SHIFTING FROM REAL ESTATE TO NON-REAL ESTATE LENDING ACTIVITY: EVIDENCE ON THE RISK AND RETURN PROFILES OF THRIFT INSTITUTIONS

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Abstract

In this paper we study the important period where many thrifts shifted from traditional mortgage products into consumer loan products. Specifically, we examine the impact of this move toward consumer banking on the risk and return profiles of thrift institutions. One reason given for this shift was the shrinldng margins associated with the traditional mortgage lending business of the thrift industry. Other reasons are increased competition from pure-play competitors and the increased merger activity among commercial banks enabling thrifts to market themselves as consumer banks. All of these reasons help to explain why the traditional thrift model became less viable.

What strategic changes are necessary for thrift institutions to survive and compete effectively in the today's financial environment? Thrifts may choose to rearrange their product mix, expand their investment portfolio, manage the enterprise more efficiently, or some combination of these, strategies. One strategy chosen by certain thrifts has been to shift from the traditional model of a mortgage-oriented lender to that of a consumer bank.

Using market data from the first quarter of 1985 to the fourth quarter of 1992, we examine whether thrift organizations that followed this consumer banking strategy increased or decreased their overall exposure to risk. Employing the volatility of equity returns as our measure of total thrift risk, we find that thrifts that specialized in consumer lending exhibited lower risk while maintaining similar common stock returns, relative to thrifts that did not specialize in consumer lending. This suggests that thrifts employing a strategy of significantly diversifying their asset portfolios by specializing in consumer lending were rewarded by the equity market. Conversely, thrifts that invested only a small proportion of their assets in the consumer banking strategy did not receive a similar reward from the equity market for diversifying into consumer banking.

1. Introduction

In 1980, the Depository Institution Deregulation and Monetary Control Act was passed and signed into law. In the Act federally-chartered thrift institutions were granted consumer lending powers.[1] This allowed federally-chartered thrifts diversify their loan portfolios. It also allowed them to compete with commercial banks and with state-chartered thrifts which had already received state authorization to make these loans. importantly, the addition of consumer loans allowed greater flexibility in the maturity structure of thrifts' assets, reducing their duration gap, and thus, their interest rate risk exposure. Whether thrifts actually used consumer loans in ways to reduce the riskiness of their portfolios is an important regulatory issue. Given that legislation in many instances results in consequences not foreseen by its enactors, our major research focus is to examine whether thrift organizations diversified into consumer loans in ways which led to a reduction in their overall exposure to risk.

The granting of consumer lending powers to thrifts was part,of a movement by the Congress and federal regulators to broaden the asset structure of the thrift industry. Insight into the impact that this movement had on the riskiness of the industry with regard to the authorization of adjustable-rate mortgage (ARM) loans is found in Brewer, Jackson, and Mondschean (1996) who examined the relationship between market measures of total risk and adjustable-rate mortgage activity. Their analysis is conducted over the 1985-1989 period for real estate specialized (RES) thrifts with high proportions of ARMs and RES thrifts with low proportions of ARMS. They find, among other things, that increasing the relative proportion of ARMs in the investment portfolio (ceteris paribus) tends to increase the total equity market risk of RES thrifts with high proportions of ARMS. RES thrift institutions with lower proportions of ARMS, however, are found to exhibit decreasing risk as the percentage of ARMs in their investment portfolio increases.

Using the structure provided by Brewer, Jackson and Mondschean (1996), we examine, over the 1985. Q I - 1992: Q4 period, the impact of consumer loan activity on thrift risk as reflected in the volatility of the thrift's equity returns. By directly measuring the impact of changes in consumer loan activity on thrift equity return volatility, we are able to determine the extent to which this activity was risk-enhancing or reducing,

The remainder of this paper is organized as follows- section two discusses the literature on thrift balance sheet portfolio risk. Section three presents the theoretical framework and model specification. Section four explains the data and methodology. Section five reports empirical results. Section six offers concluding remarks.

2. Previous Research

The literature on thrift balance sheet portfolio risk contains numerous empirical studies on the relationship between market prices of thrift stock and accounting risk measures. Benston (1985) finds that on average real estate direct investments may tend to slightly reduce the riskiness of thrifts. Benston and Koehn (1989) find that the impact of nontraditional activity (real estate direct investments, investments in service corporations, and nontraditional loans) on a thrift's risk exposure depends on its capital ratio, They find that nonmortgage assets held by thrifts with low capital were associated with higher risk as

measured by the standard deviation of thrift stock returns, while nonmortgage assets held by thrifts with high capital were not.

A study by Brewer and Mo-ndschean (1994) reports that Teal estate direct investments and nonnmortgage loans have a negative and statistically significant effect on stock return volatility. However, they find that portfolio shifts into acquisition and development loans tend to raise risk. Brewer (1995) and Brewer and Mondschean (1994) also find that shifts in asset composition toward nontraditional investments result in increases in stock returns, except at thrifts with high capital. These studies suggest that expansion of thrifts allowable investment activities may result in increased risk-taking by poorly-capitalized institutions. The question arises as to whether the regulation of thrift allowable investment activities should be selectively administered? This paper offers some insights into this question. Depending on the specific investment strategy chosen by the individual thrift, the expansion into nontraditional activities can be n'sk-reducing. Because this paper focuses on (among other things) thrifts' holdings of consumer loans, some background on why a thrift might choose a high or low consumer loan investment strategy will be presented next.

2a. Consumer Banking Strategy

As a result of market forces and enabling legislation, the thrift industry has been transformed. Thrifts are becoming more like commercial banks. Reasons for this movement include shrinking margins associated with the mortgage lending business, increased competition from pure-play competitors, and increased merger activity among their commercial bank competitors.[2] The problems of the industry have been well documented [(Barth (1991)), Barth and Bartholomew (1992), Benston 1985, and Kane (1989)]. It is also well-known that the traditional thrift model is no longer viable (Carron and Brumbaugh 1991). That model has first mortgages as it primary assets and savings accounts, primarily certificates of deposits, as its primary liabilities. This traditional model also emphasizes brick and mortar facilities to support the deposit-taking and lending functions.

There is no doubt that the thrift industry has been through traumatic times. Table I shows the top 14 thrifts in the 1980s and their fate through 1998. Of the fourteen listed, seven ceased to exist, one was reconstituted and six survived. Those that survived were forced to seriously alter their way of conducting business.

Certain problems facing the industry have been induced by changes in regulation. Consider for example, the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) which mandated increased holdings of capital by tluifts. This effectively caused a decline in industry-wide (accounting) return on equity.[3] Additionally, the disparity in the insurance premiums paid by thrifts to the FDIC's Savings Association Insurance Fund (SAIF) placed the industry in an adverse financial posture relative to the commercial banking industry. For example, Great Western was paying $70 million a year for deposit insurance (on a smaller deposit base) while its California competitor Bank of America was paying only $2,000. The disparity was eliminated by the recapitalization of the SAIF.

The question arises as to the strategy necessary for thrifts to survive and compete effectively in the changing financial environment. Thrifts may choose to alter their product mix, expand their investment portfolio, manage their costs more efficiently, or use some combination of these strategie. One of the approaches taken by some thrifts has been to transform from the traditional model of mortgage-oriented lenders to that of consumer bankers.

The movement toward consumer banking with its lower cost deposits and higher yielding assets can lead to increased spreads. The movement toward consumer banking is illustrated by the transformation of Twin Cities Financial Corporation (TCF) from a financially troubled traditional thrift into a highly profitable consumer bank.[5] TCF deemphasized mortgage lending and emphisized consumer lending, commercial real estate, and business lending. TCF's consumer lending grew to 15.0 percent of total assets at the end of 1996 from 10.8 percent at the end of 1990. Over this same period, mortgage lending as a share of total assets declined to 61.5 percent from 70.8 percent.[6] Another example is the acquisition by Home Savings of America of 61 branches from the First Interstate-Wells Fargo merger. Home Savings also began a consumer loan division, a business lending unit, and launched an experiment into electronic banking. Within two years of introducing its consumer lending division, Home Savings originated over $60 million a month in consumer loans.

This movement toward consumer banking has also been accompanied by the shrinkage of the traditional balance sheet of thrifts. This was accomplished through the adoption of a mortgage banking strategy that emphasizes fee income. Another possible explanation for the increased emphasis on consumer banking by thrifts has been the mergers

of large commercial bank competitors. This has given thrifts an opportunity to market themselves as community bankers. And, a final motivation for the movement may have been the proposed - but not subsequently enacted - legislation that would have eliminated the thrift charter by merging it into the commercial bank charter.

This transformation is not without risks. Indeed, there are several risks associated with this strategic move toward consumer banking. Such risks 'mclude: overpayment for acquisitions to enter or to increase the institution's presence in the consumer banking area, letting credit standards decline in the pursuit of the new loans, and not controlling expenses. In this paper, we empirically examine the impact of the movement of thrifts into consumer banking on their common stock risk and returns.

3. Theoretical Framework and Model Specification

The major research question examined in this paper is whether thrifts that took advantage of the changes in legislation by adopting a consumer banking strategy experienced significantly different risk and return characteristics. The first step in the development of an empirical model to test hypotheses related to this question is to formulate a theoretical basis for relating some measure of thrift risk to the composition of its asset portfolio. We use the volatility of equity returns as our measure of total thrift risk. Following Black and Scholes (1973) and Galai and Masulis (1976), we relate the volatility of the return on equity, sE to the volatility of the return on the thrift's assets, $\sigma^{\wedge}$, as follows:

$$\sigma_E = \sigma_A \left[(\partial E / \partial A)/(A/E)\right] \quad (1)$$

where $(\partial/A)/(\partial/E)$ is the elasticity of equity with respect to the value of the assets of the thrift. Equation (1) indicates that the volatility of a thrift equity returns is a function of the volatility of the asset returns, the change in equity relative to the change in total assets ($\partial E/A$) and financial leverage A/∂. By increasing equity, while holding total assets constant, a thrift can lower its riskiness. However, insufficient equity relative to total assets makes a thrift more risky.

The volatility of asset returns multiplied by the change in equity relative to the change in total assets can be influenced by the thrift's asset mix between mortgage assets and consumer loans. Conceptually, if a thrift holds a portfolio of mortgage assets and consumer loans

of different volatilities, then, as the relative investment in the different assets changes, the volatility of thrift equity must also change. The precise behavior of σ_A (and therefore σ_E) is a function of the asset mix and will depend on the variance/covariance structure of the thrift's asset portfolio.

In addition to consumer loans and mortgage assets, two potentially important sources of risky iriom-nortgage assets are real estate direct investments (Direct) and investments in service corporations (Svcorp). Changes in the relative investment in these nontraditional assets may change the volatility of thrift equity returns. Thus, we examine in detail the impact on thrift stock return volatility of these two important outlets for no-mno-rtgage investments.

The discussion here focuses on real estate direct investments and investments in service corporations because regulators reported during the thrift debacle of the 1980s that thrifts with significant holdings of such direct investments also had portfolios with significantly more creditrisk (Federal Home Loan Bank Board, 1984, p. 47862). The attention that real estate direct investments and investments in service corporations received from the regulators stems from the hypothesized positive impact on the probability of failure, as well as costs to the insurance fund to resolve those failures. In response to the perceived increase in thrift risk, the now-defunct Federal Home Loan Bank Board (FHLBB) took actions to restrict thrift real estate direct investments and investments in service corporations. On January 31, 1985, the FBLBB implemented a regulation, effective March 21, 1985, which restricted holdings of such investments by now-defunct Federal Savings and Loan Insurance Corporatio-n-insuTed thrifts to the greater of 10 percent of assets or twice the thrift's net worth. A common assertion by the FHLBB had been that open-ended authority to engage in direct investment contributed significantly to the thrift problems during the 1980s. Benston (1985) analyzed the effect of broader powers and broker funds and concluded that broader powers, especially direct investment, did not lead to higher failure rates through mid- 1980s. Moreover, Brewer and Mondschean (1994) present evidence indicating that direct investments have a -negative and statistically significant effect on stock return volatility.

To develop our model of the relationship between the asset portfolio mix of a thrift and its equity volatility (risk)- we first relate the product of the volatility of a thtift's asset returns multiplied by the change

in equity relative to the change in total assets. This produces the following equation (2).

$$[\sigma_A(\partial E / \partial A])_{j,t} = s_1 + s_2 (Mort / A)_{j,t} + s_3(Direct / A)_{j,t} + s_4 (Svcorp / A)_{j,t} + s_5 (Consumer / A)_{j,t} + s_6 (Business / A)_{j,t} + \varepsilon_{j,t} \quad (2)$$

where Mort is total mortgage loans; Consumer is total consumer loans; Business is total business loans; $A_{j,t}$ total assets of the jth thrift in period t; $\varepsilon_{j,t}$ is a stochastic error term; and the other variables are as defined above.

Substituting equation (2) into equation (1) results in:

$$\sigma_{j,t} = s_0 + s_1 LEV_{j,t} + s_2 MORTj_{,t} + s_3 DIRECT_{j,t} + s_4 SVCORP_{j,t} + s_5 CONSUMER_{j,t} + s_6 BUSINESS_{j,t} + s_7 SIZE_{j,t} + \mu_{j,t} \quad (3)$$

where all asset variables are divided by market value of capital; $\sigma_{j,t,}$ is the equity volatility of the jlh thrift in period t, $LEV_{j,t,}$ is the financial leverage ratio of the jth thrift in period t; $SIZE_{j,t}$ is the natural logarithm of total assets; and $\mu_{j,t}$ is an error term.

We include an asset-size measure in the empirical specification, because firm size might serve as a proxy for thrift asset diversification. Large thrifts, whether, involved in consumer banking or not, typically have better-diversified asset portfolios than small thrifts. Thrift asset diversification can influence the volatility of thrift equity returns independently of the effect on σ_E diversification into consumer banking.

The question is whether thrifts with significant holdings of consumer loans hold mortgage and nontraditional assets with significantly more risk exposure than other thrifts. To analyze this issue the sample of thrifts is divided into two groups: consumer loan specialized (CON) and not consumer loan specialized (NCON) institutions. Using first quarter 1987 data, our sample of 99 thrifts is ranked according to the proportion of consumer loans in the asset portfolio. On the basis of this ranking, two categories are formed. The CON category includes thrift lenders that are in the top quartile of consumer loan holders and the NCON category is composed of the remaining thrifts. Of the 99 thrift organizations in our sample, 25 are classified as high-consumer loan thrifts and 74 as NCON. Notice from Table 2, that the average

consumer loans to total assets ratios are about ten percent for the CON group and only three percent for the NCON group. The difference in these ratios is statistically significant at the one percent level.

Next, we created a binary variable, DUM I, that equals one if an institution is a CON lender and zero otherwise. We then interacted this variable with the four explanatory variables (excluding LEV and SIZE) in equation (3). In addition, thrift-specific binary variables, SDUMK (k=l, 2,..,, K-1), corresponding to each thrift in the sample a-re included to control for possible finn-specific effects. Time binary variables, W, (t-- 1, 2,..., T- 1), are also included in the equation to control for the effects on risk of changes in time-specific factors that are not captured by the other explanatory variables.

To account for each of the above factors, an expanded model is used here. The expanded model is written as equation (4):

$$\sigma_{j,t} = s_0 + \prod_{k=1}^{K-1} \gamma_k SDUM_k + \prod_{t=1}^{T-1} \delta_t W_t + s_1 LE V_{j,t} + \prod_{m=2}^{6} s_m A_{j,t}(m)$$

$$+ \prod_{m=2}^{6} s_m (D) A_{j,t}(m) D UMI + s_7 SI'ZE_{j,t} + \mu_{j,t} \qquad (4)$$

where $A_{j,t}(m)$ is the holdings the mth category asset at time t of the 'th thrift. The effect of the 'th thrift. The effect of the various categories of asset on thrift stock return volatility depends on both the initial portfolio strategy and portfolio mix.[9]

Estimation of equation (4) for a cross-section time series sample of thrifts can provide a test of the relation between various financial ratios and thrift total market risk as reflected in the volatility of thrift equity returns. As shown in equation (4), the effect of financial leverage is measured in two ways; directly with $LEV_{j,t}$ and relative to the asset composition variables. This relative measure results from the interaction of $LEV_{j,t}$ with each of the asset composition variables.

A second test examines whether changes in consumer loans significantly influenced thrift common stock returns. If the proportion of a thrift's portfolio allocated to different assets represents a set of characteristics that are important determinants of its risk profile, then these characteristics should also be significant in explaining thrift stock returns. We use the following general cross-section time series regression equation for examining the stock return performance of our sampled thrifts:

$$RET_{j,t} = s_{0,1} + \prod_{k=1}^{K-1} \gamma_{k,t} SDUM_k + \prod_{t=1}^{T-1} \delta_t W_t + s_{1,1} LE V_{j,t} + \prod_{m=2}^{6} s_{m,1} A_{j,t}(m)$$
$$+ \prod_{m=2}^{6} s_{m,1}(D) A_{j,t}(m) D UMI + s_{7,1} SIZE_{j,t} + v_{j,t}$$

where $RET_{j,t}$ is a vector of common stock returns of the jth thrift in time interval t and $v_{j,t}$ is a stochastic error term. Equation (5) captures the direct effects of portfolio composition on thrift stock returns. The thrift-specific and time period binary variables are included to account for unobserved factors that might affect thrift common stock returns that vary across firms and through time (for example, general stock market movements or changes in the level of interest rates). [10]

4. Data and Method

The data are for 99 thrifts whose stocks were traded on the New York Stock Exchange, American Stock Exchange, or over the counter which filed Federal Home Loan Bank Board Report of Condition data for each quarter over the January 1985 - December 1992 sample period. Stock market data are from Interactive Data Services, Inc. For multiple thrift holding companies, the assets of individual thrift subsidiaries are swnmed to construct the balance sheet variables discussed below.

Of the 99 thrifts in the sample, 25 had total assets of more than $5 billion as of year-end 1987. There were 48 thrifts with total assets between $1 and 5 billion. The remaining 26 thrifts had total assets less than $1 billion. At the end of 1987, the 99 thrifts had about $456 billion in total assets, accounting for about 47 percent of the industry's assets."

To obtain our measures of risk and return, we use daily stock market data. For each quarter of the year in the sample period, estimates of the average and standard deviation of each thrif's equity returns are made using data covering the three month period ending with the last month of the quarter.

We use accounting data to compute the correlates employed in the risk and performance equations. Table 2 shows the financial characteristics of the sampled thrifts. Consumer-specialized lenders are smaller on average, hold more fixed-rate mortgage loans as a fraction of total mortgages, have more real estate direct investments and business loans as a fraction of total assets than other lenders in the sample.

The variables used in the regression equations are listed in Table 3. Financial leverage (LEV) is estimated as the -ratio of thrift total asset to market value of capital. The market value of capital is calculated by multiplying the number of shares outstanding at the end of each quarter by the price of the thrift s common stock at the end of the quarter. A thrifts involvement in mortgage loans is measured by the ratio of total mortgage loans to thrift market value of capital (MORT). SVCORP and DIRECT are computed in a similar manner for investments in service corporations and real estate direct investments, respectively. The consumer loan ratio (CONSUMER) is consumer loans divided by thrift market value of capital. The business loan ratio (BUSINESS) is business loans divided by thrift market value of capital. Nontraditional assets include investments in service corporations, real estate direct investments, consumer loans, and business loans.

5. Empirical Results

5.1. Thrift Risk Analysis

The estimation for equation (4), the pooled cross-section time series regressions for thrift risk and asset-mix variables, is shown in Table 4. First, the results for all thrifts in the sample are given. Then, the results are shown for those thrifts that are consumer loan specialized lenders. For the sample as a whole, the results show a significant and positive relationship between financial leverage (LEV) and risk There is a significant negative relationship between real estate direct investments (DIRECT) and risk, indicating that these investments lower thrift risk. There are significantly positive relationships between thrift involvement in consumer lending (CONSUMER) and risk and business lending (BUSINESS) and risk. Size and risk are inversely related as in Fama and French (1992,1996). Thus, on average,thrifts reduce risk when they diversify into real estate direct investments or increase size, and increase risk when they diversify into consumer lending and business lending.

Recall that our primary hypothesis is that conswner specialized lending thrifts (CON) had a different risk and return profile relative to thrifts that did not specialize in conswner lending (NCON). Now we investigate the risk analysis for the CON group relative to the total sample by examining the coefficients associated with the binary variables related to the CON group. For example, the binary variable

MORT x HH is positive and significant indicating that mortgages result in higher risk for thrifts that are consumer loan specialized lenders. SVCORP x HH is positive and significant indicating that investments in service corporations result in higher risk for thrifts that are consumer loan specialized lenders. Notice, however, that CONSUMER x HH and BUSINESS x HH are negative and significant indicating that consumer loans and business loans result in lower risk for thrifts that are specialized consumer loan lenders. These results strongly suggest that even though traditional thrifts incur additional risks when initially diversifying into consumer banking, consumer lending specialized thrifts in fact reduce their risks when they engage in more diversificafion into consumer banking. This reduction in risk for the CON group is not only a reduction in risk relative to the NCON group, but it is also an absolute reduction in risk, To see this, notice that the sum of the coefficients on the variables CONSUMER plus CONSUMER x HH is negative. And, statistical tests of this sum of coefficients reveal that, at the five percent level, it is significantly different from zero (t-statistic = 2.0484, p-value--O.0406).

5.2. Thrift Stock Return Analysis

Reducing equity risk may not be a rewarding strategy for thrift shareholders if it also reduces equity returns. In this Section we investigate the impact of the consumer specialized strategy on the relative stock returns of the thrifts in the CON group. Table 5 contains the results from estimating the relationships between thrift common stock return and asset-mix variables. The results are as follows. Leverage is significant and negative, indicating that thrifts experienced decreases in stock returns as financial leverage increases. MORT is positive and significant, implying that as mortgage lending increased, stock returns also increased. Real estate direct investment (DIRECT) is positive and significant, implying that thrifts experienced positive stock returns from diversification into direct real estate investment. BUSINESS is negative and significant indicating that diversification into business lending is associated with negative stock returns. SIZE is negative and significant and is, again similar to the findings in Fama and French (1992,1996).

For consumer loan specialized lenders, the stock return results are strikingly different. MORT x HH and DIRECT x ffH are negative and significant, implying that for consumer specialized thrifts, mortgage lending and real estate direct investments reduced stock returns

relative to those thrifts that did not specialize in consumer lending. The coefficient on BUSINESS x HH is not statistically significant. But, the sum of the coefficients on BUSINESS and BUSINESS x HH is negative and statistically significant. This suggests that business lending was a losing strategy for thrifts in general. That is, it decreased returns and increased risk for the NCON group. However, it is a mixed strategy for the CON group as it appears to have decreased risk, but also decreased returns.

Our main results, however, focus on the coefficients for CONSUMER and CONSUMER x HH. Notice, from Table 5, that while the coefficient on CONSUMER x HH is insignificant, the sum of the coefficients on CONSUMER and CONSUMER x HH is positive and significant. These coefficient estimates suggest that an increase in consumer lending increased the stock returns of both types of thrifts. This suggests that consumer lending was a winning strategy for thrifts in the consumer specialized group. That is, it decreased risk and increased returns for the CON group. However, for the NCON group consumer lending appears to be a mixed strategy as it was associated with decreased risk, but also decreased returns.

6. Conclusion

The results presented in this article are important because they document the vastly different risk and return profiles of thrifts that pursue a consumer banking strategy relative to those that pursue a traditional strategy. We find that traditional thrifts that initiated increases in their consumer lending business experienced increases in risk as well as increases in stock returns. However, for those thrifts that became consumer-specialized, increases in consumer banking activity decreased risk and also increased stock returns. Thus, those institutions that were characterized by the traditional thrift model were less successful at diversifying their portfolios relative to those thrifts that moved significantly into consumer banking.

Given these results, the portfolio restrictions imposed on thrifts in the Depository Institutions Deregulation and Monetary Control Act of 1980, the Depository Institutions Act of 1982, and FIRREA inhibited the ability of the industry to increase returns while reducing risk.

This especially is true if the 20 percent limit on consumer lending proves binding and inhibits the continued expansion of consumer banking activities in the thrift industry. The implications of these findings

provide regulators and Congress the impetus to closely examine the possibility of expanding the scope of consumer banking in the thrift industry. If such an expansion continues to prove risk-reducing, the likelihood of thrift failure and exposure of the FDIC's Savings Associations Insurance Fund will be reduced.

Endnotes

1. Thrifts include savings and loan associations and some savings banks. This term has been used to apply to all types of depository institutions that are not commercial banks. Thrifts were allowed to hold up to 20 percent of their portfolios in consumer loans. In addition, the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) of 1989 required that thrifts hold at least 70 percent of their portfolio assets in mortgage and mortgage-related loans. The Qualified Thrift Lender requirement has been reduced to 65 percent in Section 437 of the Federal Deposit Insurance Corporation Improvement Act of 1991

2. See Rossi (1992) for a discussion of how increasing competition has deminished the profitability of the thrift industry over the 1987011992 period.

3. See Rossi (1994) for a discussion of the implications of FIRREA for tluift cost structure.

4. See Mester (1993) for a discussion of efficiency in the savings and loan industry.

5. See O'Donnell (1996).

6. Mortgage lending consists of mortgage loans plus pools of mortgage securities.

7. Thrifts that are in the 25th percentile of all consumer loan holders are classified as consumer loan specialized lenders. The remaining are classified as not consumer loan specialized lenders.

8. For a discussion of the existence of "other effects' in time series, cross-sectional analysis, see Balestra and Nerlove (1966).

9. The effect of LEV on thrift stock return volatility, a priori, should be identical across thrift groups.

10. The statistical procedure that we use is often called ordinary least squares-fixed effects. The thrift specific binary variables are introduced to control for the influences of unobserved factors that are firm specific and the time period binary variables are employed to control for the influences of unobserved factors that are common to each firm in each time period (see Greene, 1997).

11. Balance sheet data are not available at year-end 1987 for two of the 99 thrifts. The total assets are for the first quarter of 1987 for one thrift and the second quarter of 1987 for the other thrift.

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Table 1
Top Thrifts in the 1980s

Institution	Total Assets (1985) (billions)	Parent	Status (1990)[1]	Status (1998)[2]
Home Savings of America	26.7	Ahmanson H.F. and Co.	Survived	Acquired[3]
Great Western Savings	23.6	Great Western Financial Corporation	Survived	Acquired[2]
American Savings and Loan Association	27.3	Financial Corporation of America	Reconstituted	Acquired[3]
Columbia Savings and Loan Association, Irvine	6.5	———	Died	— —
World Savings and Loan Association	12.2	Golden West Financial Delaware	Survived	Survived
Great American First, SB	8.3	Great American First Savings	Survived	Died
Coast Savings and Loan Association, Los Angeles	7.4	———	Survived	Acquired[4]
Home Federal Savings and Loan Association	9.9	Homefed Corporation	Survived	Died
Lincoln Savings and Loan	2.8	American Continental Corporation	Died	——
Western Savings and Loan Association, Phoenix	5.0	———	Died	
Glendale Federal Savings And Loan Association	14.1	Glenfed Incorporated	Survived	Merged[5]
Far West Savings and Loan Association	2.4	Far West Financial Corporation	Survived	Died
Mercury Savings and Loan Association, Los Angles	22	———	Died	——
California Federal Savings And Loan Association	18.0	Calfed Incorporated	Survived	Merged[5]

[1]As of end of year. Far West Savings and Loan Association survived the end of 1990, but was seized by thrift regulators in February 1991

2Status refers to mid-year.

[3]Acquired by Washington Mutual Inc.

[4]Acquired by Ahmanson H.F. and Co.

[5]Glenfed Incorporated and Calfed Incorporated merged.

Table 2
Financial characteristics of sampled thrifts, 1985-1992 means

Item	Consumer-Specialized lender	Not Consumer-Specialized lenders
Daily common stock returns	-0.0014*'	0.0001
Standard deviation of daily common stock returns	0.0429	0.0407
Market value capital/Total assets	0.0315'**	0.0359
Tangible capital/Total assets	0.0335	0.0317
Mortgage loans/Total assets	0.6282'**	0.7292
Fixed-rate mortgage loans/ Mortgage loans	0.5575...	0-4965
Adjustable-rate mortgage loans/ Mortgage loans	0.4425***	0.5034
Real estate direct investments/ Total assets	0.0054**	0.0039
Investments in service corporation/ Total assets	0.0176...	0.0220
Consumer loans/Total assets	0.0984***	0.0313
Business loans/Total assets	0.0369***	0.0214
Total assets	$1,712 million***	
$5,562 million		
Market value	$42 million...	
$189 million		
Number of observations	582	1816

Asterisks are used to indicate whether the mean of a variable for consumer-imialized lenders is significantly different from the same variable for not consumer-specialized lenders. (***) and (**) indicate means for the consumers pecialized lenders differ significantly from means for the not consumer-specialized lenders at the one and five percent levels, respectively. The t-statistics are based on unequal variances for the two subsamples.

Table 3
Variables used in regression equations

σ	Standard deviation of daily common stock returns each quarter.
RET	Connnon stock returns (average daily returns each quarter),
LEV	Total assets divided by market value of common stock (quarterly).
MORT	Total mortgage loans divided by market value of connnon stock (quarterly).
DIRECT	Real estate direct investments divided by market value of common stock (quarterly).
SVCORP	Investments in service corporations divided by market value of common stock (quarterly).
CONSUMER	Consumer loans divided by market value of common stock (quarterly).

Table 4
Pooled cross-section time series regressions relating thrift risk and asset-mix variables r irst quarter 1985 through fourth quarter 1992[1] By consumer loan lender categories[2]

Variable	Parameter Coefficient	Coefficient T-statistic
INTERCEPT	47.0370	8.897***
LEV	0.0031	1.781
MORT	0.0011	0.345
DIRECT	-0.1082	-4.319***
SVCORP	-0.0041	-0.374
CONSUMER	0.1456	11.677***
BUSINESS	0.0944	4.760***
SIZE	-3.1182	-8.531***
MORT x HH	0.0064	2.323**
DIRECT x HH 0. 0602	1.587	
SVCORP x HH 0.2572	4.969***	
CONSUMER x HH	-0.1637	-12.166***
BUSINESS x HH	-0.1274	
- 2		
R	0.5620	
F	22.815	
Number of observations	2398	

[1]Coefficient estimates of time and thrift-specific binary variables are not reported but are available upon request from the authors.
[2]Thrifts that are in the 25 percentile of all consumer loan holders are classified as Consumer Loan Specialized Lenders; the remaining are classified as Not Consumer Loan Specialized Lenders. HH is a binary variable that is equal to one if a thrift is classified as a Consumer Loan Specialized Lender, zero otherwise.
*Significant at the 10 percent level.
**Significant at the 5 percent level.
***Significant at the I percent level,

Table 5
Pooled cross-section time series regressions relating thrift return and asset-mix variables first quarter 1985 through fourth quarter 1992[1] By consumer loan lender categories[1]

Variable	Parameter Coefficient	Coefficient T-statistic
INTERCEPT	9.1766	4-181***
LEV	-0.0031	-4.234***
MORT	0.0049	3.466***
DIRECT	0.0553	5.312***
SVCORP	0.0011	0.259
CONSUMER	0.0276	5.324***
BUSINESS	-0.0290	-3.525***
SIZE	-0.6303	-4.153***
MORT x HH	-0.0037	-3.237***
DIRECT x HH -0. 0897	-5.691***	
SVCORPxHfl -0,0181	-0,840	
CONSUMER x H.H	0.0002	0.041
BUSINESS x HH	0.0001	0.011
R2	0.3868	
F	11.725	
Number of observations	2398	

'Coefficient estimates of time and thrift-specific binary variables are not reported but are available upon request from the authors.
[2]Thrifts that are in the 25 percentile of all consumer loan holders are classified as Consumer Loan Specialized Lenders; the remaining are classified as Not Consumer Loan Specialized Lenders. HH is a binary variable that is equal to one if thrift is classified as a Consumer Loan Specialized Lender, zero otherwise.
***Significant at the I percent level.