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Thrift Conversions and Windfall Profits: An Empirical Examination

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Abstract

The thrift industry has been studied extensively in recent years due to the enormous costs to resolve failed thrifts during the late 1980s and early 1990s. Almost all of the studies have focused on the causes of these failures. Yet an important but relatively neglected development that merits further study is the conversion of mutual institutions to the stock form of ownership. Such conversions raise questions regarding the appropriate price for the shares in initial offerings, particularly in view of reports that windfall profits have been realized by the initial investors in numerous cases and who should receive the shares. The purpose of this article is to examine mutual thrifts that converted to stock ownership form during 1992 and 1993 to determine whether excess returns were indeed realized and, if so, to identify the determinants of those excess returns. The empirical results indicate the initial investors do indeed benefit from significantly positive abnormal returns during the first few days of trading after conversion. Additional empirical results indicate that both the pro-forma price-to-book ratio and the dollar amount of shares management intends to purchase are significant factors in explaining the variation in the abnormal returns.

Key Words: thrift conversions, mutual savings and loans, initial public offerings

1. Introduction

The organizational form of thrifts has been the focus of studies attempting to determine whether mutual institutions are less efficient than stock institutions.[1] The empirical results of these studies have been mixed: some studies find significant differences in efficiency between the two types of ownership form, whereas others find no differences whatsoever. The issue of efficiency was quite important when thrifts were experiencing serious financial difficulties during the 1980s and early 1990s. Concerns were even expressed about the survivability of the healthiest segment of the industry. Throughout this period large numbers of thrifts were converting from mutual to stock ownership. Many believed that this development was beneficial because stock-type institutions would operate more

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efficiently and could increase capital more easily than mutual-type institutions. Apart from which type of institution was more efficient, questions also arose about whether initial stock offerings were appropriately priced and whether the initial shares were going to the appropriate parties. These questions arose amidst reports that windfall profits were being realized by investors in numerous mutual-to-stock conversions.

Some evidence does exist indicating that individuals who purchased stock from converting institutions in early 1980s experienced significantly positive excess returns during the first few trading days following conversion, where excess returns are measured by a shareholder's total return less that portion of the return attributable to the overall movement in the stock market. Jordan, Verbrugge, and Burns (JVB) (1988), for example, study 170 institutions that converted from mutual- to the stock-ownership form between 1979 and 1986, with half converting between 1979 and 1984 and the other half converting during 1985 and 1986. According to JVB (1988, p. 133), ''The results establish that there are significant positive returns to initial shareholders in the 8.6% to 9.6% range from the initial offering to first closing price.'' In addition, they conclude that ''apparently a one-time wealth transfer occurs from the depositors not exercising their rights to the new owners'' and ''the only apparent net loser is the depositor not participating in the stock offering who gives up the right of ownership.''

At least two important issues arise when any windfall profits accompany conversions of thrift institutions from mutual-to-stock ownership form: Who should benefit from windfall profits, and what explains the excess returns? The issue of who should benefit from windfall profits has generated considerable controversy. Some argue that the transfer of wealth to investors comes at the expense of depositors who typically do not participate in initial offerings, whereas others argue that depositors are not uniquely entitled to any windfall profits. Still others argue that taxpayers have a claim to any windfall profits, especially given the fact that they contributed heavily to resolving the thrift debacle.

The purpose of this article is to examine mutual thrifts converting to stock-ownership form during 1992 and 1993 to determine whether excess returns did indeed accrue to initial investors in this recent time period. Once this has been done, a regression model is used to identify attributes of mutual institutions that explain the variation in any observed excess returns. Results from this analysis will provide information as to whether actions taken by management with respect to initial stock offerings serve as a signaling device to the marketplace. The remainder of the article is organized as follows. The next section discusses both the environment within which mutual-to-stock conversions were occurring and the relevant literature on the pricing of newly issued stocks. Section 3 discusses the sample institutions, the empirical methodology employed, and the event study results. Section 4 discusses of the determinants of excess returns. Lastly, section 5 presents the summary and conclusions.

2. Mutual-to-Stock Conversions and Relevant Literature

During the 1980s and early 1990s, in response to a changing financial and legislative environment, mutual thrifts converted to stock-type ownership form in record numbers.

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More specifically, the number of conversions escalated after 1982, subsided in 1989, and then began increasing once again in 1990. In 1970, only 15% of all institutions holding 20% of total industry assets were stock institutions. By 1987, however, 37% of all institutions were stock-type institutions holding 62% of total industry assets. And by 1996, 60% of thrifts were stock institutions holding 90% of total industry assets. This ongoing development did not go unnoticed. JVB (1988, p. 126), for example, noted that "as further indication of the increasing tendency toward publicly held thrifts, approximately 400 publicly traded thrifts existed as of mid-1987 compared with slightly over 100 in 1983." Even more recently, as quoted in an article in the *New York Times*, the acting director of the Office of Thrift Supervision, Jonathan L. Fietcher, stated that "we had 2000 mutuals, now we're down to 800. If we study this for two years, there won't be any mutuals left." His remarks were made before a congressional committee in an attempt to persuade Congress that the conversion process required more stringent regulation (Bradsher, 1994b, p. A1).

Those benefiting most from mutual-to-stock conversions have been management. According to SNL Securities of Charlottesville, Virginia, since June of 1994, managers acquired stock worth an estimated $145 million over a three-year period. Consider the case of Green Point Savings Bank of Flushing, New York, which planned to go public in the latter part of 1993 with a $700 million stock offering. Based on estimates from previous conversions, executive officers of Green Point Savings Bank who purchased shares potentially could have received approximately $40 million in windfall profits as a result of both projected gains in stock price and stock options.[2] Similarly, Graham Savings Bank in Graham, North Carolina, engaged in a conversion/merger with CCB Financial.[3] As part of the transaction, the manager of Graham Savings Bank received a compensation package equal to twenty-five years of his salary. CCB financial paid $7 million for Graham Savings Bank, which had an appraised value of $20 million. The depositors of Graham Savings Bank were offered the right to buy CCB Financial stock at a slight discount to market.

In general, however, only between 2% and 5% of eligible depositors exercise their right to buy stock in converting institutions. In contrast, the management of converting thrifts, on average, acquire 20% of the available stock.[4] Masulis (1987), based upon a sample of seventy-eight conversions that occurred between 1976 and 1983, found that the management of thrifts invested an average of $1.22 million per conversion and received an average one day return of 5.7%. He argued that "management must hold a significant equity position if their incentives to maximize firm value are to be improved" (p. 53). Masulis also argued that substantial ownership on the part of management was essential to reduce the risk of a takeover following conversion.[5] His basic conclusion is that "the evidence indicates that management generally realizes large wealth gains; loses are small and infrequent. As a result management incentives are altered so as to increase their interest in the association's long-term profitability and to decrease their aversion to undertaking risky investment opportunities" (Masulis, 1987).

Evidence therefore indicates that there is generally a wealth transfer from depositors to management and other insiders of converting institutions. Indeed, those fortunate enough to participate in a thrift initial stock offering have been rewarded with windfall profits by the end of the first trading day. Approximately 50% of the outstanding stock of a converting institution, moreover, is traded within the first week generating the windfall

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profits. The question arises, however, as to whether the appropriate parties are receiving the windfall profits in these conversions. Should the depositors, for example, participate to a greater degree in any windfall profits? This is a controversial issue. According to Barth, Brumbaugh, and Kleidon (1994, p. 48),

> One must question the extent to which depositors deserve to benefit from any gains from a mutual-to-stock conversion. The reason is that to the extent that their deposits are federally guaranteed they are not generally owners in the true economic sense of the word. Owners are usually the individuals who place their funds at risk. Federally insured deposits, however, are not at risk. When mutual thrifts were established in the early 1800s and depositors became owners, their depositors did indeed place all their funds at risk. Since the 1930s, instead of the depositor, it is the federal insurer and taxpayers who have been at risk. For this reason, proceeds from the sale of stock resulting from conversion may most appropriately belong to the insurer to hold as agent for the taxpayer.

The suggestion that taxpayers have a right to any windfall profits resulting from conversions has not escaped the attention of Congress. In this regard, the Congressional Budget Office (CBO) in March of 1994 released a study concluding that ''depositors may have the strongest claims to the pre-existing net worth of a mutual institution; but the government also had a claim because it has provided deposit insurance at a low, subsidized rate and has rescued many insolvent savings and loans'' (Bradsher, 1994a, p. D2). One of the first members of Congress to argue that the government should claim part of any gains from mutual-to-stock conversions was Representative Joseph Kennedy from Massachusetts. As a member of the House Banking Committee, he suggested that the government's right to participate in any gains should be put into law. According to a *Wall Street Journal* article dated March 1, 1994, Representative Henry Gonzalez from Texas also believed the government should benefit from any windfall profits. According to the article, ''acting on a request by Rep. Henry Gonzalez, the House Banking Committee Chairman, the CBO said the government has a reasonable claim to some of the gains, because federal deposit insurance helps thrifts accumulate their net worth. The CBO said the government could be granted options to buy conversion stock or it could tax gains from conversions'' (Bradsher, 1994a, p. D2).

If Congress deemed it appropriate, the most likely way the federal government would attempt to share in any profits from mutual-to-stock conversions would be to accept free stock options from the converting institutions. According to the CBO study cited above, if the government had possessed the rights to such stock options, it could have collected as much as $65 million in revenues per year, assuming the number of future conversions had kept pace with the then current levels and performed as well in the future as they did in the recent past.

Not surprisingly, thrift executives have objected to any such government involvement in conversions. For one thing, it is argued the government overestimates the amount of revenue it could expect to receive in conversions under a free stock-option policy. According to Brian P. Smith, policy director of Savings and Community Bankers of

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America, if the government were to exercise such options, then fewer institutions would consider converting, and its revenues would correspondingly be lower than expected (Bradsher, 1994a). For another thing, to mandate that free stock options be given to the government might be viewed as the unconstitutional taking of private property.

Besides the issues as to which parties are entitled to any windfall profits from conversions is the question as to which factors explain these profits. Based on data from the 1983 to 1987 time period, Alli, Yau, and Yung (1994) find that initial public offerings (IPOs) of financial institutions are significantly less underpriced than those of nonfinancial firms. More recently, as table 1 shows, thrift conversion transactions, a subset of all IPOs in general, have, on average, experienced a greater one-day price appreciation than all IPOs for the 1991 to 1992 time period.

Indeed, the data indicate that the mean price appreciation for thrift IPOs is more than twice the mean price appreciation for all IPOs during the first day following conversion.

3. Data and Event-Study Results

To determine whether excess returns are associated with mutual-to-stock conversions, a standard event study is performed. The study is based on sixty-four institutions that converted between January 1, 1992, and December 31, 1993. All the conversions included in this study met the following criteria: (1) an initial public offering that exceeded $10 million, (2) available and reliable offering data,[6] and (3) available daily pricing and dividend data for a 251-day trading period.[7] The appendix contains a list of the sixty-four thrifts that satisfy these criteria. Offering data and other selected financial information for each institution were obtained from SNL Securities and each institution's prospectus for the offering. All of the institutions in the study trade over-the-counter. Initial returns were calculated on a daily basis using the holding-period yield method, and abnormal returns were calculated for a sixty-day period following the initial offering date.

There are four primary methods for calculating abnormal returns. Briefly, the different methods are as follows. First, the single-index market model method (SIMM) assumes that abnormal returns are those returns in excess of the returns on a market portfolio. Second, the mean return method (MEAN) assumes abnormal returns for a security are simply the

Table 1. Selected information for initial public offerings (IPOs) (offerings greater than $10 million).

	Number of IPOs	One-Day Percent Gain
1991		
All IPOs	409	12.7%
Thrift IPOs	40	28.6
1992		
All IPOs	341	10.7
Thrift IPOs	27	24.5

Source: Barth, Brumbaugh, and Kleidon (1994).

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observed daily returns less the average or normal return for the entire examination period. Third, the market return method (MARKET) assumes that a security will earn the return on the market portfolio so that any divergence between the individual security return and the market portfolio return is an abnormal return. Fourth, the Scholes-Williams beta method (SWβ) estimates the beta of each stock by first running a regression using all returns after day sixty. Brown and Warner (1985) find that there is insufficient evidence to suggest that any one method used to calculate abnormal returns produces appreciable differences in results.

In the event study performed here, 251 individual daily returns for each of the sixty-four thrifts are used to calculate abnormal returns. The specific event is the date of the initial public offering and is thus considered to be day zero of the test period for abnormal returns. The study period examined includes the first sixty trading days after the offering date. Any abnormal returns are aggregated across institutions for each day of the test period, and the average abnormal return is calculated.

3.1. Testing for Abnormal Returns

To check whether Brown and Warner's finding that the choice of method does not matter holds for the institutions examined here, abnormal returns are calculated using all four methods as outlined above for each day during the sixty-day test period. The returns calculated using each method are aggregated across institutions, and then the average return and standard deviation are calculated. The abnormal returns for each institution calculated using the alternative methods are presented in table 2.

To test the hypothesis that all four methods yield insignificantly different results, each method is tested against one another based on the calculated Z statistics. The results from this test are presented in table 3 and indicate that one may reject the null hypothesis when the market-adjusted method is compared to each of the other methods at the 10% significance level.

However, although not reported in table 3, at the 1% significance level one cannot reject the null hypothesis that the market adjustment method yields different results. When the SIMM, SWβ, and MEAN results are compared to each other, one finds that one cannot reject the null hypothesis at the 10% significance level.

The importance of these results is that except for the market-return method, the other three methods of calculating abnormal returns yield results that are not significantly different from one another. In the case of the market-return method, one is assuming that the returns on individual stocks move in a one-to-one ratio to the returns on the market portfolio. According to finance theory, however, the return for any given stock should reflect the risk of the stock compared to the overall market so that a one-to-one ratio may not hold. This means that the market-return method may not be an appropriate method to calculate abnormal returns. If so, the findings reported here are in agreement with Brown and Warner's finding that three alternative methods are equally useful in an event study.

In the JVB study, a forward-market-index approach was used to test for abnormal returns. This approach is quite similar to the SIMM approach, except that the estimation

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Table 2. Abnormal returns by institution calculated using alternative methods.

Ticker Symbol	SIMM	MEAN	SWβ	MARKET
CTZN	0.001083	0.000976	0.003215	0.003215
FFWM	0.000776	0.000743	0.000640	0.002678
PSFC	0.001921	0.001861	0.001927	0.003862
UPBI	0.010386	0.010099	0.010992	0.013467
AADV	0.001174	0.001248	0.001350	0.003966
CBCI	0.008384	0.008624	0.008664	0.010139
ALBK	0.001057	0.000787	0.001181	0.002941
HFFC	0.003514	0.003565	0.003681	0.005941
HFBS	0.005375	0.005504	0.004887	0.007551
LGFB	0.002264	0.002194	0.001992	0.003705
SWBI	0.003392	0.003571	0.002848	0.004576
WCBI	0.000850	0.001165	0.000798	0.002470
FFDP	0.003497	0.003499	0.003593	0.004834
OSBF	0.004847	0.004843	0.004801	0.005869
HNFC	0.001703	0.001493	0.001590	0.003412
FSLA	0.006240	0.005763	0.006143	0.009062
FFBA	0.007999	0.007630	0.008579	0.011051
ABCW	0.004207	0.003988	0.005263	0.006899
MSBK	−0.001570	−0.000960	−0.000960	0.004795
CNIT	−1.4E-05	0.000019	0.000447	0.002271
MSBB	0.001528	0.001534	0.001496	0.003282
FROK	0.005109	0.005322	0.004962	0.005946
HOFL	0.011487	0.011784	0.011719	0.013856
AMFS	0.005498	0.005508	0.005158	0.007505
FNSC	0.006350	0.006360	0.006397	0.006377
KKKB	0.007216	0.007335	0.007262	0.007673
OHSL	0.004982	0.005093	0.005539	0.00605
FSOU	0.004149	0.004311	0.003801	0.006696
MARN	0.007830	0.007942	0.008195	0.008772
THIR	0.007406	0.00763	0.007753	0.008942
CGFC	0.005350	0.005217	0.005544	0.007100
HFSB	0.001166	0.001210	0.000911	0.003432
SUNY	0.002860	0.003179	0.002853	0.004366
SHEN	0.005463	0.005391	0.005149	0.006075
JSBA	0.006380	0.006395	0.006410	0.007173
FDNY	0.005383	0.005561	0.005133	0.005969
HBLF	0.005057	0.005116	0.005117	0.005345
STFR	0.005988	0.006279	0.005884	0.006683
FFYF	0.005781	0.005911	0.005609	0.006247
ROSE	0.001694	0.001883	0.001680	0.003387
FFBS	0.004823	0.004924	0.004601	0.005881
FDEF	0.007666	0.007625	0.007809	0.007305
FFWD	0.003179	0.003167	0.003049	0.004706
CASH	0.008213	0.008219	0.008260	0.008320
FCBF	0.004800	0.004903	0.005078	0.005785
HAVN	0.002122	0.002325	0.002088	0.003534
COSB	0.002088	0.002060	0.001801	0.003608
FFPB	0.006345	0.006510	0.006277	0.007600

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Table 2. (*continued*)

Ticker Symbol	SIMM	MEAN	SWβ	MARKET
LFCT	0.007520	0.008354	0.006693	0.009819
SBCN	−0.000510	−0.000380	−0.000330	0.002112
FSFC	0.004871	0.005011	0.004717	0.005578
PETE	0.002050	0.002112	0.001832	0.003059
ASFC	0.003456	0.00342	0.003412	0.002966
QCSB	0.007707	0.008145	0.007630	0.007326
WVFC	0.011008	0.011388	0.011200	0.011001
FMCT	0.001858	0.002002	0.002211	0.003000
FBCI	0.001450	0.001492	0.001079	0.001140
KEBI	0.016415	0.016385	0.015942	0.016585
NBSI	0.001500	0.001449	0.001638	0.002011
LVSB	0.004329	0.004470	0.004365	0.005070
FBSI	0.000321	0.000200	8.5E-06	0.001602
PSBX	−0.002280	−0.002180	−0.002760	0.000864
WSBI	0.006277	0.006296	0.005932	0.007311
MSCB	0.005216	0.005232	0.005495	0.005301
CAPS	0.005001	0.005001	0.005188	0.005417
QCBC	0.005143	0.005053	0.005221	0.004574
Mean	0.004447	0.004498	0.004445	0.005833
Standard deviation	0.003255	0.003295	0.003288	0.003039

period follows the event date. The reason for this difference is that in the case of an initial public offering there is no history of price-returns data. Since non-synchronous trading also existed in their sample, JVB used the Scholes and Williams methodology for calculating the beta of each stock.[8] As a further check, the results obtained using JVB's methodology here are compared to those reported by JVB (see table 4).

Table 4 indicates that investors do benefit from significantly positive abnormal returns during the first, second, and third days of trading following a conversion. In the JVB study, abnormal returns were observed only on the first and second days of trading. The primary difference in findings, however, is the magnitude of abnormal returns. JVB found an average abnormal return of 8% on the first day, whereas here an average abnormal return of 27% is found on the first day. Although such a difference might be due to the differing sample sizes and the fact that JVB included offerings of all size, the more likely explanation is that JVB examined thrifts in the midst of the debacle, while the examination here is on thrifts after the crisis was resolved. In the case of JVB, they argue that the excess

Table 3. Comparing alternative methods: Z statistics.

	SWβ	MEAN	MARKET
SIMM	0.00354	−0.0900	−2.5476
MARKET	2.5375	2.4378	
MEAN	0.0932		

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Table 4. Results of event study and comparison to JVB findings.

Day	JVB Average Residual	JVB Test Statistic	Average Residual	Test Statistic
0	0.0864	*46.09	0.2729	*91.04
1	0.0136	*7.24	0.0088	*2.98
2	0.0023	1.21	0.0077	*2.57
3	– 0.0006	– 0.30	0.0019	0.64
4	0.0019	1.02	– 0.0013	– 0.44
5	0.0001	0.05	0.0005	0.18
6	0.0044	*2.37	– 0.0013	– 0.45
7	0.0049	*2.64	– 0.0025	– 0.82
8	– 0.0029	– 1.53	– 0.0015	– 0.49
9	– 0.0011	– 0.56	0.0078	*2.60
14	– 0.003	– 1.62	– 0.0027	– 0.90
19	0.0008	0.42	– 0.0003	– 0.09
24	– 0.0010	– 0.55	0.0008	0.27
29	– 0.0018	– 0.97	– 0.0011	– 0.36
39	0.0012	0.67	– 0.0007	– 0.25
49	– 0.0016	– 0.84	– 0.0004	– 0.12
59	– 0.0007	– 0.36	– 0.0057	– 1.92

Note: *Significant at the 1% level.

returns represent a reward for risk. We view the excess returns, however, as a reflection of the fact that the shareholders have a claim not only on the existing assets of the institution but also on the cash proceeds from the initial stock offering. This is at least the case for the larger excess returns found here since our time period encompasses an overall financial environment that was quite positive for the savings and loan industry.

4. Determinants of Abnormal Returns

The abnormal returns for each stock on day zero are used as the dependent variable in a multiple-regression analysis to determine whether a relationship exists between various attributes of the converting institutions and the returns. In a related study, Aharony, Falk, and Lin (1996) find that there is a convex relationship between the proportion of a stock subscribed to by management and a firm's initial value. They also find that the status of the underwriter or auditor is unrelated to the stock value of converting firms. The independent variables that are included in their study and here are the growth rate in tangible capital, the pro-forma book-to-price ratio, and the dollar amount that management has stated they intend to acquire in the offering. The importance of identifying any attributes that may be systematically related to the excess returns lies in the regulatory and policy framework for conversion IPOs. Certainly, the U.S. Congress discussed certain attributes during hearings held regarding the windfall profits surrounding many of the IPOs. The variables considered here are defined as follows:

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4.1. Pro-Forma Price-to-Book Ratio (PBR)

The pro-forma price-to-book ratio is equal to the offering price divided by the expected shareholder's equity per share. This variable is included to examine whether the appraised value relative to the book value has any explanatory power. Regulatory authorities have expressed concerns that the appraisal value has frequently been set "too low," thereby contributing to windfall profits. It is thus useful to determine whether indeed there is any statistically significant relationship between excess returns and this variable. The hypothesis is that an investment banker would set the offering price higher for firms in which there is less uncertainty about price appreciation. For firms in which there is greater uncertainty, investors will require more incentive to invest, and thus the offering price will be set lower. One should therefore expect the relationship between PBR and abnormal returns to be positive.

4.2. Management Participation (MG)

The degree of management participation is in an initial offering calculated by multiplying the percentage of total shares management intends to purchase by the offering size and the offering price. This value is coded to minimize problems with multicollinearity and rounding errors. This variable provides information about whether excess returns and the degree of management participation are positively related or not. Regulatory authorities have expressed concerns about IPOs of savings and loans because of the extent to which management has experienced windfall profits from conversions. It is therefore important for both regulatory and public policy reasons to determine whether such a relationship exists. The hypothesis is that the dollar amount of stock purchased by management signals to the market that those with asymmetric information are acting on that information. Thus abnormal returns should be positively related to the dollar amount of stock management intends to acquire.

4.3. Growth in Tangible Capital (GTC)

The growth rate in tangible capital is obtained from the prospectus of converting institutions (that is, by subtracting pro-forma tangible capital from current tangible capital and dividing by current tangible capital). The tangible capital variable is included because the Financial Institutions Reform, Recovery and Enforcement Act of 1989 requires that the minimum capital standards for savings and loans be based on tangible capital. It is therefore useful to assess whether excess returns are related to the growth in tangible capital. The hypothesis is that positive growth in tangible capital reduces leverage and thereby lowers the return on equity. Thus, the relationship between abnormal returns and the growth rate in tangible capital should be negative.

The regression estimates are presented in table 5. All coefficient estimates are significant at the 5% level and have the expected signs.

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Table 5. Regression estimates.

	Constant	PBR	MG	GTC
Estimated coefficients	0.183	0.592	4.312	– 15.993
t-statistics	(0.015)	(2.673)*	(2.291)*	(– 2.089)*
Adjusted R-square	0.272			

Note: *Denotes significance at the 5% level.

To further examine the determinants of abnormal returns an expanded model is estimated. It includes variables to capture any nonlinearities in the independent variables and also includes interaction variables among the independent variables. The expanded model is specified as

$$y = \beta_0 + \beta_1 x_1 = \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_1^2 + \beta_5 x_2^2 + \beta_6 x_3^2 + \beta_7 x_1 x_2 + \beta_8 x_1 x_3 + \beta_9 x_2 x_3,$$

where x_1, x_2, and x_3 denote PBR, MG, and GTC, respectively. The cross-product terms are included to capture any interaction effects and the quadratic terms are designed to capture any nonlinearities. The results from estimating the expanded model are in table 6.

The pro-forma book ratio is significant in the quadratic form, indicating that there is a nonlinear relationship between this variable and abnormal returns. None of the remaining quadratic terms are significant. However, two of the interaction terms are significant at the 10% level. The interaction of the pro-forma price-to-book ratio and the degree of management participation is positive and significant, indicating that the more favorable the expected future performance of the firm, the greater will be management participation in the offering. Likewise, the interaction between the pro-forma price-to-book ratio and the growth in tangible capital is found to be negative and significant.

Results from the regression analysis indicate that the pro-forma price-to-book ratio and the dollar amount of stock that management intends to acquire may be useful in predicting the magnitude of abnormal returns associated with an initial offering. A higher book value may indicate that an institution expects higher future cash flows and underwriters therefore are more likely to set offering prices higher when investor uncertainty is low. The dollar amount of stock to be acquired by management may be a signal to the market that those with more information about the offering are acting on it.

Table 6. Results from estimating the expanded model.

Constant	X_1	X_2	X_3	X_1^2	X_2^2	X_3^2	X_1X_2	X_2X_3	X_1X_3
130.15	4.65	– 38.80	0.88	– 0.02	1.65	35.72	0.49	18.39	– 1.08
(1.85)**	(2.21)*	(– 2.03)*	(0.12)	(– 1.89)**	(1.14)	(1.63)	(1.81)**	(– 0.84)	(– 1.89)**

Note: * and **denote significance at the 5 and 10% levels, respectively.

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5. Summary and Conclusions

The purpose of this study was twofold. First, to conduct an event study to determine whether abnormal returns were associated with the thrift conversions from mutual-to-stock ownership form that occurred during 1992 and 1993. Second, to identify, using a regression model, factors that might explain any abnormal returns.

An obvious reason for the existence of abnormal returns is that offering prices are consistently set too low. Indeed, the underpricing of initial offerings for nonfinancial firms is a well-documented phenomenon. In the case of the thrifts in this study that converted in 1992, the average initial offering price as a percentage of pro-forma book value was 52%, with a low of 36% and a high of 78%. In the case of the thrifts that converted in 1993, the average was 61% with a low of 46% and a high of 89%. An explanation for such underpricing in general is that it occurs as a result of ex ante uncertainty. Risk-averse investors fear they stand to gain less the greater the uncertainty. Consequently, to induce such investors to submit purchase orders for shares in an initial offering with relatively substantial uncertainty, ''more money must be left on the table'' in an expected value sense. This means the offering must be underpriced. The findings of this study are consistent with this view. Abnormal returns are positively related to pro-forma book value, indicating that offering prices are higher for those institutions whose shares are expected to be well received.

The underpricing effect is generally more severe for mutual thrifts than other firms because preconversion net worth is distributed to the initial shareholders on a pro-rata basis, since no founding shareholders exist to claim it. Since neither existing depositors nor anybody else receives the proceeds from the sale of stock in the converting thrift, the proceeds simply become an addition to the thrift's assets. As a result, the investors in mutual-to-stock thrift conversions by acquiring a claim on the entire thrift also receive a claim on the funds raised by the offering itself.

The management of mutual thrifts considering conversion may confront a conflict of interest with regards to the setting of the offering price. Management's responsibility is to select underwriters and appraisers that will set an offering price that will maximize the institution's proceeds. At the same time, however, management often becomes the largest percentage owner of the new shares. Therefore, it is in their personal interest for the offering price to be set quite low. One might conclude that the way to limit unusually positive abnormal returns is to require more reasonable appraisals of an institution's pro-forma net worth that would result in higher initial offering prices. But whether indeed this approach will eliminate abnormal returns is unlikely for the reason discussed at the end of the previous paragraph. In any event, while it may be difficult to limit abnormal returns and to decide who is entitled to any windfall profits from conversions (depositors, taxpayers, or shareholders), there is little difficulty in determining who benefits most. The findings of this study indicate that the greater the management participation in terms of dollars invested in the initial offering, the greater the appreciation in stock prices during the first day after the offering.

Many of those who are concerned about thrift conversions base their concern on the fact that management and other insiders appear to benefit unduly when compared to the ''real''

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owners, the depositors. Yet Barth, Brumbaugh, and Kleidon (1994) suggest that, in an economic sense, depositors are not even the real owners of the thrift. This view is based on the fact that due to deposit insurance, depositors are not at risk. As a result, taxpayers rather than depositors may be real owners of mutual thrifts.

Given the uncertainty as to whom the real owners of mutual thrifts are and the potential conflict of interest confronting management, what should be done with respect to windfall profits? One answer might be to further limit management participation in initial offerings. Currently, management is limited to purchasing a maximum of 25% of an offering. This aggregate purchase limit, however, does not include stock distributions by the firm through ESOP plans or MRPs (management retention programs). As a result, total management participation can easily exceed the 25% limit when these other programs are taken into account. Even if further limiting management participation would reduce the magnitude of abnormal returns in thrift conversions, such limits would not eliminate their occurrence.

An interesting characteristic of the thrifts in this study was that all but one were well-capitalized institutions prior to conversion. The average tangible capital-to-total asset ratio for the thrifts prior to conversion was 7.5%. After conversion, the average increased to 10.8%. The minimum tangible capital requirement was 1.5% and gradually increased to 3.0% in the early to mid-1990s. It would thus appear that thrift institutions were not converting just to satisfy this minimum regulatory capital standard. In this regard, a possible way in which to eliminate excess returns would be to limit conversions to those thrifts that either do not meet the minimum capital-standards or to those institutions that can convincingly demonstrate that the communities would benefit from greater leverage on the part of the existing mutual institutions.

Whether the existence of abnormal returns calls for government action or not is clearly debatable. But with the memory of the thrift debacle still fresh in the memories of many taxpayers, the need for a safe and sound banking system is not. And mutual-to-stock thrift conversions certainly do not pose any risk to taxpayers at the present time.

Appendix: Sample Institutions and IPO Date

Name	IPO Date	Ticker Symbol
Kankakee Bancorp, Inc	12/30/92	KKKB
Financial Security Corp.	12/29/92	FNSC
Amfed Financial, Inc.	11/20/92	AMFF
Home Savings Bank FSB FL	10/22/92	HOFL
First Rock Bancorp, Inc.	10/05/92	FROK
MSB Bancorp, Inc.	09/03/92	MSBB
CENIT Bancorp, Inc.	08/05/92	CNIT
Mutual Savings Bank	07/17/92	MSBK
Anchor BanCorp Wisconsin	07/16/92	ABCW
First Federal Savings Bank of Colorado, MHC	07/14/92	FFBA
First Savings Bank, MHC	07/10/92	FSLA
Hinsdale Financial Corp.	07/07/92	HNFC
OSB Financial Corp.	07/01/92	OSBF
Firstfed Bancshares	07/01/92	FFDP

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Appendix (continued)

Name	IPO Date	Ticker Symbol
Westco Bancorp	06/26/92	WCBI
Southwest Bancshares	06/24/92	SWBI
LGF Bancorp, Inc.	06/18/92	LGFB
Heritage Federal Bancshares	04/18/92	HFBS
HF Financial Corp.	04/08/92	HFFC
Albank Financial Corp.	04/01/92	ALBK
Reliable Financial Corp.	03/30/92	RESB
Advantage Bancorp, Inc.	03/23/92	AADV
Plains Spirit Financial Corp.	03/10/92	PSFC
Calumet Bancorp, Inc.	02/20/92	CBCI
First Financial-West-Maryland	02/11/92	FFWM
Citfed Bancorp, Inc.	01/10/92	CTZN
Quaker City Bancorp, Inc.	12/30/93	QCBC
Capital Savings Bancorp, Inc.	12/29/93	CAPS
Main Street Community Bancorp	12/28/93	MSCB
WSB Bancorp, Inc.	12/27/93	WSBI
PSB Holdings Corporation	12/22/93	PSBX
First Bancshares, Inc.	12/22/93	FBSI
Lakeview Savings Bank, SLA	12/22/93	LVSB
North Banchshares, Inc.	12/21/93	NBSI
Kentucky Enterprise Bancorp, Inc	12/16/93	KEBI
Fidelity Bancorp, Inc.	12/15/93	FBCI
WVS Financial Corporation	11/29/93	WVFC
Queens County Bancorp, Inc.	11/23/93	QCSB
Astoria Financial Corporation	11/18/93	ASFC
Peterborough Savings Bank	10/13/93	PETE
First Southeast Financial Corp.	10/07/93	FSFC
Sururban Bancorporation, Inc.	09/30/93	SBCN
Leader Financial Corp.	09/30/93	LFCT
First Palm Beach Bancorp, Inc.	09/29/93	FFPB
CSB Financial Corporation	09/24/93	COSB
Haven Bancorp	09/23/93	HAVN
FCB Financial Corp.	09/21/93	FCBF
First Midwest Financial, Inc.	09/20/93	CASH
Wood Bancorp, Inc.	08/31/93	FFWD
First Federal S&LA, MHC	07/21/93	FDEF
FFBS Bancorp, Inc.	06/30/93	FFBS
TR Financial Corp.	06/29/93	ROSE
FFY Financial Corp.	06/28/93	FFYF
St. Francis Capital Corp.	06/18/93	STFR
MBLA Financial Corp.	06/18/93	HBLF
Fidelity New York, FSB	05/03/93	FDNY
Jefferson Savings Bancorp	04/08/93	JSBA
Sunrise Bancorp, Inc.	04/05/93	SUNY
Hamilton Bancorp, Inc.	04/01/93	HFSB
Coral Gables Fedcorp, Inc.	03/31/93	CGFC
Third Financial Corp.	03/25/93	THIR
Marion Capital Holdings	03/18/93	MARN
First Southern Bancorp	02/24/93	FSOU
OHSL Financial Corp.	02/05/93	OHSL

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Notes

1. See, for example, Akella and Greenbaum (1988), Blair and Placone (1988), Mester (1989, 1991), and Verbrugge and Jahera (1981) for an examination of expense-preference behavior in the thrift industry. Also, see Cordell, MacDonald, and Wohar (1993) for an examination of the effect of ownership form on risk-taking behavior in the thrift industry.
2. The Green Point Savings Bank case was a highly publicized affair. The initial stock offering would have probably occurred without incident had it not been for a hostile bid from Republic New York Corp. Even though the bid was determined to be illegal by the New York State Superintendent of Banking, the Treasury Department, under pressure from Congress, placed a moratorium on conversions in January of 1994. Subsequently, stricter guidelines for conversions were issued by the Office of Thrift Supervision, which included allowing depositors to buy stock ahead of ESOP plans, giving depositors within a 100-mile radius priority in buying stock, forcing management to wait one year after conversion before requesting for free stock options, and requiring that appraisals of converting institutions be more "realistic."
3. In a conversion or merger, the converting institution is taken over by another institution.
4. According to Dunham (1985, p. 37), "Before aggregate limits on stock purchases by insiders were introduced in the regulations, management and directors typically purchased about 37% of conversion shares."
5. During the time frame in which Masulis wrote his article, the problem of takeovers following conversions to stock ownership form was mitigated by regulations that precluded takeover for three years.
6. The offering data were compiled by SNL Securities.
7. Nonsynchronous trading occurs when securities are thinly traded. In both the JVB study and this study, several days without the bid or ask prices changing are not uncommon.
8. Several of the variables displayed extremely large values. These variables included the value of assets at conversion and the dollar amount management intended to acquire. To avoid problems with multicollinearity and rounding errors, the values for these variables were coded using the following convention:

$$u_i = \frac{x_i - \bar{x}}{s_x} \text{ where } s_x = \sqrt{\frac{\sum_{i=1}^{n}(s_i - \bar{x})^2}{n-1}}$$

where x is the uncoded quantitative independent variable and u is the coded quantitative independent variable.

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