GAO/GGD-90-97, Aug. 1990).

as much as 30 basis points by large-scale securitization of mortgages by government-related secondary market agencies.[3]

A recent Freddie Mac study reinforces this finding.[4] The study documents the spreads between rates on "jumbo" loans--loans that exceed the limit that Fannie Mae and Freddie Mac can securitize—and "conforming" loans—loans that the agencies can securitize. In 1986, 1988, 1989, and 1990, the spreads between jumbo and conforming rates nationwide were 23, 43, 57, and 50 basis points, respectively. These spreads provide some evidence for both the role of the agencies and the role of liquidity (jumbo loans are a smaller and more thinly traded segment of the mortgage market) in lowering the yield of highly traded MBS.

There are a number of factors, including the following, that suggest that the MBS market is likely to continue to expand in the 1990s:

- Technological advancements and financial market innovations have enhanced foreign investors' ability to tap into the U.S. MBS market.
- Nontraditional investors, such as commercial banks, credit unions, and retirement and pension funds, have continued to increase their demand for such long-term assets as MBS.
- Only one-third of the residential mortgage debt market has been securitized, leaving substantial room for continued growth in MBS.
- The perceived government backing of MBS debt issued by government-sponsored enterprises is an increasingly important factor to potential investors in a world of volatile interest rates.
- The implementation of risk-based capital standards for banks and thrifts has given favorable risk weightings to securitized mortgages issued by government and government-sponsored enterprises.

As the MBS market continues to expand, institutions that choose to hold mortgages will continue to face stiff competition and pressures on the profitability of this activity.

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[3]"By 1986, the agencies had lowered mortgage rates by 30 basis points in more than half of the residential mortgage market. . ." Patrick H. Hendershott, "The Future of Thrifts as Home Mortgage Portfolio Lenders," in The Future of the Thrift Industry, The Federal Home Loan Bank Board of San Francisco, San Francisco, Dec. 1988, pp. 153-159; Patrick H. Hendershott and James D. Shilling, "Reforming Conforming Loan Limits: The Impact on Thrift Earnings and Taxpayer Outlays," Journal of Financial Services Research, Kluwer Academic Publisher, New York, Jun. 1989, pp. 311-330; Patrick H. Hendershott, "Do Home Mortgage Portfolio Lenders Have a Future?," Federal Home Loan Bank Board Journal, FHLBB, Washington, D.C., May 1989, pp. 6-9; Robin Grieves and Robert Van Order, "Bid-Ask Spreads in Multiple Dealer Markets," Federal Home Loan Mortgage Corporation, Reston, VA, Jan. 1990, p. 16.

[4]Robert Van Order, "Bridge Over Troubled Water," Secondary Mortgage Markets, Summer 1990.

Demographic Trends Are Unfavorable to Housing Demand

Demographic trends also suggest a slower growth in housing demand that may reinforce the downward pressure on the profitability of mortgage lending.

Unlike thrifts' experience during most of the post-World War II period when demographics clearly favored an expanding housing finance system, recent studies indicate that present demographic trends portend a slower growth in housing demand than in the past 3 decades; this slowdown in turn may lower the demand for mortgage credit.[5] A slower growing housing market is likely to expose any overcapacity that may exist in the mortgage finance business and put downward pressure on the spreads earned in mortgage lending, even if interest rates remain stable.

These studies predict a slowdown in net household formation as the "baby boom" generation passes into middle age and is followed by the much smaller "baby bust" generation. As the baby bust generation (those currently aged 14-25) enters the housing market, there will be a decrease in the number of housing units built and sold. Reinforced by the aging of the population, the arrival of the baby bust generation will result in a declining demand for starter homes as the number of younger households falls. These studies expect these factors will slow down growth in housing demand if not put it on a downtrend into the next century.

The studies also indicate that it is likely that the diminishing number of prospective home buyers will moderate the price appreciation of starter homes. On balance, both new and existing homes are expected to appreciate less quickly than they did since the 1970s, and neither may rise faster than the rate of inflation.

If these demographic factors develop as predicted, the housing market will be less robust, especially in the late 1990s, than it was in the 1980s.

[5] A sampling of these studies and comments include the following: Bryce Curry Seminar, The Future Role of Thrift Institutions, Papers and Proceeding, FHLB of New York, New York, April 1987, pp. 8-69; "Aging Baby Boomers Reshape the U.S. Housing Market" and "Despite Positive Signs, Home ownership Rates Decline," Savings Institutions, U.S. League of Savings Institutions, Chicago, Jan. 1988 and Jan. 1989; Remarks by Martha Seger, Member, Board of Governors of the Federal Reserve System, to Real Estate Conference Group, Los Angeles, Dec. 7, 1989, pp. 1-10; Fannie Mae proprietary information prepared for GAO, Jan. 8, 1990, pp. 111-112.

Thrifts Have to Incur Greater Risks Than Other Investors to Earn a Positive Spread in Portfolio Lending

The evidence suggests that yields from mortgage investing have decreased sufficiently so that thrifts will have difficulty simultaneously managing the interest rate and credit risk that they must bear as holders of mortgages, as well as generating profits to pay expenses and a return on capital. Other mortgage investors face the same narrowing spreads that thrifts face but have greater portfolio flexibility to manage the interest rate risk and the often lower costs attributable to capital and regulation than thrifts.

Many Thrifts May Not Be Able to Operate Both Profitably and Safely by Concentrating on Mortgage Portfolio Lending

A key issue in assessing the long-term safety and profitability of the thrift industry is the ability of thrifts to deal with interest rate risk. The lesson of the early 1980s is that specialized mortgage portfolio lenders do not do well in an environment of rapidly rising interest rates when they are locked into long-term, fixed-rate mortgage assets, while competitive forces require them to offer higher returns on their short-term deposit liabilities. In a recent study, two experts examined the aggregate thrift industry balance sheet for 1989 and concluded that the industry remains vulnerable to interest rate risk and that a repeat of the 1977 to 1986 interest rate cycle would be extremely costly.[6] If the industry were profitable and adequately recapitalized, these losses could be sustained without loss to taxpayers. Their analysis indicates, however, that under current conditions such an interest rate episode would impose substantial losses on taxpayers.

There are a number of ways a thrift can improve the match of the maturity structure of its assets and liabilities and so strengthen the safety of the business through various economic cycles.

First, thrifts could use hedges to reduce the sensitivity of net worth to changes in interest rates. This means that the value of the hedging asset changes just enough to offset the change in the value of net worth, both when net worth is rising as well as when it is falling. Hedging is like buying an insurance policy to protect the thrift from changes in interest rates. The thrift must pay for the hedging assets just as one must pay for an insurance policy. There are a number of hedging instruments.

[6]Patrick H. Hendershott and James D. Shilling, "Continued Interest Rate Vulnerability of Thrifts," presented at the American Real Estate and Urban Economic Association meeting, Washington, D.C., May 1990.

Three of the most widely available instruments include interest rate swaps, financial futures, and options on financial futures.[7]

Hedging strategies are complex and expose the thrifts to new risks.[8] In addition, mortgage prepayments make the hedging strategies more complicated and imperfect. Home owners have an incentive to prepay mortgages when interest rates are falling. The cash from these prepayments cannot be reinvested as profitably at lower interest rates. Thus, thrifts do not experience gains when interest rates fall in such a manner so that they are symmetric with the losses they suffer when interest rates rise; mortgage borrowers are not effectively locked into the higher rates that previously prevailed. When interest rates are rising, homeowners defer prepayments. The uncertainty of prepayments makes cash flows difficult to predict and makes it more difficult to hedge the portfolio. Prepayments also heighten the sensitivity of the effect of interest rate changes on the value of the mortgage asset. Thus, mortgages rise in value less than other fixed-income securities do when interest rates fall, and mortgages fall in value more than other fixed-income securities when interest rates rise. Because of prepayments, hedging a mortgage portfolio is quite complicated.

There is a wide array of complex instruments with various features to choose among, and hedge positions must be frequently reevaluated. To

[7]Charles S. Morris and Thomas J. Merfeld define these instruments in "New Methods for Savings and Loans to Hedge Interest Rate Risk," in Economic Review, Federal Reserve Bank of Kansas City, March 1988. An interest rate swap is a contract in which one party—the fixed-rate payer—agrees to make a sequence of level payments to another party—the floating-rate payer—in exchange for a sequence of payments that varies with prevailing interest rates. This practice is like "swapping" interest payments on some underlying fixed-rate and floating-rate loans without an exchange of the principal. Financial futures are contracts based on a financial asset (rather than on a tangible commodity) that promise the holder delivery of a specified quantity of a financial asset on a predetermined date in the future for a predetermined price. Frequently thrifts use Treasury bonds or Eurodollars for hedging in financial futures. Thrifts can use call and put options to hedge against large interest rate changes and to protect themselves from prepayment risk. The call option is a contract that gives the owner the right, but not the obligation, to buy a fixed amount of a specified asset at a fixed price at any time on or before the contract expires. In a like manner, the put option gives the owner the right to sell a fixed amount of a specified asset at a fixed price.

[8]Territory Savings & Loan Association in Seminole, OK, attempted to use a complex interest rate hedging strategy to relieve its poor financial condition in the 1980s. The hedging plan ended up costing the savings and loan more than $10 million in 6 months. In the early 1980s, Wichita Federal Savings & Loan Association in Kansas became involved in reverse repurchase agreements in which it bought securities from sellers who agreed to buy them back at a set price and time. In just 2 months in 1985, Wichita Federal lost $17.5 million. Franklin Savings Association in Kansas was placed in conservatorship by OTS in Feb. 1990 after the thrift refused to recognize about $119 million in losses on futures contracts. The contracts were held as a hedge against losses in the $10.26 billion of MBS that dominated Franklin's portfolio of assets. However, in Sept. 1990 a federal judge ordered that Franklin be returned to its former officials, indicating that the regulators had made erroneous findings and conclusions in evaluating the thrift's hedging techniques and its health.

successfully manage the complexity inherent in portfolio hedging programs, highly trained experts must be hired, and a computerized database must be developed containing all the relevant information for each asset and liability in the portfolio. As a result, the available hedging techniques are best suited to large, sophisticated, and well-capitalized institutions, generally not the smaller institutions. Smaller institutions—those with assets less than $50 million—make up a substantial part of the industry. At year-end 1989, 781 thrifts, which accounted for 27 percent of the industry assets, fit into this category.

The greater the interest rate risk, the more costly is the hedging program because the cost of hedging a portfolio against wider variation in earnings is greater than the cost of a hedge for less protection. If, as a result of FIRREA, thrifts end up holding an even greater share of mortgage assets in their portfolios, as well as a larger proportion compared to other financial institutions, thrifts may be exposed to a high degree of interest rate risk, and they will have to spend more than other institutions to hedge such a portfolio to achieve an equivalent degree of risk.

Second, a thrift theoretically could adjust the mix of its assets so as to create an asset mix whose maturity corresponds more closely with the repricing of its shorter term deposits, relieving the maturity mismatch problem. While FIRREA's new QTL test requires thrifts to hold a heavy concentration of mortgage assets, it allows them flexibility to invest in assets other than long-term, fixed-rate mortgages, such as ARMs, home equity loans, and mortgage-backed securities of various maturities. However, the extent to which thrifts can invest profitably in such assets is constrained by market forces, such as the reluctance of home owners to purchase ARMs in rising interest rate environments. Furthermore, while a thrift holding long-term mortgage debt could relieve the maturity mismatch problem by investing in non-mortgage-related assets with shorter terms to maturity, a thrift's ability to make such investments is heavily constrained by the QTL-imposed floor on a thrift's holding of mortgage assets and FIRREA's restrictions on the investments that a thrift may make. Furthermore, under FIRREA's QTL test, short-term liquid assets are no longer considered qualified thrift investments.

Third, not only can thrifts use short-term deposits to fund mortgages, they can also use longer term liabilities such as FHLB advances, debt issued in the capital market (e.g., bonds), or time deposits with a lengthy maturity. By better matching the maturity of its assets and liabilities, a thrift may raise its cost of funds but the thrift better insulates itself from losses that could result from sudden interest rate increases.

A variety of studies suggest, however, that a typical thrift cannot earn a positive spread on mortgage portfolio lending when it matches the maturities of assets and liabilities.[9] Thrift institutions with unusually low operating expenses, access to low-cost funds, or other advantages may be profitable as mortgage lenders in the long term while adequately controlling interest rate risk.[10]

The earnings of thrifts as mortgage lenders come from three sources: the origination fee, the servicing income, and the funding spread. The first two constitute the noninvestment aspects of the mortgage business. Though origination and servicing may currently be profitable aspects of the mortgage business, a thrift that undertakes only origination and servicing cannot satisfy the QTL test in FIRREA since that test requires thrifts to hold the mortgage-related assets in portfolio. The funding spread, the difference between the rate thrifts charge for the funds they lend and the rates they pay to acquire funds, is what thrifts must manage in order to generate profits to pay expenses and a return on capital, as well as cover the cost of the interest rate and credit risk that they must bear as holders of mortgages. For the average thrift, this funding spread has been deteriorating.

In a recent study, two thrift industry researchers evaluated the expected profitability of mortgage lending by taking into account the complex cash flows due to the prepayment option embedded in mortgages.[11] The authors calculated these option-adjusted yields on newly

[9]Andrew S. Carron and R. Dan Brumbaugh, Jr., "The Viability of the Thrift Industry," Apr. 1990; Hendershott, Dec. 1988; Hendershott and Shilling, June 1989; William J. McGuire, Susan M. Scoville, and Alan R. Winger, "The Profitability of Portfolio Mortgage Lending by Thrifts in a Competitive Environment," Federal Home Loan Bank of Cincinnati, Mar. 1989; Sanford Rose, "Congress is Set to Goof" and "Restructuring the Thrifts," American Banker, May 31, 1989, and July 5, 1989; and Delonis, Robert, "QTL Test Heightens Profit Pressures," Savings Institutions, Robert Bradner, Chicago, May 1990, pp. 48-49.

[10]There can be substantial differences among thrift institutions in the cost of funds, particularly in funds certificates of deposit (CD), negotiable orders of withdrawal (NOW) accounts, passbook accounts, etc.) obtained through a retail deposit branch network. A study done at the Federal Home Loan Bank of San Francisco found a spread of 93 basis points between the all-in-cost of deposit funds at low-cost and high-cost firms located in California. Hartzog, Jerry, Richard W. Nelson, S. Wayne Passmore, and Patricia M. Remch, "Thrift Financing Strategies," Federal Home Loan Bank of San Francisco, Oct. 1990.

[11]See Carron and Brumbaugh, Apr. 1990.

originated home mortgages from 1982 through March 1990.[12] They found that during this period the expected return on these mortgages generally averaged between 50 and 100 basis points over the rate on Treasury securities of comparable average life. To compute the thrifts' net funding spread, the researchers subtracted the cost of funding these mortgages with liabilities of the same maturity (match funding from the expected returns). They found that when a thrift used either FHLB advances or deposits, the cost of thrift money just about equaled the return on home mortgage assets. If money to fund the mortgages was raised in the capital markets, the return from holding home mortgage assets was actually negative. In other words, if it insulates itself from interest rate risk by match funding, the typical thrift will have a zero to negative funding spread. However, this study assumed that all thrifts pay the same premium over Treasury securities to obtain funds. In fact, there can be large differences among thrifts in the cost of funds.

To attract and retain capital, thrifts must earn a competitive rate of return on their equity (ROE). The authors assumed that the relevant rate of return for thrift equity is 15 percent. On the basis of new capital rules under FIRREA—capital of 3 percent of all assets—the authors determined that over the 1986 to 1990 period, the return on mortgages would have had to have been 32 basis points greater than it actually was; with capital of 1.6 percent (based on the risk-based capital requirement), the return would have had to have been 24 basis points greater.[13]

According to these studies, match funding mortgages is an unprofitable activity for the thrift industry.[14] The research suggests that thrifts can sometimes profit at mortgage lending because of noninvestment mortgage activities—originating and servicing—but only by substantially

[12]To compute the expected returns, it is necessary to break the mortgage into its component parts—the call option and the noncallable segment—and value them separately. Once the value of the noncallable segment is determined, its yield to maturity can be calculated. The call-adjusted, or option-adjusted, yield measures the mortgage lender's real compensation. In other words, the authors applied probabilities to the cash flows expected from a mortgage investment under alternative interest rate scenarios and thereby computed an expected return or fair market value.

[13]If most investors demand at least a 15-percent ROE and the required capital-to-asset ratio is 3 percent, then the average thrift needs to earn a spread of 45 basis points (0.15 X 0.03=0.45 percent) between its asset yield and its liability costs to be an adequately profitable institution. From 1982 to Dec. 1989, thrifts could not earn such spreads in portfolio lending.

[14]Delonis determined that an ROE of 15 percent with a 6 percent equity-to-asset ratio requires a net interest margin (interest income less interest expenses divided by assets) of 2.56 percent. However, fixed-rate mortgage lending produced a net interest margin of no more than 1.75 percent. At year-end 1989, nearly 25 percent of thrifts' assets were in fixed-rate mortgages. Delonis, May 1990, p. 49.

mismatching their portfolios.[15] In general, thrifts face a dilemma: if they do mismatch their mortgage portfolios, they may earn temporary profits, but ultimately it may be unsafe because of interest rate and prepayment risk. And if they match funds, it is temporarily safe, but unprofitable.[16]

Other Financial Institutions Can Invest in Mortgages More Profitably and Safely Than Thrifts

As of December 1989, thrifts held about 20 percent of the securitized mortgage debt. A variety of other holders accounted for the other 80 percent. What accounts for the ability of other financial institutions to invest in mortgages more profitably and safely than thrifts?

There are two principal explanations why nonthrift investors are able to invest more safely and/or profitably than thrifts in mortgages: (1) nonthrift investors enjoy broader powers to diversify their assets and (2) the liabilities of nonthrift investors may be better matched to long-term mortgage investments so that they do not have to incur the cost of hedging their portfolios. The following serve as examples:

- Pension funds can hold whatever percentage of their portfolios in mortgage-related assets that the fund managers deem prudent. Such funds have minimal capital requirements, and since income earned by the funds is tax free, they do not have to earn as high a return to attract participants. Also, the pension fund typically has actuarially determined liabilities of a fairly long duration. So long-term mortgage assets are an attractive match without the interest rate risk drawback.
- Life insurance companies can also broadly diversify their assets. They tend to have liabilities of a long duration that match well with long-term mortgage assets, avoiding much of the interest rate risk that thrifts face.
- Mutual funds and investment firms have certain investment options that thrifts do not and also have lower capital requirements, allowing them higher earnings on mortgage investments relative to thrifts.
- Commercial banks have greater portfolio flexibility than thrifts and greater diversity in the composition of their assets. Also, banks' prime rate loans tend to reprice before their money market deposit accounts

[15]Even if they mismatch their funds, it may not be possible for thrifts to earn enough on origination and servicing to offset the funding losses and operating expenses, which now stand at about 200 basis points of assets. Since the option-adjusted spread on ARMs has amounted to only 10 to 20 basis points over the spreads on fixed-rate mortgages, it is likely that they too are earning little if anything for the industry.

[16]Sanford Rose, "Thrift Survival Requires More, Not Less Capital," American Banker, May 4, 1990, p. 6.

assets. This gives banks a greater proportion of shorter term assets relative to their liabilities than thrifts have in their portfolios. For banks then, investing in mortgage assets may be more risk-reducing than revenue-enhancing.[17]

- Fannie Mae and Freddie Mac, like thrifts, are restricted to the mortgage business. Unlike thrifts, neither Fannie Mae nor Freddie Mac is required to invest in mortgages. Both can purchase mortgages for resale as MBS. Freddie Mac chooses not to invest in mortgages in a significant way, in order to avoid the interest rate risk involved. Fannie Mae does invest in mortgages. Its large volume[18] allows it to take advantage of economies of scale and to employ sophisticated financial management techniques to handle its interest rate risk exposure by borrowing funds that are matched in maturity to its mortgage investments.[19]

Other FIRREA Provisions Have Raised the Cost of Operating a Thrift

The privileges once granted thrifts in return for their commitment to the business of home financing have gradually been eroded. The advantage of a steady source of low-cost funds vanished when interest rates rose and deposit ceilings were eliminated. Tax advantages have been steadily eliminated since 1982. The new QTL test increases the proportion of residential mortgage-related assets that thrifts must hold in their portfolio, confining them to an activity which, according to a number of studies, can be profitable for some thrifts at some times, but which will not yield sufficient profits for the entire industry at all times. Although this activity can be profitable for some thrifts at some times, it probably cannot yield sufficient profitability to sustain the industry at its present size without excessive exposure to interest rate risk.

[17]According to some regular contributors to American Banker, the amount of banks' investments in MBS may currently be excessive. Their investments in MBS may exceed what is required to close an asset-sensitive gap, and they may be taking on excessive interest rate risk and prepayment uncertainty.

[18]In 1989, Fannie Mae issued $228 billion of the $932 billion securitized mortgage debt outstanding, or 25 percent of the total residential mortgage debt. At year-end 1989, Fannie Mae held $110.7 billion worth of residential mortgages, which represented 4 percent of total residential mortgage debt outstanding.

[19]Fannie Mae's success in the MBS market reflects its sophisticated portfolio management strategy, which is designed to maintain a wide interest margin by creating an asset liability structure that will maintain the desired earnings in as wide a range of financial environments as possible. At year-end 1989, Fannie Mae considered its current earnings to be well protected in a range of interest rates up or down 250 basis points (2.5 percent) from current rates given the well-matched maturities between its assets and liabilities.

Once thrifts' reserve requirements were lower than banks'. Under FIRREA, thrift capital standards must become at least equally as stringent, and thrifts will have to hold more cash, Treasury notes, and other liquid assets with typically lower returns than higher risk assets than before the standards were raised. As a result, each dollar of capital will now support fewer earning assets than before.

Historically, thrifts have enjoyed access to capital market financing through FHLB advances. In the future, banks with at least 10 percent of assets invested in mortgages can become members of the FHLB system. However, the benefits of membership have been considerably reduced by FIRREA, which tapped the future earnings of the FHLB system to pay for the thrift crisis and to finance affordable housing. Under FIRREA, FHLBs are required to contribute $300 million annually for interest on bonds issued to finance part of the thrift crisis. FHLBs must also commit $50 million (increasing to $100 million) annually to finance affordable housing.

Higher charges for examination and supervision also put thrifts at a small cost disadvantage relative to commercial banks. These charges will average $254,000 (or .025 percent) for each billion dollars of thrift deposits compared to $133,000 (or .013 percent) for each billion dollars of deposits at national banks.

Higher insurance premiums will raise the costs of operations for thrifts relative to banks and other mortgage investors. FIRREA raises the premiums that thrifts must pay to finance SAIF, the thrift deposit insurance fund, to 23 cents for each $100 of deposits from 1990 to 1993, 18 cents from 1994 to 1997, and 15 cents thereafter. Banks will pay 12 cents for each $100 of deposits in 1990 and 19.5 cents in 1991. FDIC has authority to consider additional insurance premium hikes.

Thrifts With the Greatest Mortgage Investments Have Not Consistently Performed Better Than Others

On the basis of our analysis of various strategies that thrifts used throughout the 1980s, we found that thrifts that chose traditional mortgage investing over other business strategies were not consistently more profitable. Rather, our study indicates that the relative profitability of different investment strategies has varied over time. Also, there is a stronger association between an institution's profitability and its level of capitalization (capital-to-asset ratio) than to the particular strategy pursued. This association could reflect the greater flexibility, superior opportunities, and stronger incentives for managerial prudence (reduced moral hazard) that come with higher capitalization. Alternatively, it

could reflect the fact that more competent managements achieve higher profitability and thereby, through retained earnings, a higher capitalization. Our analysis cannot discriminate between these two explanations. Very likely, both are involved in producing the observed association.

Recent Profitability Performance of Thrifts in Various Strategies

On the basis of previous studies of thrift business strategies,[20] we identified six strategies based on the concentration of assets in thrift portfolios. Using data from the Thrift Financial Reports from December 1979 through December 1989, we placed each thrift into one of these strategies for each reporting period. Some thrifts were assigned to more than one strategy, since strategies are not precisely or exclusively pursued. However, instances of such multiple classification were minimized.[21] Because the existing QTL test requires thrifts to maintain a large percentage of their portfolios in housing-related assets, our distinctions focus more on the discretionary investments that a thrift could make. The six strategies include traditional, commercial, mortgage banking, security/equity investment, real estate development, and eclectic—those thrifts not meeting any of the previous strategy definitions. These strategies are defined in table 4.1.

[20] Carron and Brumbaugh, Apr. 1990; Donald Kaplan, "Alternative Strategies for Success," Proceedings of the Fourteenth Annual Conference at the FHLB of San Francisco, FHLB of San Francisco, Dec. 1988, pp. 81-127; Elizabeth Mays, "Tracking Profits in the Eighties," Bottomline, Vol. 6, No. 12, Dec. 1989.

[21] Overlap between strategies ranged from 50 to 120 thrifts.

Table 4.1: Thrift Business Strategies

Business strategy	Criteria
Traditional	Permanent residential mortgages are at least 60 percent of assets; or permanent residential mortgages at least 40 percent and, when combined with MBS, the sum is at least 65 percent of assets
Commercial	The sum of consumer loans and commercial (business) loans plus nonresidential (commercial) mortgage loans is at least 30 percent of assets
Mortgage banking	Loans serviced for others are at least 70 percent of assets
Security/equity investment	Investment in service corporations/ subsidiaries plus investment securities and MBS is at least 45 percent of assets; or investment securities plus investment in service corporations/subsidiaries is at least 30 percent of assets
Real estate development	The sum of real estate held for development plus construction loans plus land loans is at least 30 percent of assets; or real estate held is at least 20 percent of assets
Eclectic	Thrifts that do not meet any of the above strategies

Note: Due to data limitations prior to 1987, some thrifts may have been classified in the wrong strategy. Before 1987, construction loans were embedded in traditional mortgages and could not be separated out for inclusion in the real estate development strategy. This biases the analysis to include more thrifts in the traditional strategy than there would otherwise have been. As a result, the number of thrifts in the real estate business strategy is understated prior to 1987.

Within each strategy, we further divided thrifts into four net worth categories based on GAAP capital to asset ratios defined as: (1) insolvent—less than 0 percent, (2) troubled or poorly capitalized—between 0 percent and 3 percent, (3) moderately capitalized—between 3 percent and 6 percent, and (4) healthy—greater than 6 percent. This subdivision permitted us to examine the association between thrift capital levels and profitability.

Until 1982, more than 90 percent of the thrift industry's assets were in thrifts that were pursuing the traditional thrift strategy—originating and holding residential mortgages. By year-end 1985, that share had fallen to 48.7 percent, while thrift assets concentrated in other business strategies increased. At year-end 1989, the share of the industry's assets committed to the traditional strategy was 38.9 percent. (See table 4.2.)

Table 4.2: Percentages of Thrift Industry Assets Devoted to Various Strategies

Business strategy	1979	1982	1985	1989
Traditional	98.8%	83.7%	48.7%	38.9%
Commercial	0.3	0.8	7.4	5.7
Mortgage banking	1.1	1.9	3.6	7.4
Security/equity investment	0.4	1.3	6.2	13.4
Real estate development	0.0	0.1	3.2	1.6
Eclectic	0.7	14.6	34.0	36.2

Notes: Mean values are at year-end and are expressed as a percentage of total assets.

To compute the percent of assets devoted to each strategy, we first categorized each thrift according to its dominant strategy. Then we totaled all the assets of the thrifts falling into each business strategy and determined what percentage this represented of the industry's total assets.

Source: FHLBB and OTS semiannual and quarterly Thrift Financial Reports.

The industry has taken advantage of the opportunities to pursue new strategies; some thrifts have been successful and others unsuccessful in these nontraditional endeavors. As shown in table 4.3, thrift industry profitability has not regained its precrisis heights.[22] However, in every year since 1985, the overall return on assets was greater for thrifts following the traditional strategy than it was for thrifts following any other strategy. Further, while the traditional strategy was at least marginally profitable in each of these years except 1989, the other strategies were typically unprofitable and sometimes dramatically so. Strategies such as real estate development and mortgage banking outperformed the traditional strategy prior to 1985. But those same strategies, together with commercial lending, were markedly inferior to the traditional strategy in the later years of the decade.

[22]The thrift industry's continued poor profit performance reflects a number of factors: inability to recoup the very severe losses they suffered in the early 1980s; the erosion of thrift subsidies; worsening of market conditions in many regions of the country; the losses of insolvent thrifts, which swamped the net gains of the healthier segment of the industry; the high cost of funds of many insolvents, pressuring the healthy thrifts to raise their rates as well; and the increased competition, growth, and innovation in the secondary mortgage market narrowing the spreads that thrifts can earn in the business.

Table 4.3: Return on Assets by Strategy, December 1977 - December 1989

Year	Traditional	Commercial	Mortgage banking	Security/ equity investment	Real estate development	Eclectic	ROA for all thrifts
1977	0.79%	1.12%	1.02%	0.62%	1.51%	0.53%	0.79%
1978	0.83	0.89	1.27	0.58	0.63	0.43	0.82
1979	0.65	0.71	0.87	0.74	[a]	0.49	0.65
1980	0.10	−0.28	0.42	−0.55	[a]	0.10	0.1
1981	−0.96	−1.48	−0.86	−1.14	[a]	−0.69	−0.95
1982	−0.33	0.28	0.21	−0.62	2.16	0.01	−0.27
1983	0.19	0.93	0.86	0.53	2.38	0.16	0.23
1984	0.27	−0.09	0.71	0.67	0.39	0.15	0.25
1985	0.72	−0.92	0.60	0.58	−0.29	0.30	0.44
1986	0.80	−4.53	−0.06	−0.47	−9.96	−0.07	−0.29
1987	0.37	−3.42	−0.33	−1.11	−9.51	−1.07	−1.01
1988	0.42	−2.42	−0.66	−0.20	−5.01	−1.16	−0.68
1989	−0.26	−7.23	−5.72	−1.30	−9.63	−2.74	−2.08
All thrifts in strategy	0.27	−2.11	−0.62	−0.17	−6.93	−0.63	−0.30

Note: Mean values are expressed as a percentage of total assets.

[a]Not applicable.

Source: FHLBB semiannual and quarterly Thrift Financial Reports.

These results must be interpreted cautiously. Part of the reason that thrifts with mortgage-related assets have done better than the rest of the industry since 1985 is that most of this period was marked by slowly declining and relatively stable interest rates, a particularly favorable condition for mortgage lending. In such a period, the risks associated with the maturity mismatch of thrift assets and liabilities remain latent. Also, the overall poor performance of the rest of the industry reflects the dismal performance of the insolvent thrifts, whose portfolios, on average, contain a greater share of nonmortgage assets than the industry. It is generally believed that many of these most poorly performing thrifts were ones that began gambling on nontraditional strategies after their net worth had been substantially eliminated by other factors—including, in particular, the interest rate run-up of the late 1970s and early 1980s. Also, some studies suggest that thrifts pursuing the traditional strategy may be making money on the originating, servicing, and the selling of mortgages, and not the holding of mortgages.[23]

[23]Others who agree include Carron and Brumbaugh, Apr. 1990; Rose in a variety of articles, e.g., "Can the Thrift's Still Finance Home Mortgages?," American Banker, Apr. 4, 1989; Christopher T. Gilson, "Acquisition Will Make NCNB a Heavyweight in Servicing," American Banker, June 29, 1990.

The continuing poor profit performance of the thrift industry in recent years reflects a number of factors whose individual roles are difficult to sort out. Even the many institutions that have been prudently and competently managed have struggled to recover from the effects of the interest rate shock of 1979 to 1982. While doing so, they have had to deal with declining subsidies, narrowed interest rate spreads resulting from the increased competition from the secondary mortgage market, and increases in the costs of funds caused by competition from the risk-seeking part of the industry. Many have also suffered from weaknesses in their local economies. Meanwhile, a portion of the industry suffered misfortunes arising from mismanagement, which itself took a variety of forms. It ranged from lack of caution in approaching new lines of activity to deliberate pursuit of risky investment strategies to, at worst, criminal fraud.

Differences in Thrift Profitability Reflect Capital More Than Strategy

Our study indicates that profitability is more closely correlated with an institution's level of capitalization (capital-to-asset ratio) than to the particular strategy pursued. Once we adjust for capital levels, differences in profitability, as measured by ROA, are associated with a thrift's capitalization level more strongly than with the dominant business strategy pursued. (See table 4.4.)

Table 4.4: Average Annualized ROA by Strategy and Net Worth Category

Net worth category	Traditional	Commercial	Mortgage banking	Security/equity investment	Real estate development	Eclectic	All thrifts in industry
December 1979 - December 1982							
<0	−2.24	−7.51	−1.11	−3.55	[a]	−0.98	
0-3	−0.94	−0.58	−0.42	−0.30	2.42	−0.41	
3-6	−0.26	−0.14	0.05	−0.18	2.03	−0.02	
>6	0.2	0.23	0.51	−0.06	1.87	0.42	
All thrifts in strategy	−0.29	−0.28	0.02	−0.81	2.14	−0.19	−0.28
January 1983 - December 1985							
<0	−0.52	−4.51	−1.39	−0.80	−9.65	−0.56	
0-3	0.06	0.19	0.31	0.56	−0.10	0.05	
3-6	0.54	0.84	1.02	0.99	1.17	0.61	
>6	0.75	1.00	1.07	0.79	2.30	0.87	
All thrifts in strategy	0.32	−0.33	0.62	0.60	0.40	0.24	0.29
January 1986 - December 1989							
<0	−3.78	−14.10	−10.62	−5.58	−29.27	−6.76	
0-3	0.11	−0.29	−0.73	−0.43	−1.94	−0.44	
3-6	0.56	0.41	0.23	0.33	−0.35	0.37	
>6	0.91	0.69	0.99	0.73	1.08	0.64	
All thrifts in strategy	0.41	−2.91	−0.91	−0.31	−8.79	−0.93	−0.68

Note: Mean values are expressed as a percentage of total asets in the category.

[a]There were no insolvent thrifts that pursued the real estate development strategy during this period.

With a few minor exceptions, for each strategy, profitability increased with the level of capitalization. In other words, insolvent and poorly capitalized thrifts underperformed the better capitalized thrifts in each strategy. Again, at a given point in time, any strategy pursued by well-capitalized thrifts outperformed the poorly capitalized thrifts in every strategy undertaken. Such results are consistent with the moral hazard theory that says that poorly capitalized thrifts have incentives to engage in high-risk activities because the gains accrue to the institutions' owners but the losses accrue to the deposit insurance funds. However, the study results could also be explained by other advantages of adequate capitalization that were discussed above, or by a theory based on the proposition that managerial competence and integrity are the underlying factor affecting both profitability and net worth.

Our results are, in any case, consistent with other studies that show aggregate performance statistics for the thrift industry to be strongly influenced by the large losses incurred by the insolvent thrifts.[24]

The following summarizes our findings.

Insolvent Thrifts: GAAP Capital/Assets Less Than 0 Percent

Among insolvents, returns in all strategies were negative in every reporting period. The traditional strategy produced smaller losses than any of the other strategies throughout the period since January 1983. Over this same period, real estate development did the worst, by a large margin. In the period since January 1986, the difficulties experienced by insolvent thrifts in the nontraditional strategies have been dramatic. On average, these thrifts had ROAs always below, and sometimes far below, those thrifts following the traditional strategy. For all strategies, ROA has generally deteriorated considerably for the insolvents since December 1985.

Troubled Thrifts: GAAP Capital/Assets Between 0 and 3 Percent

For this poorly capitalized group of thrifts, no one strategy consistently outperformed the others, though the security/equity investment strategy ranked among the top three performers throughout the decade. The traditional thrift strategy performed the worst in the early period, but since December 1985 that strategy has outperformed the others. Since December 1985, the performance of the traditional strategy improved modestly, the performance of the real estate development strategy declined, and the performance of the other strategies varied over a narrower range.

Moderately Capitalized Thrifts: GAAP Capital/Assets Between 3 Percent and 6 Percent

From December 1979 through December 1985, the real estate development strategy generally outperformed all other strategies, and the mortgage banking strategy ranked second. The traditional strategy has been, on average, the most profitable since December 1985, followed by the commercial strategy. Between June 1982, the low point of the thrift crisis, and December 1985, the traditional strategy underperformed all others.

Healthy Thrifts: GAAP Capital/Assets Greater Than 6 Percent

Among the well-capitalized thrifts, the real estate development strategy consistently ranked first throughout the period examined, and the mortgage banking strategy held the number two position. Although in all the other net worth categories the traditional strategy outperformed the other strategies during the period January 1986 to December 1989, for

[24]See, for example, Barth, James R., and Michael G. Bradley, "Thrift Deregulation and Federal Deposit Insurance," Journal of Financial Services Research, 1989.

thrifts in this net worth category, the traditional strategy ranked third.[25] It is noteworthy that the ROA of healthy thrifts was not only better, but also steadier across strategies and across time than that of other institutions. The range of ROA performance across both strategies and time for the healthy thrifts was 2.36 percentage points. For the insolvent thrifts, the range was 29.34 percentage points.

Observations From Our Study

There are two main observations from our study: (1) there is not one strategy that was most profitable for all thrifts in all periods and (2) capital, not business strategy, was clearly more associated with profitability at a point in time.

It appears that choosing a particular asset strategy did not, in and of itself, determine the level of profitability. Moreover, the success of any particular strategy choice varied over time.

Conclusions

One of the objectives of FIRREA was to make the thrift industry safe and profitable by refocusing thrift industry lending in the area of residential mortgages. However, the evidence suggests that forcing thrifts to concentrate their portfolios heavily in mortgages exposes the institutions to narrowing profit margins and considerable interest rate risk. To the extent that thrifts can insulate their earnings from the various risks involved in their activities, particularly interest rate risk, they will be safer, though perhaps not as profitable.

Although some thrifts will continue to operate profitably and safely in the traditional mortgage business, many others will find it difficult to succeed if their portfolios are restricted to a high concentration of residential mortgage assets. Long-term prospects for profitability in making and holding mortgages do not appear bright. That is, structural changes in housing markets, especially the existence of securitized mortgages and well-developed secondary markets, have reduced the margin that can be earned by mortgage lenders. These changes are likely to continue into the future.

Our review of the profitability of alternative strategies for thrifts uncovered no simple answer to the problem of assuring adequate safety

[25]As explained in chapter 2, a slowly declining or stable interest rate environment, such as that of the United States between year-end 1985 to 1989, is favorable to mortgage lenders. The rest of the decade, however, was characterized by high and volatile interest rates. We cannot forecast what will happen in the future.

and profitability in the thrift industry. Restricting thrifts to a mortgage lending portfolio certainly will not ensure their success, and a repeat of the 1979 to 1982 interest rate run-up would be devastating. However, the performance record of other strategies in the 1980s was at least as inconsistent as that of the traditional strategy. Real estate development, in particular, produced the largest profits for some groups of thrifts in some years, but also produced the largest losses for other groups of thrifts in other years.

Our evidence shows that undercapitalized thrifts did poorly in any line of business whereas well-capitalized thrifts outperformed the industry average in virtually all strategies. We are unable to provide an unequivocal interpretation of this evidence, since adequate capitalization may be an effect as well as a cause of prudent and competent management.

Taken together, these factors raise questions about the degree to which thrifts should be required to concentrate in their traditional area of expertise—investing in residential mortgages.

Reconsidering the Move to a Stricter QTL Test

At one time, thrifts were the major originators and holders of residential mortgages. But thrifts' share of the housing finance market has declined steadily over the past 2 decades. FIRREA's QTL test is intended to get savings associations back to their original purpose of financing housing in the belief that such active participation by the thrift industry is essential in meeting the housing needs of the country. FIRREA's 70-percent QTL test is also intended to help the industry survive in the modern financial environment by redirecting thrifts back to their traditional role as housing lenders in the belief that this is what they can do best and most safely. However, thrifts now operate in a substantially different economic and mortgage finance environment than they used to. Many new nontraditional mortgage investors have entered the residential mortgage finance market. As a result, the thrift industry has become less influential in supplying housing finance, and the returns from residential mortgage lending have declined.

With the development of mortgage-backed securities, mortgage finance has become integrated into the capital markets. This has made the financing of mortgages more attractive to a broader range of investors than it once was. As a result, the supply of mortgage credit is no longer as dependent on the thrift industry as it was in earlier years. The thrift industry's declining share of a growing mortgage finance market has been offset by the increasing participation in the market by a broad range of other nonthrift investors. We see no reason why any further declines in thrift participation should not continue to be met with a similar response. As a result of these developments, the availability of mortgage credit does not depend as much as it once did on the thrift industry or the degree to which its portfolios are constrained to mortgage assets.

By making the QTL test more rigorous, Congress intended to, among other things, restore the thrift industry to profitability, thereby strengthening the safety and soundness of thrifts and lessening the risk to the deposit insurance fund. However, mortgage portfolio lending—originating and holding mortgages or holding MBS—has become an increasingly competitive business. The continuing expansion in the breadth and depth of the secondary mortgage market, the growth in participation by Fannie Mae and Freddie Mac, and the demographic trends of this decade all suggest a narrowing of spreads to be earned and a consequent reduction in the profitability of the mortgage lending business.

Most subsidies and privileges that thrifts originally received in exchange for their strong commitment to housing finance have been eliminated. This development has adversely affected thrifts' profit margins. Certain FIRREA provisions have added to the relative costs of thrifts doing business, including reduced FHLB dividends, higher capital standards, higher insurance premiums, and higher supervision and examination costs. While each of these steps is desirable in its own right, for various reasons they pose additional obstacles to thrift profitability.

Moreover, an undiversified mortgage lending portfolio is exposed to many risks, particularly interest rate risk. While these risks remain latent in periods of low and steady interest rates, a repeat of an interest rate episode like that of 1979 to 1982 would quickly reveal their magnitude and potentially serious consequences. The available hedging techniques are costly, complicated, and imperfect and suitable only for the large, more sophisticated thrifts.

Given the lower yields to be earned in mortgage lending and the higher costs faced by the thrift industry as a result of post-FIRREA reforms, the prospects for the industry's return to a safe and profitable operation in the near term seem unfavorable, even without a stricter QTL test. In the long term, the thrift industry will survive only if it is able to earn a competitive rate of return. As the poorly capitalized, less profitable thrifts leave the industry through bank conversions, mergers, acquisitions, and failures, the industry profitability should improve. Among those that remain, some may be capable of safe and profitable operation while concentrating heavily in the traditional mortgage lending business. Others, however, may seek to achieve short-term profitability at the price of accepting high levels of interest rate risk.

We do not know the optimal level at which to set the QTL test nor the best definition of qualifying assets to use to promote industry safety and soundness. Raising the QTL test to a higher percentage of mortgage assets appears unlikely to make the thrift industry safer or more profitable when it blocks the way to desirable portfolio diversification that would help reduce interest rate risk and industry exposure to housing cycles. The record of the 1980s shows that poorly capitalized or imprudently managed thrifts pursued high-risk diversification strategies, failed, and imposed losses on the insurance fund. However, many of FIRREA's provisions have made prudent use of diversification more likely. Another way to reduce risk to the insurance fund would be to allow safe, short-term assets, such as U.S. Treasury securities to qualify

as qualified thrift investments without limitation. Such changes to the QTL test appear feasible without affecting the supply of housing finance.

Matters for Congressional Consideration

In view of the possibility that raising the qualified thrift lender test to a higher level may increase risks, Congress may wish to consider amending FIRREA to leave the qualified thrift lender test unchanged at the current 60-percent level, while retaining FIRREA's prospective and more precise language regarding those assets that qualify as housing related. Congress should also consider allowing safe investments, such as U.S. Treasury securities with less than 1 year to maturity, to qualify without limitation as qualified thrift investments. Such investments present little risk to the deposit insurance fund and can provide thrifts with liquidity to respond to marketplace changes and unstable environments.

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