The Quarterly Review of Interest Rate Risk

Volume 1, Number 3 Third Quarter, 1996

EXECUTIVE SUMMARY

Interest Rate Sensitivity Remains Largely Unchanged for the Third Quarter

Results of the Office of Thrift Supervision (OTS) Net Portfolio Value Model showed a small increase in the interest rate sensitivity of the thrift industry's net portfolio value during the third quarter of 1996. At the end of the third quarter, the median **sensitivity measure** for the industry was 188 basis points, representing an increase of only 6 basis points from the previous quarter. A small deterioration in the thrift industry's ability to absorb interest rate shocks was also evident in the third quarter. As measured by the Net Portfolio Value (NPV) Model, the median **post-shock NPV capital ratio** decreased slightly during the third quarter, falling from 9.8 to 9.6 percent. While the overall financial condition of the thrift industry remains strong, a substantial segment remains vulnerable to potential interest rate shocks. Approximately 45 percent of OTS-regulated thrifts are likely to lose more than 20 percent of their net portfolio value under a 200 basis point interest rate increase. Moreover, 31 thrifts (2.5 percent) have **exposure ratios** below 4.0 percent.

QUARTERLY TREND ANALYSIS

The overall sensitivity of the industry to changes in interest rates remained largely unchanged between the second and third quarters. The median sensitivity measure — a key measure of the industry's interest rate sensitivity — increased slightly to 188 basis points at the end of the third quarter, up a modest six basis points from the second quarter (Chart 1). This relative stability in the sensitivity measure can be traced to two factors. First, the yield curve at the end of September was virtually identical to the yield curve at the end of June (Chart 2). And second, the effective durations of the industry's assets and liabilities remained fairly constant (Chart 3). As might be expected, given the striking similarity of the yield curves for June and September, the duration of fixed-

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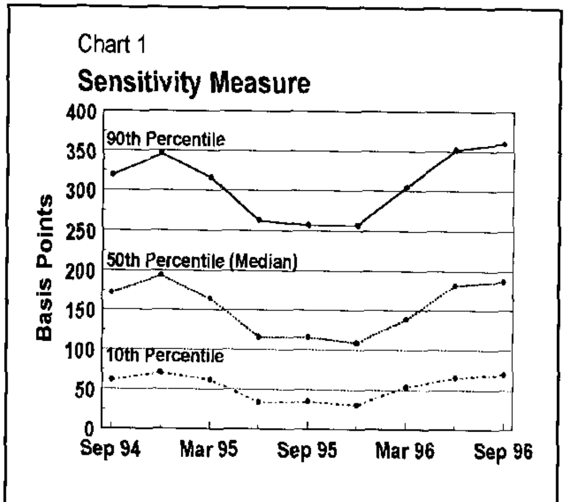
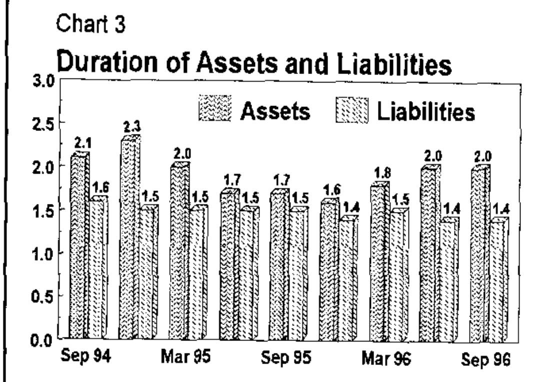
Note: See glossary on page 5 for definitions of the terms highlighted throughout this article.

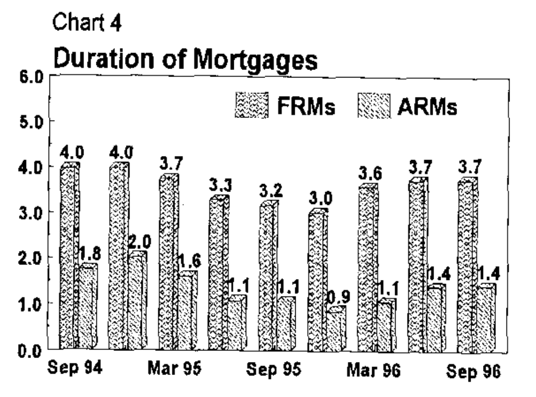


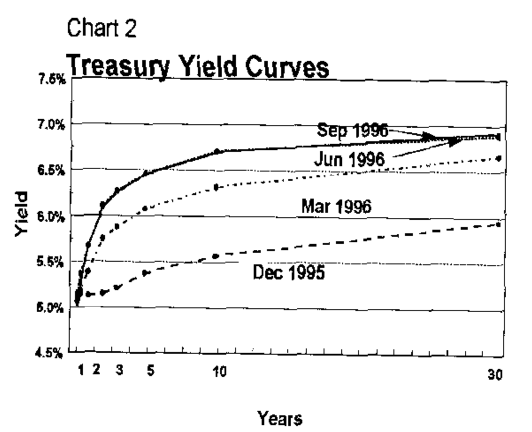


Note: Aggregate industry data. Asset durations have been adjusted to exclude deposit intangibles; liability durations have been adjusted to include deposit intangibles.

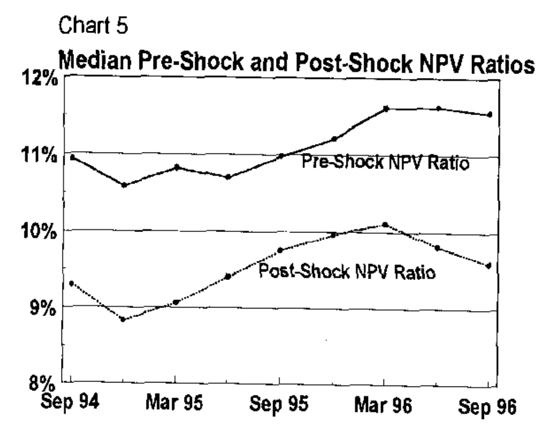
and variable-rate mortgages in those two quarters was essentially unchanged (Chart 4).

The median **pre-shock NPV ratio** for the industry remained unchanged at 11.6 percent in the third quarter, however, the median post-shock NPV ratio decreased slightly from 9.8 percent in the second quarter to 9.6 percent in the third quarter (Chart 5). The higher the post-shock ratio, the less interest rate risk a thrift institution poses.





Source: Bloomberg



ASYMMETRY OF GAINS AND LOSSES

Table 1 shows the estimated percentage change in the industry's aggregate net portfolio value and its NPV capital ratio under different interest rate scenarios for the last two quarters. For the thrift industry as a whole, the loss in net portfolio value when interest rates increase is greater than the gain in net portfolio value when interest rates decrease. For example, the thrift industry would lose about 20 percent of its net portfolio value if rates rose by 200 basis points, but would gain only 7 percent in value if rates fell by 200 basis points. The asymmetry between gains and losses is largely a result of the embedded call option in mortgage loans and mortgage-backed securities. As interest rates decline, the market value of most mortgages increases, but at a decelerating rate since falling interest rates increase the likelihood that mortgages will be prepaid. (The decrease in the NPV-to-Assets ratio in the base case scenario for the third quarter was in large part attributable to the one-time special assessment for the Savings Association Insurance Fund.)

Table 1

Interest Rate Risk Measures

(Industry aggregate data)

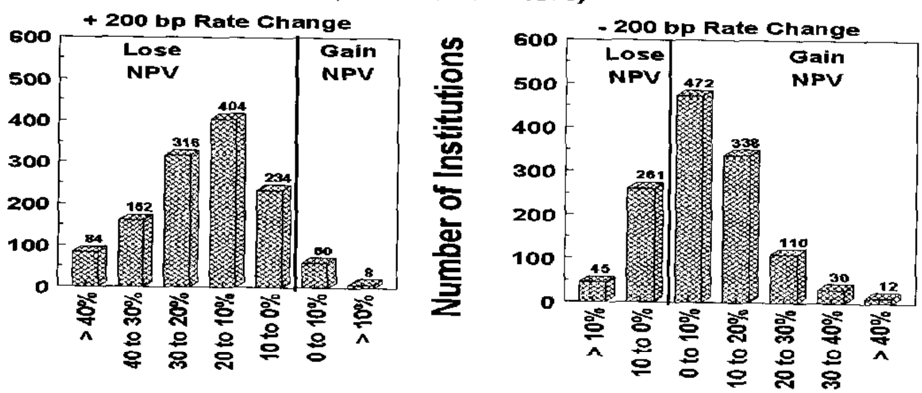
Change in Interest Rates (basis points)	Percentage Change in NPV		Ratio of NPV-to-Assets	
	Jun 96	Sep 96	Jun 96	Sep 96
+300	-33.32%	-33.62%	6.99%	6.91%
+200	-20.09%	-20.43%	8.21%	8.12%
+100	-8.68%	-8.93%	9.23%	9.13%
Base Case	0.00%	0.00%	9.96%	9.89%
-100	5.28%	5.43%	10.37%	10.31%
-200	7.21%	7.06%	10.48%	10.39%
-300	9.28%	8.60%	10.60%	10.47%

As in past quarters, the response to changes in interest rates was particularly pronounced at some thrift institutions. Chart 6 shows the distribution of the estimated percentage change in individual thrift net portfolio values for an interest rate increase of 200 basis points. Of the 1,268 reporting thrifts, 94.6 percent would experience a loss of net portfolio value in that scenario. Moreover, about 44.3 percent of the industry (562

Chart 6

Estimated Change in NPV

(Industry Distributions, Third Quarter 1996)



thrifts) would lose 20 percent or more of their economic value if rates increased 200 basis points.

Chart 6 also shows the industry distribution of gains and losses in net portfolio value for a 200 basis point decrease in interest rates. Under this usually favorable scenario, 75.9 percent of the reporting thrifts would experience increases in their net portfolio values.

EXPOSURE MEASURES UNDER 4 PERCENT RAISE CONCERNS

Any thrift with a post-shock NPV ratio below 4.0 percent gives cause for supervisory concern. The number of thrifts with exposure measures below that level decreased slightly in the third quarter to 31 institutions, well below the recent peak level of 142 institutions in December 1994 (Chart 7). At the end of the third quarter, 2.5 percent of all thrifts had exposure measures below the 4.0 percent level.

INDUSTRY PROFILE

The pre- and post-shock NPV capital ratios of each reporting thrift are plotted in the NPV Sensitivity Chart (Chart 8). In this chart, the horizontal axis represents a thrift's pre-shock NPV ratio and the vertical axis represents its post-shock NPV ratio. The 45 degree line in the chart represents the "zero sensitivity line," where pre- and post-shock NPV ratios are equal. Each dot denotes the pre- and post-shock NPV capital ratios for a thrift. The 31 thrifts with post-shock NPV ratios of less than 4.0 percent appear in the area below the dotted horizontal line. A thrift institution whose post-shock NPV ratio is below 4.0 percent either has a relatively low level of capital, a high degree of NPV sensitivity, or both. In general, thrifts with exposure ratios below that level should take steps to strengthen their capital position or reduce their interest rate sensitivity. Twenty-nine of the 31 thrifts with exposure measures below 4.0 percent also had sensitivity measures in excess of the industry median of 188 basis points. Chart 8 also shows that a limited

Chart 7
Number of Institutions with Exposure Ratios under 4.0 Percent

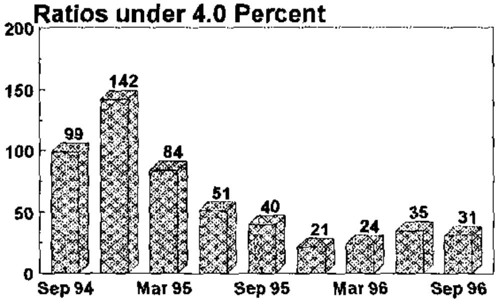
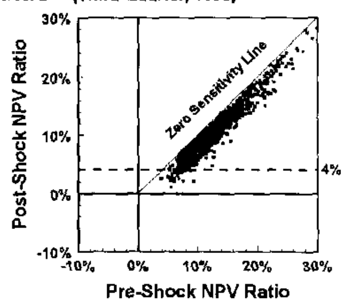


Chart 8
Distribution of Pre-Shock and Post-Shock NPV Ratios (Third Quarter, 1996)



number of points (institutions) below the dotted 4.0 percent line are close to the "zero sensitivity" line. ■

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GLOSSARY

Pre-Shock NPV Ratio	Equity-to-assets ratio expressed in present value terms (i.e., base case NPV divided by present value of assets).
Post-Shock NPV Ratio (Exposure Ratio)	Equity-to-assets ratio expressed in present value terms following an adverse 200 basis point interest rate shock. Also referred to as the exposure ratio.
Sensitivity Measure	Difference between pre-shock and post-shock NPV Ratios (expressed in basis points).
Estimated Change in NPV	The percentage change in base case NPV caused by an interest rate shock.

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