THE IMPACT OF THE FINANCIAL INSTITUTIONS REFORM,

RECOVERY AND ENFORCEMENT ACT OF 1989 ON

PERFORMANCE AND RISK OF DEPOSITORY

INSTITUTIONS: EVIDENCE FROM

THE CAPITAL MARKETS

By

ROBERT BRUCE STAPP

Bachelor of Science
Bachelor of Arts
Oklahoma City University
Oklahoma City, Oklahoma
1975

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1983

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
December, 1991

THE IMPACT OF THE FINANCIAL INSTITUTIONS REFORM,

RECOVERY AND ENFORCEMENT ACT OF 1989 ON

PERFORMANCE AND RISK OF DEPOSITORY

INSTITUTIONS: EVIDENCE FROM

THE CAPITAL MARKETS

Thesis Approved:

_____
Thesis Adviser

_____

_____

_____

_____
Dean of the Graduate College

PREFACE

This research examines investor reaction to the events
leading to the passage of FIRREA in 1989. Intervention
analysis is used within the context of the market model to
determine the impact of this legislation on depository
institution performance and risk. Data for depository
institutions was gathered and segmented into three
equally-weighted regulatory portfolio's. Stigler's (1971)
hypothesis of regulation according benefits in a
disproportionate manner is investigated. Peltzman's (1976)
hypothesis of increased ownership risk resulting from a
change in the regulatory environment is also examined.

A project of this scope would be completely impossible
without the help and guidance of a great many people. I
would like to express my personal gratitude to the members of
my committee for their patience and understanding. Dr. Joe
Jadlow for his guidance, encouragement and editorial
comments. Dr. Tim Krehbiel for his counselling of the
econometric work and the foresight to allow a mainframe
novice to hopefully mature into a more sophisticated user.
Dr. Don Bumpass for his tremendous advice and counsel in
maintaining my focus throughout this procedure. Dr. Gerald

M. Lage for his patience with my academic career which has spanned a well-documented and somewhat lengthy era.

Via the data collection phase, I was most appreciative of my former employer, the Economics Department of the University of Arkansas, for allowing me the opportunity to access the majority of the data necessary for this research. Special thanks to Dr. Joe Ziegler, Chairman, and Dr. Don Market of the Bureau of Business and Economic Research. Helpful comments from Dr. Mike Benefield, Dr. Jim Rimby and the ever present enthusiasm of one Dr. Charles "Chuck" Britton were especially welcome.

Along the way I became eminently involved and learned in mainframe computer communications which included TSO, CMS, VMS, and the ability to telnet substantial amounts of data from the University of Arkansas to Oklahoma State University. Special thanks to Renee Lewin for her CMS and tape technology skills, Betty Gilliam with her knowledge of TSO and Loraine Goff for her Fortran and JCL expertise. The relentless hospitality of Cindy Williams of the OSU computer staff along with Kathy Lawter, Tom Buttress and Dan Charlile made this journey easier. The computer services and communications personnel of the University of Arkansas rendered invaluable service, foremost among these are Ken Schrinner and Bill Ashmore.

Without the infinite patience of a very special person the empirical work of this research would have been a much

more formidable task if not completely impossible. The genius which is Iris MacPherson will always be remembered by this author with a special admiration.

A very special thanks to Brad Livingstone who provided inspiration and hope to me on some very tough days. I would like to express gratitude to Dr. Ron Moomaw and Dr. Mike Applegate for making my completion of the requirements for the Ph.D. possible. A note of gratitude to Donna Woodward of the statistical staff of SAS for her Proc Syslin prowess.

A heartfelt thanks to my mother, father, brother and mynieces Marie and Liz and nephew Dewey and the remaining part of my family for their confidence and help in the fulfillment of a dream. Thanks to my Aunt Florida and Aunt Lottie for their constant enthusiasm with my educational development. To my Sigma Theta Kappa brothers, there simply aren't any words to express the importance of your encouragement throughout this process. A finer set of brothers nobody could hope to find. Particular expressions of thanks to "Evil", Sib, Murt, Cliff and Hootus who have always been there when needed most. Thanks to Schootalaukis as well.

Perhaps the age of miracles has yet to cease as witnessed by the completion of this research.

This dissertation is dedicated to the everlasting memory of Sarah Irene Dudley 4/4/87 a most beloved and missed friend.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The 1980s will long be remembered as one of the most
chaotic decades in the history of the depository institutions
industry. The record number of insolvencies and failures
witnessed have threatened the viability of the industry and
has led to the extinction of at least one of the insurance
entities established to assure depositor confidence, namely
the Federal Savings and Loan Insurance Corporation (FSLIC).
The extent of the crisis stretches memories back to the
banking holocaust of the Great Depression and has forced
itself to the very forefront of the political agenda as the
largest bailout in the nation's history has been approved.

An attempt to mitigate these consequences came with the
enactment of the Financial Institutions Reform, Recovery and
Enforcement Act (FIRREA) of 1989 which altered the
competitive positions and regulatory environment of the
industry. Specifically designed to restructure the industry
and curb abuses attributed to deregulation earlier in the
decade, the main purposes of the act were fourfold. First,
the recapitalization of both the industry and the unified
insurance fund under control of the Federal Deposit Insurance

Corporation (FDIC). Second, the lowering of risk exposure of the savings and loan component, particularly the state-chartered thrifts which represent the greatest percentage of losses within the industry. Third, the elimination of permissive regulatory attitudes in order to reduce the potential for mismanagement, fraud and malfeasance of funds fostered by a lax regulatory environment. Fourth, to re-institute the public's trust by disposing of institutions currently insolvent or heading towards failure.

Stigler (1971) envisions a market for regulation whereby suppliers and demanders of regulation allocate regulation via a bidding process. Those possessing the most effective demand, as determined by political influence, receive the greatest benefits of the regulatory offer. Furthermore, when an industry is not regulated homogeneously, as is the case of the depository institutions industry, such rewards for effective bidding can be profound. Therefore to analyze the impact of regulatory change, an industry cannot be lumped together but rather must be segmented along various regulatory lines (James 1983).

Schwert (1981) asserts that the usage of financial theory to assess the impact of regulatory changes is proper and conveys a distinct advantage that traditional welfare oriented economic theory cannot employ. An important tenant of the Efficient Market Hypothesis (EMH) states that the announcement of any unexpected significant information affecting a financial entity is immediately evaluated and

translated into its asset prices by the market participants. Therefore, any announcement containing important regulatory change will have discernible effects and will allow the testing of Stigler's (1971) hypothesis that wealth is redistributed among the various segments of an industry.

The focus of this research will be to examine the influence of FIRREA on 1) the performance of the various segments of the depository institutions industry, 2) the question of whether the legislation conveyed advantages to certain members while precluding or coming at the expense of others, i.e. Stigler's (1971) hypothesis of wealth redistribution will be investigated, and 3) Peltzman's (1976) contention that regulatory change may alter ownership risk of shareholders.

Using capital market data and employing the market model, the industry will be segmented into three regulatory portfolio's. These will be comprised of 1) commercial banks, 2) state-chartered savings and loans and 3) federally chartered savings and loans. Theil's (1971) Seemingly Unrelated Regression (SUR) framework will be used to incorporate contemporaneous correlation within the industry to account for joint reactions of changes. Intervention analysis will be used to ascertain the influence of the events leading to the passage of FIRREA on the risk characteristics of these portfolio's.

The remainder of this proposal is organized as follows: Chapter II describes the historical background leading to the

passage of FIRREA. A discussion of the tenets of the legislation will also be included. Chapter III will examine the previous empirical studies of the impact of regulatory change on depository institutions. Chapter IV introduces the data collection process and methodology employed. Chapter V contains the hypotheses to be tested and the appropriate test statistics. Chapter VI presents the interpretation of the results, conclusions and recommendations for the extension of this research and closely related topics.

CHAPTER II

BACKGROUND HISTORY

Introduction

Fundamental and dramatic changes in the economic and competitive environments which the depository institutions industry encountered during the 1970s and 1980s led to changes in the regulatory philosophy governing the industry. FIRREA is the latest and most important in a series of legislative regulatory responses to the changing nature of the financial services industry. Competitive restrictions imposed by legislation of the 1930s left depository institutions at a competitive disadvantage relative to alternative competitors and investment vehicles in the 1970s.

This section will document the difficulties faced by the depository institutions industry and the resulting Federal Government's legislative responses in the 1980s. In order to obtain a clearer perspective of the ultimate impact of the FIRREA upon the various components of the industry, a brief examination of the phenomena which are popularly credited with leading to it's conception and subsequent passage can be instructional.

The Economic Environment of the 1970s

The initial catalyst of change for the then sedate depository industry arose in the mid-1970s. High and volatile rates of inflation put upward pressure on interest rates. Restricted by Regulation Q to maximum rates which could be paid to attract deposits, depository institutions began to experience disintermediation on a historical scale as rational investors pursued alternative repositories offering non-regulated market oriented rates of return for their liquid funds (Balderston 1984).

This shrinking depositor base was a particularly acute problem for the thrift component of the industry given its unique maturity structure of lending long-term, primarily for home mortgages while relying heavily on shorter-term deposits for their necessary reserves. Meier (1985) points out that such disintermediation meant thrifts would be forced to seek sources of financing via the money markets with non-regulated rates in order to service their fixed-rate mortgage loan obligations. The rates of return on their long-term mortgages were far lower than the new higher money market rates driving down their profitability as they competed for funds during the latter 1970s (Bowden and Holbert 1984).

The Federal Reserve's dedication to decreasing inflationary pressure by abandoning short-term interest rate targets in favor of monetary growth limits in October of 1979 exasperated the situation for thrifts (Pilzer 1989). The

ensuing restrictive monetary policies pursed after this time
period would prove to increase interest rates to double digit
levels as conveyed by the Fed increasing the discount rate to
a then record of 12 percent (Pilzer 1989). Such an
unprecedented inflationary era further enhanced the desire to
elude the profit eroding effects of constrictive regulation
and indeed accelerated the process both from within and
outside of the industry proper.

Financial Innovation

Bound by restrictions and regulations, it was evident by
the late 1970s that the depository institutions industry
could no longer adequately fulfill the return requirements of
their customers given their current array of deposit
offerings. Incentives for financial innovation existed and
were manifested by new investment instruments paying market
determined and inflation hedging rates of return (Meier 1985).

Money Market Mutual Funds (MMMFs) provided the initial
source of major interindustry competition to depository
institutions. MMMFs which had only limited appeal and
popularity upon their inception during the lower inflationary
era of the early 1970s, quickly became an ever important
component in the portfolios of sophisticated bearers of funds
attempting to offset the effects of spiraling inflation by
the end of the decade. They were short-term investments
primarily tied to Treasury Department debt obligations in the

money market. Depositors found MMMFs to be acceptable substitutes for their traditional transaction and time deposits held in depository institutions despite their lack of both interest rate guarantees and federal insurance protection (Jaffee 1989). This absence of federal insurance made these investments subject to increased default risk relative to ordinary deposits (Cargill 1991). However, depositors demonstrated their willingness to accept this increased risk in order to have the opportunity to garner competitive returns. In 1972 MMMFs' asset holdings totaled less than $2 billion and grew to $10.8 billion by 1978 which came largely from withdrawals at depository institutions (Benston 1986).

Investors gained further access to money market rates while enjoying checking account privileges with the creation of Merrill Lynch's Cash Management Account (CMA) in 1977. A CMA could be opened for a minimum deposit of $20,000 which allowed a client to originate checks on the loan value of his investments. Cash advances could also be obtained with the individuals VISA card while the balance within the account received the going money market rate (Meier 1985).

These alternative investment opportunities shared several unique features. First, they gave their investors more liberal transaction account features with returns in excess of depository rates of interest. They also penetrated and further eroded the deposit base of the nation's

depository industry.

These alternatives were feasible due to the improvements
and adoption of advanced computer and telecommunications
technology. This technological advance allowed the rapid and
reliable transference of funds necessary for this type of
activity to be profitable. The traditional paper-bound
depository industry was ill-prepared for this revolution and
initially failed to meet the resulting competitive challenge
(Kane 1981).

The deteriorating nature of the balance sheets of
depository institutions was not exclusively confined to the
liability side. Commercial enterprises began offering their
own debt for auction in ever increasing quantities (Kaufman,
Mote, and Rosenblum 1982). This direct placement of debt by
major corporations decreased the size of the lending
portfolios of depository institutions. Cargill (1991) points
out that the volume of commercial paper issued rose 600
percent from 1978 to 1988 while traditional borrowing at
banks increased by less than half of this figure.

Limited Service Banks (Nonbank Banks)

For the purpose of regulation the Bank Holding Company
Act of 1956 defined a bank as any entity which both accepts
deposits and makes commercial loans. Any institution meeting
such criteria is subject to the regulatory apparatus at the
federal and or local levels. An entity not performing both

functions simultaneously would not be classified as a bank. Such a limitation of operations allows these "limited service banks" to successfully elude the more stringent regulations of reserve requirements and deposit insurance.

This nonbank bank loophole conveys a competitive advantage to such institutions. Nonbank banks were able to provide a greater diversity of products to depositors during a period when they desired just such items. By filling a void in the market with market oriented financial instruments nonbank banks became significant competitors to depository institutions and thereby contributed to disintermediation. Bank holding companies employed the nonbank bank loophole to great advantage for the interstate marketing of their services while credit cards were made available nationwide by various nonfinancial companies (Rosenblum and Siegel 1983).

Depository institutions faced challenge's from a diverse field of these new competitors. Included among these nonbank banks were the financial subsidiaries of some of the nations leading manufactures and retailers such as the General Electric Credit Corporation, Sears and Roebuck, Ford, ITT and the General Motors Acceptance Corporation. These firms offered a variety of financial services ranging from equity securities to home mortgages (Haraf 1988).

Intraindustry Innovation

Witnessing ever declining liquidity and profit

positions, depository institutions had incentives of their own for financial innovation. Faced with an eroding depositor base and the migration of corporate borrowing, institutions had two goals: 1) to encourage depositor retention and 2) broaden the scope and nature of their loan portfolios.

In order to accomplish the first goal, institutions pursued methods of diversifying their deposit offerings while paying money market rates and eluding the strict regulatory codes forbidding such behavior (Cargill and Garcia 1982). A successful strategy of shifting to less regulated deposit venues could help improve their liquidity positions. State-chartered thrift institutions in New England were the first to venture into this arena (Kane 1981). Taking advantage of more liberal state regulatory attitudes, S&Ls in this region began to offer Negotiable Orders of Withdrawal (NOW Accounts). Although still relegated to a ceiling interest rate, these accounts permitted checks to be written on time deposits which had the effect of making such deposits transactions accounts (Cargill and Garcia 1985). In 1978 temporary authority was given to New York and New Jersey to experiment with NOW Accounts (Woerheide 1984). This innovation allowed S&Ls in the Northeast to effectively pay greater interest on these pseudo transaction accounts than what commercial banks were permitted. These NOW Accounts extended beyond the direct control and influence of the Fed

(Cargill and Garcia 1985).

However, NOW Accounts had very limited availability nationwide. In the presence of such a migration of funds thrifts had several alternatives to meet their short-run liquidity needs. They could sell off portions of their mortgage holdings thus downsizing operations, but this would limit their revenue generating capabilities. Many institutions sought advances from the Federal Home Loan Bank Board (FHLBB) where members could obtain funds at favorable rates. FHLBB advances totaled $6 billion in 1966 and grew to $40 billion by 1980. Institutions could also bid for funds in the money market and pay the current rate of interest. During periods of inflation this avenue would drive up the cost of funds (U.S. Department of the Treasury, June 30, 1980).

In 1978 the FHLBB took the first step toward interest rate deregulation for thrifts by approving the issuance of Money Market Certificates (MMCs), (U.S. Savings and Loan League 1980). The purpose of such certificates was to aid thrifts by creating an instrument which could effectively compete with MMMFs thereby lessening the disintermediation effects of Regulation Q (Carron 1982). Their primary appeal was a rate of return which was set at 25 basis points above the six month Treasury Bill rate. Designed to be within reach of the middle class, these six month certificates could be obtained for a minimum of $10,000. MMCs proved to be a

very popular form of deposit accounting for 40.4 percent of total thrift deposits in 1981 replacing traditional passbook and fixed-rate certificates as thrifts prime source of funds (Woerheide 1984). This would increase the cost of funds and also expose thrifts to a higher level of interest rate risk, hence they would aid liquidity needs but increase the probability of decreasing profits (Carron 1982). MMCs did move the industry towards the adoption of a greater volume of nonborrowed reserves (Cargill and Garcia 1985).

An attempt to retain the deposits of large institutional investors led regulators to abolish interest rate ceilings on Jumbo CDs offered by depository institutions in 1973 (Woerheide 1984). In existence since the 1960s these certificates with minimum denominations of $100,000 became more popular at the end of the 1970s when higher rates of inflation were experienced. Approximately half of S&L deposits took this form by late 1980 (Federal Reserve Bank of Chicago 1987). Jumbo CDs carried lower reserve requirements than normal deposits which would be an advantage to depository institutions (Cargill and Garcia 1985). Unlike MMMFs these Jumbo CDs were covered by Federal insurance which would make them palatable to larger investors (Carron 1982). The elimination of interest rate ceilings on these certificates was the first effort made to allow institutions to compete for funds with the MMMFs. However their rather large minimum requirements made them a feasible alternative

to only the largest customers while the lack of interest rate ceilings would most certainly increase the cost of funds to depository institutions extending these offerings.

Repurchase agreements (RPs) were another liquidity enhancing innovation. Although they were available prior to the disintermediation troubles of depository institutions, RPs became ever more popular during the late 1970s (Cargill and Garcia 1985). Essentially banks sell securities, generally U.S. Treasury debt obligations, to their larger transaction depositors who may temporarily have balances exceeding their immediate needs. By nature these monies therefore draw a lower amount of interest than Treasury securities. In purchasing these securities the client receives a greater return for his total balances than without the transaction when the bank repurchases the securities at a later date, usually overnight, for a pre-agreed guaranteed price (Jaffee 1989).

RPs allow the bank to obtain non-borrowed reserves to expand its lending capabilities while helping to retain its larger clients (Cargill and Garcia 1985). These funds are not subject to reserve requirements but are not insured by the federal authorities. Their short-term nature and higher interest is appealing to the customer.

The Federal Reserve permitted commercial banks to open Automatic Transfer Service (ATS) Accounts in 1978 to encourage their retention of savers (Burns 1988).

Essentially ATS Accounts allowed banks to use interest bearing savings deposits as transaction accounts via the instantaneous transfer of funds whenever the checking account balance of the client drops below a pre-specified lever (Woerheide 1984). The net effect of ATS Accounts was to make savings deposits at commercial banks more "checkable" (Cargill 1991).

Unfortunately, the second goal of asset diversification was not so readily accomplished. Restrictions on asset composition with fixed rates of return greatly inhibited depository institutions from generating sufficient revenues to cover their increasing costs of acquiring funds. Institution assets would have to take on similar characteristics to the new short term liabilities, i.e. shorter maturities and inflation adjusted rates of return. The primary innovation on this front came from state-chartered thrifts.

Variable Rate Mortgages

Variable Rate Mortgages (VRMs) are mortgage loans whose rate corresponds to current market rates of interest and were employed by institutions as compensation for inflation. California thrifts were the initial providers of such loans as early as 1975 (Carron 1982). However they were slow to catch on due to the public's inflationary expectations and the current level of interest rates. Part of the advantage

of institutions use of VRMs was offset by generally placing the initial interest rate below the fixed mortgage rate in order to gain wider public acceptance. Caps on the allowable increases in interest rates would also deter adequate compensation in a rapidly spiraling inflationary environment. By late 1981 less than 2 percent of all outstanding mortgage loans of thrifts were of this type. VRMs became more widely accepted during the lower inflationary period to follow and by January 1984 60 percent of mortgage loans took this form (Cargill and Garcia 1985).

Thrifts were facing a delima since their deposits were rapidly being converted to the new higher returning instruments while the majority of mortgages remained pent up at lower fixed rates. Revenues could only increase on the new higher rate mortgages. Therefore the cost of maintaining a portfolio of savings deposits was escalating faster than the revenue generated off mortgage lending. The resulting decreased profits gave many of these institutions a greater incentive to take on increased risk lending opportunities in an effort to match their earning yields closer to their costs of funds (Cargill and Garcia 1985).

Regulation

Regulation itself imposes costs upon depository institutions in three primary forms: 1) capital requirements, 2) deposit insurance and 3) activity restrictions (Rose and

Rose 1979). Institutions with a choice among alternatives started to withdraw from the Federal Reserve System in favor of becoming regulated by less stringent state authorities. Voluntary Fed membership had decreased enough for its control over total bank deposits to diminish from 80 percent in 1970 to 71 percent by 1979 (Cargill and Garcia 1985). The Fed's influence over monetary aggregates began to wain.

Regulation of depository institutions was clearly at a crossroads in 1980. One option would be to expand its influence to encompass the new competitors and products. The question of how to cope with future innovations could not however be adequately addressed with this course of action. Deregulation of depository institution asset and liability structures in order to enhance greater competition throughout the financial services industry was a second option. Authorities opted for the latter by passing a series of new regulatory legislation which would liberalize the asset and liability compositions of depository institutions while reinstating the Fed's autonomy over monetary aggregates.

DIDMCA

March 1980 witnessed the enactment of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) which had two fundamental purposes. The first of which was to enhance the competitive positions of depository institutions by liberalizing their asset and liability

structures. The second objective was to reestablish the Fed's influence over monetary aggregates by extending its control to include the reserves of all depository institutions whether they had previously been members of the system or not (Spong 1990).

New homogeneous reserve requirements were instituted to permit the Fed to regain its control over the money supply while promoting a more competitive environment within the industry. DIDMCA would also advance greater inter and intra industry competition by recognizing the new products spawned by the industry's innovative efforts. ATS accounts received authorization and NOW Accounts were extended nationwide (Burns 1988). The act provided for the eventual phase out of Regulation Q over the insuing six years (Burns 1988). The lack of diversified asset portfolios was recognized for which S&Ls were granted more discretionary use of non-mortgage investment and lending instruments (Cooper and Fraser 1984). Thrifts could distribute 20 percent of their assets among various consumer purposes, commercial paper or other forms of corporate debt issues (Spong 1990). Thrifts were now permitted to issue credit cards.

DIDMCA also provided equal and full access for all institutions to the entire range of Fed services which would now be priced. This included the extension of discount window privileges to every institution. Federal deposit insurance protection was now raised to $100,000 per account

in order to bolster the depositing publics confidence in the financial system (Burns 1988).

DIDMCA was hailed as the single most influential alteration of the regulatory environment of the industry to date since the bulk of legislation regulating the industry was passed during the 1930s. The relaxation of artificial restraints on their lines of commerce was felt to be advantageous to depository institutions.

Despite this outlook, significant problems remained for the various components of the industry. Homogeneous reserve requirements promote a fairer degree of competition within the industry but still impart a competitive advantage to non-regulated entities such as MMMFs and nonbank banks which can successfully elude such restrictions (Cargill and Garcia 1985).

The attempt to reduce the duration of asset maturity to more closely reflect the shorter term liability side for thrifts remained an unsolved problem. Many thrifts had already committed vast portions of their reserves to mortgage obligations which left them without the ability to take full advantage of the new instruments. This process would take several years to reach a fuller fruition. Short-run hopes of dramatically increased thrift profitability were in vain (Federal Reserve Bank of Chicago 1987).

Persistent high interest rates in excess of those levels experienced during the latter 1970s raised the cost of

acquired funds to thrifts while still encouraging
disintermediation. Thrift access to funds continued to
diminish as MMMFs had the most dramatic growth rate ever of
150 percent between 1980 and 1982 (Balderston 1984). An
adequate and elastic source of funds for housing became less
tenable and it was clear that the thrift component of the
industry would require further assistance to remain viable
(Carron 1982).

The Federal Government made an effort to subsidize the
increasing cost of acquiring funds by creating tax-exempt
savings certificates (Carron 1982). All-Savers Certificates
were established by the Economic Recovery and Tax Act of
1981. These were one year certificates on which institutions
paid only 70 percent of the current one year Treasury rate.
However, the tax free return on All-Savers Certificates
exceeded the passbook rate (Carron 1982). They proved to be
short-lived as Congressional concerns over decreasing tax
revenues grew and they were allowed to lapse. Universal
IRA's were also instituted by this legislation to increase
the level of deposits (Woerheide 1984).

Garn-St. Germain

The Depository Institutions Act, better known as the
Garn-St. Germain Act, was signed into law on December 12,
1982. The essential purpose of the legislation was to
further broaden thrift powers in order to mitigate their

interest rate risk (Gart 1985). Policy makers believed that by permitting a greater range of thrift asset and liability holdings while granting all institutions the opportunity to offer new money market instruments that thrifts could remain viable (Cargill and Garcia 1985).

Liability diversification was achieved with the inauguration of two new pseudo money market accounts. Money Market Deposit Accounts (MMDAs) with minimum deposits of $2,500 were created in December 1982 and were specifically designed to stem disintermediation by effectively competing on equal terms with MMMFs. The interest rate paid on these accounts was to be freely determined by the originating institution. While such competition would clearly increase the costs of funds in a high interest rate environment, this effect would be partially offset by the decision to excuse institutions issuing personal MMDAs from holding required reserves against these non-maturing balances (Gart 1984). MMDAs also carried federal deposit insurance guarantees, an added benefit over MMMFs. These accounts proved to be emensely popular as holdings of MMDAs grew to $340 billion in their first three months of issuance (Meier 1985).

Super NOW Accounts (SNOWs) were introduced in January 1983 as a result of Garn-St. Germain. SNOWs were NOW Accounts but lacked their subjugation to Regulation Q. They totaled $30 billion within their first six months (Cooper and Fraser 1984). SNOWs permitted institutions to offer

unregulated rates on what are essentially transaction accounts.

Even though a tenet of Garn-St. Germain accelerated the termination date of Regulation Q to January 1984, the point was mute since MMDAs and SNOWs effectively eliminated interest ceilings of transaction balances. They also proved successful in arresting the disintermediation difficulties of thrifts as MMMFs actually declined in volume after MMDAs and SNOWs came on line (Cargill 1991).

Under Garn-St. Germain federally-chartered thrifts could now originate transaction accounts to individuals or commercial enterprises which had previously established a working relationship with the thrift (Cargill 1991). Thrifts were now permitted to provide overdraft loans (Meier 1985) In order to accommodate the revenue requirements resulting from the increasing cost of funds, this act took steps to diversify the loan portfolios of thrifts by permitting increased non-mortgage lending limits. Five percent of total assets could now be channeled into corporate loans. Under this act thrifts had the opportunity to issue 40 percent of their assets as nonresidential real estate loans with another 30 percent for consumer loans. Thrifts could issue 10 percent of their assets in the form of tangible personal property loans and 5 percent in support of the educational needs of individuals (Burns 1988). With Garn-St. Germain's enactment, federal thrifts were given permission to increase

both the loan limit to a single borrower and the amount of
reals estate loans they could originate (Gart 1985). These
lending opportunities were new and untried ventures for
thrifts. Thrifts were also given the option to purchase
government debt obligations with the entirety of their assets
(Meier 1985). Despite these newly acquired powers, policy
makers still envisioned the primary mission of thrifts as
being the essential contributor to home ownership at
favorable rates (Gart 1985).

Continued Problems for Thrifts

Several problems arose as a result of broadening the
activities of thrifts in a high interest rate environment.
The deregulatory philosophy of the Reagan administration
brought less supervisory and auditing control of institutions
which set the stage for possible abuses (Pilzer 1989).

The new assets carried more risk than the carefully
screened mortgage loans traditionally handled by thrifts.
They also plunged thrifts into new competitive arenas and
products for which they had little prior expertise at best
(Pilzer 1989). Thrifts could now extend speculative real
estate loans, make equity purchases and become involved in
interest futures contracts and junk bond transactions (Pilzer
1989). What had constituted unacceptable risks in prior
eras almost became required investments as the cost of funds
rose steadily and dramatically. Thrifts were becoming

increasingly involved with direct investments in residential and commercial enterprise building endeavors as well as land development (Benston 1985). The singular nature of these projects lay in the fact of thrifts actually owning and or managing these assets directly which had heretofore been unprecedented. In twenty states, state-chartered thrifts had the opportunity to also hold equity securities which were forbidden to their federally-chartered counterparts (Benston 1985).

Reductions in the net worth requirement of thrifts coupled with a high loan origination fee of 6 percent also created the opportunity for direct speculation in thrift ownership. Pilzer (1989) gives an example of how one could start a S&L for $3 million under the relatively liberal state-chartering requirements. This capital could legally attract as much as $100 million which could then be lent to speculative real estate developers. The 6 percent origination fee would not only recover the initial capital outlay but would also generate an additional $3 million in profit even without considering the rate of return on the loan. In the event of the loan defaulting, the government would be chiefly responsible for the protection of depositors via federal insurance guarantees. This situation creates a moral hazard problem particularly since very risky adventures could be conducted with the flat rate deposit insurance fee. Deposit insurance is mis-priced since it is myopic to the

nature and magnitude of risk which the institutions encounter with their loan portfolios. Thus the insurance in effect acts as a direct subsidy for risk taking (Cooper and Fraser 1984).

State-chartered thrifts did in fact take advantage of less restrictive local oversight than their federally-chartered counterparts. Pilzer (1989) points out that California state-chartered thrifts had the ability to legally invest their entire asset portfolios into any investment of their choosing without regard to risk. By using a subsidiary of itself, a thrift could conceivably invest all of its reserves in junk bonds. Pilzer (1989) cites a further concern of eliminating the 5 percent ceiling on $100,000 brokered deposits by nonbank banks. S&Ls, most notably in Texas and California, offered very high returns on such deposits which carried federal deposit insurance protection. This increase in cost to attract funds could then only be recaptured by originating investments with greater amounts of risk.

Recession

Just as the industry was adopting a wider range of deposits and nonborrowed reserves which were increasing their costs of operations while making riskier investments with greater chances for failure, another severe economic shock hit the U.S. economy. During the early 1980s the economy

suffered its worst recession since the era of the Great Depression. Significant spikes in key industries which have traditionally sought major sources of their financing from depository institutions were particularly devastating in local regions of the country. Depressed prices in the agriculture, petroleum and housing industries left many institutions, especially thrifts, with an ever expanding volume of nonperforming loans and defaults (Haraf 1988).

As the recession intensified many of the high risk ventures in real estate development fell through. Institutions witnessed loan loss provisions rising while profits evaporated and indeed became negative in 1981 and 1982 (Benston 1985). The resulting deterioration of asset quality put a tremendous strain on FSLIC reserves and to a lesser extent the FDIC fund (Benston 1985).

The Competitive Equality Banking Act

In an attempt to replenish the FSLIC fund and avert an impending catastrophe which such an occurrence would render, Congress passed the Competitive Equality Banking Act (CEBA) in 1987. The principle component of the legislation was to extract $10.8 billion from the thrift component of the industry in order to resuscitate the FSLIC insurance fund (Cargill 1991). So massive was the crisis in reality that this figure represented only a down payment on the amount which would eventually be required to protect depositors.

S&Ls continued to fail in record numbers forcing the ultimate liquidation of the FSLIC fund (Banking Report March 9, 1986,p22). This act encompassed nonbank banks into the regulatory process. For regulatory purposes it redefined a bank as an entity offering FDIC insured accounts as well as non-FDIC insured enterprises issuing transaction accounts and extending commercial loans. Nonbank banks in existence prior to 1987 were "grandfathered" by the new legislation but faced expansion restrictions. The number of nonbank banks was placed at 157 in 1987 (Haraf 1988). In addition, the CEBA extended regulatory forbearance of net worth requirements to thrifts whose difficulties were a direct result of the economic downturn (Haraf 1988) This situation was most prevalent among thrifts in Texas (Cargill 1991).

This legislation received criticism as a stopgap measure at best which failed to eliminate the reasons for such a calamity. Meier (1985) points out a pattern of legislative responses which fall far short of recognizing the underlying causes of the crisis in order to derive a proper diagnosis. The first attempts of policy makers appear to be designed to simply mitigate the consequences of a dilemma without directing significant efforts to the termination of

Fraud and the Malfeasance of Funds

Coincident to the increasing number of thrift failures came several very high profile cases of abuse within the

system. Nominee loans, double pledging of collateral, reciprocal loan arrangements, land flips, embezzlement and check kiting were the most prolific forms of fraud according to the U.S. Department of Justice (Congressional Digest 1989). Evidence of inordinate expenditures on exclusive parties, nonessential aircraft and luxurious office suites have also arisen (Congressional Digest 1989).

Direct allegations of fraud have been made in approximately half of all thrift failures (Barth 1990). The Attorney General places the figure for fraud and insider abuse closer to 25 to 30 percent of total thrift failures accounting for $2 billion of losses during 1988 alone (Congressional Digest 1989). However, evidence exists that despite the seemingly widespread nature of abuse, the actual losses inflicted by fraud are extremely low relative to the overall volume of losses of the system (Barth, Bartholomew and Labich 1989).

Despite these facts the perception of high flying thrift executives making speculative investments in unsubstantiated ventures led to a public outcry to strip thrifts of many of their recently acquired powers and relegate them to mortgage lenders as in past days. Pressure on policy makers to respond to such demands was tremendous and any future legislation dealing with depository institutions must certainly account for such concerns.

Major Changes FIRREA Instituted

The FIRREA Act of 1989 represents the most comprehensive overhaul of the depository institutions industry since the 1930s. Among other items it changed the asset and liability compositions of institutions, capital requirements as well as the insurance premiums paid to guarantee deposits. FIRREA revamped the regulatory structure of the industry and replaced the defunct FSLIC with the Savings Association Insurance Fund (SAIF) placing its supervision under the FDIC. The Federal Home Loan Bank Board (FHLBB) was stripped of its chartering and supervisory duties over savings and loans with these functions coming under the domain of the Treasury Department.

The essential purpose of FIRREA was to restore the viability of and the public's confidence in the nation's thrifts by infusing them with more money and more discipline. By doing so the competitive positions of the participants of the industry were redrawn.

A discussion of the impact of FIRREA on the thrift component of the industry will follow in the next section. The specific effects of the legislation on state-chartered thrifts, federally-chartered thrifts and commercial banks will then be examined. A general discussion of the changing competitive positions of the three component parts of the industry will complete this section.

Changes to Thrifts in General

Commercial banks had always felt that thrifts had essential competitive advantages in at least three key areas. First, thrifts had investment powers such as long term revenue generating mortgages and business lending opportunities not available to commercial banks. Second, thrifts were allowed to maintain significantly lower capital standards. The capital requirements of thrifts were only half the amount required in the nation's banks prior to FIRREA. Third, thrifts had the ability to borrow at reduced rates from the Federal Home Loan Bank (FHLB). The availability of low cost funds gave them increased profit potential.

The elimination, or providing homogeneous compliance or equal access to these would tend to decrease the competitive advantage of thrifts while enhancing the same for commercial banks. FIRREA addressed these and other issues concerning thrifts by proposing an eight-point agenda. First, thrifts were to have lower commercial real estate loan limits. Second, they would be prohibited from direct real estate and equity investments. Third, new capital rules for thrifts and their subsidiaries were instituted. Fourth, stricter loan-to-value ratios were to be enforced. Fifth, regulatory authorities were given increased criminal enforcement powers. Sixth, higher deposit insurance premiums were to be paid. Seventh, new limitations would be placed on powers granted to state-chartered savings and loans. Eighth, there would be

new restrictions on brokered deposits, see Cranford [1989A], Meyer [1990], Lange and Schiller [1989] and Chessen [1989].

The retained earnings of the FHLBB would now be tapped to help fund the cost of the savings and loan bailout. This will limit the value of the thrift-owned stock in the FHLB reducing their dividends thus making it more difficult to raise capital in accordance with new requirements. These earnings have traditionally been a key source of low cost funding to thrifts. By decreasing the amount of credit available to them borrowing rates will rise. Many savings and loans may pursue a strategy of down-sizing their asset portfolio's in an attempt to meet higher capital standards thus reducing their profit potential. Already paying premium rates to attract deposits and now required to pay higher insurance premiums while doubling their capital requirement within two years can only further strain savings and loan profitability.

A stricter Qualified Thrift Lender (QTL) Test is also imposed on thrifts. To insure that thrifts "stick to their knitting" only those institutions having at least 70 percent of their portfolio's in housing related fields will qualify for favorable tax treatment and insurance protection guarantees. Thus, the focus of FIRREA was to revert thrifts back to their more traditional lines of commerce and product lines of home building and finance. However, mortgages are only marginally profitable at best particularly during

interest rate fluctuations, see Ordway [1989], Cooper [1989] and Hanc [1989].

State-Chartered Thrifts

The majority of the bad press regarding the nation's thrifts has been leveled at the state-chartered savings and loans. Lax regulation allowed highfliers and newcomers to enter a field without proper capital or expertise. Abuse of power, bad loans and fraud contributed to the bankruptcy of the FSLIC.

In order to limit future exposure to the remaining depository insurance funds, state-chartered thrifts were prohibited under FIRREA from "engaging in activities not permissible to federally-chartered savings associations in type and amount" (Cranford 1989D). State-chartered thrifts were prohibited from the following four basic types of investments: 1) direct investment in real estate development, 2) making commercial or other non-housing loans, 3) speculation in non-investment grade corporate debt (i.e., junk bonds) and 4) stock ownership.

State-chartered institutions were to have "bank-like" capital requirements, higher deposit insurance premiums and no longer given the opportunity to make investments forbidden to federally-chartered thrifts. Beyond these changes, state-chartered savings and loans faced severe restrictions on the percent of reserves which could be lent to a single

borrower. Homebuilders had severe objections to this new
limitation, see Allen [1989].

Federally-Chartered Thrifts

Beyond the new stricter guidelines for increased capital
requirements and insurance premiums required of all thrifts,
federally-chartered savings and loans would be affected in
three primary ways. First, the amount of a thrift's loan
portfolio that may be invested in commercial real estate is
reduced. Second, federally-chartered institutions would not
be forced to divest commercial real estate loans that exceed
the limit. Finally, they would be permitted to offer
checking accounts to commercial customers without first
establishing a "business relationship" with them, a break in
tradition (Cranford 1989B).

The competitive position of federally-chartered thrifts
diminishes in comparison to commercial banks with respect to
tougher capital and insurance premium requirements. The
prohibition of certain assets and diminished allowance of
others is not as severe as those mandated for state-chartered
thrifts.

With the abolition of practices which state-chartered
institutions were permitted in excess of allowable limits for
federally-chartered thrifts, one could expect that the latter
would gain a competitive edge over their state-chartered
counterparts.

Commercial Banks

While FIRREA would extract higher deposit insurance premiums from commercial banks, it will greatly enhance their competitive positions in three ways. First, commercial banks will be granted membership in the FHLBB with favored access. They can have the opportunity to secure loans at favorable rates without meeting the stock purchase requirements of thrifts. This gives commercial banks a source of funds not previously available to them. Second, commercial banks are now granted permission to acquire both healthy or insolvent thrifts effectively allowing them to branch into more geographical areas, new products (i.e. home mortgages), and gives them the ability to cross market their services. Finally, commercial banks will receive insurance premium rebates when their insurance fund reserves reach a specified level. It is unlikely that thrifts will ever reach their limits anytime soon, see Cranford [1989B].

Commercial banks are given several opportunities to enhance their competitive position relative to thrifts. Access to FHLBB funds and branch banking via thrift acquisition are great benefits accorded to them.

Overall Impact

If Stigler's (1971) hypothesis is correct, then there would tend to be theoretical evidence to favor commercial

banks gaining at the primary expense of state-chartered savings and loans. State-chartered thrifts are now required to have commercial bank-like capital and pay higher insurance premiums. Competitive advantages they once enjoyed over their federally-chartered counterparts have been eliminated under FIRREA. Commercial banks' new opportunities to borrow at a reduced rate once reserved for thrifts and the ability to acquire thrifts thereby extending their influence at modest costs must be considered a potentially great benefit to them.

CHAPTER III

REVIEW OF THE LITERATURE

Introduction

This segment of the research will present the relevant
empirical literature to date on the use of financial theory
to study the impact of regulation and regulatory changes upon
the various elements of the depository institutions industry.
A brief discussion of the Economic Theory of Regulation will
be followed by the recent papers which shed light upon this
theory's validity. Finally, three articles by Allen and
Wilhelm (1988), Millon-Cornett and Tehranian (1989) and
Millon-Cornett and Tehranian (1990) are highlighted at the
end of this discussion due to their importance for this
research in terms of approach and methodology.

The Economic Theory of Regulation

Stigler (1971) and Peltzman (1976) theorize a market for
regulation whose value and distribution are determined by the
interaction of policymakers and the regulated firms.
Regulation can convey definite benefits to an industry in a
variety of forms, i.e. restricted entry and price fixing.
Those firms within the industry which are effective in

36

exerting political influence may be accorded a disproportionate share of these benefits which may come at the expense of the remaining firms.

Posner (1974) believes that given time, regulated firms will obtain the political savvy necessary to retain and possibly enhance their positions by skillful manipulation of the regulatory apparatus. By doing so, these regulated firms would in affect "capture" their regulators and work the process to their continual advantage. Therefore having established their relative positions within the regulatory environment, any significant alteration of regulation by policymakers will induce a potential redistribution of wealth among the market participants (Stigler 1971). The resulting effect of such a change may have either a positive of negativeimpact among the various elements comprising the industry, much like the original imposition of regulation entailed.

Peltzman (1976) further asserts that the competitive and cost insulating effects of regulation will lower ownership risk. Any erosion of regulation which significantly realigns the competitive positions within an industry can potentially elicit a change in ownership risk.

Empirical Studies on Depository Institutions

Schwert (1981) justified the use of financial theory to analyze the impact of regulation on firm profitability. The

Efficient Market Hypothesis (EMH) posits that asset prices reflect all available relevant information. The response of shareholders to any significant unanticipated information concerning the expected value of future cash flows will be immediately impounded into share prices. These changes in stock value provide an unbiased estimate of market participants reaction to regulatory change. Therefore, financial theory provides an advantageous vantage point from which to view the examination of regulatory change.

Peltzman (1968) first employed market values to examine the structure-performance relationship of commercial banks. This article focused on the welfare aspects of a segmented banking system and the impact of entry upon the stock prices of banks. Peltzman found evidence that economies of scale are present within the banking system. However, by prohibiting meaningful inter and intra state branching, regulation tends to stifle these economies. The cost of such regulation are significant.

Aharony and Swary (1981) used the market model with an event study format to study the stock price impact of the Bank Holding Company Act of 1970. Bank holding company expansion into nonbank realms during the early 1970s was profound. Their effects on one-bank holding companies and multibank holding companies revealed no significant investor reaction to the legislation. Further, no changes in the relative risk of these firms were detected.

Binder (1985) points out that the failure of event studies to find detectable levels of investor reaction may not necessarily rule out the ineffectiveness of the legislation. The problem may lie in the inexact nature of determining the appropriate dates when new information actually reached the market. Incorrect specification of event dates would lower the confidence of determining the precise interaction of regulation and market value changes.

Chance and Lane (1980) incorporated interest rates into the market model in an attempt to improve its specification for financial institutions. They found no relationship between interest rate changes and stock price movements for the industry. However, Flannery and James (1984) found evidence that the stock prices of financial institutions were effected by interest rate fluctuations. The extent of the influence is positively related to the magnitude of the maturity difference between the institution's assets and liabilities. This result was valid for both long and short-term measures of interest rates. They conclude that the longer the maturity of assets and the shorter the duration of liabilities the greater is the impact of inflation lessening the market value of the institution.

Deposit rate regulation acts as a subsidy by guaranteeing a constant cost of acquiring funds. This represents a transfer of wealth from depositors to stockholders. Dann and James (1982) believe that in an

efficient market this advantage should be fully capitalized into the stock prices of thrifts. They study the impact of the market value of thrifts when rate ceilings on small saver certificates below $100,000 were abolished. Their results showed a negative investor reaction to publicly traded thrifts upon the announcement of removal of interest rate ceilings. James (1983) did find evidence that market values of commercial banks were significantly enhanced upon the elimination of interest rate ceilings on certificates of deposits in excess of $100,000. However no perceived investor response was detected for the abolition of ceilings on the consumer oriented MMCs of smaller denominations. James also discovered intraindustry regulatory effects on commercial banks. Wholesale banks experienced positive excess returns on information of ceiling removals while retail banks had the opposite reaction.

Smirlock (1984) extends the analysis of bank deposit rate regulatory changes to the relative risk component of banks. He failed to find proof that the lifting of interest rate ceilings leads to a corresponding increase in bank risk. Therefore, banks do not automatically acquire incentives to delve into riskier assets upon the elimination of deposit rate ceilings. Smirlock concludes that the solvency of banks should not be threatened by such occurrences. This study also concludes that rate regulation causes wealth transfers from large to small banks and from depositors to

shareholders.

Santoni (1985) evaluated the impact of the homogeneous reserve requirements of DIDMCA on the stock prices of 40 bank holding companies. Arguing that these reserve requirements behave as a tax, he found that Federal Reserve member banks, whose requirements were lowered, garnered increased stock values. In contrast, nonmember bank holding companies experienced the opposite as their reserve requirements were raised.

Allen and Wilhelm (1988)

Allen and Wilhelm (1988) studied the market's reaction to the events leading to the passage of DIDMCA in 1980. Using weekly return data, they segmented depository institutions into three equally weighted portfolios: 1) 38 Federal Reserve member banks, 2) 16 nonmember banks and 3) 19 stock savings and loans. Intervention analysis which specifically captures alterations in the stochastic return generating process was used in the framework of the market model. Not only would this technique accurately reflect the market participants expectations of the act but also the impact of the legislation on the risk characteristics of these institutions. Peltzman (1976) hypothesizes that the erosion of regulation will lead to greater risk of ownership.

Allen and Wilhelm selected six event weeks containing relevant news of the progress of DIDMCA through the

legislative process. They found the only unanticipated information about the act to reach investors came during the week of enactment. They theorize that up until the act was passed that its final form and therefore ultimate influence on the various sectors of the industry remained essentially unknown. Federal Reserve member banks experienced significant positive returns of 3.9 percent while nonmember banks and savings and loans had losses of 4.3 percent and 4.4 percent respectfully for this week. Joint tests of hypothesis revealed that Federal Reserve member banks benefited from this legislation to the detriment of savings and loans as well as nonmember banks. They saw this to be evidence in support of Stigler's (1971) regulatory hypothesis of a redistribution of wealth as regulation is imposed or altered. There were no results generated which would suggest Peltzman's (1976) alteration of the risk structure.

Millon-Cornett and Tehranian (1989)

Investor reactions to the chronology of events which led to the adoption of DIDMCA were also approached by Millon-Cornett and Tehranian (1989). Equally weighted portfolios of 1) 42 large banks, 2) 158 small banks, 3) 12 large savings and loans, and 4) 16 small savings and loans were collected. Zellner's (1962) and Thiel's (1971) Seemingly Unrelated Regressions (SUR) technique was employed to estimate the market model incorporating dummy variables to account for

the nine event dates when significant new information may have reached the market concerning the nature of the legislation or its probability of adoption.

Millon-Cornett and Tehranian found several announcements to elicit favorable responses of large bank investors, i.e. the initial proposal of the legislation and its final approval by the House of Representatives. These events resulted in negative abnormal returns for small commercial banks and small thrifts. The inclusion of an announcement detrimental to passage produced the exact opposite results. There was no detection of abnormal returns for large S&Ls.

Millon-Cornett and Tehranian believe large commercial banks to inherit the greatest benefits of deregulation. Removal of Regulation Q and enhanced activity opportunities allowed them to compete more affectively with nonbank banks as well as thrifts. This new competition with S&Ls which DIDMCA spawned is believed responsible for the absence of abnormal returns for large S&Ls for each of the events. Advantages DIDMCA rendered to these institutions vanished in the eyes of investors with the introduction of competition from banks for borrowed funds. The effect on large S&Ls is therefore indeterminate. The benefits of less efficient smaller S&Ls and banks are completely overwhelmed by the increased competition for funds. This increased specter of small institution failures led investors to view them as poor investments.

Millon-Cornett and Tehranian (1990)

Millon-Cornett and Tehranian (1990) used a Multivariate Regression Model (MVRM) to analyze the response of publicly traded depository institutions to the Garn-St. Germain Act. The industry was partitioned into four equally weighted portfolios according to size and type: 1) 12 large thrifts, 2) 16 small thrifts, 3) 42 large commercial banks and 4) 158 small commercial banks. Dummy variables were employed to capture the abnormal returns associated with each of 14 critical announcement dates leading to the passage of the legislation. Dates which contained information leading to the increased or decreased probability of adoption were included.

They reported evidence that significant abnormal returns existed among their chosen announcement dates and the reactions of investors for each portfolio were not uniform. Two dates conveyed significant positive abnormal returns for large S&Ls and large commercial banks. The recommendation of President Reagan's Housing Commission to enhance the competitive powers for thrifts produced positive abnormal returns of 3.93 percent and 1.21 percent for large S&Ls and large banks respectively. Conversely, small S&Ls and small banks suffered losses of 4.63 and 4.02 percents respectively. The Senate's approval of the bill generated positive abnormal returns once again for large S&Ls and large commercial banks of 4.93 and 2.75 percents respectively. Small S&Ls and small

commercial banks incurred losses on this date of 3.81 and
3.48 percent, respectively. Interestingly, a date on which
the bill faltered in the Senate produced the opposite
results. Large S&Ls and large banks experienced losses of
2.94 and 1.93 percent, respectively, while small S&Ls and
small banks gained 4.90 and 1.96 percent on that date,
respectively.

Millon-Cornett and Tehranian conclude that investors in
large S&Ls and large banks responded favorably to the
legislation while small S&Ls and small bank investors would
appear to suffer. They attribute their findings to the
response of these four groups to the increased competition
for funds which Garn-St. Germain would create.
Millon-Cornett and Tehranian believe larger institutions to
be more efficient and lower cost producers of financial
services than their smaller counterparts. Given the
increased cost of acquiring funds which the act would entail
due to competitive bidding for funds in the money market,
large institutions would have a better opportunity for
survival.

CHAPTER IV

DATA AND METHODOLOGY

Data

The sample data analyzed in this research consists of
daily stock returns for commercial banks and savings and
loans trading on the New York Stock Exchange, American Stock
Exchange and the Over-the-Counter Market. To be included,
each institution was required to have return data between
January 1, 1988 and December 31, 1989. This period spans the
time approximately thirteen months before the legislation was
first proposed to four months after its final enactment. The
return data were collected from the Center for Research in
Security Prices (CRSP) data tapes.

A primary concern with the data collection was to obtain
a consistent source of information listing the publicly
traded depository institutions by type. The <u>Standard</u> <u>and</u>
<u>Poor's</u> Register of Corporations, Directors and Executives of
1990 was used to identify institutions by their primary
Standard Industrial Classification Codes (SIC Codes). The
detailed profile's of institutions within the Register were
also consulted to insure their primary line of commerce
satisfied the requirements of depository institutions. The
NYSE/AMEX institution data were obtained from the CRSP tapes

at OSU while the same information on the NASDAQ tapes was obtained by the generosity of the University of Arkansas. Stock market indexes were collected from Standard and Poor's Stock Price Index for 1990 and from the subscription service of the Wilshire 5000 company.

The identification of relevant dates when unanticipated information altered either 1) the timing and probability of enactment or 2) the specific nature of the law's codicils due to the legislative process is necessary to determine the legislation's impact on depository institutions. The empirical analysis to follow is based on the proper identification of these dates when new information was conveyed to the market. Important legislative dates of testimony and key votes at various stages in the deliberation process have been identified using the Congressional Record. This produced the preliminary list of event dates reported in Table I. The Wall Street Journal Index was examined for news items relating the importance of the events to the various depository institutions. Industry journals published by the American Banker's Association and the U.S. League of Savings Institutions were also be consulted for the industry's interpretation of each event.

Given the nature of the health of depository institutions during this most volatile period, the Wall Street Journal Index was further reviewed to establish if any institutions within the sample experienced firm-specific events (i.e. acquisitions, litigation, unexpected earnings

TABLE I

CHRONOLOGY OF EVENTS LEADING TO THE
PASSAGE OF FIRREA

Date	Announcement
2/06/89	K_1 Administration proposal of FIRREA
4/19/89	K_2 Senate approves plan
6/15/89	K_3 Admendment relaxing capital standards is defeated. Defeat for thrifts
7/27/89	K_4 House-Senate Conference Committee complete work on bill
8/03/89	K_5 Bush veto threat if bill is financed on-budget
8/04/89	K_6 House and Senate accept revised conference report which placed $20B on budget in 1989 yet excused from Gramm-Rudman
8/09/89	K_7 Bush signs FIRREA into law

announcements, etc.) at the time of each event. In order to
properly isolate the impact of regulatory change on a firm's
conduct, any firm having these confounding events was
eliminated from consideration.

Empirical Methodology

The impact of FIRREA on the performance and risk of the
various forms of depository institutions is examined using
the market model (Fama 1976). The market model posits that
the return of a security is primarily a function of the
proper compensation for nondiversifiable risk, i.e.
systematic risk. Estimation of single security returns may
lead to erroneous test of hypothesis results due to
contemporaneous correlation of residuals resulting from
industry wide phenomena. Schwert (1981) suggests grouping
firms into equally weighted portfolio's constructed along
demographic lines. Therefore, three portfolio's of equally
weighted regulatory status are utilized.

Since the nature of FIRREA was designed at least in part
to alter the risk of depository institutions, intervention
analysis is employed to discern the market's reaction to the
events leading to its passage (Box and Tiao 1975), (Wichern
and Jones 1977). Larcker, Gordon and Pinches (1980) offer
evidence that this technique is valid when the probability of
the event changing the securities stochastic
return-generating process is nonzero.

The model produces the following system of portfolio

return equations for 1) 194 commercial banks, 2) 32 state-chartered thrifts and 3) 62 federally-chartered thrifts:

$$\tilde{R}_{ct} = \alpha_{cp} + \alpha'_{cp}D_s + \beta_{cp}\tilde{R}_{mt} + \beta'_{ct}D_s\tilde{R}_{mt} + \sum_{k=1}^{n} D_{ik}\gamma_k + \tilde{\epsilon}_{ct}$$

$$\tilde{R}_{st} = \alpha_{sp} + \alpha'_{sp}D_s + \beta_{sp}\tilde{R}_{mt} + \beta'_{st}D_s\tilde{R}_{mt} + \sum_{k=1}^{n} D_{ik}\gamma_k + \tilde{\epsilon}_{st} \quad (1)$$

$$\tilde{R}_{ft} = \alpha_{fp} + \alpha'_{ft}D_s + \beta_{fp}\tilde{R}_{mt} + \beta'_{ft}D_s\tilde{R}_{mt} + \sum_{k=1}^{n} D_{ik}\gamma_k + \tilde{\epsilon}_{ft}$$

where:

$\tilde{R}_{jt}$=The rate of return on portfolio j on day t   j = c, s, f

$\tilde{R}_{mt}$=The return of the CRSP equally weighted index of all stocks on day t

α_{jp}=The regression intercept for portfolio j before the intervention

α'_{jp}=Shift in the regression intercept due to the intervention

β_{jp}=$Cov(\tilde{R}_{jt}, \tilde{R}_{mt})/ Var(\tilde{R}_{mt})$ The systematic risk coefficient of portfolio j before the intervention

β'_{jp}=Shift in the systematic risk coefficient due to the intervention

D_s=Shift dummy variable, = 0 Before the intervention

= 1 After the intervention

D_{ik}= Event dummy variable k

= 1 during the period of the kth announcement

=0 otherwise

γ_k=Coefficient on event dummy variable k

(The effect of the kth regulatory change on the jth

portfolio)

n = Number of days in which information concerning the

event in question is released to the market

$\tilde{\varepsilon}_{jt}$= Stochastic error term for portfolio j

Changes in the regulatory environment may lead to random effects common to all firms within an industry. The seemingly unrelated regression (SUR) framework can be used to allow for just such an occurrence, see Theil (1976) and Binder (1985).

Using the SUR format, the regulatory portfolio return equations of (1) can be expressed as:

$$
\begin{bmatrix} \tilde{R}_c \\ \tilde{R}_s \\ \tilde{R}_f \end{bmatrix} = \begin{bmatrix} \tilde{X}_c & 0 & 0 \\ 0 & \tilde{X}_s & 0 \\ 0 & 0 & \tilde{X}_f \end{bmatrix} \begin{bmatrix} \beta_c \\ \beta_s \\ \beta_f \end{bmatrix} + \begin{bmatrix} \tilde{e}_c \\ \tilde{e}_s \\ \tilde{e}_f \end{bmatrix} \tag{2}
$$

or $\tilde{R} = \tilde{X}\beta_j + \tilde{e}_j$ (3)

where:

$\tilde{R} = (\tilde{R}_c , \tilde{R}_s , \tilde{R}_f)$ is a 1 X T vector of portfolio returns

$$\tilde{X} = (1, D_s, \tilde{R}_m, D_s\tilde{R}_m, D_i) \text{ is a T X N matrix of}$$

independent variables

$$\beta_j = (\alpha_p, \alpha'_p, \beta_p, \beta_p, \gamma_p) \text{ is a N X 1 vector of}$$

coefficients

$$\tilde{e}_j = (\tilde{e}_c, \tilde{e}_s, \tilde{e}_f) \text{ is a 1 X T vector of disturbances}$$

The multivariate regression model expressed in equation (2) assumes that the disturbances are independent and identically distributed within each equation. However, contemporaneous correlation across equations could create heteroscedasticity and cannot be ignored. Equation (2) will be estimated using generalized least squares (GLS) techniques which is more efficient than single equation ordinary least squares (OLS) estimation with these circumstances.

The principal advantage of multivariate regression methodology is the possibility of joint hypothesis testing when heteroscedasticity across equations and contemporaneous correlation of disturbances are accounted for in the hypothesis testing procedure. The dummy variables in the intervention analysis technique reflect 1) any potential parameter changes in the return generating process resulting from the announcement of new information and 2) the market's appraisal of new information announced.

Designation of the time when a significant alteration in the return generating process occurred must be stipulated. Owing to the uncertainty of the final specific form of the

legislation, particularly the closed door debates of the Congressional Conferee's, the most likely candidate is the day of enactment. This will be the proposed point of intervention. The impact of which will be measured by the statistical significance of the shift parameters α'_{jp} and β'_{jp}.

CHAPTER V

EMPIRICAL RESULTS

This chapter presents the principal empirical results of the analysis. The validity of employing the SUR framework is discussed, followed by the estimation of the model parameters and their relevant test statistics. The evaluation of the various hypotheses is also included.

Test for Contemporaneous Correlation

As previously mentioned, the SUR technique provides an advantageous vehicle over single OLS estimation for the joint testing of hypotheses. For this method to offer such enhanced efficiency, contemporaneous correlation must be present. Breusch and Pagan (1980) suggest a Lagrange multiplier statistic as the appropriate criterion for detecting the presence of contemporaneous correlation. For the three equation model in this analysis the statistic is given by:

$$\lambda = T(r_{21}^2 + r_{31}^2 + r_{32}^2)$$

with: T = the number of observations (504 for this model)

$$r = \frac{\hat{\sigma}^2_{ij}}{\hat{\sigma}^2_{ii}\hat{\sigma}^2_{jj}}$$

This λ statistic is distributed as χ^2 with three degrees of freedom (Judge et al 1990). The appropriate correlations are provided by the cross model correlation matrix of the SUR procedure of Proc Syslin in the Statistical Analysis System (SAS) package. The calculated value of λ is 543.816. The critical value of a $\chi^2(3)$ at the 5 percent level is 7.81. Therefore the null hypothesis of the absence of contemporaneous correlation is rejected.

Panel A of Table II presents the SUR estimates of the abnormal returns and the t-statistics for each of the seven announcements across each of the portfolio's of 66 state-chartered thrifts, 98 federally-chartered thrifts and 164 commercial banks. The coefficients of determination, first-order autocorrelation coefficients and the Durbin-Watson statistics of each portfolio are also reported. Panel B of Table II presents the F-Statistics for Hypothesis 2 which measures the significance of the abnormal returns for each announcement.

Hypotheses Tested

The abnormal returns associated with the various k announcements which cannot be explained by the stochastic return generating process are the γ's in equation (1). The

TABLE II

RESULTS OF INTERVENTION ANALYSIS OF THREE EQUALLY-WEIGHTED
REGULATORY PORTFOLIO'S AND DUMMY VARIABLES
SURROUNDING THE PASSAGE
OF FIRREA

	Panel A		
Parameters	Portfolio Estimates		
	R_{ST}	R_{FT}	R_{CB}
Constant	-0.00007 (-0.260)	0.0004 (1.68)	0.0005 (3.805)
Post-FIRREA Constant	-0.0026 * (-4.191)	-0.0018 * (-3.230)	-0.001 * (-3.796)
Beta	0.6967 * (13.978)	0.5349 * (12.036)	0.5248 * (22.680)
Post-FIRREA Beta	0.2444 * (2.307)	0.0711 (0.753)	0.1543 * (3.136)
K_1	-0.0012 (-0.363)	-0.0007 (-0.233)	0.0011 (0.746)
K_2	0.0028 (0.884)	-0.0013 (-0.472)	-0.0002 (-0.137)
K_3	-0.0018 (-0.574)	-0.0011 (-0.394)	0.0008 (0.523)
K_4	-0.0014 (-0.446)	-0.0010 (-0.343)	0.0012 (0.776)
K_5	-0.0050 (-1.178)	-0.0035 (-0.929)	0.0015 (0.753)

TABLE II (CONTINUED)

K_6	0.0044 (1.039)	0.0042 (1.109)	-0.00008 (0.394)
K_7	0.0074 (2.323)*	0.0133 (4.665)*	0.0041 (2.784)*
Adjusted R^2	.40	.32	.62
ρ	-.004	-.199	-.001
Durbin-Watson Statistic	1.943	2.397	2.001

Panel B

Event	F-Statistics for Hypothesis 2
K_1	0.4011
K_2	0.5104
K_3	0.3920
K_4	0.4998
K_5	1.3334
K_6	0.9952
K_7	7.7778*

*Significant at the 5% level

significance of these γ's across portfolio's and announcements (k) is the focus of the first three hypotheses evaluated.

       Hypothesis 1: The events leading to the passage of FIRREA never generated significant abnormal returns.

This is the test of abnormal returns jointly equaling zero for all announcements over all portfolio's and is given as the null hypothesis:

$$H_o: \quad \gamma_{jk} = 0 \quad \forall \; j,k$$

The critical value of the F-statistic as defined by Theil (1971) is 1.57. The calculated value of the test statistic incorporating these restrictions is $F(21,1482)=1.581$ which is significant at the 5 percent level. Thus the null hypothesis is rejected as evidence is provided that abnormal returns do indeed exist among the various announcement dates.

       Hypothesis 2: The individual announcements (k) of any new information had no impact across portfolios

This is a test of abnormal returns for each portfolio equaling zero on any announcement day and is expressed by the null hypothesis:

$$H_o: \quad \gamma_{jk} = 0 \quad \forall \; j$$

The t-statistics from Table II of each announcement on each portfolio reveal that only the enactment date (K_7) provided significant abnormal returns at the 5 percent level. The excess returns for state-chartered thrifts, federally-chartered thrifts and commercial banks were .7 percent, 1.3 percent and .4 percent respectively. The calculated F-statistic to determine the significance of each announcement across portfolios is reported in row 5 of Table II. Only for the date of enactment (K_7) did this statistic prove significant.

> Hypothesis 3: Stigler's (1971) assertion that regulatory changes will result in disproportionate wealth redistributions.

This is a joint test that the impact of FIRREA is the same for each regulatory portfolio and is given by the following null hypothesis:

$$H_o: \quad \gamma_{ij} - \gamma_{ij} = 0 \quad \forall \; i,j$$

This is a test of linear restrictions on β of equation (1) of the following form:

$$L\beta = 1$$

where L is a P X N matrix of constants with rank P(P ≤ K), β is an N X 1 vector of coefficients estimated from (2), 1 is a P X 1 vector of constants, P is the number of restrictions tested, see Cornett and Tehanrian (1989).

According to Theil (1971) the joint test statistic is:

$$\frac{JT - JN}{P} \; \frac{(1 - L\hat{\beta})' \; \{ \; L \; [X'(\sum {}^{-1} \otimes I)X] \; {}^{-1} \; L' \} \; {}^{-1} \; (1 - L\hat{\beta})}{(\tilde{R} - X\hat{\beta} \; '(\sum {}^{-1} \otimes I)(\tilde{R} - X\hat{\beta})}$$

where:

$\sum = \sigma_{i,j}$ $i,j = c,s,f$

$\otimes$ = the Kronecker Product

T = the number of daily returns (=504)

J = the number of portfolio's tested

P = the number of restrictions tested

which is asymptotically distributed as F(P, JT - JN), see
Cornett and Tehanrian (1989), Wilhelm and Allen (1988). The
critical value of the test is $F(1,1503,.05) \approx 3.84$. Joint
tests of the hypotheses:

H_O: $\gamma_{cbK7} - \gamma_{stK7} = 0$ (Commercial Banks vs

State-chartered thrifts)

H_O: $\gamma_{cbK7} - \gamma_{ftK7} = 0$ (Commercial Banks vs

Federally-chartered thrifts)

H_O: $\gamma_{ftK7} - \gamma_{stK7} = 0$ (Federally-chartered vs

State-chartered thrifts)

yield the test statistics:

F = 1.23

F = 11.64

F = 2.81

These tests suggest that the impact of FIRREA on the returns of federally-chartered and state-chartered thrifts were essentially identical. However the passage of FIRREA resulted in significantly different returns among commercial banks and federally-chartered thrifts which implies that wealth was rearranged in a dissimilar manner. Federally-chartered thrifts gained more than commercial banks.

The Impact of FIRREA on Risk

Peltzman (1976) hypothesized that alterations of regulatory structures will lead to changes in ownership risk. Any significant change in the underlying stochastic return generating process will be revealed by the coefficients of α' and β' in equation (1).

As Table II reports, the constant in the post-FIRREA era is significantly lower for all three portfolios at the 5 percent level. The measure of risk, β, is significantly higher for both state-chartered thrifts and commercial banks at the 5 percent level. However, the risk component for federally-chartered thrifts showed no substantial change. Thus the increased ownership risk of regulatory change as espoused by Peltzman (1976) seems evident for both state-chartered thrifts and commercial banks.

CHAPTER VI

INTERPRETATION, CONCLUSIONS AND

RECOMMENDATIONS

This chapter offers the interpretation of the
empirical results. An examination of the parameter estimates
and their significance provides the evidence of FIRREA's
impact upon the various components of the depository
institutions industry. Next conclusions are drawn as to
the effect of FIRREA on the future structure-performance
relationship within the industry. Finally, extensions of
this analysis are presented for further consideration.
Possible research in close proximity to this study is also
be examined.

Interpretation of the Results

The interpretation of results focuses upon three key
areas for which investors demonstrated significant reaction:
1) changes in the overall expected return for investments
made in the industry, 2) changes in the measure of market
risk perceived by market participants, and 3) specific
reactions of investors to the events leading to the passage
of FIRREA.

Alpha Shifts

The first area of investigation concerns the significant shifts in the constant term , (α), of the market model. By the nature of its construct, a significant decrease in the constant term would reveal pessimistic investor reaction to future profitability of institutions as a result of the enactment of FIRREA. Statistically significant negative shifts were indeed detected in the constant of all three portfolios with the α' parameter estimates for state-chartered thrifts, federally-chartered thrifts and commercial banks of -0.0026 (t= -4.191), -0.0018 (t= -3.230) and -0.0026 (t= -3.796) respectively.

Such widespread feeling by investors could be explained by several factors. FIRREA would add directly to the operational costs of depository institutions by imposing increased deposit insurance rate premiums. Prior to FIRREA, thrifts paid the FSLIC 20.8 cents per $100 of deposits. The new law requires them to pay 23 cents by January 1, 1991. This will put added stress on marginally solvent thrifts attempting to comply with the higher capital requirements established by FIRREA. Commercial banks had previously been assessed 8.3 cents per $100 of deposits but this figure would rise to 15 cents by 1991 (Cox 1989). Profits for commercial banks with $100 million in deposits would fall by $67,000 to cover the increased insurance rates.

The increased capital requirements of FIRREA will lower
the amount of funds available for earning assets, thus
lowering profitability. This has led elements of the thrift
component to downsize their operations. By decreasing their
volume of assets they can comply with the tougher capital to
asset standards without directly increasing capital (Cargill
1991). However, this action will also have a detrimental
effect on their profitability.

The more stringent QTL Test forces thrifts to engage a
higher percentage of loans in home mortgages which are only
marginally profitable at best (Roosevelt 1990). Recessionary
tendencies of the economy also led investors to question the
asset quality of all types of institutions. The diversion of
FHLB system income to assist the cost of the bailout will
decrease the dividends paid to member thrifts further eroding
profitability. By the first quarter of 1990 the dividend had
been cut to 8.3 percent from 13 percent in 1989 (Roosevelt 1990).

Beta Shifts

The second area of interest is the possible alteration
in the systematic risk of depository institutions as
perceived by investors. A significant increase in the beta
coefficient in the post-FIRREA era would lend credence to the
Peltzman (1976) hypothesis of an increase in ownership risk
resulting from a change in the regulatory environment.

Table II's row 4 presents the post-FIRREA beta

coefficients for the three portfolios. State-chartered thrifts experienced a significant increase in risk with a reported post-FIRREA beta estimate of 0.2444 (t= 2.307). Several factors may have contributed to such an increase in systematic risk. State-chartered thrifts were now subject to stricter regulation of activities. FIRREA eliminated many high yielding assets such as direct real estate investments which could provide an efficient inflationary hedge against rising interest rates. State-chartered thrifts were not as well capitalized as their federally-chartered counterparts which would lower their probability of meeting the higher capital standards. As a group, they were not as close to the new 70 percent mortgage requirement of the QTL Test as federal thrifts.

The post-FIRREA beta coefficient for federally-chartered thrifts was 0.0711 (t= 0.753). These institutions showed no significant change in the systematic risk component of the return generating process. On the whole, they were a better capitalized lot, capable of meeting the increased capital requirements of FIRREA with less difficulty than state-chartered thrifts. The majority of federal thrift institutions could also comply with the stricter QTL Test. Investors did not perceive FIRREA increasing the risk of investments in publicly traded federally-chartered thrifts.

Commercial banks witnessed a significant increase in their post-FIRREA beta coefficient of 0.1543 (t= 3.136).

During this era, bank stocks were in an economic bind. Favorable economic news inevitably renders higher interest rates that drive up costs and lower stock values while recessionary trends lead to concerns about deteriorating asset quality. Investors were also expressing concerns over distressed asset qualities of some banks. Tardy repayment and defaults of third-world country loans led to enhanced risk in their loan portfolio's (Forde 1989). Overcapacity in the depressed real estate markets of the Northeast left banks with mounting loan losses (Forde 1989).

Reactions to FIRREA's Passage

Despite the general public's conception, the majority of thrifts remained healthy, by capital standards, during the 1980s. Barth (1991) points out that the bulk of thrifts retained adequate solvency to meet the tangible-to-asset ratios required by FIRREA. An examination of the institutions employed in this research affirms that approximately two-thirds of all thrifts reacted favorably to the enactment date of this legislation.

Investors of healthy thrifts would be encouraged for several reasons. First the perception and stigma of continuing insolvency difficulties and failures with troubled institutions lead depositors to shy away from the entire industry regardless of the soundness of a particular institution. Such withdrawals would prove to inflict further

damage to healthy thrifts. Secondly, unhealthy thrifts in a desperate attempt to retain liquidity were prone to increase deposit rates to attract funds thus increasing costs to healthy thrifts. Steps taken by FIRREA to phase out the unhealthy element of thrifts were viewed by investors of state-chartered and federally-chartered thrifts as a positive move. Also healthy thrifts could now be bought by commercial banks making investments in such institutions more palatable. As a result, both federally-chartered and state-chartered thrifts experienced significant positive abnormal returns of 1.33 percent (t= 4.665) and .74 percent (t= 2.323) respectively.

Commercial banks were accorded several new opportunities under FIRREA which could prove advantageous. First, commercial banks were given the privilege of borrowing from the FHLB system. While this would provide an added source of funds to meet liquidity needs, analysts reasoned that healthy banks would be hesitant to pursue such activity since it could possibly convey substantial liquidity difficulties (Cline 1989). This public image could hasten the withdrawal of funds from such institutions. Secondly banks were given the chance to acquire both healthy and insolvent thrift institutions. Their motivation would come from three sources: 1) the expansion of their retail presence and deposit-gathering base, 2) effective branching to any part of the country of their choice, and 3) the elimination of thrift

competition for funds and deposit rates (Trigaux 1989).
However, the acquisitions of thrifts would be tempered by the
proper assessment of thrift value due to antiquated
accounting procedures thus slowing the process. The use of
book value versus the true market value of assets makes such
an evaluation adds an element of risk to the purchaser. Both
of these privileges would initially have only limited
practical effects. As a result, commercial banks experienced
a significant positive abnormal return on the enactment date
of .41 percent (t= 2.784). In sum, banks benefited from
FIRREA but these pluses were partly mitigated by practical
reality.

Conclusions

The depository institutions industry, particularly
thrifts, entered the mid-1970s with non-diversified
portfolios of assets and liabilities with mismatched maturity
structures and mispriced deposit insurance. Restrictive
legislation of the 1930s had effectively quelled competition
for both sources and uses of funds as well as rates paid and
charged. The industry was ill-prepared for the rapid
adaptation required by the new financial environment and
failed to meet the competitive challenges of new products and
competitors in an escalating inflationary and interest rate
climate. Deregulation of the early 1980s allowed
institutions to pursue new avenues for survival. However

recession took its toll on asset quality and insolvencies mounted. The public image of the industry was at a new low and demands for reform resulted in the passage of FIRREA.

FIRREA was primarily designed to address the difficulties of thrifts by increasing both deposit insurance premiums and capital requirements while disposing the assets of insolvent institutions. However, properly priced deposit insurance premiums based upon the risk of an institution's asset portfolio would have to await another day. Regulatory forbearance of capital requirements was granted to institutions whose difficulties were the result of economic distress. Activity restrictions would be phased in over the ensuing years. Resolution of insolvent thrifts was viewed as a victory for healthy thrifts albeit temporary. The slow process of the dispensation of insolvent thrift assets would add greatly to the cost of the bailout. Increased personal liability penalties for failed thrift activities may lead to a very conservative approach by managers. Avoidance of increased levels of risk may force them into lower yielding endeavors thereby decreasing profitability.

The net result of this analysis reveals lower profitability for the industry as a result of FIRREA. Barth (1991) estimates the annualized rate of return on tangible capital for healthy thrifts to be 10.7 percent which he deems too low to insure their long term stability. Evidence of this assertion was provided by this research with the

significant reductions of the portfolio alpha's.

FIRREA also influenced the risk of investments in state-chartered thrifts. Prohibited from engaging in high-yielding ventures led investors to question their ability to survive as a separate entity. Significant interest rate risk remains for all thrifts as variable rate loans designed to reduce such risk are limited by caps to protect the borrowing public (Roosevelt 1989).

Commercial bank risk increased during this era but probably because of non-FIRREA related issues. Increased exposure to third-world debt and the real estate calamity of the Northeast were the most likely candidates producing such results (Forde 1989).

No direct evidence of Stigler's (1971) hypothesis of redistribution of wealth among winners and losers as a result of regulatory change was found. However, to the extent that FIRREA was designed to help the industry, evidence was uncovered that increases in wealth were distributed in a non-homogeneous manner.

The depository institutions industry is currently undergoing a consolation trend. The number of independent thrifts had been curtailed to 2,949 by 1988 from 3,993 in 1980 due to acquisition, merger or dissolution (Barth 1991). Increased concentration can be expected as excess capital of healthy banks is used to eventually purchase thrifts over time. The nature of the industry is also changing. Thrifts

have also lost substantial amounts of market share to commercial banks and nonbank banks. Banks account for one-fourth of all mortgage loans now being originated (Klinkerman and Zuckerman 1990).

Substantial difficulties still appear to lie ahead for both the industry and the taxpaying public. Barth (1991) believes that many of the original ingredients of the thrift disaster of the 1980s still exist. The primary failure of policymakers to recognize that rigidities imposed on the system prevent the proper evolution of the industry and thus jeopardize its probability for survival. Institutions remain undercapitalized with mispriced deposit insurance. They still have interest rate risk and have maturity structures which are out of balance in terms of duration and return. Carron (1985) points out the continual failure of authorities to understand the causes of this dilemma and thereby take the necessary actions to eliminate the chance of such a recurrence.

Recommendations

This analysis lends itself to several logical extensions for future research. A delineation of healthy and unhealthy institutions could better afford an evaluation of the merits of this legislation on the various segments of the industry. As previously mentioned the reaction of these elements would differ to such a regulatory change. One possible criterion

would be to use industry trade journals which list those institutions capable of meeting the higher capital standards before FIRREA's enactment versus those which failed to do so.

The effect of bank acquisitions of thrifts on the competitive positions of surviving institutions also remains an open question. The consolidation of the industry currently taking place could lead to more oligopolistic pricing behavior in certain locales.

A SELECTED BIBLIOGRAPHY

Aharony, Joseph, and Itzhak Swary. "Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis." Journal of Finance 35 (March 1980), 1-12.

Aharony, Joseph, and Itzhak Swary. "Effects of the 1970 Bank Holding Company Act: Evidence from Capital Markets." Journal of Finance 36 (September 1981), 841-53.

Allen, Pat "FIRREA's Barrage of Compliance Issues Demands Scrutiny", Savings Institutions Volume 110 Issue 11 December 1989 pp. 65-67.

Baer, Herbert L. and Christie A. Pavel. "Does Deregulation Drive Innovation?" Economic Perspectives, Federal Reserve Bank of Chicago, (March/April), 1988, 3-16.

Bailey, Elizabeth E. and Ann F. Friedlaender. "Market Structure and Multiproduct Industries." Journal of Economic Literature, September 20, 1982, 1024-1048.

Balderston, Frederick E. Thrifts in Crisis, (Cambridge, Mass: Ballinger Publishing Company, 1984).

Benston, George J. An Analysis of the Causes of Savings and Loan Association Failures, (New York: New York University, 1985).

Bey, Roger P. and George E. Pinches. "Additional Evidence of Heteroscedasticity in the Market Model." Journal of Financial and Quantitative Analysis, 15 (June 1980), 299-322.

Binder, John J. "Measuring the Effects of Regulation with Stock Price Data." Rand Journal of Economics 16 (Summer 1985), 167-83.

Black, Fisher, M. Jensen and Scholes. "The Capital Asset Pricing Model: Some Empirical Tests." in M. Jensen (Ed), Studies in the Theory of Capital Markets. (New York: Praeger, 1972). 79-124.

Black, Fisher, Merton Miller, and Richard Posner. "An Approach to the Regulation of Bank Holding Companies." Journal of Business 51 (July 1978), 379-412.

Boness, James A., Andrew H. Chen, and Som Jatusipitak. "Investigations of Nonstationarity in Prices." Journal of Banking, 47 (October 1974), 518-537. 37.

Bowden, Elbert V., and Judith L. Holbert. Revolution in Banking. 2nd edition, (Reston, Va.: Reston Publishing Company, 1984).

Box, G.E.P. and George C. Tiao. "Intervention Analysis with Applications to Economic and Environmental Problems." Journal of the American Statistical Association, (March 1975), 70-79.

Brenner, Menachem. "The Effect of Model Misspecification on Tests of the Efficient Market Hypothesis." Journal of Finance 32 (March 1977), 57-66.

Brenner, Menachem and Seymour Smidt. "A Simple Model of Non-Stationarity of Systematic Risk." Journal of Finance 32, (September 1977), 1081-1092.

Brown, Stephen J. and Jerold B. Warner. "Measuring Security Price Performance." Journal of Financial Economics 8 (September 1980), 205-258.

Burns, Arthur F. The Ongoing Revolution in American Banking, (Washington,D.C.: American Enterprise Institute, 1988).

Cargill, Thomas F. Money, the Financial System, and Monetary Policy 4th Edition, (Englewood Cliffs, N.J.: Prentice-Hall, 1991).

Cargill, Thomas F. and Gillian G. Garcia Financial Deregulation and Monetary Control, (Stanford: Hoover Institution Press, 1982).

Cargill, Thomas F. and Gillian G. Garcia Financial Reform in the 1980s, (Stanford: Hoover Institution Press, 1985).

Carron, Andrew S. The Plight of the Thrift Institutions, (Washington, D.C.: The Brookings Institution, 1982).

Chen, Andrew H. and Gary C. Sanger. "An Analysis of the Impact of Regulatory Change: The Case of Natural Gas Deregulation." Financial Review 20 (February 1985), 36-54.

Chessen, James "Special Report: The New Banking Law--Strong Medicine", American Banking Association Banking Journal 81 October 1989 pp. 63-71.

Cooper, William A. "The QTL Test Sends Savings and Loans Back to the Future", Bottomline 6 12 December 1989 pp. 25-29.

Cooper, Kerry and Donald R. Fraser Banking Deregulation and the New Competition in Financial Services, Cambridge, Mass: Ballinger Publishing Company, 1984.

Cranford, John R. 1989A "Markup of FSLIC Bailout Bill Due Following Recess", Congressional Quarterly March 25, 1989 pp. 632-634.

Cranford, John R. 1989B "Banking Panels Get Started on Shaping Bailout Bill", Congressional Quarterly April 8, 1989 pp. 735-737.

Cranford, John R. 1989C "House Banking Bailout Bill Toughens Rules for S&Ls", Congressional Quarterly May 6, 1989 pp. 1022-1025.

Cranford, John R. 1989D "House, Senate Thrift Bills Differ on Major Points", Congressional Quarterly June 24, 1989 pp. 1574-1583.

Dann, Larry Y. and Christopher M. James. "An Analysis of the Impact of Deposit Rate Ceilings on the Market Values of Thrift Institutions." Journal of Finance 37 (December 1982), 1259-75.

Fabozzi, Frank J. and Jack Clark Francis. "Beta As a Random Coefficient." Journal of Financial and Quantitative Analysis 13 (March 1978), 101-116.

Fama, Eugene F. Foundations of Finance. New York: Basic Books, 1976.

Fama, Eugene F., Fisher L., Jensen M., and R. Roll. "The Adjustment of Stock Prices to New Information." International Economic Review 10 (February 1969), 1-21.

Fischer, L. Richard, Elizabeth G. Gentry and Petrina M. E. Verderamo. "The Garn-St. Germain Depository Institutions Act of 1982: What's in it for You?". The Consumer Bankers Association, Arlington, VA, 1982.

Flannery, Mark J., and Christopher M. James. "The Effect of Interest Rate Changes on the Common Stock Returns of Financial Institutions." Journal of Finance 37 (September 1984), 1141-53.

Garcia, Gillian. "Financial Deregulation: History and Perspective of the Garn-St. Germain Depository Institutional Act of 1982." Federal Reserve Bank of Chicago, Staff Study 83-3, 1983.

Gart, Alan The Insider's Guide to the Financial Services
    Revolution, (New York: McGraw Hill Book Company, 1984).

Gart, Alan Bank, Thrifts and Insurance Companies, (Lexington,
    Mass: D.C. Heath and Company, 1985).

Hanc, George "Deposit Insurance: Unfinished Business",
    Bottomline 6 September 1989 pp. 7-8.

Haraf, William S. and Rose Marie Kushmeider (Editors)
    Restructuring Banking and Financial Services in America,
    (Washington, D.C.: American Enterprise Institute, 1988).

Jaffee, Dwight M. Money, Banking, and Credit, (New York: Worth
    Publishers, Inc., 1989).

James, Christopher M. "An Analysis of Intra-industry
    Differences in the Effect of Regulation: The Case of
    Deposit Rate Ceilings." Journal of Monetary Economics 12
    (September 1983), 417-32.

Judge, George G., W.E. Griffiths, R. Carter Hill, Helmut
    Lutkepohl, and Tsoung-Chao Lee. The Theory and Practice of
    Econometrics. 2nd Ed. (New York: John Wiley & Sons, Inc.,
    1985).

Kaufman, George G. and Roger C. Kormendi (Editors) Deregulating
    Financial Services, Cambridge, Mass: Ballinger Publishing
    Company, 1986.

Kaufman, George, Larry Mote, and Harvey Rosenblum.
    "Implications of Deregulation for Product Lines and
    Geographic Markets of Financial Institutions." Federal
    Reserve Bank of Chicago. Proceedings of a Conference on
    Bank Structure and Competition. (April 1982), 7-21.

Kolari, James and Asghar Zardhooki. Bank Cost, Structure, and
    Performance. (Lexington: D.C. Heath, 1987).

Kormendi, Roger C., Victor L. Benard, S. Craig Pirrong and
    Edward A. Snyder Crisis Revolution in the Thrift Industry,
    (Boston, Mass: Kluwer Academic Publishers, 1989).

Lang, Richard W. and Timothy G. Schiller "The New Thrift Act:
    Mending the Safety Net", Business Review (Federal Reserve
    Bank of Philadelphia) November/December 1989 pp. 3-8.

Larcker, David F., Lawrence A. Gordon, and George E. Pinches.
    "Testing for Market Efficiency: A Coparison of the
    Cumulative Average Residual Methodology and Intervention
    Analysis." Journal of Financial and Quantitative Analysis
    15 (June 1980), 267-87.

Malatesta, Paul H., and Rex Thompson. "Partially Anticipated Events: A Model of Stock Price Reactions with an Application to Corporate Acquisitions." Journal of Financial Economics 14 (June 1985), 237-50.

Mandelker, G. "Risk and Return: The Case of Merging Firms." Journal of Financial Economics 1 (December 1974), 303-335.

Meier, Kenneth J. Regulation: Politics, Bureaucracy, and Economics, (New York: St. Martins Press, 1985).

Meyer, Dianne A. "A Practical Guide to FIRREA", Journal of Commercial Bank Lending Volume 72 Issue 5 January 1990 pp. 11-23.

Michel, Allen and Israel Shaked. "Airline Performance under Deregulation: The Shareholders' Perspective." Financial Management 13 (Summer 1984), 5-14. 14.

Miller, Richard B. American Banking in Crisis, Homewood, Il: Dow Jones-Irwin, 1990.

Ordway, Nicholas "The Key Provisions of the FSLIC Bailout Bill", Real Estate Finance 6 Fall 1989 pp. 81-84.

Peltzman, Sam. "Toward a More General Theory of Regulation." Journal of Law and Economics 19 (August 1976), 211-41.

Peltzman, Sam "Bank Stock Prices and the Effects of Regulation of the Banking Structure." Journal of Business 41 (October 1968), 413-430.

Pettway, R. and J. Thrifts. "Purchase and Assumption Mergers: Do Banks Overbid? Proceedings of the Conference on Bank Structure and Competition. Federal Reserve Bank of Chicago, 1985, 407-426.

Pilzer, Paul Zane Other People's Money, (New York: Simon and Schuster, 1989).

Pratt, Richard. "The Savings and Loan Industry: Past, Present, and Future." Federal Home Loan Bank Board Journal 15, (November 1982), 3-8.

Rose, John T., and Peter S. Rose. "The Burden of Federal Reserve System Membership: A Review of the Evidence." Journal of Banking and Finance 3 (September 1979), 331-45.

Santoni, George J. "The Monetary Control Act, Reserve Taxes, and the Stock Prices of Commercial Banks." Federal Reserve Bank of St. Louis Review 67 (June/July 1985), 12-20.

Sametz, Arnold W. (Editor) The Emerging Financial Industry, (Lexington, Mass: Lexington Books, 1984).

Scherer, F. M. Industrial Market Performance and Economic Performance, (Chicago: Rand McNally, 2nd edition, 1980).

Schipper, K. and Thompson, R. "Evidence on the Capitalized Value of Merger Activity for Acquiring Firms," Journal of Financial Economics, 11 (April, 1983), 85-119.119.

Schwartz, Robert A. and David K. Whitcomb. "Evidence on the Presence and Causes of Serial Correlation in Market Model Residuals." Journal of Financial and Quantitative Analysis 12, (June 1977), 291-313. 13.

Schwartz, Robert A. and David K. Whitcomb. "The Time-Variance Relationship: Evidence on Autocorrelation in Common Stock Returns." Journal of Finance 32 (March 1977), 41-55.

Schwert, G. William. "Using Financial Data To Measure Effects of Regulation." Journal of Law and Economics 24 (January 1981), 121-58.

Schroeder, Frederrick J. "Development in Consumer Electronic Fund Transfer." Federal Reserve Bulletin 69 (June 1983), 395-404.

Smirlock, Michael. "An Analysis of Bank Risk and Deposit Rate Ceilings: Evidence from the Capital Markets." Journal of Monetary Economics 13 (March 1984), 195-210. 10.

Smith, Rodney T., Michael Bradley, and Greg Jarrell. "Studying Firm-specfic Effects of Regulation with Stock Market Data: An Application to Oil Price Regulation." Rand Journal of Economics 17 (Winter 1986), 467-89.

Spong, Kenneth. Banking Regulation: Its Purposes, Implementation, and Effects. 3rd Ed., Federal Reserve Bank of Kansas City, 1990.

Stigler, George J. "The Theory of Economic Regulation." Bell Journal of Economics and Management Science 2 (Spring 1971), 3-21.

Stigler, George J. "Free Riders and Collective Action: An Appendix to Theories of Economic Regulation," Bell Journal of Economics and Management Science, 5 (Autumn 1974), 359-365.

Theil, Henri. Principles of Econometrics, (New York: Wiley,1971).

Thompson, Rex. "Conditioning the Return-generation Process on Firm-specific Events: A Discussion of Event Study Methods." Journal of Financial and Quantitative Analysis 20 (June 1985), 151-68.

Weston, J. and Chung, K. S. "Some Aspects of Merger Theory," Journal of the Midwest Finance Association, 12 (1983), 1-36.

White, Eugene N. "The Regulation and Reform of the American Banking System, 1900-1929." (Princeton: Princeton University Press, 1983). 3).

Whitehead, David D. "Interstate Banking: Taking Inventory." Economic Review, Federal Reserve Bank of Atlanta, (May 1983), 24-31. 31.

Wichern, Dean W. and Richard H. Jones. "Assessing the Impact of Market Disturbances Using Intervention Analysis." Management Science, 24, (November 1977), 329-337. 37.

Woerheide, Walther J. The Savings and Loan Industry, Westport, Conn: Quorum Books, 1984.

Zellner, Arnold. "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias," Journal of the American Statistical Association, 57 (June 1962) 348-368.

VITA

Robert Bruce Stapp

Candidate to the Degree of

Doctor of Philosophy

Thesis: THE IMPACT OF THE FINANCIAL INSTITUTIONS REFORM, RECOVERY AND ENFORCEMENT ACT OF 1989 ON PERFORMANCE AND RISK OF DEPOSITORY INSTITUTIONS: EVIDENCE FROM THE CAPITAL MARKETS

Major Field: Economics

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, October 30, 1952, the son of C.W. and Virginia Stapp.

Education: Received Bachelor of Science and Bachelor of Arts Degrees from Oklahoma City University in 1975; received Master of Science degree from Oklahoma State University in 1983; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in December, 1991.

Professional Experience: Teaching Assistant, Department of Economics, Southern Methodist University, August, 1975 to May, 1976; Teaching Assistant, Department of Economics, Oklahoma State University, August 1976 to May, 1977; Instructor, Division of Social Sciences, Northwestern Oklahoma State University, August 1977 to May 1979; Teaching Assistant, Oklahoma State University, August 1979 to May 1983; Assistant Professor of Economics, College of Business, Phillips University, August 1983 to May 1985; Lecturer, Department of Economics, Oklahoma State University, August 1985 to May 1986; Lecturer, Department of Finance, Oklahoma State University, August 1986 to May 1987; Visiting Assistant Professor of Finance, Oklahoma State University, August 1987 to May 1989; Visiting Assistant Professor of Economics, University of Arkansas, August 1989 to May 1990; Visiting Assistant Professor of Finance, Oklahoma State University, August 1990 to December 1990.