

The Quarterly Review of Interest Rate Risk

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



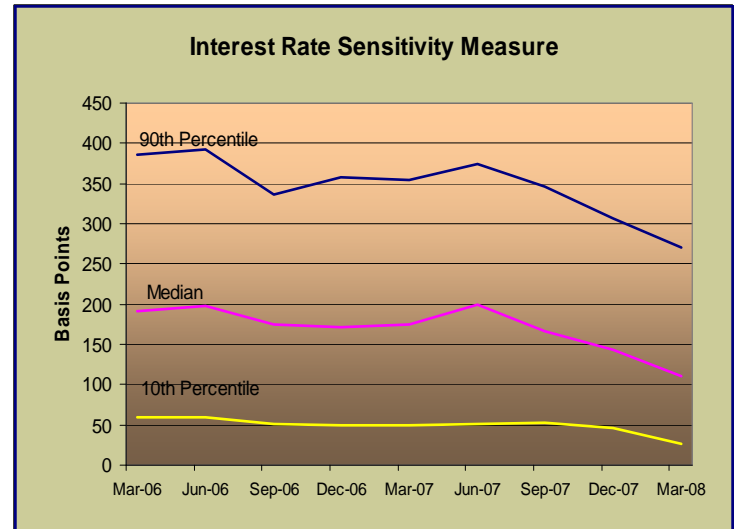
Special points of interest:

- 30-yr mortgage commitment rate declines 33 basis points
- Treasury yield curve drops and steepened in the first quarter with a dramatic decline in short-term rates
- First quarter median interest rate sensitivity declines with post-shock NPV ratios improving
- Asset durations shorten and liability durations lengthen
- Comparative Regional Analysis
- Feature article discusses valuation challenges, regulation, and evolving standards of practice

First Quarter Sees Continued Sensitivity Decline

Between December 31, 2007 and March 31, 2008, interest rates declined and the yield curve steepened significantly. The most dramatic changes occurred at the lower end of the curve with both the three-month and six-month rates dropping 198 bps. Rates declined for the 12-month by 179 bps to 1.55%. The five-year Treasury rate declined 99 bps to 2.46%. The ten-year Treasury rate went from 4.04 percent to 3.45 percent and the 30-year Treasury rate declined from 4.45 percent to 4.30 percent - declines of 59 bps and 15 bps, respectively.

During the quarter, the 30-year mortgage rate on



conforming fixed rate loans declined from 5.96 percent to 5.63 percent. The target for the

federal funds rate was lowered to 2.25 percent at the end of the
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Valuation Challenges, Regulation, and Evolving Standards of Practice

The last year has been a tumultuous time for banks and financial markets in general. After a lengthy period of economic expansion, secular declines in credit spreads, and ample market liquidity, the on-set of credit concerns has created significant market turbulence, reductions in credit availability, and the need for increased capital.

Uncertainty over the scope, depth, and duration of the current turmoil has kept many investors on the sidelines. During this period, banks and other financial intermediaries have struggled to value various balance sheet products – including trading inventory, warehouse positions, available for sale (AFS), and held-for-

investment (HFI¹) portfolios. This pricing difficulty has not been limited to headline products, such as CDOs, auction-rate securities, and other complex structured investments and loans; indeed, banks have had a difficult time finding appropriate prices for less exotic instruments including various types of CMOs, RMBSs, and private-label mortgage loans and securities.

Price discovery has been hampered by significantly reduced volumes of trading in credit-sensitive instruments, particularly in vintages (e.g., 2006 and 2007), underwriting type (e.g., low-doc; Alt-A; etc), and

collateral (e.g., Option ARMs; jumbo v. conventional; etc) of questionable or difficult to ascertain quality. Investors are increasingly aware that collateral and structure may price differently, and investors continue to find transparency into the underlying collateral pools that make up many of these instruments non-existent or remarkably difficult to obtain.

The lack of transparency and access to more granular levels of detail, when combined with reduced faith in rating agency assessments of default-risk and the concomitant uncertainty around forecasted credit exposure, has served to reduce confidence in

¹ For purposes of this article HFI and HTM ("held to maturity") are considered as interchangeable.

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Valuation Challenges, Regulation, and Evolving Standards of Practice (continued)

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various product markets, and in some cases in the structure of the broader market infrastructure itself. Consequently, investors and dealers are conserving capital and liquidity in an effort to weather the storm and bid-side pricing for many products has been hard to come by. This has resulted in a broader use of “mark-to-model” valuations, or what in accounting parlance is now well known as “level 2” and “level 3” valuations.

Meanwhile, the accountants and regulators are asking banks to raise capital, recognize losses, and proactively identify, measure, and control their inherent and expected risk exposures. As evidenced by the surge in discussion around valuation issues - both formal and informal - regulators and accountants are increasingly interested in valuation integrity and internal bank pricing and valuation practices². This is particularly important for bank supervisors given that the value of assets and liabilities is critical in determining the financial safety, soundness, capital adequacy, and resolution risks of a bank.

In the third quarter 2007 issue of this publication, we provided a primer on Financial Accounting Standard (FAS) 157, Fair Value Measurements, and described its impact on the Schedule CMR reporting process. At that time, the full effects of the standard on the industry were unknown given that most institutions had not opted for early adoption and the current period of turbulence was still in its early stages. Nonetheless, reported results from the early adopters indicated that we

² See Table-1 at the end of the article for a summary of fair value proposals and/or observations from three important regulatory groups.

were in for a bumpy ride.

Since then, the difficulties of fair value measurement have continued to create a variety of challenges for management, and in many cases accounting losses have been recognized resulting in reductions in accrual earnings and capital. Given these market circumstances, pressure has mounted within banks to place assets within accounting categories that permit more management flexibility in valuation assumptions, or in some cases to transfer and hold assets at historical cost. While appropriate in some cases, the question is raised as to the efficacy of valuations in categories permitting more management discretion (i.e., whether the principle of conservatism is being applied and assumptions are sufficiently justified by market facts) and whether and how to estimate reasonable values for assets held in categories that, for accounting purposes, allow for historical cost estimates. This same question is being raised within and across markets.

Regardless of accounting designation, events that have unfolded in recent months reinforce a central theme: measuring fair value during times of market stress is a challenging exercise. This has been painfully clear to many thrift executives forced to take large impairment and valuation write downs on AAA-rated securities backed by option ARM and sub prime mortgage collateral during the first and second quarters of 2008. Performing securities held in AFS or trading, and with ample credit protection and low likelihood of principal loss, were being priced as low as 70 and 80 cents on the dollar. As many thrift executives have repeatedly pointed out,

“...virtually no plausible stress scenario can justify prices this low!”

This apparent disconnect between “price” and “value” illustrates an important aspect of FAS 157. Under FAS 157, “fair value” is defined as the exit price that would be received to sell an asset or paid to transfer a liability in an orderly transaction at the measurement date. In other words, the “intrinsic value” of a security (i.e., present value of all future cash flows) is not considered when assigning fair value. This highlights an important point:

“Price is what someone is willing to trade at; value is what something is worth intrinsically”

While the philosophy of fair value has been that these two units are generally the same, there is a rising chorus of market participants who believe that price and value can and often do diverge in periods of stress. That is, in periods of major disruption, “exit prices” don’t accurately reflect the intrinsic value of expected cash flows. This difference between price and value explains, in part, why many firms are holding onto positions and transferring AFS and trading assets and liabilities to Level 2 and Level 3 categories, and why some analysis has shown that current market prices for some assets imply loss and recovery scenarios that are implausible. Although FAS 157 did not introduce the concept of “fair value”, prior to its issuance firms seemed to have a higher degree of flexibility in determining what constituted “fair value”. Rarely did firms mark an asset down to a value lower than its intrinsic value, espe-

cially for complex assets that traded in illiquid markets. By all accounts, FAS 157 seems to have reduced that flexibility.

Fortunately for many institutions, current fair value accounting does not require loans designated as HFI to be carried at fair value. That said, the OTS has received a number of questions regarding how the concept of “fair value” should be applied to the calculation of pre-shock Net Portfolio Value (NPV) capital ratios for interest rate risk modeling purposes, in particular for loans that are HFI.

This article will seek to clarify our position on this issue and explain why it is important to accurately estimate value for all items on the balance sheet, regardless of their accounting designation. More recently, OTS’s longstanding, market-based philosophy is being emphasized across other Agencies as well. Indeed, the Committee of European Bank Supervisors (CEBS) has noted that:

“...institutions [need] to apply the same valuation processes and diligence when valuing financial instruments irrespective of the accounting categories that they have been allocated to or whether the fair values are purely used for disclosure.”³

We will also discuss our observations regarding recent industry valuation practice and share some concerns and recommended actions prompted by those practices.

OTS’s Approach to Measuring Interest Rate Risk

Pursuant to OTS Thrift

³ See page 13 of CEBS, June 18, “Report on Issues regarding the valuation of complex and illiquid financial instruments”.

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Valuation Challenges, Regulation, and Evolving Standards of Practice (continued)

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Bulletin 13a, Management of Interest Rate Risk, Investment Securities, and Derivatives Activities (TB13a), the level of interest rate risk at an institution is a function of both 1) an institution's pre-shock NPV capital ratio and 2) its sensitivity measure (i.e., the degree to which NPV capital is affected by changes in interest rates). The higher an institution's pre-shock NPV capital

ratio, the more interest rate risk an institution can afford to carry. Thus, the calculation of pre-shock NPV capital - an estimate of market value (note: not market capitalization) - is critical to assessing the overall level of interest rate risk at an institution.

OTS has long advocated the use of a market-based approach when calculating pre-shock NPV capital, regardless and without consideration of U.S. GAAP accounting convention. In other words, all values used in the calibration of an interest rate risk model should be based on observed market prices whenever feasible. Where market pricing is not available, a rigorous, documented, and disciplined process should be in place to create reasonable approximations of asset and liability value. The ultimate objective is to create a fair estimate of market value for an institution's assets and liabilities - without regard to accounting and regulatory capital rules, which can sometimes bias or distort estimates of value. This approach can and often does differ from

more simplistic, deterministic "economic value of equity" (EVE) approaches, wherein cash flows are discounted by risk-free (or near "riskless" rates), and values and risk-measures are not calibrated to observed market

"Where market pricing is not available, a rigorous, documented, and disciplined process should be in place to create reasonable approximations of asset and liability value. The ultimate objective is to create a fair estimate of market value for an institution's assets and liabilities - without regard to accounting and regulatory capital rules."

levels. While cognizant of the pricing and valuation difficulties in periods of stress, OTS has nonetheless long-believed that by instilling a market-based valuation discipline throughout an organization a bank will be better able to identify areas of emerging risk, risks that might otherwise go undetected. As pointed out by the Senior Supervisors Group (SSG) March 6, 2008 report:

*"The ability to capture evolving market conditions in risk measures can provide early-warning indicators that prompt management to review a firm's risk profile."*⁴

The SSG also observed that banks with a consistent application of valuation principles across their organizations performed better, avoided crippling losses, and created a healthy level of skepticism for more illiquid and complex products. In particular, these companies were more aware of the fragility of some of the Agency ratings for more complex structures, tracked and understood underwriting and concomitant valuation concerns in some of the more innovative affordability products, and tended to move in advance of

other financial intermediaries in reducing, hedging, or eliminating excessive risk concentrations. In these organizations, valuation uncertainties in the banking and trading book conveyed important signals to senior management, signals that are unavailable in firms that rely on less rigorous practice. These firms worked to reduce or eliminate heterogeneous valuation practices across different lines-of-business and sought to create a "level playing field" for performance measurement and reporting.

While some in the industry believe fair value and fair value accounting to be the "bane of the industry's woes", more reasonable thinking recognizes that while not perfect, excellence in an internal valuation process and rigorous risk pricing practice is necessary for prudent balance sheet management and enterprise risk governance. This is especially true in a market environment that is traditionally somewhat shortsighted in rewarding short-term accrual (i.e., "accounting") earnings. Given that risk manifests through time and accrual income and various accounting gains are often more immediate, banks need measures of economic value - not just performance - in order to bring longer-term risk-taking into proper focus. In fact, firms with strong valuation disciplines may have been less damaged by market turbulence than others. Recently, in fact, some firms have considered dropping out of the Institute of International Finance (IIF) over this very issue, with the IIF petitioning regulators, members of Congress, and others to alter fair value accounting rules and move the industry back toward an historical cost-based approach for various instruments.

While moving backward does not seem the right direction, it is clear that valuation

approaches are not always straightforward (even in calm periods) and many lessons will undoubtedly be learned, behavior modified, and new requirements promulgated as a result of the recent turmoil. Moreover, in the case of valuation, certain assets and liabilities such as mortgage servicing rights (MSRs) and non-maturity deposits may not have readily observable market prices or may suffer from severe liquidity constraints. As such, OTS recognizes that in some cases it is unavoidable that certain assets and liabilities be marked-to-model, a process by which one uses a model and a set of reasonable, market-based "observable" or "unobservable" assumptions to produce a value (note: these are often level-2 or level-3 assets under the FAS 157 hierarchy).

It is important to note that the OTS generally expects the principle of conservatism to apply to values used to calibrate pre-shock NPV, especially for level-3 assets such as MSRs and other complex instruments with unobservable valuation inputs and no active market. This is not to imply that OTS expects arbitrarily conservative adjustments to fair value estimates; rather, that when determining value for more complex, illiquid instruments the institution's risk management is advised to err on the side of conservatism rather than optimism. This also ties into emerging standards in Europe where both CEBS and the recently formed International Accounting Standards (IAS) Board expert task force on valuation are considering how liquidity and model risk (i.e., uncertainty) may or may not be used to ascertain, document, and disclose fair value (or a range of fair value (s)). In periods of stress, OTS expects that the rigor and gov-

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⁴ See page p. 15 of the Senior Supervisors Group (SSG) report entitled, "Observations on Risk Management Practices During the Recent Market Turbulence".

Valuation Challenges, Regulation, and Evolving Standards of Practice (continued)

ernance of internal pricing and valuation processes to increase, and that banks will continue to apply concerted effort to determine, use, and report the fair value of assets and liabilities, even when such value must be estimated through the use of models.

Calculating the Pre-Shock NPV Capital Ratio in the OTS's NPV Model

In order to measure a bank's interest rate risk each quarter, the OTS uses hundreds of market-based interest rates and price quotes, and calibrates and applies sophisticated term-structure and option-adjusted spread (OAS) risk models to a bank's reported position. However, given the level of aggregation used within the OTS reporting vehicle (i.e., Schedule CMR), the difficulty in changing official reporting processes, and data collection requirements - as well as the natural limitations of a model designed to handle hundreds of banks - we are forced to assume that all mortgages reported on Schedule CMR are highly liquid instruments with low credit-risk (e.g., conventional, prime-based loans), an assumption of questionable merit in the current environment. Said differently, the OTS production NPV model does not adequately capture credit risk⁵. Therefore, recent market disruptions in pricing and valuation have not been sufficiently captured in the OTS NPV model since Agency TBA pricing - at least so far - has remained fairly stable.

As a result of these simplifying assumptions, if your institution's loan portfolio contains non-agency eligible instruments (e.g., jumbo, Alt-A, and sub-prime loans), non-traditional, credit-sensitive instruments (e.g., option ARMs, Flex-Pay loans), or is concentrated in illiquid level-3 assets (such as MSRs), it

is important to realize that the pre-shock NPV capital ratio on your bank's Interest Rate Risk Exposure report may be overstated. As such, we caution you against using such estimates for internal accounting, risk assessment, or public disclosure purposes.

OTS and the Use of Internal Models

Pursuant to TB13a, institutions with total assets in excess of \$1.0 billion are required to possess an internal interest rate risk model. Banks with assets under this threshold should likewise have their own in-house model depending on the complexity and materiality of risk exposure. In all cases, OTS encourages the use of rigorous valuation and risk technologies when and where appropriate. With an internal system, the limitations of the OTS NPV Model discussed above are not a constraint, and banks often can modify their model to capture credit-spread and liquidity risks. Accordingly, we expect institutions that have implemented internal models to apply the appropriate levels of stratification necessary to accurately measure risk exposure and to use benchmark values that - whenever feasible - are based on observable prices and orderly market-transactions, even if market volume is at or near historic lows. While prices stemming from distressed sales or forced liquidation may not be viewed as valid exit prices, the existence of historically low pricing is not necessarily evidence of a distressed market, and therefore cannot be ignored.

Current Industry Practice

Good valuation practice can have implications in periods of market stress on a firm's financial position, particularly where risk management has not acted

preemptively to reduce exposure and where senior management has not established risk tolerances on the range of valuation uncertainty arising from credit spread volatility (i.e., basis risk), counterparty risk, and market illiquidity factors. Unfortunately, early indications suggest that many institutions may need to strengthen their practices in the area of valuation.

The following are a variety of sound principles that banks are encouraged to consider in an effort to improve their internal valuation processes. These practices are by no means all inclusive and result from observed weaknesses at a variety of banks made during the course of several recent OTS examinations, where OTS examiners have looked closely at banks' internal valuation models, practices, and controls.

- **Senior management, internal/external audit, and risk management should seek to improve the valuation discipline and practice across the entire banking book, regardless of accounting classification**

Consistent with prior OTS guidance (i.e., TB-13a), the Agency expects banks to apply a market-based approach toward the estimation of base-case pre-shock net portfolio value. That is, for banks that are required to use internal models - either due to size or complexity - there is no difference for OTS as to the integrity of valuation discipline that should be applied to banking versus trading books. While practically speaking - and given the daily P&L impact of trading exposure - the internal "risk governance" and "management" may be dramatically different across these lines of business, the OTS expects banks to apply similar integrity to "valuation" processes across these

books of business. As noted elsewhere in this article, firms that apply a rigorous valuation discipline, not just an "earnings" (i.e., P&L) discipline, have typically fared better through the recent turbulence. A solid valuation process provides important signaling to senior management and requires a far more robust appreciation for product complexities and market issues than simple "yield-cost-spread" perspectives. Cash flow modeling of instrument characteristics is the preferred method for valuation, and OTS naturally shuns the use of short-cut approaches to valuation that do not properly consider instrument-level cash flows (e.g., copula-based approaches to pricing credit risk in structured investments). Senior management must ensure that sufficient funding is provided to encourage and support "price discovery" by groups that heretofore may not have had a central role in valuation (e.g., ALM and treasury groups). This may require staffing the group(s) with additional experience, particularly around specialized products (e.g., structure) and credit-sensitive instruments (e.g., private-label; syndications; CRE; CMBS). Such a process may also entail enhancing the alignment of treasury and risk functions such that these groups are able to incorporate information from all businesses in risk pricing (e.g., FTP), valuation, and balance sheet risk control. As noted by the SSG:

"...[successful firms] created internal pricing mechanisms that provided incentives for individual business lines to control activities that might otherwise lead to significant balance sheet growth or unexpected declines in capital."

Both the SSG and CEBS note that the independence, scope, and quality of valuation processes are critical, and that sufficient resources should be applied to support model approval, review, price verification, and stress testing.

- **Banks should create**
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⁵ Historically, the intersection of market and credit risk wasn't as pronounced as in today's "originate-to-distribute" model of financial risk management. As a result of industry advancements, OTS is in the process of testing models that do, in fact, jointly capture market and credit risk. In these beta-test models, which we would ultimately like to roll-out to the industry, we are able to jointly model prepayments and default in a competing risk framework. Banks interested in these test models may contact their OTS Regional Capital Markets Specialists for more information.

Valuation Challenges, Regulation, and Evolving Standards of Practice (continued)

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“market-sensitive” (i.e., risk sensitive) escalation processes for valuation results and risk control, including more frequent reporting to senior management

Successful firms had a process in place that required enhanced frequency of senior level reporting to discuss valuation problems – actual and anticipated – and other issues as the markets became more volatile. Successful firms fostered a culture of “debate-and-confirm” such that internal constituents could challenge valuations across various lines of business. In one case, senior managers received a daily “market signal” report that highlighted areas of elevated risk, along with narrative from line-of-business (LOB) risk managers as to major concerns and issues related to their portfolio’s value and risks. This report opened needed transparency across various lines of business and allowed for challenges to be made across otherwise silo’d portfolios and risk groups. LOBs with elevated risk, due perhaps to a spike in inter-bank funding spreads, were asked to estimate market pricing and other market action on a more frequent basis. Often senior managers would convene more frequent meetings as market events unfolded and discuss emerging issues and impact to the loan warehouse, pricing disputes on the collateral desk, and abrupt changes to risk spreads in secondary market trading for mortgage bonds and loans that were of similar nature to those carried on-balance sheet. Senior management viewed values and market movements as being inter-twined and recognized that equity and debt investors, and the official sector, would use these signals to infer asset, capital, and earnings quality at their bank. This practice of internal discussion, trans-

parency and senior management involvement is echoed in the SSG report:

“...[senior managers] did not rely on the hope that business lines would make decisions individually that would benefit the firms exposure collectively.” [emphasis added]

By aggressively monitoring the balance sheet and enterprise risks, the bank’s senior management was often able to respond in a more thoughtful and disciplined fashion to investors and rating agencies, and usually had good valuation and risk reports at hand in order to answer questions. Having a control process that is quick to recognize market signals, when combined with an internal valuation process that is also tightly coupled with market risk pricing/valuation, results in a more accurate and timely response to emerging issues.

- **Bank risk management should ensure that all critical risk factors impacting valuations are updated on a timely and regular basis, both for banking and trading book positions. These updates should reflect current market conditions**

On some reviews, we noted that banks were using broker-quotes and consensus pricing services as starting points for estimating value. While certain questions exist relating to the acceptable nature of some of these quotes⁶, most firms understood these weaknesses and would attempt to modify these price quotes to consider contractual and product features unique to the underlying positions. In many cases, the banks would do a reasonable job creating the adjustment factors; however, the internal control and review of these

factors, the frequency of their update(s), and the transparency regarding their impact was often lacking. Also, the rigor with which these factor adjustments would occur on HFI and HTM portfolios was often much lower than the rigor applied to AFS and trading portfolios. OTS expectation is that banks will be rigorous in estimating such factors regardless of accounting classification. Banks should ensure that valuation processes are applied consistently and on a timely basis. When market events require more frequent updates, or changes to internal processes and models, OTS expects the firm to have control processes and governance architectures in place, including policies, that will address the bank’s approach and internal management expectations.

- **Risk managers and portfolio modeling and valuation groups must ensure sufficient granularity and reasonable segmentation of pricing cohorts**

Given the size of many portfolios, it is often the case that matrix and cohort pricing is applied. This is especially true within the banking book. In some cases, OTS examiners have observed a lack of granularity to the cohorts being used. Firms used only a handful of bonds or other traded instruments (i.e., loans) to represent base-case values for all balance sheet products. In other circumstances, critical elements required for the proper segmentation of cohorts were missing. For example, vintage (i.e., year of origination) is a critical factor when pricing mortgage and other credit-sensitive product. In some cases, internal pricing models failed to consider vintage. In other examples, the number of pricing cohorts was so small as to render the application of the valuation process somewhat

meaningless. OTS also noted the importance of data management, error-checking, and control. In one particular instance, sub-prime loans were mapped to the wrong cohort resulting in a significant over-estimation of value. Banks should ensure that the manner in which values are applied to banking book assets and liabilities are reasonable and that the number of price points used in the process are granular enough to fairly represent aggregate portfolio risks. Key valuation considerations, such as vintage, loan-to-value, FICO, and geography, must be considered when defining pricing cohorts. There should also be sufficient rigor applied to ensure that reported results are sensible, and that data quality and integrity has been maintained throughout the modeling process.

- **Valuation staff and risk managers should ensure that internal valuation processes are not over-reliant on “one source” of information, or one methodology, when generating estimated values and pricing**

Many firms that had invested in super-senior CDS positions were overly reliant on one-model and, often, one or few sources of input data for generating valuation estimates. In some cases, the firms had to quickly switch from one modeling paradigm to another, often without sufficient review of results. In hind-site, it is clear that firms should have contingency plans for models such that the firm is more adaptive to disruptions in the market. This may mean having a “bench” of models that can be applied to a portfolio, position, or transaction. Such contingency can also support valuation benchmarking and enhance model risk measurement and control. During the turbulence, several firms were over-reliant on inputs that depended on liquid markets and/or the origina-

⁶ The CEBS paper, referred to elsewhere in this article, points out that under FAS 157 and IAS 39, additional guidance is needed to ascertain whether, in fact, a broker quote (usually an indication) is sufficient to comply with the accounting requirement of an “active market”. The same question applies to consensus pricing services. Determination of “active market” likely includes consideration of spreads, volumes, number of counterparties, two-way prices, and other factors.

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Valuation Challenges, Regulation, and Evolving Standards of Practice (continued)

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 tion of new product for “proxy” pricing. Such process weaknesses should normally be picked-up in new product approval processes; however, this is an area that – like valuation – needs further enhancement. Many new product approval processes are “awareness” exercises rather than risk management exercises. A lesson learned is that effective new product approval processes should include instrument complexity, market liquidity, and model contingency planning within its scope, especially for complex and new instruments with little trading history.

Sensitivity of Ratings in the Current Environment

While it is easy for us to opine on various sound practices and lessons learned, we do want to convey that we recognize and appreciate the difficulty of finding the appropriate benchmark prices during this period of market disruption. But for reasons we have outlined above, we believe that the pre-shock NPV capital ratio is a critically important internal and supervisory metric, for purposes of IRR certainly, but also as a measure of capital adequacy and – performed properly – as a barometer for inherent and expected credit risk. We believe all banks should have a disciplined approach toward valuation and believe that a market-based approach, although imperfect, is better than the alternative (i.e., historical cost-basis).

Keep in mind, however that although the existence of a low pre-and post-shock NPV capital ratio may be cause for supervisory concern, it may not necessarily indicate an interest rate risk problem. Instead, a low pre- and post-shock NPV capital ratio may be indicative of a capital adequacy, asset quality, or earnings issue. As noted in TB13a, “only when an institution’s low Post-shock Ratio is, in whole or in part, caused by high interest rate risk prob-

lem suggested.” TB13a contains quantitative guidelines for assessing the level of interest rate risk. But we have long stressed to OTS examiners that blind adherence to these guidelines is not desirable. Rather they should be viewed as a starting point for the assessment process.

Conclusion

In the end, we expect examiners to exercise judgment when assigning an “S” rating, and consideration of valuation accuracy is a key element of this judgment. This includes undertaking a comprehensive review of the quality of your bank’s pricing and interest rate risk management practices. As such, we strongly encourage you to review the guidelines for Sound Practices for Market Risk

Management contained in Appendix B of TB13a. We also encourage you to read the Senior Supervisors Group’s publication on lessons learned during this period of turbulence, and believe that those interested in valuation-related issues will benefit by studying the Committee of European Banking Supervisors report on valuation practices.

If you have any questions, please contact us or your regional capital market specialist noted on the bottom of your institution’s Interest Rate Risk Exposure Report – Executive Summary.

- by Scott Ciardi and Thomas Day



Table-1

Various Supervisory Recommendations on Enhancements to Valuation Practices			
	CEBS	SSG	FSF
1 Clarification of "active markets" definition	✓		✓
2 Better supervisory guidance needed on valuation practices		✓	✓
3 Improved and/or enhanced accounting guidance on fair value heirarchy	✓		
4 FMV should consider:			
- Counterparty risks	✓	✓	
- Liquidity risks	✓	✓	
- Model risks	✓		
5 Enhancement to impairment rules and definitions	✓		
6 Even the playing field across accounting standards with respect to day-1 profit issues	✓		
7 Enhance internal bank governance and controls around valuation practices	✓	✓	✓
8 Broader application of FMV principles to include banking and trading books	✓		
9 Increased efforts on behalf of industry associations to enhance demand for increased transparency of underlying assets and liabilities contained within complex structures	✓		
10 BCBS to issue guidance in 2008 around enhancements to supervisory pratics for evaluating valuation controls and governance		✓	✓
11 BCBS (2009) to review and enhance Basel II Pillar 3 rules around disclosure, considering valuation "lessons learned" over the recent period of turbulence		✓	✓
12 IASB to strengthen disclosure standards with respect to valuations, reviewing IFRS #7 requirements for completeness			✓
13 Enhanced disclosures around OBS risks, SPVs and other similar exposures		✓	✓
14 Broad mandate for institutions to improve disclosures	✓	✓	✓
15 Standard setters and relevent regulators to enhance auditor guidance on valuation review, especially with respect to less liquid instruments in times of market stress	✓	✓	✓

* CEBS = Committee of European Banking Supervisors (paper published June 18, 2008)
 * SSG = Senior Supervisors Group (paper published March 6, 2008)
 * FSF = Financial Stability Forum (paper published April 7, 2008)

First Quarter Sees Continued Sensitivity Decline (continued)

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first quarter from 4.25 percent at the December quarter end. An additional rate cut was made on April 30 with the federal funds target rate lowered to 2.00 percent.

Given the fact that most OTS-regulated banks are liability-sensitive (meaning that they fund longer term assets with shorter term maturities), the interest rate changes that occurred during the quarter improved the interest rate risk profile of the typical thrift. Lower interest rates typically increase the value of fixed rate mortgage loans and trigger a corresponding increase in preshock capital.

First quarter results for the nation's thrift industry improved from the results of the fourth quarter, but the continued housing market downturn resulted in losses in earnings and profitability, and declining asset quality measures throughout the first quarter of 2008. During the first quarter, thrifts set aside a record \$7.6 billion in loan loss provisions, or 2.01 percent of average assets. That was up from 1.44 percent (\$5.5 billion) in the previous quarter and 0.33 percent (\$1.2 billion) in the first quarter one year ago.

Troubled assets (non-current loans and repossessed assets) were 2.06 percent of assets, up from 1.66 percent in the fourth quarter and 0.80 percent a year ago. Delinquencies for most loan types increased over the past year and continued to rise in the first quarter. The largest in-

creases in delinquency rates were in 1-4 family mortgages and construction loans, and these increases reflect the continued weakness in the housing sector.

Capital measures for the industry continue to be well in excess of minimum regulatory requirements. Equity capital at the end of the first quarter was 9.05 percent of assets, down from 10.70 percent year-over year, and from 9.26 percent in the prior quarter. At the end of the first quarter, only three thrifts were less than adequately capitalized from a regulatory standpoint. Keep in mind, however, regulatory capital does not necessarily reflect mark-to-market values on assets and liabilities.

Net losses in the first quarter were \$617 million, an improvement from net losses of \$8.75 billion in the fourth quarter, but down from net income of \$3.61 billion in the first quarter one year ago. Last quarter was the first quarterly loss reported by the thrift industry since a special assessment was collected in the third quarter 1996 for the Savings Association Insurance Fund. Higher loan loss provisions drove the losses in the first quarter.

Profitability, as measured by return on average assets (ROA), was a negative 0.16 percent in the first quarter, an improvement from a negative 2.31 percent in the fourth quarter, but down from 0.97 percent in the comparable year ago quarter. The median ROA increased to 0.43 percent in

the first quarter from 0.39 percent in the prior quarter, but was down from 0.51 percent in the first quarter a year ago. Return on average equity (ROE) was a negative 1.80 percent in the first quarter, up from a negative 23.48 percent in the fourth quarter, but down from 9.35 percent in the first quarter a year ago.

In the first quarter, the net interest margin increased to 276 basis points from 261 basis points in the fourth quarter, but was down from 277 basis points in the comparable quarter a year ago. Loan loss provisions increased to 2.01 percent of average assets in the first quarter from 1.44 percent in the fourth quarter and from 0.33 percent in the first quarter a year ago. The recent increases in loss provisions reflect the increase in non-current loans stemming from the housing market downturn and the deterioration of loans originated in the past several years.

Total fee income, including mortgage loan servicing fee income and other fee income, was unchanged in the first quarter from the comparable year ago quarter at 1.11 percent of average assets, but was down from 1.15 percent in the fourth quarter. Other noninterest income was 0.60 percent of average assets in the first quarter, up from a negative 0.51 percent in the fourth quarter and from 0.39 percent in the first quarter a year ago.

Noninterest expense increased to 2.77 percent of average assets in the first

quarter from 2.46 percent in the first quarter a year ago, but was down from 4.59 percent in the fourth quarter. Noninterest expense in the first quarter was higher due to write-downs of goodwill by several large thrifts. General and administrative expense, the largest component of noninterest expense, increased 26 basis points to 2.66 percent of average assets in the first quarter from 2.40 percent in the comparable year ago quarter.

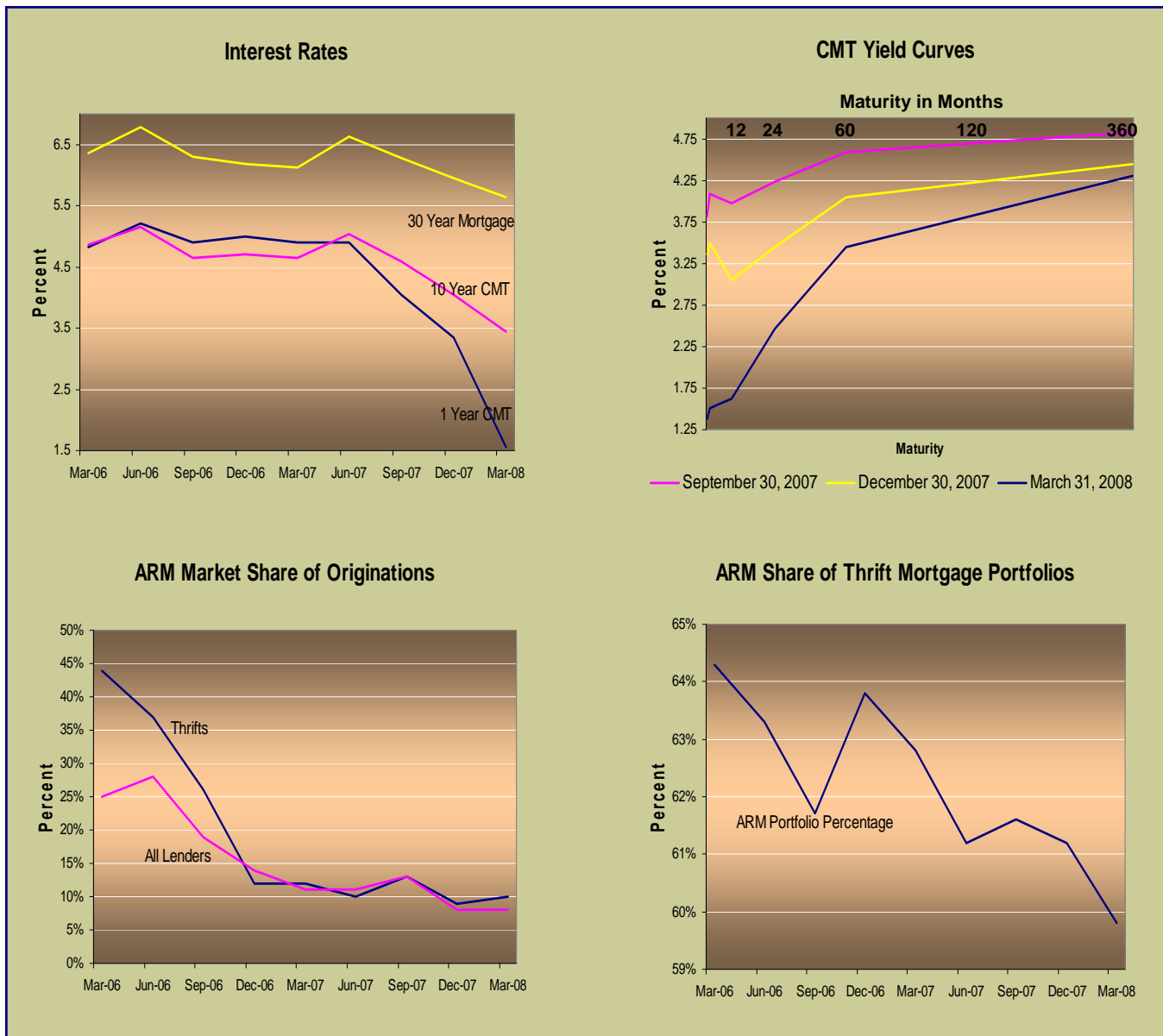
Thrifts remain focused on residential mortgage lending, with 49.4 percent of assets invested in 1-4 family mortgage loans at the end of the first quarter, down from 51.8 percent one year ago. Of these 1-4 family mortgage loans, 7.8 percent are home equity lines of credit, up from 6.2 percent one year ago. Holdings of consumer loans decreased to 5.6 percent of assets from 5.9 percent a year ago, and multifamily mortgages decreased over the year from 4.3 percent of assets to 4.2 percent at the end of the first quarter. Commercial loans increased to 4.0 percent of assets at the end of the first quarter from 3.5 percent one year ago.

Total thrift industry mortgage originations (which include multifamily and nonresidential mortgages) were \$133.7 billion in the first quarter, down 21 percent from \$169.2 billion in the first quarter a year ago and down 20 percent from \$166.6 billion in the prior quarter.

An estimated ten per-

(Continued on page 8)

Interest Rates and ARM Market Share



First Quarter Sees Continued Sensitivity Decline (continued)

(Continued from page 7)

cent of thrift originations were ARMs in the first quarter, down from 12 percent in the comparable year ago quarter, but up from nine percent in the prior quarter. The ARM share for all lenders was estimated at eight percent in the first quarter, eight percent in the prior quarter, and 11 percent in the first quarter one year ago.

The volume of mortgage refinancing, as a percentage of total originations, remained strong in the first quarter as borrowers converted adjustable rate mortgages to fixed rate mortgages. Refinancing activity accounted for 50 percent of thrift originations in the first quarter, up from 48 percent in the prior quarter, but down from 52 percent in the first quarter a year ago.

Deposits and escrows fell by four percent over the year to \$913 billion from \$953 billion. As a percentage of total assets, deposits and escrows decreased to 60.3 percent from 64.0 percent one year ago. Federal Home Loan Bank advances were up from 14.2 percent one year ago to 20.4 percent of total assets.

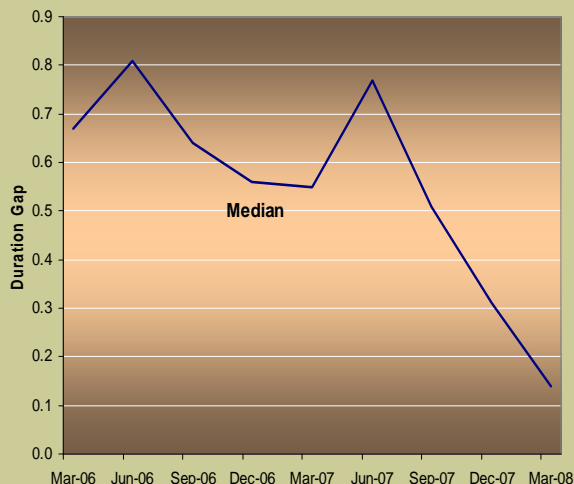
The interest rate changes that occurred during the quar-

ter improved the interest rate risk profile of the typical thrift. Lower interest rates typically increase the value of fixed rate mortgage loans and trigger a corresponding increase in preshock capital. Similarly, lower mortgage rates increased the likelihood of refinance-driven mortgage prepayments which decreased the effective duration of most

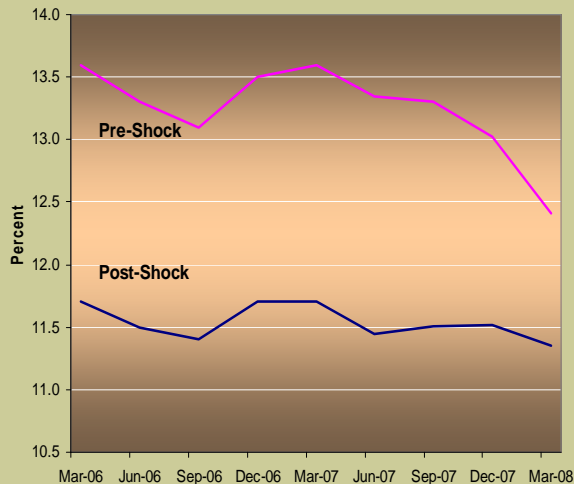
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Duration and NPV Sensitivity Measures

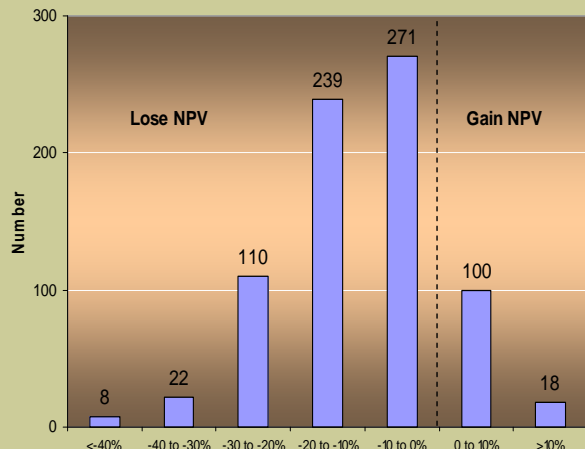
Median Effective Duration Gap



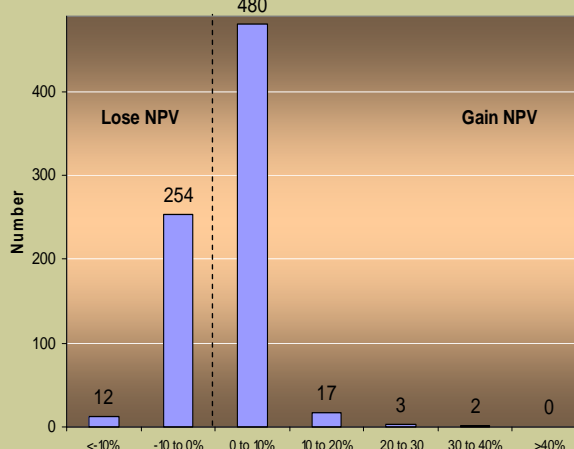
Median Pre- and Post-Shock NPV Ratios



Estimated Change in NPV: +200bp Rate Change



Estimated Change in NPV: -100bp Rate Change



First Quarter Sees Continued Sensitivity Decline (continued)

(Continued from page 8)
 fixed and adjustable rate mortgages relative to last quarter. The drop in effective duration of assets, in turn, led to an industry wide decrease in sensitivity. It should be noted that current prepayment speeds may not be as high as past experience has shown or as high as our model is fore-

casting.
 First-quarter median interest rate sensitivity fell to 110 basis points, down from 144 basis points in the prior quarter. The median pre-shock Net Portfolio Value (NPV) ratio fell in the first quarter by approximately 61 basis points while the median post-shock ratio declined by

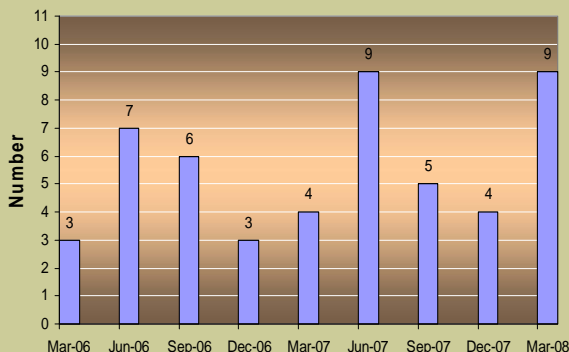
17 basis points. The decline in pre-shock NPV was influenced by a decline in the equity capital ratio at thrifts. The number of thrifts with post-shock NPV ratios below 4.0 percent increased from four to nine institutions.
 The industry's median effective duration of assets declined from 1.61 to 1.55 in

the first quarter. The decline in the duration of assets was caused by the decrease in interest rates, which increased estimated prepayment speeds. The first quarter saw the industry's median effective duration of liabilities increase from 1.28 to 1.40. The decrease in the effective dura-

(Continued on page 10)

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	
	Dec-07	Mar-08	Dec-07	Mar-08
+300	8.83%	7.97%	-21%	-19%
+200	9.70%	8.68%	-12%	-11%
+100	10.38%	9.21%	-4%	-4%
Base	10.76%	9.54%	0%	0%
-100	10.88%	9.65%	2%	2%
-200	10.80%		2%	

Post-Shock NPV Ratio and Sensitivity Measure Matrix March 2008

	Under 100bp	101-200bp	201-400bp	Over 400bp	Total
Over 10%	246	139	96	7	488
6% to 10%	102	90	52	2	246
4% to 6%	8	11	6	0	25
Below 4%	2	2	3	2	9
Total	358	242	157	11	768

Minimal Moderate Significant High

Post-Shock NPV Ratio and Sensitivity Measure Matrix December 2007

	Under 100bp	101-200bp	201-400bp	Over 400bp	Total
Over 10%	188	174	141	11	514
6% to 10%	54	90	84	4	232
4% to 6%	4	5	5	1	15
Below 4%	0	1	2	1	4
Total	246	270	232	17	765

Minimal Moderate Significant High

First Quarter Sees Continued Sensitivity Decline (continued)

(Continued from page 9) tion of assets coupled with the increase in the duration of liabilities resulted in a decrease in the duration gap for the thrift industry in the first quarter from 0.31 to 0.14.

Of the thrifts that submitted Schedule CMR data in the first quarter, the NPV model estimated that about 85 percent would experience a loss

of net portfolio value if rates rose by 200 basis points and approximately 65 percent of thrifts would experience an increase in net portfolio value should rates fall 100 basis points. The NPV model estimated that the thrift industry would lose 11 percent of its net portfolio value if rates rose by 200 basis points in the first quarter, and the industry

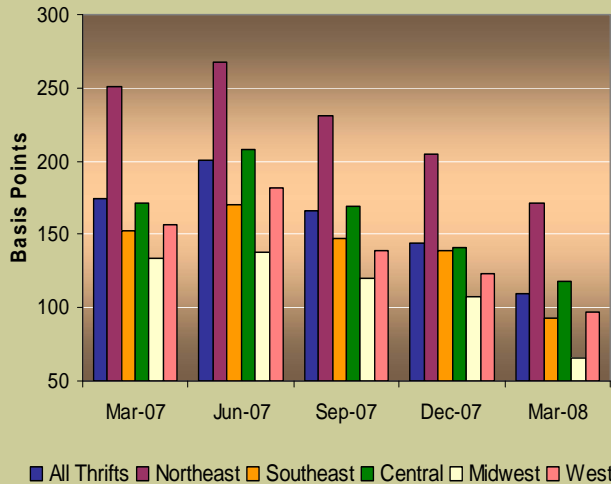
would gain two percent if rates fell by 100 basis points.

Based on TB 13a guidance for the "S" rating for those institutions that submitted scheduled CMR, 681 thrifts (88.7 percent) initially would be assigned a minimal interest rate risk rating, 72 thrifts (9.4 percent) a moderate rating, ten thrifts (1.3 percent) a significant rating, and

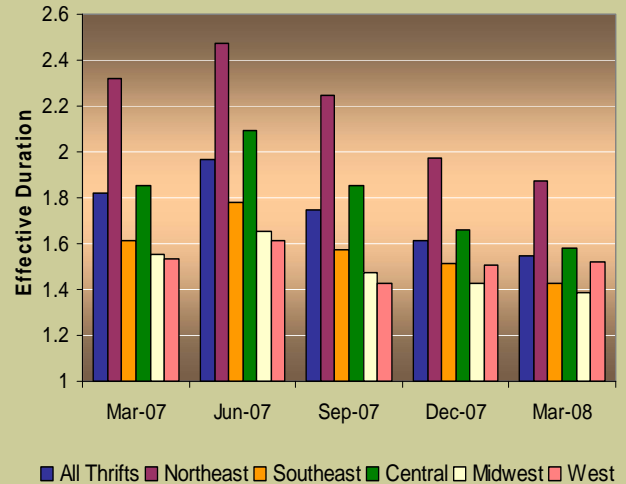
five thrifts (0.65 percent) a high rating in the first quarter. The number of thrifts with significant or high interest rate slightly increased from 14 in the fourth quarter to 15 in the first quarter.

Comparative Trends in the Five OTS Regions

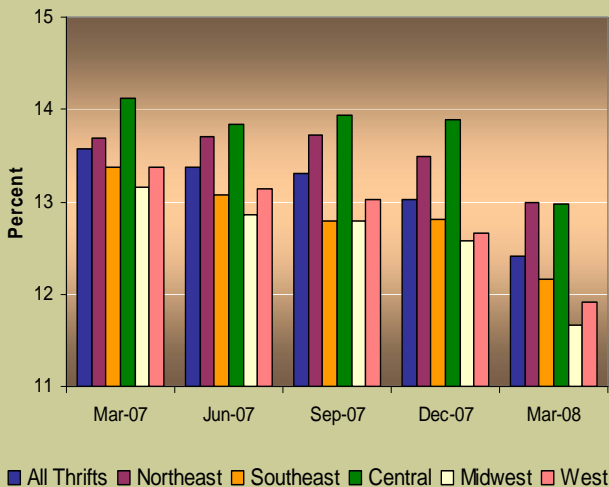
Median Sensitivity by OTS Region



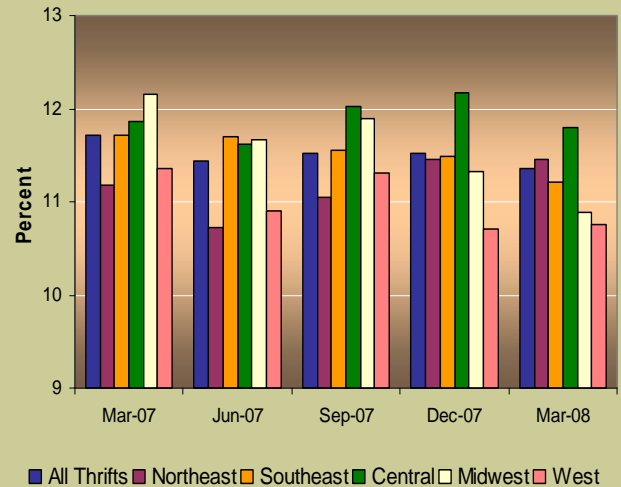
Median Assets Duration by OTS Region



Median Pre-Shock NPV Ratio by OTS Region



Median Post-Shock NPV Ratio by OTS Region



Regional Comparisons

At the end of the first quarter, the Northeast Region had the highest median sensitivity at 171 basis points, while the Midwest Region had the lowest median sensitivity at 66 basis points.

All five regions saw their median sensitivities fall, with the Southeast Region's sensi-

tivity falling the most (46 basis points) and the Central Region's sensitivity falling the least (23 basis points).

The Northeast Region had the highest median pre-shock NPV ratio at 12.99 percent. The Midwest Region had the lowest pre-shock NPV ratio at 11.66%.

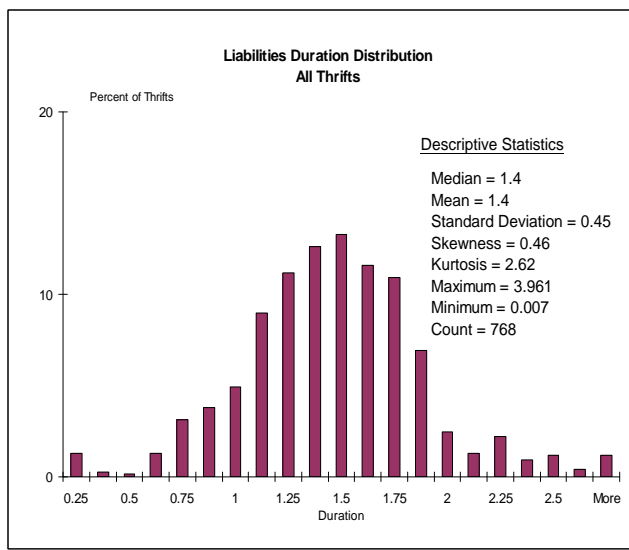
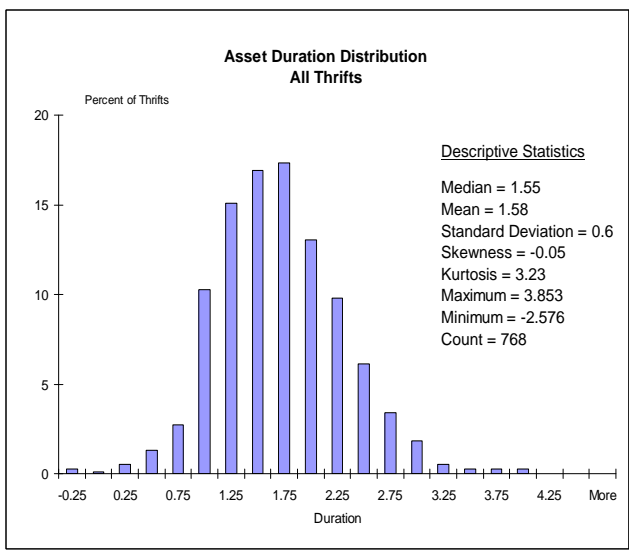
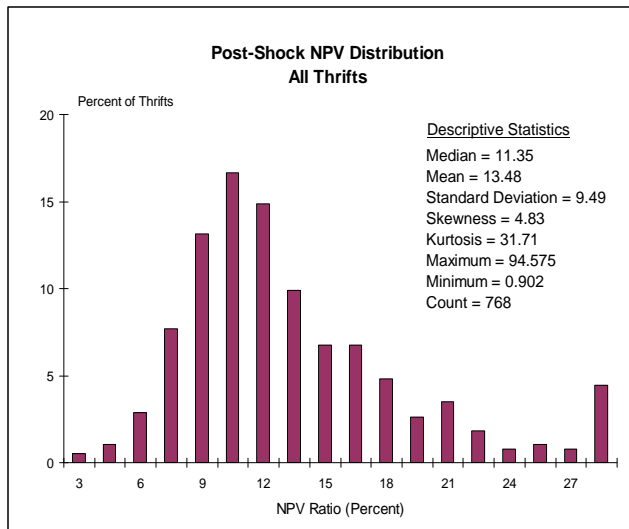
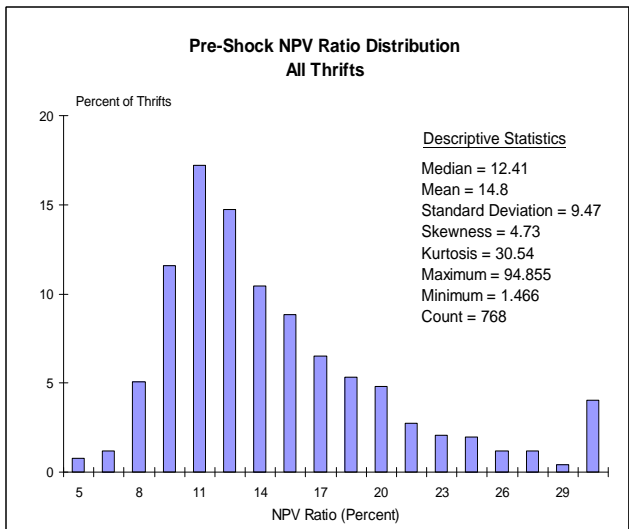
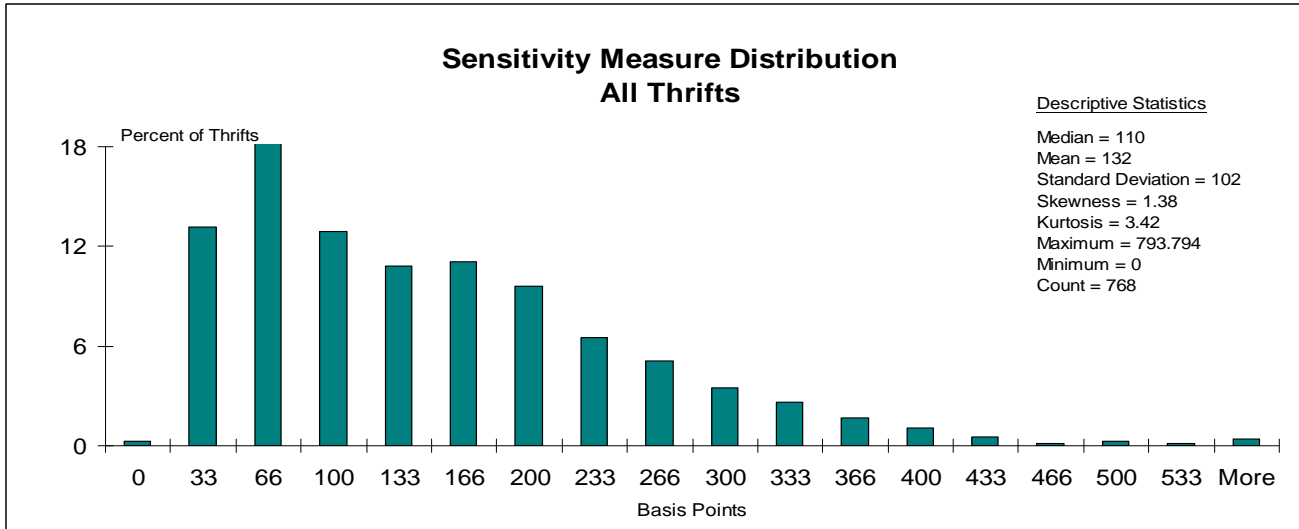
The Central Region had the highest median post-shock NPV ratio, at 11.79 percent, while the West Region had the lowest, at 10.75 percent.

The Northeast Region had the highest median asset duration, at 1.87, while the Midwest Region had the low-

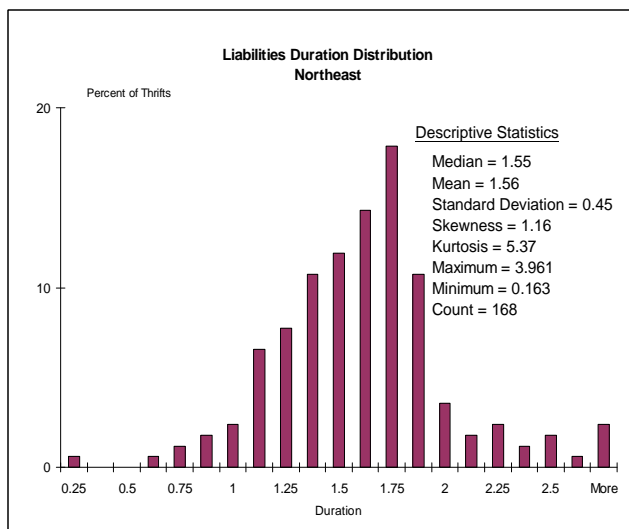
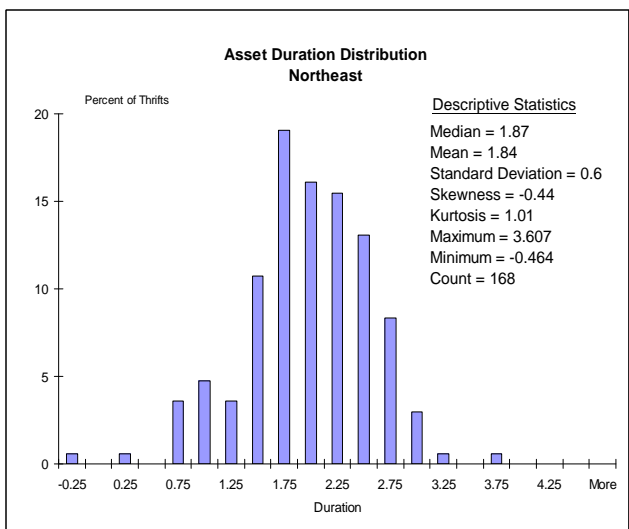
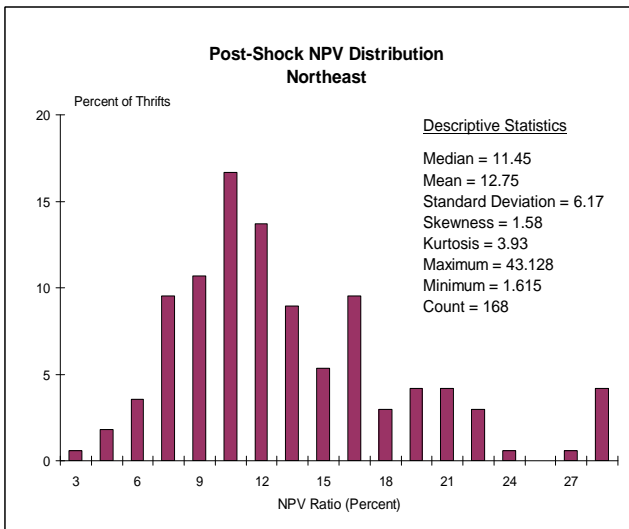
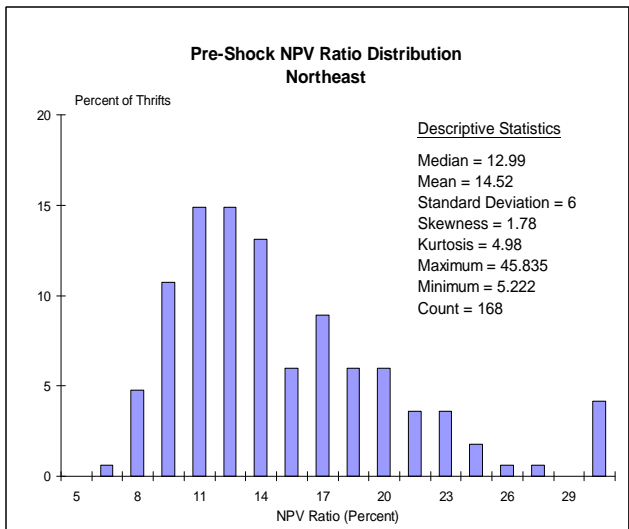
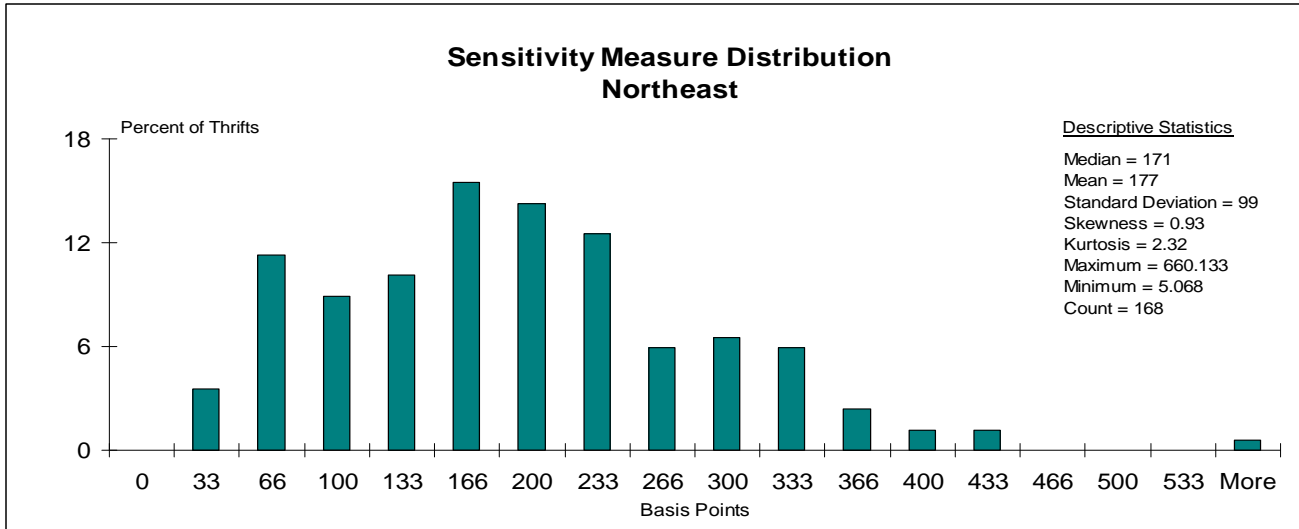
est, at 1.39, at quarter end.

The Southeast Region had the lowest median liability duration, at 1.23, while the Northeast Region had the highest, at 1.55. ■

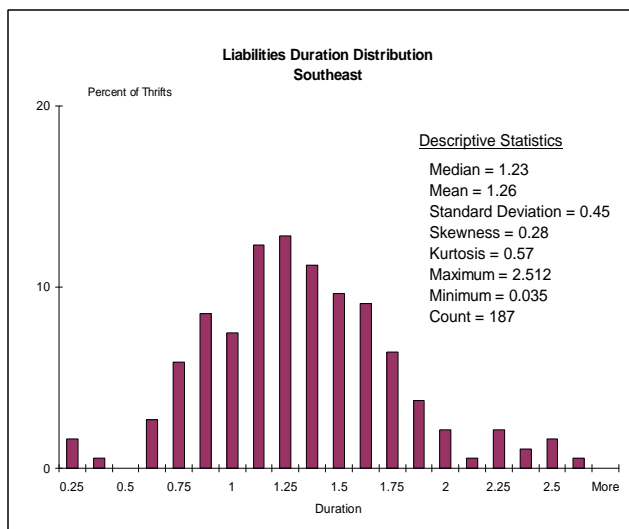
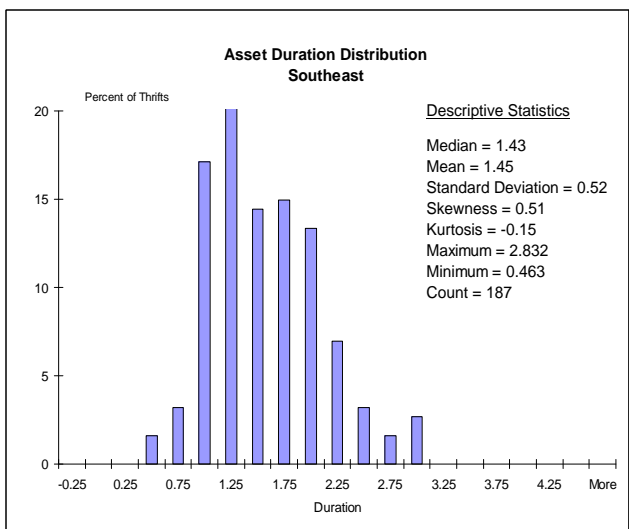
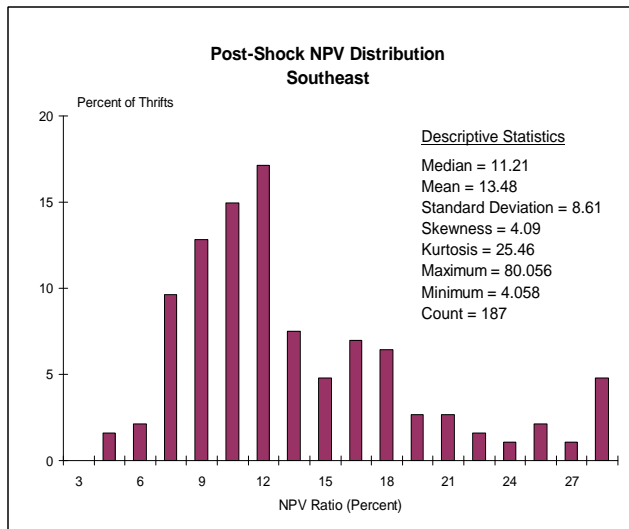
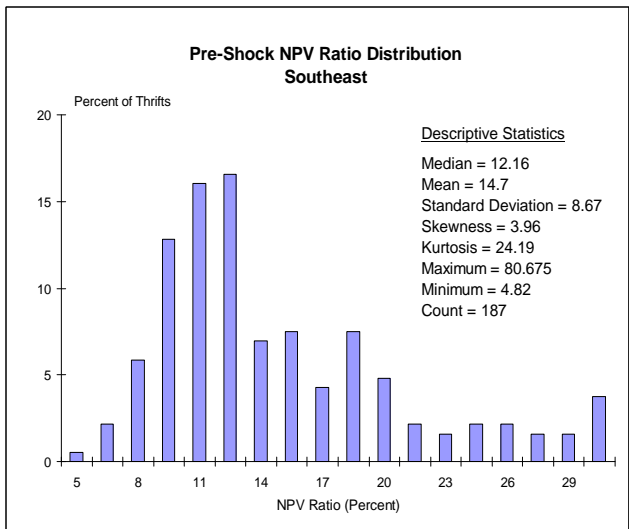
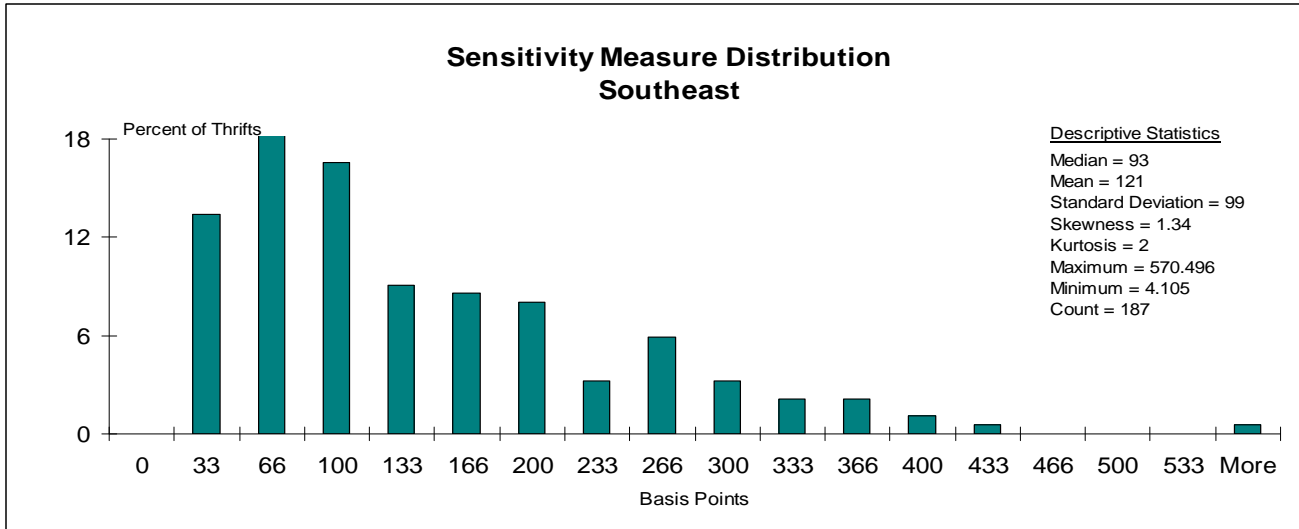
Appendix A – All Thrifts



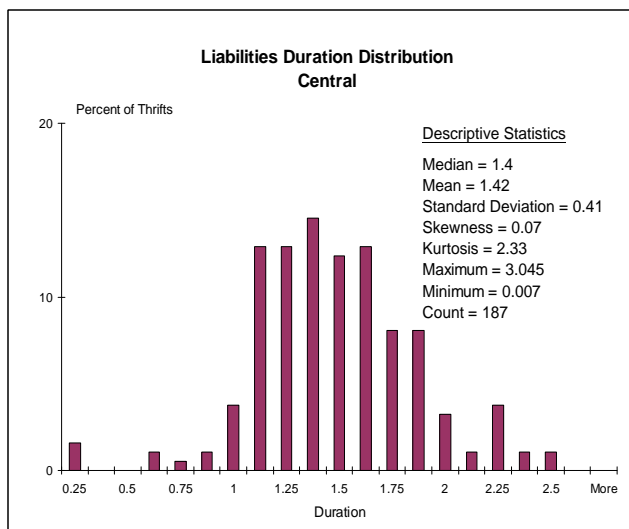
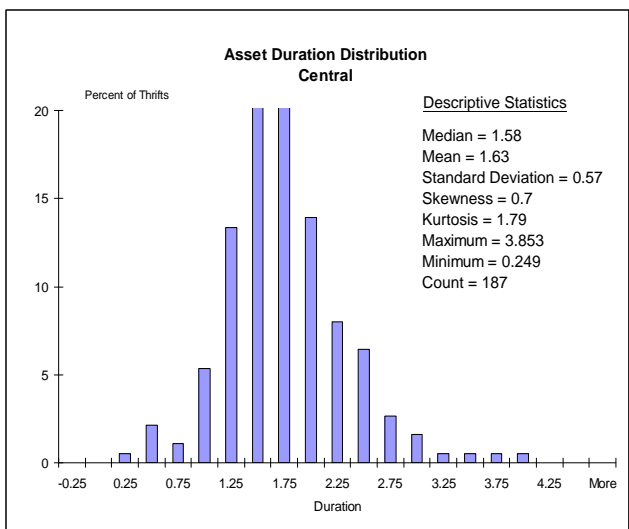
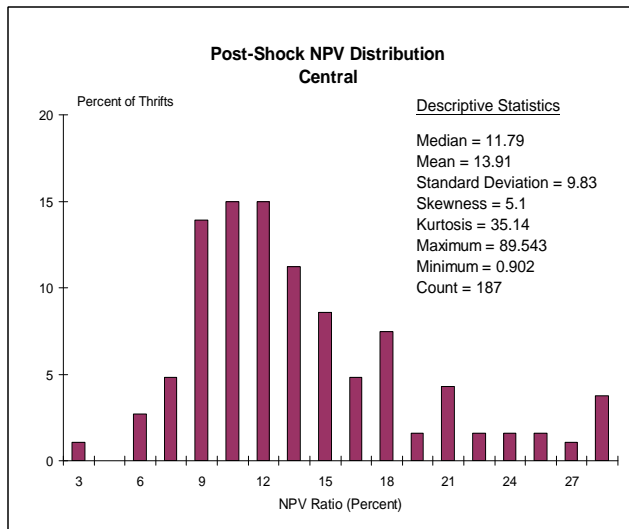
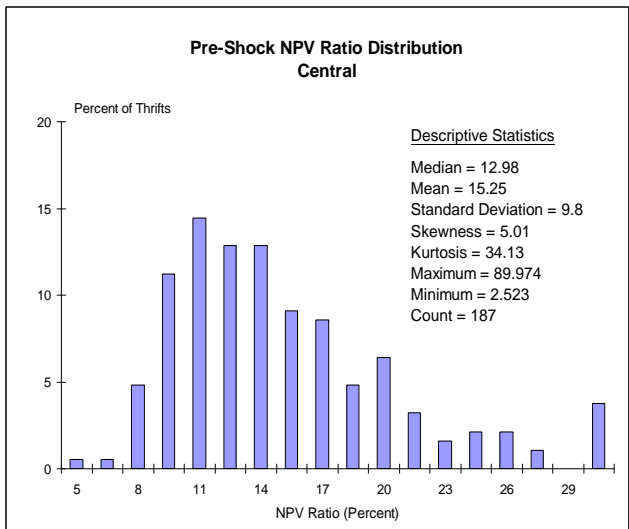
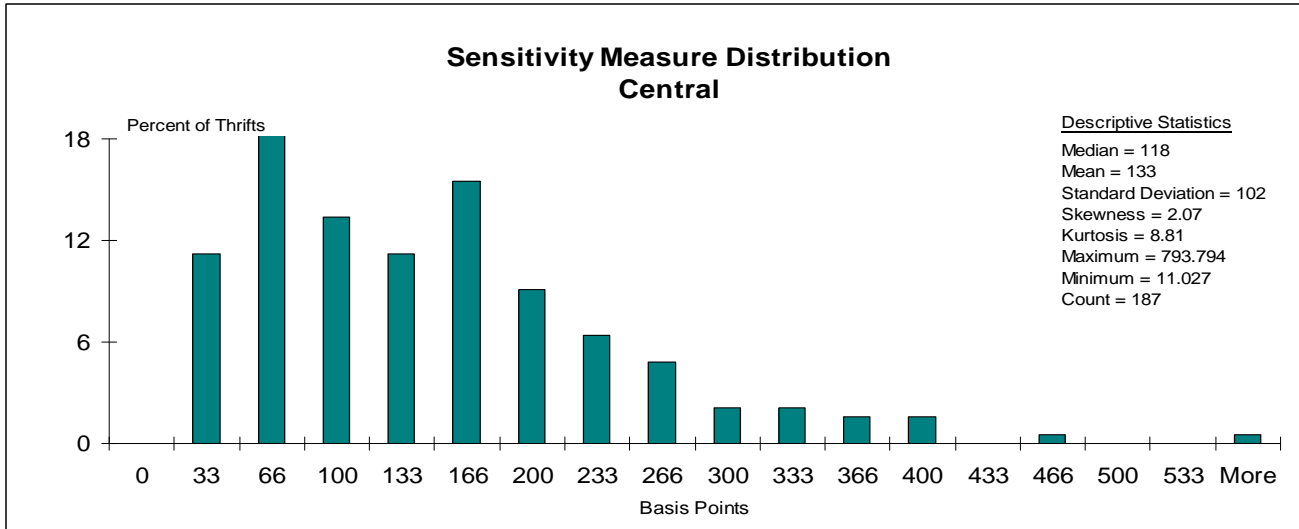
Appendix B – Northeast Region



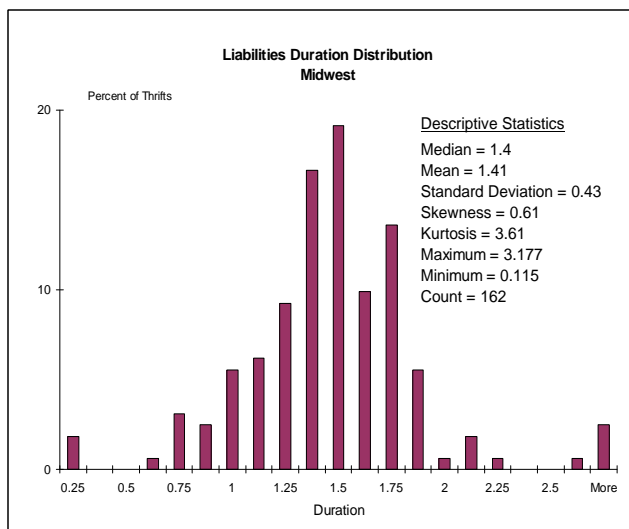
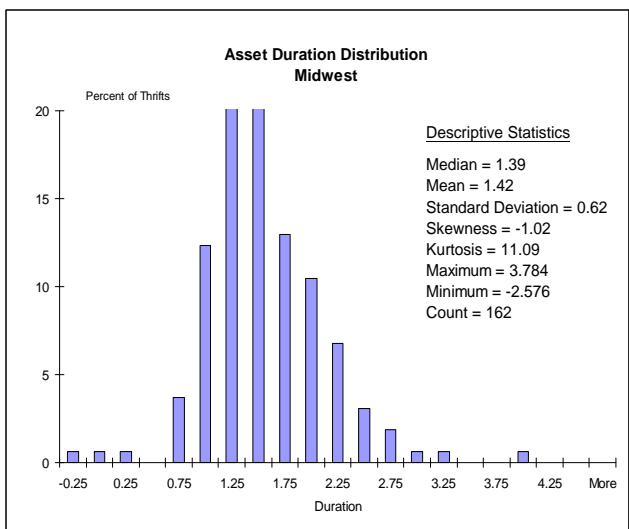
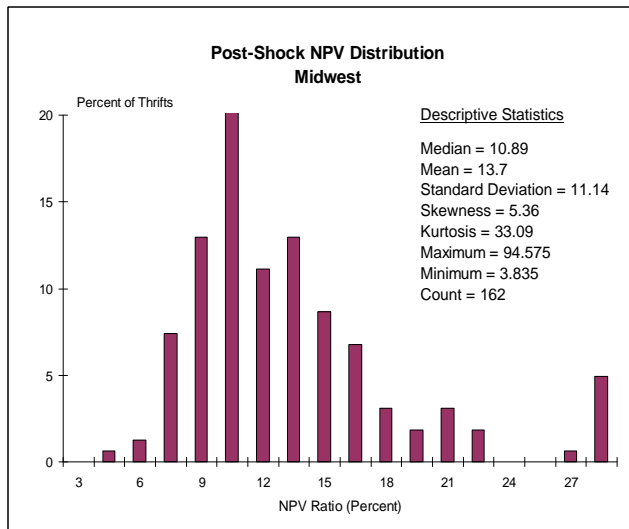
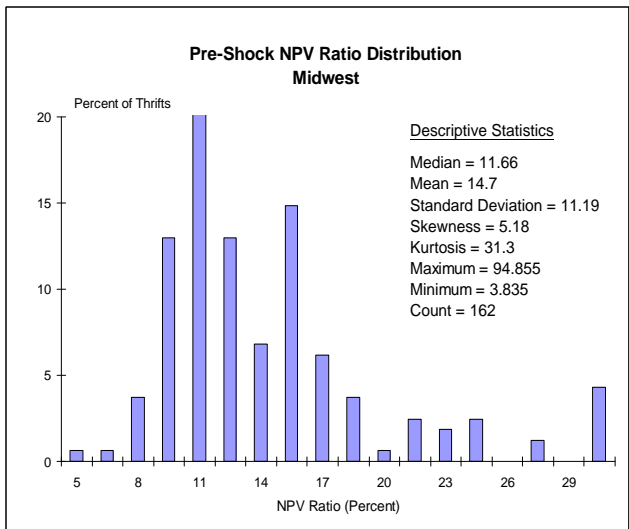
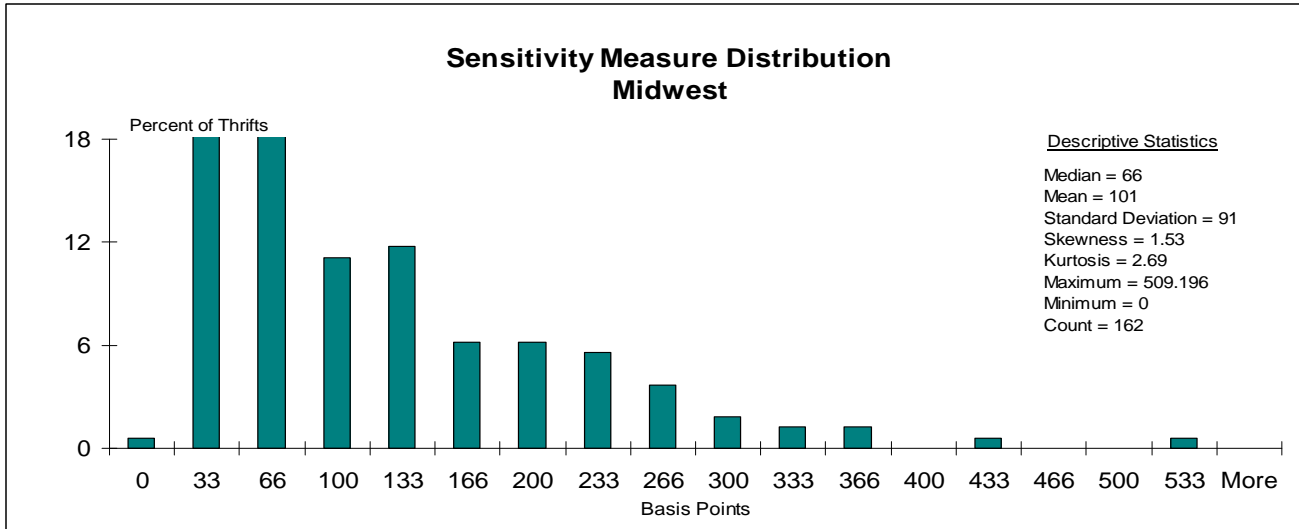
Appendix C – Southeast Region



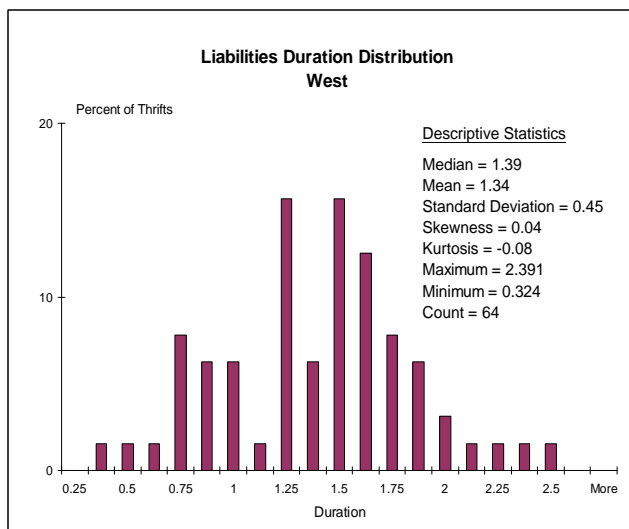
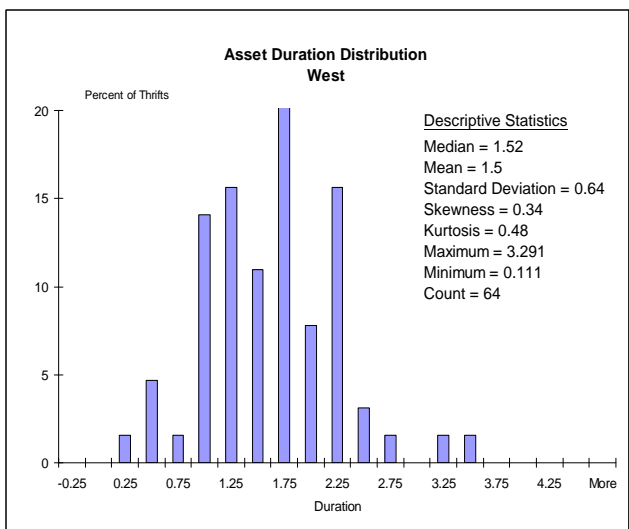
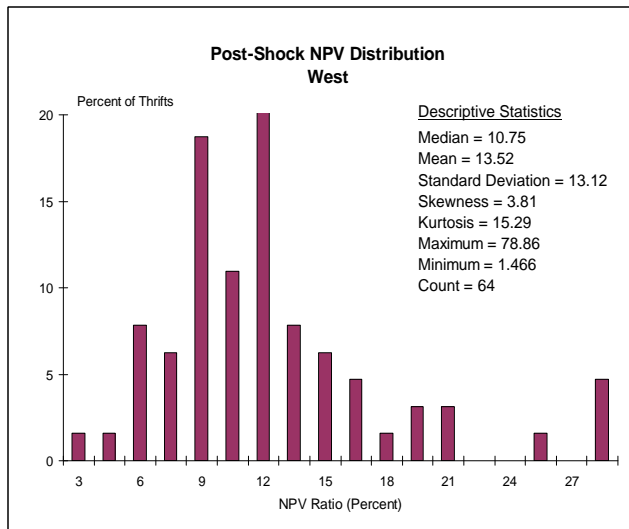
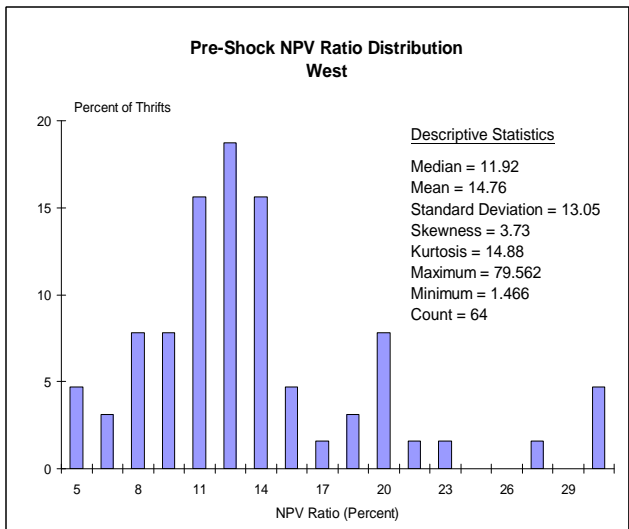
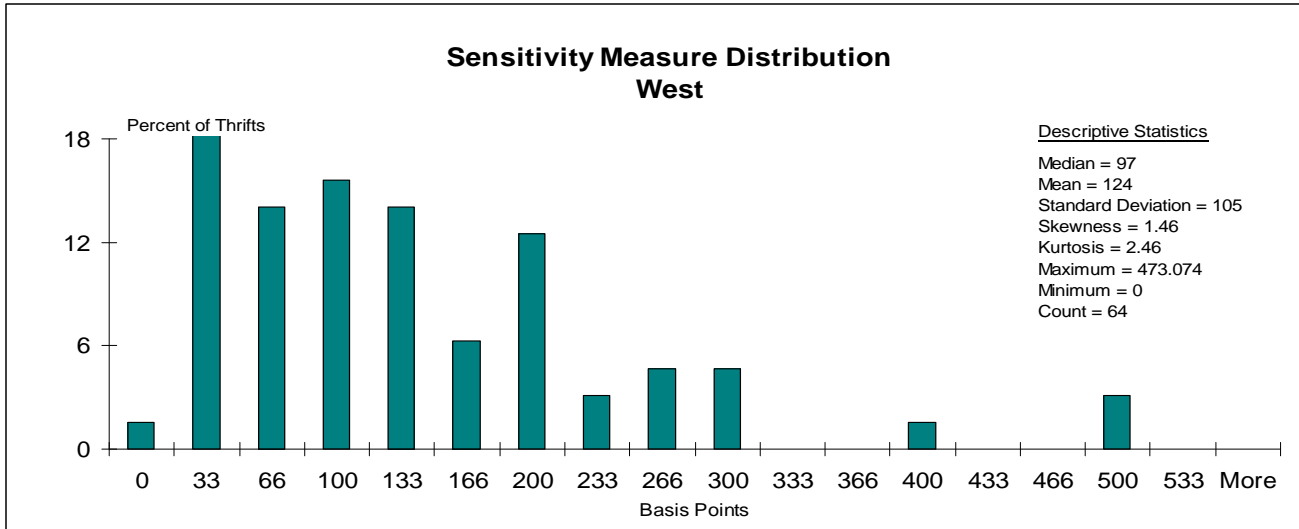
Appendix D – Central Region



Appendix E – Midwest Region



Appendix F – 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).

Risk Modeling and Analysis Division

Scott Ciardi

Director
Phone: 202-906-6960
Email: scott.ciardi@ots.treas.gov

Tom Day

Senior Capital Markets Specialist
Phone: 202-906-7933
Email: tom.day@ots.treas.gov

Andrew Carayiannis

Financial Analyst
Phone: 202-906-6919
Email: andrew.carayiannis@ots.treas.gov

Jeff Adams

Capital Markets Specialist
Phone: 202-906-6388
Email: jeff.adams@ots.treas.gov

Tom Wilderman

Capital Markets Specialist
Phone: 202-906-6973
Email: thomas.wilderman@ots.treas.gov

Haranath Chadive

I T Specialist, NPV Model
Phone: 202-906-6898
Email: haranath.chadive@ots.treas.gov

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