

The Quarterly Review of Interest Rate Risk

Office of Examinations, Supervision, and Consumer Protection
Risk Modeling and Analysis Division



Special points of interest:

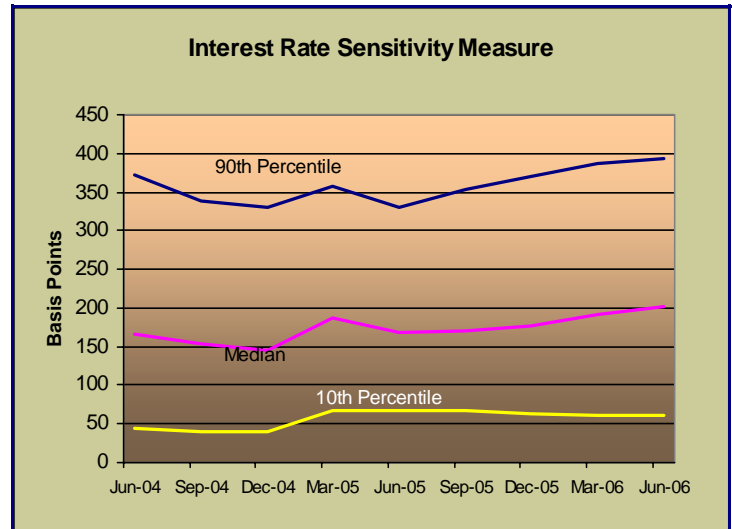
- 30-yr mortgage commitment rate rises
- Treasury yield curve rises and becomes humped in the second quarter
- Second quarter median interest rate sensitivity rises
- Asset duration rises
- Comparative Regional Analysis
- Q & A with Roy Hingston of Shay Financial Services

Second quarter median interest rate sensitivity rose 11 basis points. Sensitivity increased due to an upward shift in the yield curve in the second quarter that caused the effective duration gap between assets and liabilities to widen for the industry.

Both the median pre-shock Net Portfolio Value (NPV) ratio and the median post-shock NPV ratio fell between the first and second quarters.

The second quarter saw the Treasury yield curve shift upward, displaying a classic humped, inverted shape. Between March 2006 and June 2006, rates rose along the

Sensitivity Rises for Fourth Consecutive Quarter



yield curve for all maturities, but considerably more for short-term maturities. For

example, the six-month yield rose by 43 basis points, the

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Q & A with Roy Hingston of Shay Financial Services

Roy Hingston has been involved in Strategic Planning, Investment Analysis, and Asset/Liability consulting with financial institutions at Shay Financial Services, Inc., since 1985. He is the author of "Creating the Perfect Portfolio for Your Financial Institution," is a frequent speaker at industry functions, and authors the "Investment Management" on-line column for Shay Financial Services.

Born and raised in western Canada, Roy began his banking career with the Royal Bank of Canada in 1966.

OTS. Tell us a little bit about your educational background. When did you first become interested in pursuing a career in investment analysis and asset/liability management?

RH. As far as my educational background is concerned, I was one of those people who went to work for a while after high school before attending college. I joined the Royal Bank of Canada in 1966, because my father had worked there for his entire career and was very loyal to the company. After a few years working there, the bank allowed me to get my BA in Monetary

Economics from the University of Calgary in Canada.

OTS. What did you do when you worked at the Royal Bank of Canada?

RH. I began my career at the Royal Bank of Canada in a rural branch of the bank in Alberta, Canada. Initially, I cleaned the vault door, ordered the stationery supplies, and hand-posted the passbook savings accounts. After three months, I moved up and became a bank teller. I learned about banking operations from the ground up at the Royal

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Q & A with Roy Hingston of Shay Financial Services (continued)

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Bank. After completing my BA degree, I moved to the bank's head office in Montreal, where I first became a foreign exchange trader, then a euro-dollar deposit trader.

In 1974, I moved to New York City to trade the U.S. dollar bond portfolio for the bank. I was also responsible for the bond fund position, the banker's acceptance portfolio, and gathering deposits in U.S. dollars from major American corporations. It was at this time that I first met Rodger Shay, who was then the head of Merrill Lynch Government Securities Inc. It was in New York that I got excited about the U.S. bond market and began to watch the actions of the Federal Reserve, pored over money supply statistics, and monitored interest rates.

OTS. What made you want to leave the Royal Bank of Canada and go to Shay Financial Services?

RH. I left the Royal Bank in 1977 to work for Merrill Lynch in Miami, where I covered savings and loans for the first time. I learned to integrate the bond market with interest rate risk analysis in order to provide value-added to those clients. GNMA securities were still relatively new at the time, and Fannie Mae and Freddie Mac were just arriving on the scene. I left Merrill Lynch in 1985 to join Rodger Shay in what became Shay Financial Services.

OTS. You wrote "Creating the Perfect Portfolio For Your Financial Institution." What is the perfect portfolio anyway?

RH. I wrote the book, "Creating the Perfect Portfolio for Your Financial Institution," in order to express Shay Financial's view that "asset allocation techniques" and a "top-down" approach can lead to more efficient investment decisions. As such, the "perfect portfolio" is one that serves the purpose for which it was intended.

At Shay, we believe that there are three distinct portfolios in a bank's balance sheet. The first is the "cash and cash equivalent" portfolio. Its purpose is to provide primary liquidity. As a result, it should be managed to an effective duration target of six months. It will have a low return and should represent about five percent of assets in a typical institution.

The second portfolio is the "liquidity" portfolio. It should represent about ten percent of the balance sheet and should be managed to an effective duration of between 1.5 years and 2.5 years. It will have a higher return profile than the "cash and cash equivalent" portfolio, but it will be subject to more price volatility.

The third portfolio is the "loan surrogate" portfolio. It should represent 80 percent of the balance sheet minus loans. If loans equal 80 percent of assets, there is no need for this portfolio. However, if loans are 65 percent of assets, as is often

the case, then this portfolio will represent 15 percent of assets (i.e., 80 percent minus 65 percent). The purpose of this portfolio is to generate income.

The effective duration target of this portfolio will be a function of the duration of liabilities minus the duration of the existing loan portfolio. Assets in this category should be purchased for their long-term income potential and can be declared "Held to Maturity," if desired.

A portfolio manager operating with this three-portfolio asset allocation technique has the advantage of using a very efficient decision matrix. If the bank has a dollar to invest, that dollar should go into the "cash and cash equivalent" portfolio, unless it is already "full." If that dollar is going into the "cash and cash equivalent" portfolio, there are very few types of investments that have short term maturities or cash flows to qualify for an effective duration of a one year maximum with a six-month target.

Therefore, the portfolio manager will be able to resist all offers on "bonds du jour," which are normally high yield, option enhanced assets that tend to perform poorly on a bank's balance sheet. If the "cash" portfolio is full, the dollar can be allocated to the "liquidity" portfolio. The range of acceptable effective durations is larger here, but long-term assets with uncertain cash flows will not qualify for purchase because of their potential for convexity risk.

If both the "cash" and "liquidity" portfolios are full, the dollar can be allocated to the "loan surrogate" portfolio. Investment decisions in this portfolio can focus on diversification and the trade-off between effective duration and convexity and the expected return of the assets available. Shay publishes monthly "Relative Value Reports" in which assets are reviewed by sector for their value compared to other typical bank assets in that same sector.

OTS. How would the perfect portfolio be different for commercial banks and savings associations in today's highly volatile environment?

RH. The asset allocation technique described above can be used by any financial institution. For example, there may be differences from one institution to another as to whether a five percent "cash" portfolio is sufficient. A bank that has a deposit base of large corporate clients with large seasonal cash requirements may need eight percent or even ten percent in primary liquidity in the "cash" portfolio.

Some mature thrifts with steady client cash demands may only need three percent of assets in the "cash" portfolio. The same holds true for the "liquidity" portfolio. It could be that banks, as a group, may find ten percent "liquidity" a little thin and may opt for 12 percent or even 15 percent. Thrifts might find that eight

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Q & A with Roy Hingston of Shay Financial Services(continued)

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percent “liquidity” is sufficient to meet their needs. As we discussed above, the “loan surrogate” portfolio will represent that amount necessary to bring the “loans + loan surrogate” category up to the optimal percentage of the balance sheet, normally 80 percent.

OTS. What are some of the key risk management and asset/liability management issues confronting financial institutions today?

RH. For the financial institutions that Shay covers, the key risk management issue today is the very definition and measurement of “risk.” Since our clients tend to be community-based financial institutions without a full time investment officer, we are typically working with financial executives who work under stress and confront time management problems.

These executives tend to “triage” their problems. Combined with the fact that today’s assets and liabilities tend to have more embedded options, such as early withdrawal or call options, prepayment options, and conversion options, and the stage is set for problems.

Thus, an in-depth discussion with these bank executives of the relative merits of various interest rate risk measurement tools may never happen. Since the regulators and the accountants already require a set of reports, such as TFR and CMR, the balance sheet, and income statement, busy ex-

ecutives typically attempt to manage their banks using these reports, rather than taking the time and the trouble to develop a more detailed set of management friendly reports.

In today’s complex financial world, using third-party reports designed for bank executives to manage risk is less than optimal, and may even be dangerous. To start with, bank executives have not invested enough time to understand the input and output limitations of the reports they are using, and therefore, they do not trust these reports enough to use them in making their decisions.

They tend to view the reports as “required by the regulator” and “sufficient to give to the Board.” Very few executives, for example, will take the time to question whether the effective duration of their mortgage loan portfolio is fairly represented in the report.

Deep discussions on the true effective duration of core deposit valuations are also infrequent. Therefore, I read with great excitement the announcement that the OTS is making significant enhancements to the NPV Model. These improvements will provide time-challenged executives with higher quality interest rate risk reports that include more accurate pricing of embedded options in bank balance sheets.

OTS. Should financial institutions develop their own asset/liability management software or should they purchase third-party vendor

models?

RH. Under no circumstances should a community-based financial institution rely on an asset/liability model that they have developed themselves. The modeling issues are so complex that only a few institutions would have sufficient brainpower in house to develop a model that was robust enough to handle today’s complex assets. Moreover, even if they had such talent, the cost of building, maintaining, and obtaining third-party validation of a model would be prohibitive.

Community banks tend to choose from the following four solutions. First, they can buy a model and run it in-house. This would be best for institutions with assets of \$1 billion or more that can afford to pay for the full-time employees needed to run the model and do the “What-If” analyses.

Second, they can rent a model. This is the ideal solution for most community institutions under \$1 billion. The user controls the chart of accounts and all model assumptions. The vendor maintains the model and obtains third-party model validation. In addition, some vendors provide “back-testing” validation of model assumptions. Some have “What-If” models for rent as well. These vendors have access to data pricing and can usually accept data uploads from service bureaus and/or portfolio accounting reports.

Third, they can use someone’s model. Some

broker/dealers offer free or heavily subsidized access to a model to their best customers/prospects.

Regulators should have some concerns here as to the level of control retained by the institution. Fourth, they can use free models. A few small institutions are trying to get away with using free interest rate risk reports sent by people using only Call Report data. This is not acceptable, since optionality is not captured or modeled. Even the simplest of today’s banking institutions are affected to some degree by optionality in the balance sheet.

OTS. Do you think that mortgage product innovations, such as option ARMs, are inherently more risky than traditional types of mortgage products? Are there any other financial innovations that should be on the radar screens of financial institutions today?

RH. I believe that some mortgage product innovations, especially option ARMs, are not prudent. It is not a question of these mortgage products being marginally risky. This mortgage structure simply does not pass the basic credit smell test.

Under unusual circumstances, a borrower may be able to meet the terms and conditions of the complex contract that the option ARM is, but it would only be because the amount borrowed is trivial compared to the borrower’s total finan-

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Q & A with Roy Hingston of Shay Financial Services (continued)

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cial capacity. To suggest that this product can be mainstreamed to the typical purchaser of a single-family home is ludicrous. I realize that many institutions have originated many mortgages of this kind. I wish them the best of luck. I do not believe that the average mortgage customer is capable of understanding the complexities of this contract. I also do not believe that the main purpose of mortgage financing is to allow people to purchase homes that are beyond their means in order to generate fees for the mortgage underwriter.

It appears to me that the value of the underlying real estate would have to continue to appreciate in order for the lender to come out ahead in the case of a mortgage foreclosure. It is not prudent banking to lend against collateral that must continue to appreciate in order to cover the loan.

It is possible that “interest-only” mortgage loans may be marginally acceptable for those institutions in areas where price appreciation is probable. I believe that speculative construction lending will once again demonstrate why it is considered relatively risky, despite many quiet years.

OTS. Do you feel that derivatives are inherently riskier than end-users believe? Are there any derivatives products that savings associations should try to avoid using?

RH. I do not believe that derivatives are inherently

risky. I agree with former OTS Director, Jonathan Fiechter, who was brave enough to say that it was more prudent to hedge using derivatives than to remain unhedged. I believe that many community-based financial institutions could benefit from understanding and using derivatives to manage risks. Certainly larger institutions should and do use derivatives.

I believe that many institutions are intimidated by the complex accounting required to achieve proper hedge accounting treatment. I also believe that most institutions are of the opinion that they would be soundly criticized by their regulator if they were to hedge. It is up to the regulator to change this atmosphere and to actively encourage hedging.

Many community-based institutions are still abusing embedded options, however. Many are selling call options to obtain a few extra basis points in yield on a security. They are doing so without any understanding of OAS theory or its measurement. This practice should be actively discouraged by regulators. In fact, the aggravation of interest rate risk exposures through the continual selling of embedded options is one of the many factors contributing to the poor results of many community-based financial institutions.

OTS. What are the benefits and risks of financial institutions using credit derivatives? Are these derivatives products inherently more difficult to price and value than other types of deriva-

tives?

RH. Credit derivatives are still off the radar for most community-based institutions. Most are taking very simple and local credit risk with which they believe they are familiar. Much must be done in the way of education before community financial institutions will be able to participate in this market.

OTS. How important is model risk in implementing asset/liability management models today?

RH. I believe that model risk can be reduced with significant effort in backtesting and understanding of a model. All models will be limited by the granularity of the inputs and/or the output. We can certainly get down to line item inputs, but we are not capable of understanding line item output.

The effects of assumptions and the increasing variation caused by the fact that we carry those assumptions through hundreds of time periods times multiple interest rate scenarios does limit the value of the output. Despite all that, I still believe that we are better off with a model than without one. ■

Editor's Note: The views expressed are Roy Hingston's and do not necessarily reflect those of OTS. Roy can be contacted at Shay Financial Services at rhingston@shay.com.

Sensitivity Rises for Fourth Consecutive Quarter (continued)

(Continued from page 1)

10-year yield rose by 29 basis points, and the 30-year yield rose by just over 29 basis points.

During the second quarter, the Federal Reserve increased the target rate for federal funds by 25 basis points twice. The unfavorable shape of the yield curve kept downward pressure on net interest margins at individual institutions, but did not adversely affect aggregate measures.

Average net interest margin rose to 280 basis points in the second quarter, up three basis points from the previous quarter. Net interest income rose slightly for the industry because asset yields rose slightly more than liability costs. Over the quarter, interest income rose 33 basis points, while interest expense rose 30 basis points.

Total thrift earnings for the second quarter were \$4.21 billion, remaining unchanged from the previous quarter. This represents the sixth consecutive quarter with industry earnings of \$4 billion or higher.

Although net income remained unchanged, thrift profitability fell from the previous quarter. The average return on assets (ROA) for the industry fell to 1.11 percent in the second quarter, down from 1.14 percent in the previous quarter.

The decline in ROA in the second quarter was due largely to lower fee income and higher loan loss provisions and noninterest expense. Partially offsetting these negative impacts to

second-quarter profitability were a higher net interest margin, other noninterest income, and lower taxes.

The 30-year mortgage rate, as measured by the contract interest rate on Freddie Mac commitments for fixed-rate, 30-year mortgages, rose to 6.78 percent at the end of the second quarter, up from 6.35 percent from the prior quarter.

The volume of mortgage originations rose in the second quarter. Total thrift mortgage originations were \$171 billion, up four percent from \$164.6 billion in the previous quarter.

Second-quarter 1-4 family mortgage originations rose to \$148.4 billion, up from \$142.6 billion in the previous quarter. This represents a four percent increase. Also, the ARM share of total thrift mortgage originations fell to 37 percent, down from 44 percent in the prior quarter.

Mortgage refinancing volume was \$53.6 billion in the second quarter, down eight percent from the previous quarter. Consistent with the decline in the volume of mortgage refinancings, mortgage refinancing activity accounted for 31.3 percent of total mortgage originations in the second quarter, down from 35.4 percent in the previous quarter. This decrease in mortgage refinancing activity for thrifts is consistent with the mortgage refinancing activity of all lenders, where the proportion fell to 35 percent from 49 percent.

With regard to thrift mortgage pipeline activity,

the notional amounts of optional and firm commitments to originate both fixed- and adjustable-rate mortgages in the second quarter were \$78.9 billion and \$4.9 billion, respectively. Optional commitments to originate mortgages rose \$2.1 billion, while firm commitments fell \$900 million from the previous quarter's levels.

The ARM share of total 1-4 family mortgages held by thrifts in their portfolios declined slightly to 63.3 percent in the first quarter, down from 64.3 percent in the prior quarter. Consistent with this fall in portfolio holdings of adjustable-rate, single-family mortgages and MBS over this period, thrifts increased their holdings of fixed-rate single-family mortgages to \$288 billion from \$277 billion.

Between March 2006 and June 2006, thrift portfolio holdings of single-family, fixed-rate, balloon mortgage loans with a WAC between 6.0 percent and to 7.0 percent rose 74.4 percent. Over the same period, thrift portfolio holdings of single-family 30-year fixed-rate MBS with a pass-through rate between 6.0 percent and 7.0 percent rose 40 percent.

The liabilities side of the balance sheet for thrifts also saw some changes between March 2006 and June 2006. Total variable-rate borrowings rose from \$243.9 billion to \$256.5 billion. Over the same period, total fixed-rate, fixed-maturity deposits rose from \$368.6 billion to \$388.7 bil-

lion. Also, balances in MMDA accounts rose to \$195.9 billion in the second quarter, up from \$191.9 billion in the prior quarter.

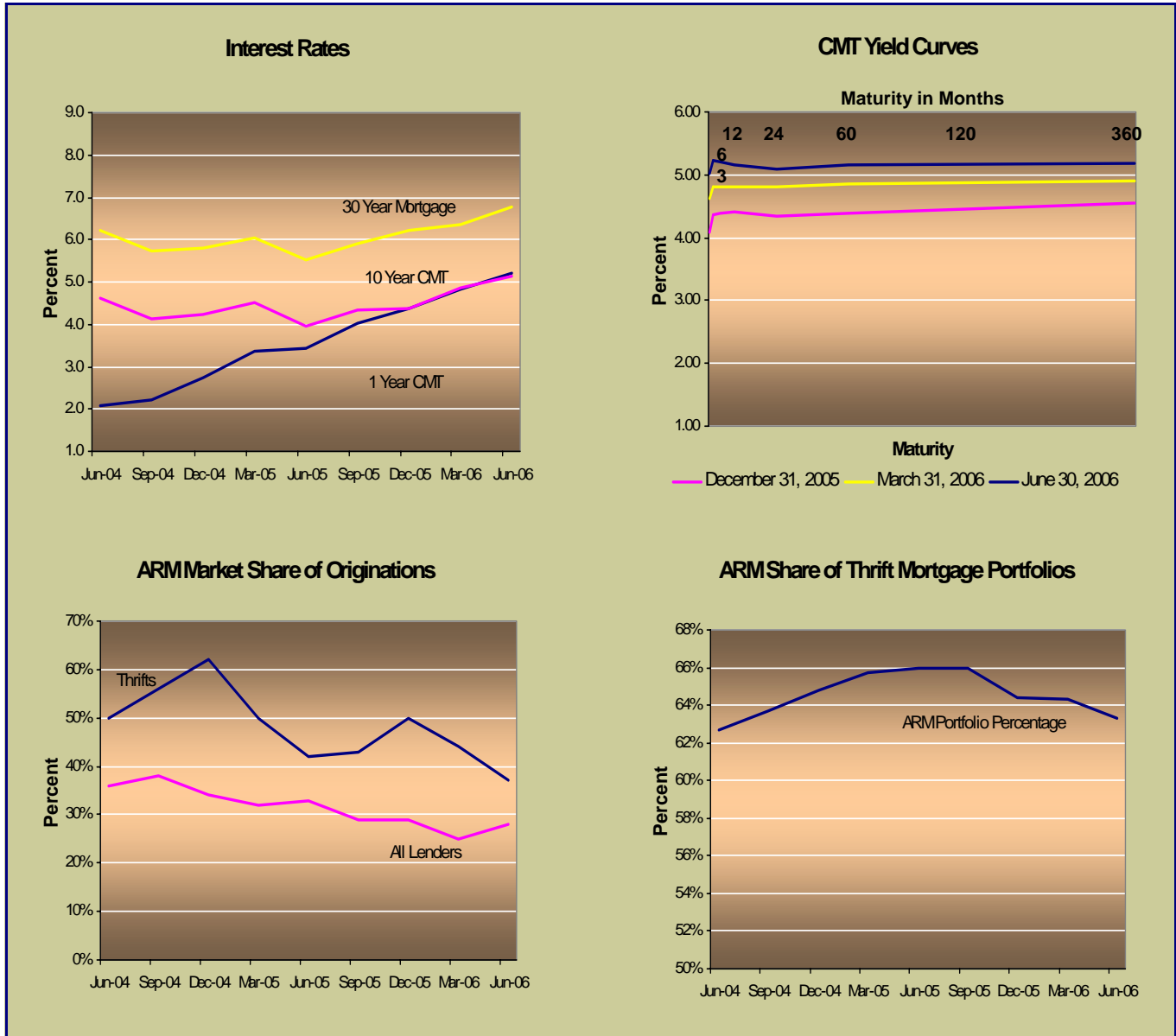
The industry's median effective duration of assets rose from 2.09 to 2.16 between March 2006 and June 2006. This represents the fourth consecutive quarterly increase in the effective duration of assets. The increase in longer-term interest rates during the second quarter caused a decline in the rate of projected one- to four-family mortgage prepayments. As a result of the fall in prepayments, the durations of both single-family mortgages and total assets rose.

The industry can probably expect to see additional increases in asset duration in the future unless prepayment speeds rise over the next several months. Since the end of June, the 30-year fixed mortgage rate has declined 53 basis points to 6.35 percent. This represents its lowest level since February of this year.

In a recent *Prepayment Report and Commentary*, Bear, Stearns & Co. observes that, despite the significant fall in fixed mortgage rates and a surge in the MBA Refinancing Index since June, the refinancing exposure of the fixed rate MBS universe has risen only marginally. Given that the average homeowner holds a mortgage rate near 6.0 percent suggests that rates would have to fall an additional 70 to 80 basis points to push refinancing expo-

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Interest Rates and ARM Market Share



Sensitivity Rises for Fourth Consecutive Quarter (continued)

(Continued from page 5)
 sure high enough to start a nationwide refinancing surge.

However, with an estimated \$1 trillion in ARM mortgages scheduled to reset over the next 12 months, Bear, Stearns believes that a large component of today's refinancing is being driven by ARM-to-fixed mortgage refinancing as ARM borrowers facing future resets lock-in

attractive fixed rates.

Consistent with this view is the fact that ARM originations as a percent of total originations recently fell to its lowest level in three years. As a result, today's level of refinancing does not imply the same duration and volatility swings experienced in previous fixed-rate dominated markets.

For example, as noted by

Bear, Stearns, if fixed rates fall an additional 20 to 30 basis points, the first significant segment of fixed rate borrowers will enter the refinancing windows.

These borrowers back the 6.0 percent MBS coupon and constitute nearly 20 percent of the outstanding fixed rate mortgage market. On a 25 basis point move, the duration of the mortgage market would

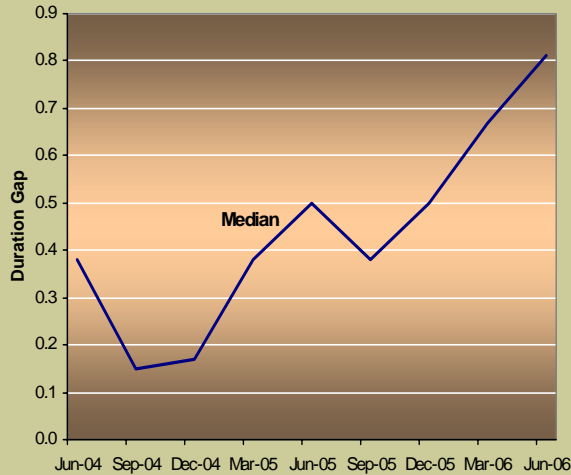
shorten by about 0.37 years.

The second quarter saw the industry's median effective duration of liabilities fall from 1.41 to 1.33 due to the increase in interest rates. The increase in the effective duration of assets and the decrease in the effective duration of liabilities resulted in an increase in the duration gap for the thrift industry in the first

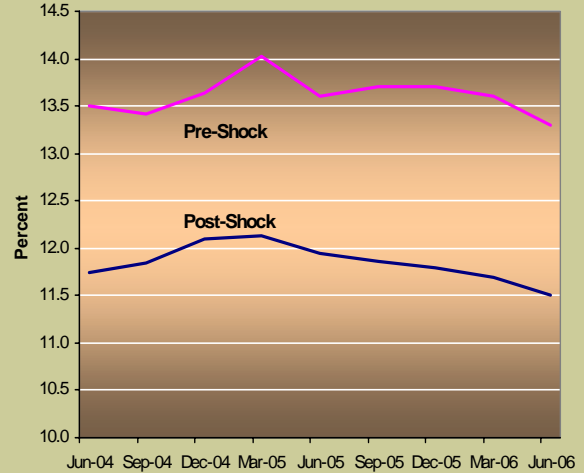
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Duration and NPV Sensitivity Measures

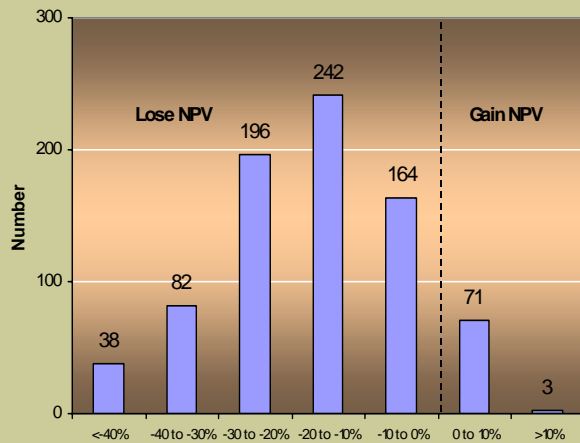
Median Effective Duration Gap



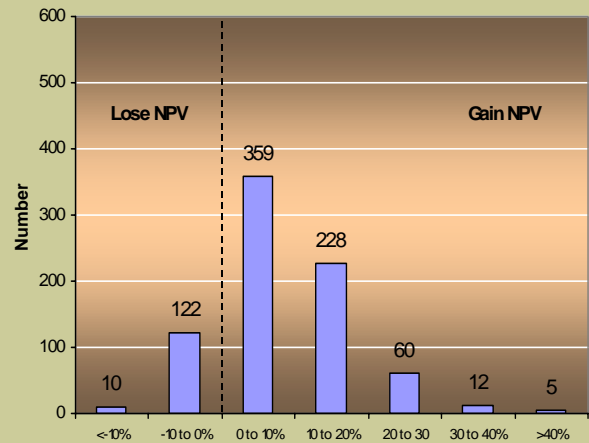
Median Pre- and Post-Shock NPV Ratios



Estimated Change in NPV:
+200bp Rate Change



Estimated Change in NPV:
-200bp Rate Change



Sensitivity Rises for Fourth Consecutive Quarter (continued)

(Continued from page 6)
quarter. The median effective duration gap rose to 0.81 in the second quarter, up from 0.67 in the prior quarter.

Both the median pre- and post-shock NPV ratios fell slightly between the first and second quarters. The median pre-shock NPV ratio fell to 13.3 percent in the second

quarter, down from 13.6 percent in the previous quarter.

The median post-shock NPV ratio dropped, falling from 11.7 percent in the previous quarter to 11.3 percent in the first quarter. Median sensitivity increased from 191 basis points to 202 basis points.

The number of thrifts

with a post-shock NPV ratio below four percent rose to seven, up from three institutions in the first quarter.

Of the thrifts that submitted Schedule CMR data in the second quarter, about 91 percent would have experienced a loss of net portfolio value if rates rose by 200 basis points. In contrast, if rates fell by 200

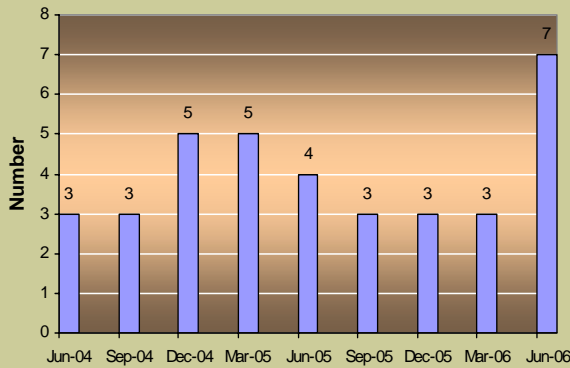
basis points, about 86 percent of thrifts would have experienced increases in their net portfolio values.

The thrift industry would have lost 22 percent of its net portfolio value if rates rose by a 200 basis points in the second quarter. On the other hand, the industry would have

(Continued on page 8)

Interest Rate Risk Measures

Thriffs with Post-Shock NPV Ratios Under 4 Percent



Interest Rate Risk Measures Industry Aggregates Last Two Quarters

	NPV as % of PV of Assets		% Change in NPV	
	Mar-06	Jun-06	Mar-06	Jun-06
+300	7.89%	7.50%	-33%	-35%
+200	9.21%	8.88%	-20%	-22%
+100	10.31%	10.06%	-9%	-10%
Base	11.18%	10.99%	0%	0%
-100	11.72%	11.62%	6%	7%
-200	11.75%	11.80%	7%	9%
-300	N/A	N/A	N/A	N/A

Post-Shock NPV Ratio and Sensitivity Measure Matrix March 2006

	Under 100bp	101-200bp	201-400bp	Over 400bp	Total
Over 10%	160	163	190	41	554
6% to 10%	31	63	114	22	230
4% to 6%	0	0	9	5	14
Below 4%	0	0	1	2	3
Total	191	226	314	70	801

Minimal Moderate Significant High

Post-Shock NPV Ratio and Sensitivity Measure Matrix June 2006

	Under 100bp	101-200bp	201-400bp	Over 400bp	Total
Over 10%	159	150	174	42	525
6% to 10%	25	61	126	26	238
4% to 6%	1	1	20	4	26
Below 4%	0	0	3	4	7
Total	185	212	323	76	796

Minimal Moderate Significant High

Sensitivity Rises for Fourth Consecutive Quarter (continued)

(Continued from page 7) gained nine percent if rates fell by 200 basis points.

The number of thrifts with a post-shock NPV ratio below six percent rose to 33 institutions in the second quarter, up from 13 in the prior quarter. The number of thrifts with interest rate sensitivity of 100 basis points or

below fell to 185 in the second quarter, down from 191 in the previous quarter.

The number of thrifts with over 400 basis points in interest rate sensitivity rose to 76 in the second quarter, up from 70 in the prior quarter. These results are consistent with an overall increase in the interest rate sensitivity of the

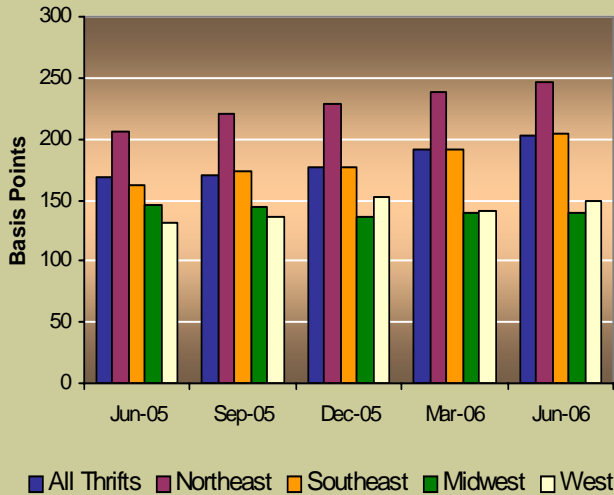
industry in the second quarter.

Based on TB 13a guidance for the “S” rating, 716 thrifts (71.6 percent) initially would be assigned a minimal interest rate risk rating, 169 thrifts (21.2 percent) a moderate rating, 46 thrifts (5.8 percent) a significant rating, and 11 thrifts (1.4 percent) a high rating in the first quarter.

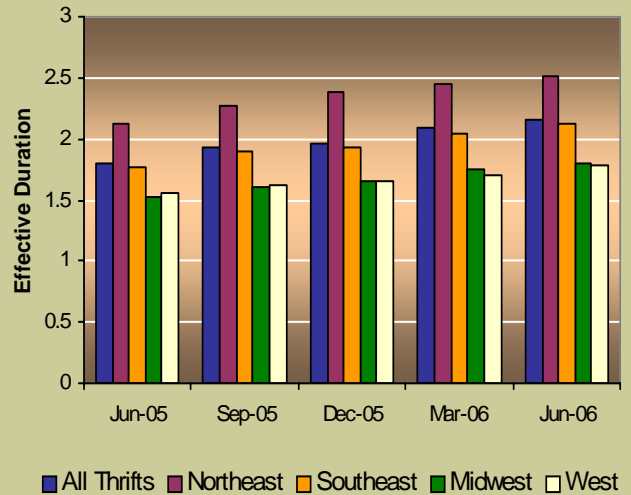
The number of thrifts with significant or high interest rate risk rose to 57 in the second quarter, up from 39 in the prior quarter. ■

Comparative Trends in the Four OTS Regions

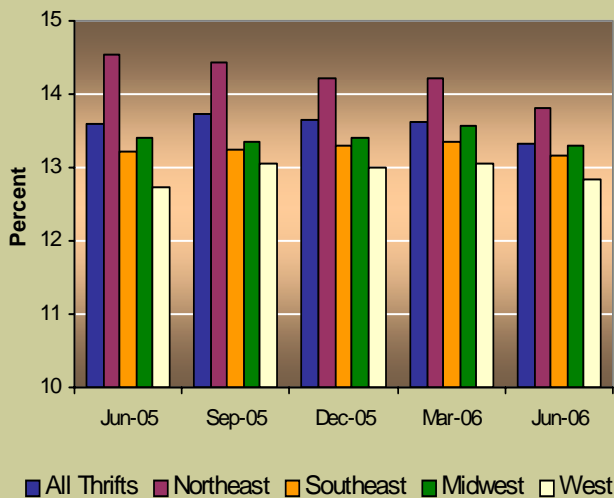
Median Sensitivity by OTS Region



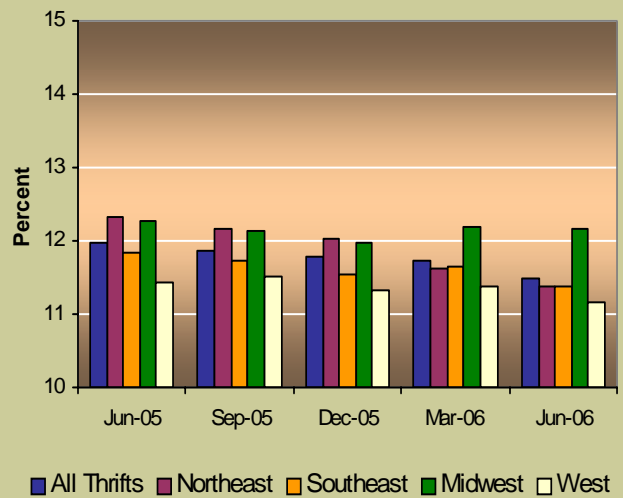
Median Assets Duration by OTS Region



Median Pre-Shock NPV Ratio by OTS Region



Median Post-Shock NPV Ratio by OTS Region



Regional Comparisons

At the end of the second quarter, the Northeast Region had the highest median sensitivity at 247 basis points, while the Midwest Region had the lowest median sensitivity at 140 basis points.

All four OTS regions experienced an increase in their median sensitivities. The

Northeast, Southeast, Midwest, and Southeast Regions saw their median sensitivities rise by 9, 14, 1, and 8 basis points, respectively.

The Northeast Region had the highest median pre-shock NPV ratio at 13.8 percent, while the West Region had the lowest median pre-

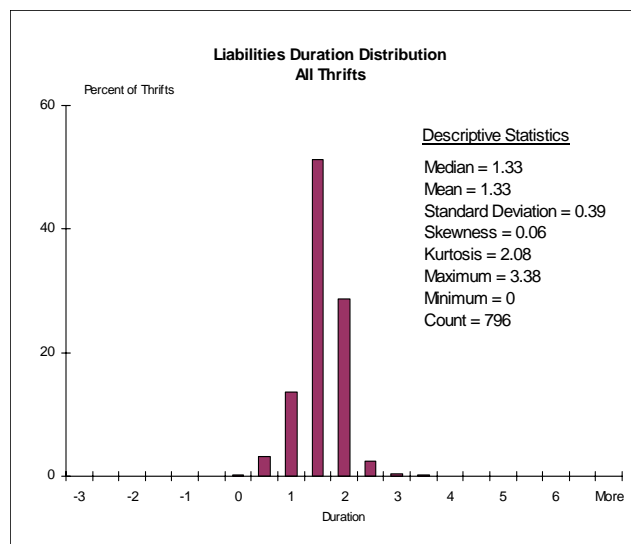
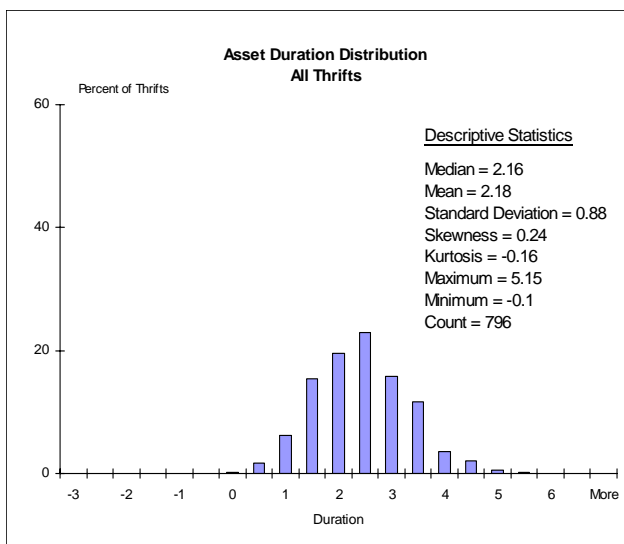
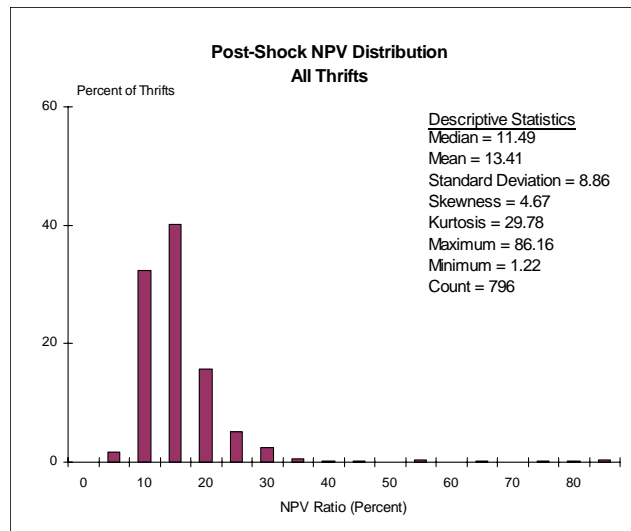
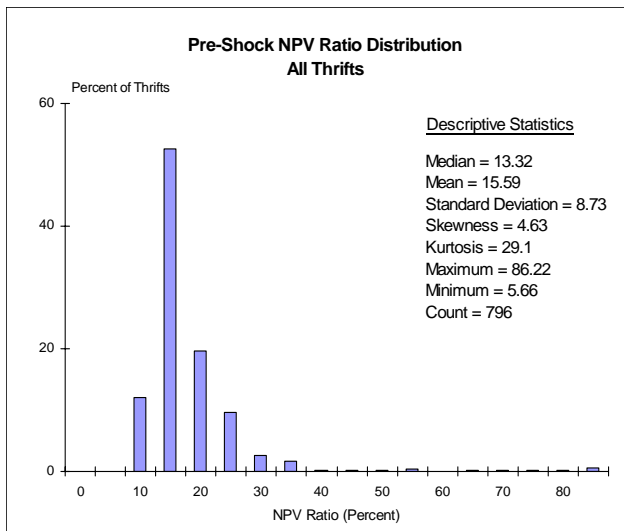
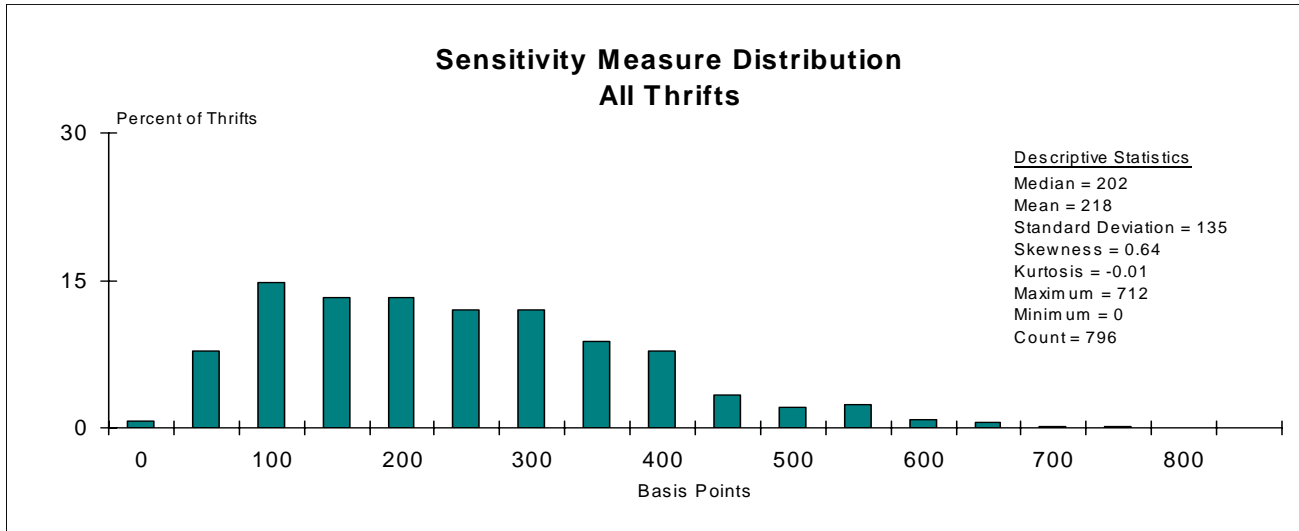
shock NPV ratio at 12.8 percent. The Midwest Region had the highest median post-shock NPV ratio, while the West Region had the lowest.

All four OTS regions saw their median asset durations rise. The Northeast Region had the highest asset duration, at 2.51, while the West

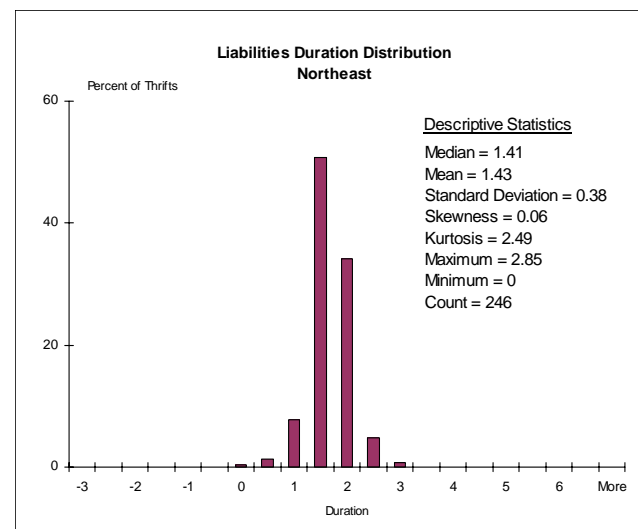
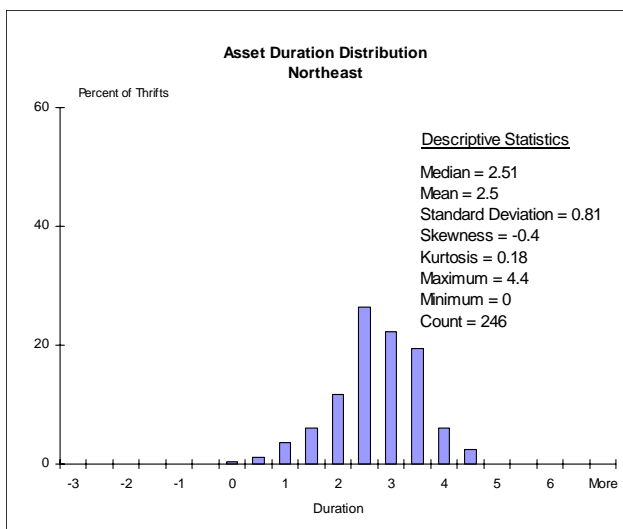
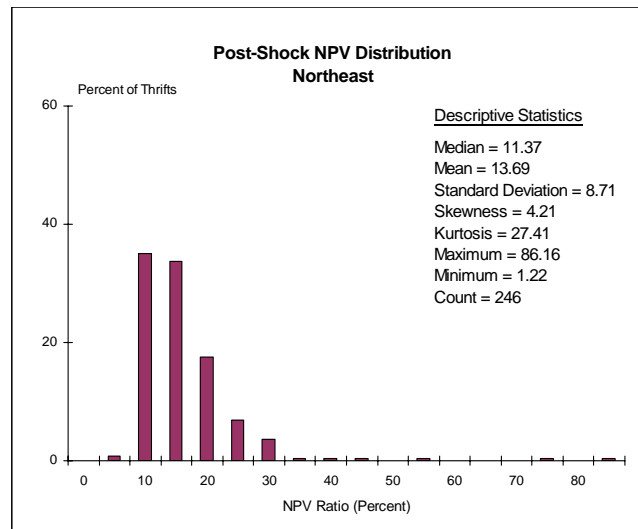
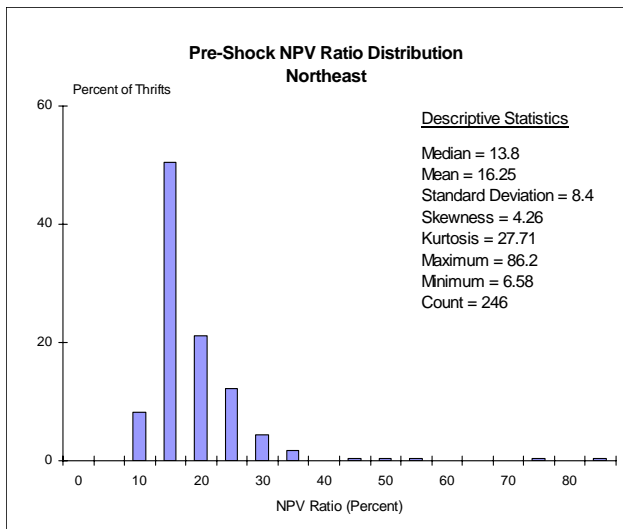
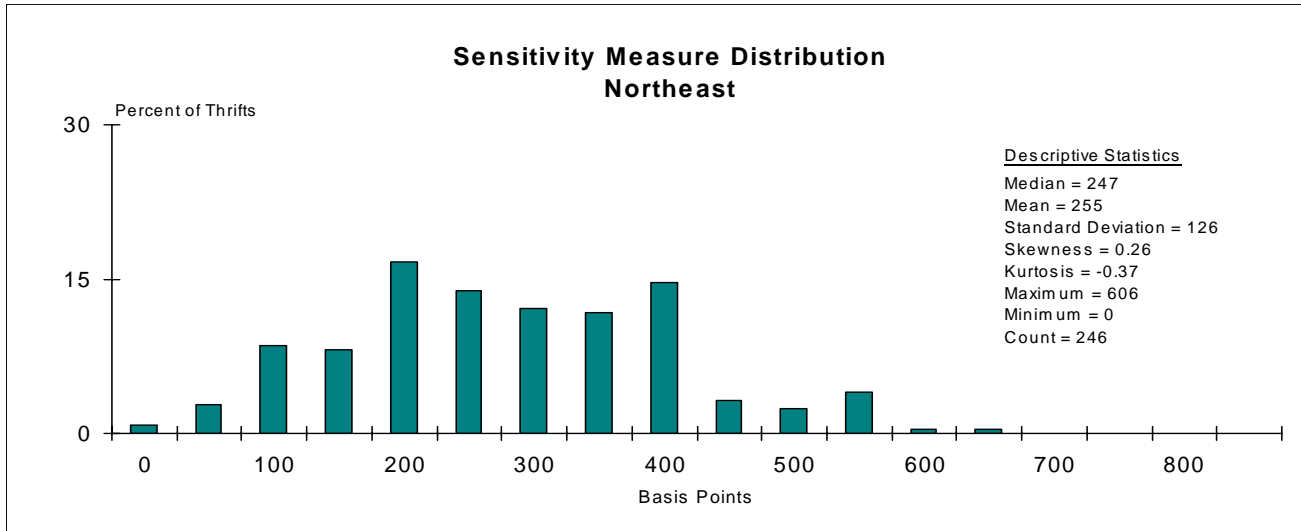
Region had the lowest, at 1.79, at the end of the second quarter.

All four OTS regions experienced a decrease in their median liability durations in the second quarter. ■

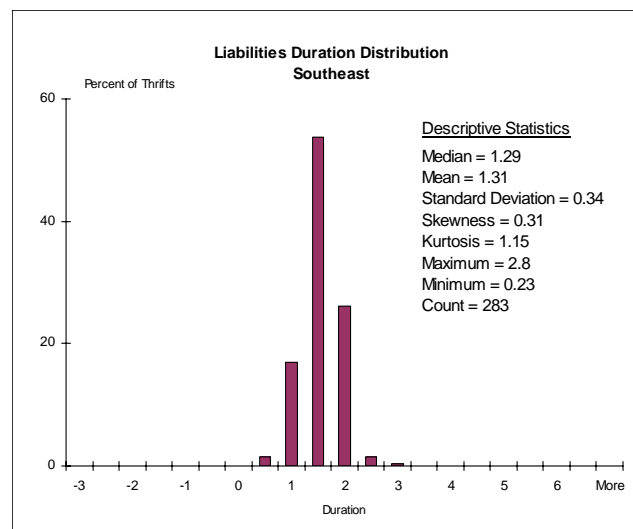
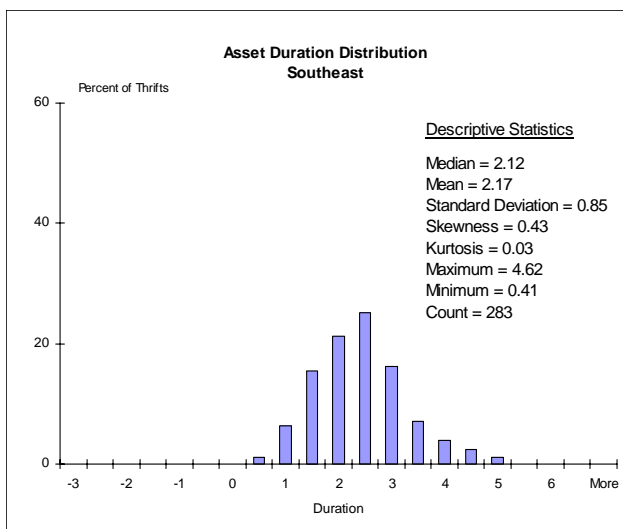
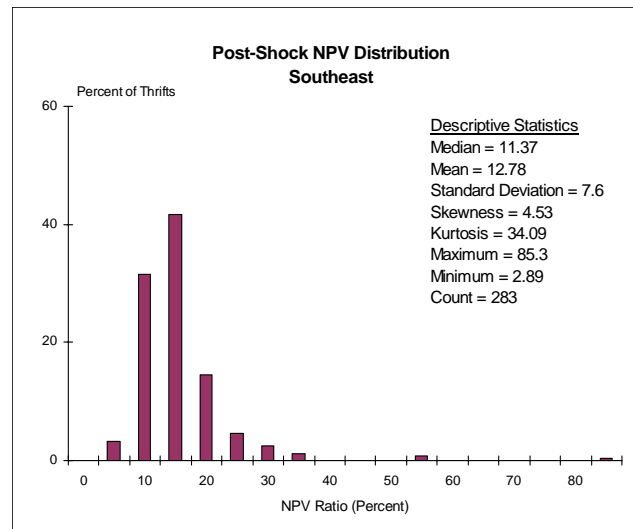
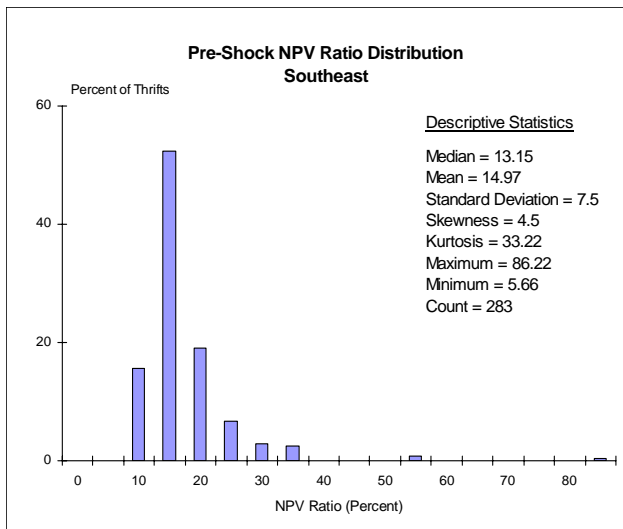
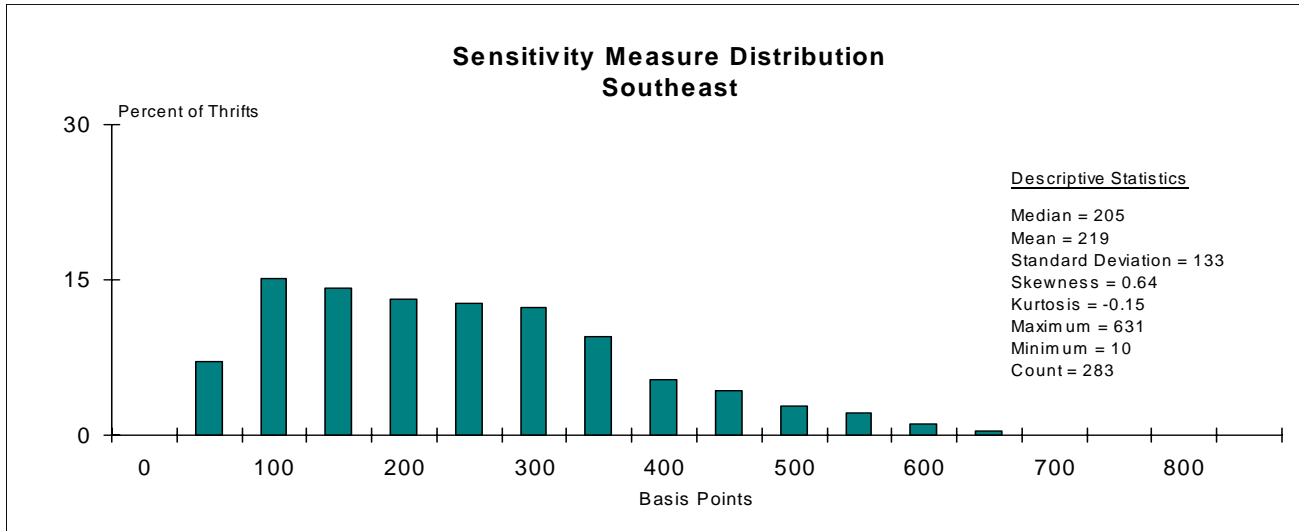
Appendix A – All Thrifts



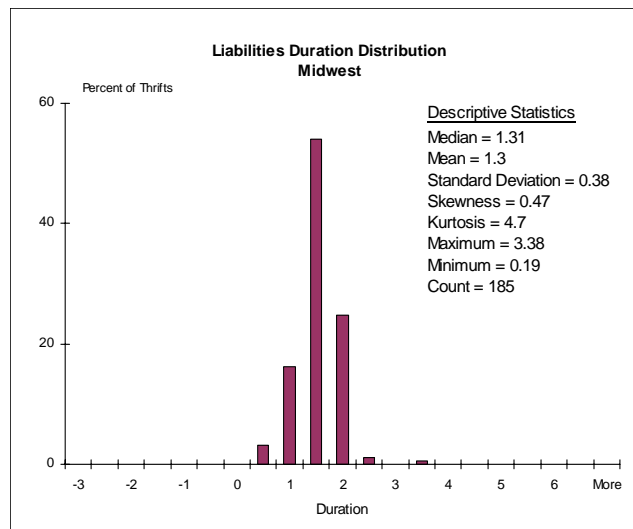
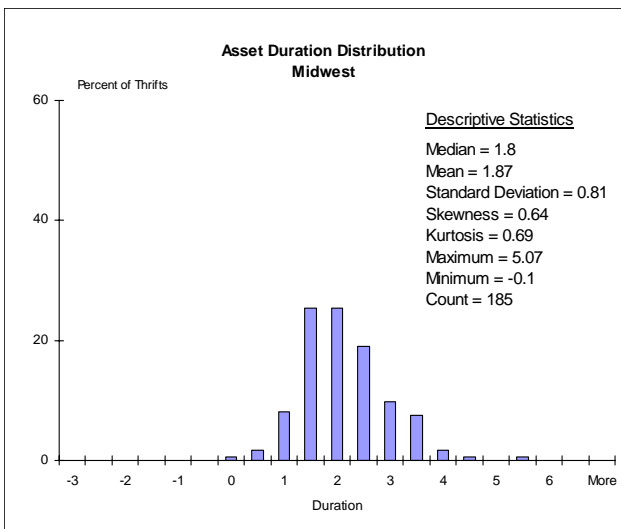
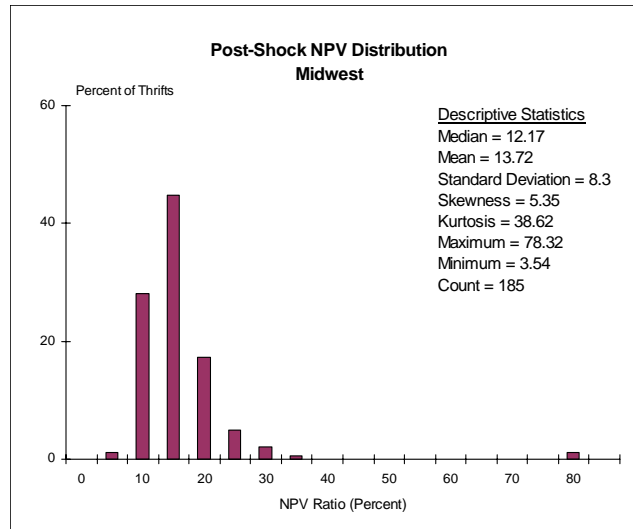
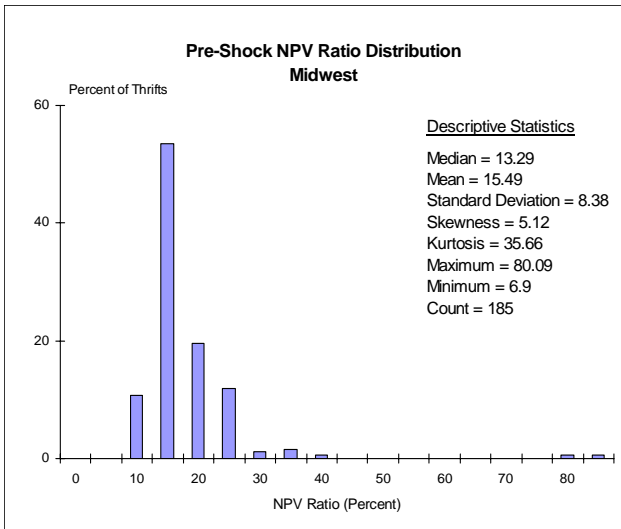
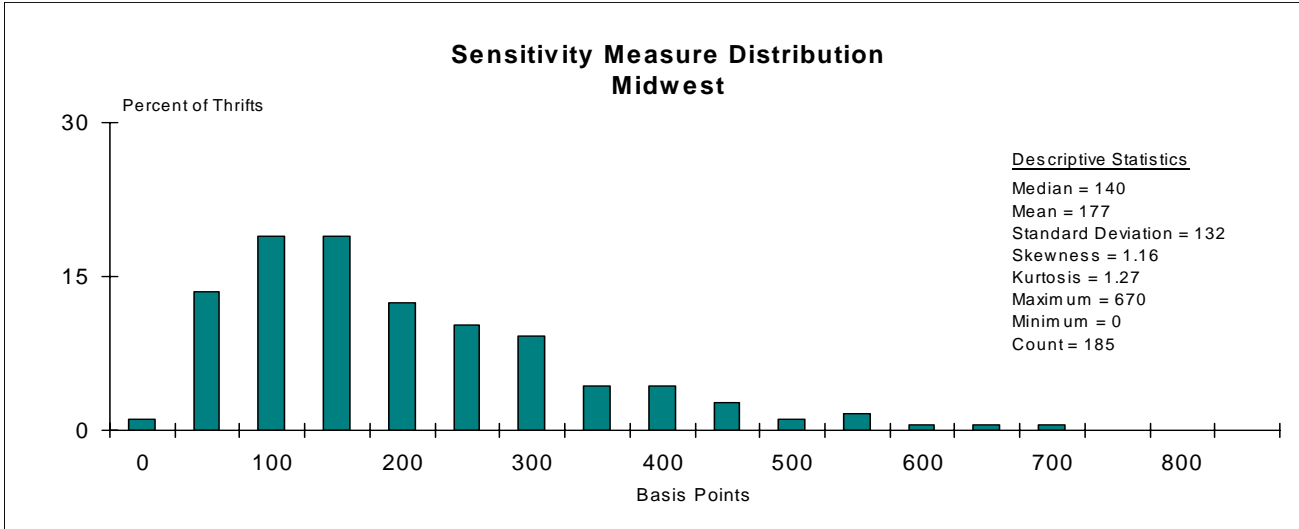
Appendix B – Northeast Region



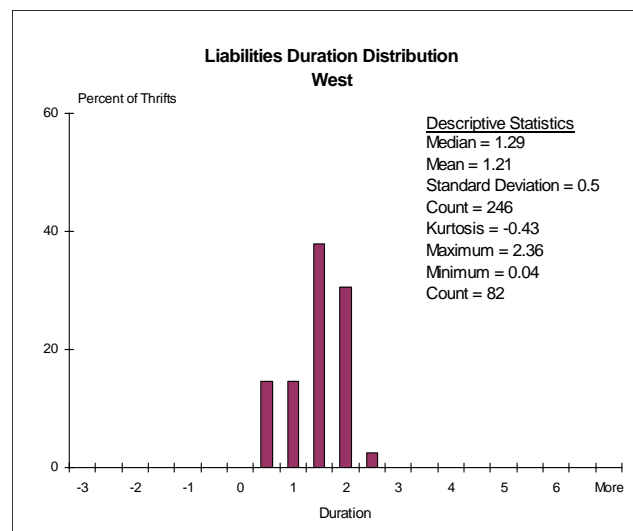
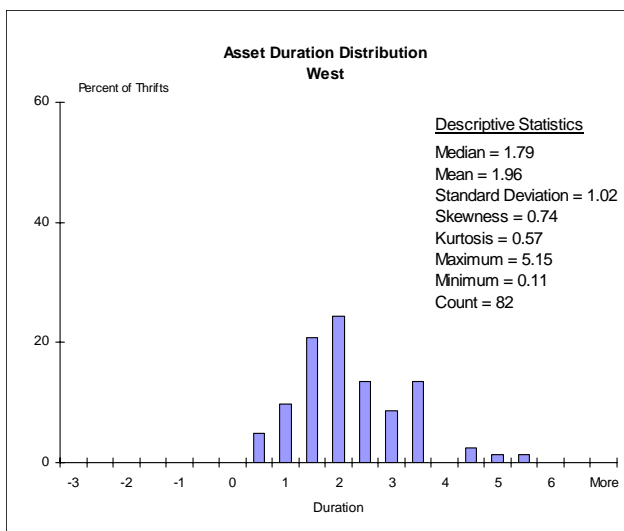
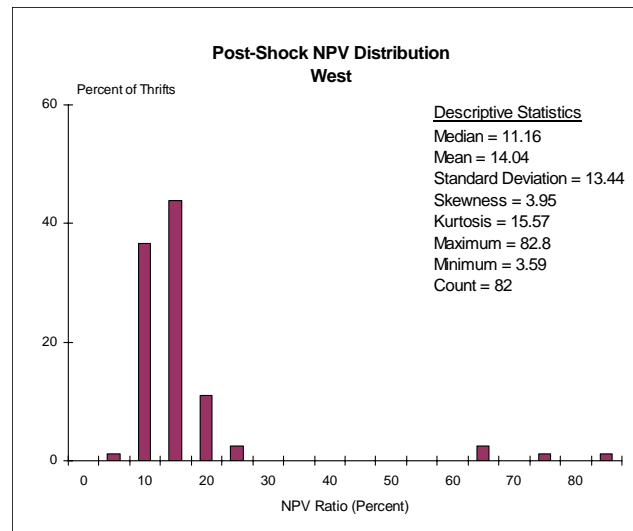
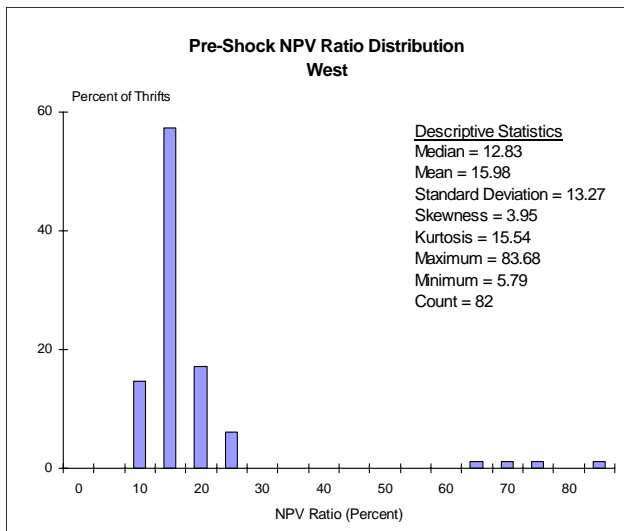
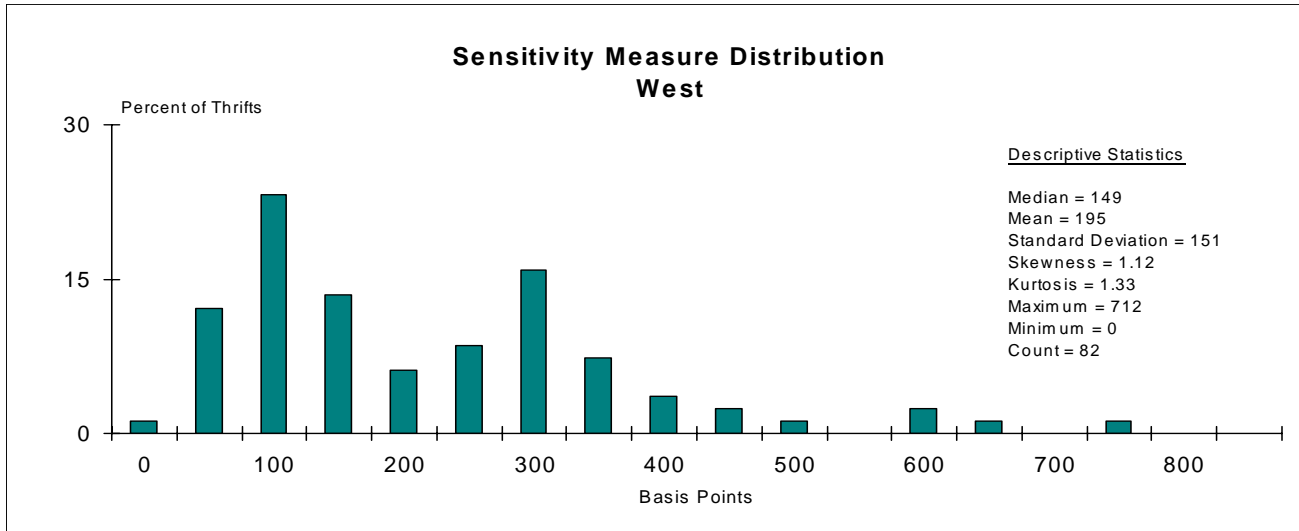
Appendix C – Southeast Region



Appendix D – Midwest Region



Appendix E – West Region



Glossary

Duration: A first-order approximation of the price sensitivity of a financial instrument to changes in yield. The higher the duration, the greater the instrument's price sensitivity. For example, an asset with a duration of 1.6 would be predicted to appreciate in value by about 1.6 percent for a 1 percent decline in yield.

Effective Duration: The average rate of price change in a financial instrument over a given discrete range from the current market interest rate (usually, +/-100 basis points).

Estimated Change in NPV: The percentage change in base case NPV caused by an interest rate shock.

Kurtosis: A statistical measure of the tendency of data to be distributed toward the tails, or ends, of the distribution. A normal distribution has a kurtosis statistic of three.

NPV Model: Currently measures how five hypothetical changes in interest rates (three successive 100 basis point increases and two successive 100 basis point decreases) affect

the estimated market value of a thrift's net worth.

Post-Shock NPV Ratio: Equity-to-assets ratio, following an adverse 200 basis point interest rate shock (assuming a normal interest rate environment), expressed in present value terms (i.e., post-shock NPV divided by post-shock present value of assets). Also referred to as the exposure ratio.

Pre-Shock NPV Ratio: Equity-to-assets expressed in present value terms (i.e., base case NPV divided by base case present value of assets).

Sensitivity Measure: The difference between Pre-shock and Post-shock NPV Ratios (expressed in basis points).

Skewness: A statistical measure of the degree to which a distribution is more spread out on one side than the other. A distribution that is symmetric will have a skewness statistic of zero.

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