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Examining Loss Severity in Nonagency MBSs

In most cases, loan loss severity can be held in check when the liquidation period (otherwise known as delay or lag) does not exceed two years. An examination of the Prudential Home Mortgage liquidated loan portfolio for 30-year fixed-rate mortgages shows that about 75% of those loans were liquidated within two years of default and experienced an overall loss severity of about 30%. **More recent experience from Pru Home, NASCOR, and RFC, however, justifies a loss severity assumption of 20%.** In this article, we take a closer look at historical loss severity in nonagency MBSs.

Typically, loss severity is expressed as a percentage of the remaining principal balance that is not recovered after liquidation of a property. In addition to changes in market value, factors such as principal and interest advances, tax advances, property maintenance expenses, and attorney fees all affect loss severity. Loss severity of 30%, for example, means that 70% of the loan's remaining principal balance was returned to the trust.

Understanding the loss severity component of mortgage credit risk is crucial in accurately evaluating subordinate MBSs, especially in the below-investment-grade sector. Investors calculating loss-adjusted yields, for example, make assumptions concerning future loan performance of a mortgage pool. Those assumptions include **loss severity**, as well as default rate, delay, and prepayment speed. **Below-investment-grade yields are especially sensitive to changes in loss severity assumptions** (see Figure 34).[10]

[10] See *Bond Market Roundup: Strategy*, Salomon Smith Barney, May 21, 1999.

Most properties are liquidated within two years of default.

We have concluded that the most important determinant of loss severity is the liquidation period. Generally, a short liquidation period results in loss severity that compares favorably with standard loss-severity assumptions used in the market for valuation purposes. (Typically, single-family credit risk investors use a loss-severity assumption of 25% or 30% to calculate loss-adjusted yields.) Likewise, the longer the liquidation period, the higher the loss severity. However, evidence shows that most properties are liquidated within two years of default. Figure 31 shows historical loss-severity experience for Pru Home's Jumbo 30-year FRMs measured by liquidation period. (We define the liquidation period as the amount of time from the first day of default to the day that liquidation proceeds hit the trust.) The Pru Home loss portfolio is comprised of about 4,200 liquidated loans with originations dating back to 1987.

One-year liquidations resulted in 21% loss severity.

Figure 31 shows that 26% of the loan portfolio was liquidated within one year of default and resulted in 21% loss severity. Furthermore, one-half of the loan portfolio was liquidated in one to two years and resulted in loss severity of 35%. **Combined, three-quarters of the portfolio were liquidated within two years after default, with corresponding 30% loss severity**.

Figure 31. Historical Loss-Severity Experience for Pru Home Jumbo 30-Year FRM Loan Portfolio (by Liquidation Period), May 98

Liquidation Period (Years)	Loss Severity	Loan Concentration
1	21%	26 %
2	35	50
3	52	18
>3	70	6

Sources: Prudential Home and Salomon Smith Barney.

The remaining 24% of the portfolio required more than two years from default to liquidate. Loss severity averaged 52% for properties with two-to-three-year delays. Properties with delays greater than three years (6%) have an average loss severity of 70%.

Loss severity for Pru Home and RFC has improved with each vintage year.

Loss severity has improved in more recent vintages. Figure 32 shows Pru Home loss severities by loan origination year (1990 to 1995), as well as by liquidation period. Almost without exception, loss severity has improved with each vintage when compared to loans with similar liquidation periods. Overall, loss severity was about 42% for 1990 vintages and decreased with each new vintage to 18% for the entire 1995 vintage. RFC's loan loss-severity data shows a similar pattern (see Figure 33).

Recent vintages show that average loss severities are below standard assumptions.

Loss severity from Pru Home's 1995 vintage (18%) and RFC's 1996 vintage (15%, (see Figure 33) is far lower than the market's standard loss-severity assumptions (25%). **This could mean significant gains above anticipated loss-adjusted yields** and the possibility of a rating upgrade given that the 1995 vintage is adequately seasoned for upgrade consideration by the ratings agencies.

Although not included in this analysis, loss severity from the NASCOR 30-year FRM portfolio (loans originated and transactions issued in 1996–1998) confirms the trend. Although relatively few loans from NASCOR transactions have actually been liquidated, **loss severity on those loans average approximately 16%.**

Figure 32. Historical Loss-Severity Experience for Pru Home Jumbo 30-Year FRM Loan Portfolio (by Liquidation Period and Origination Year), May 98

	Loss Severity					
	Loan Origination Year					
Liquidation Period (Yrs)	**1995**	**1994**	**1993**	**1992**	**1991**	**1990**
1	13%	15%	20%	23%	21%	21%
2	19	25	29	35	37	38
3	NA	40	49	48	54	53
Overall	**18**	**25**	**30**	**35**	**39**	**42**

Sources: Prudential Home and Salomon Smith Barney.

RFC's Loss Severity

Since 1994, RFC's average loss severity has been below 20%.

Loss-severity information provided by RFC supports a lower standard loss-severity assumption for the valuation of 30-year Jumbo FRM subordinates. Figure 33 shows RFC's loss-severity experience for loans originated from 1990 to 1996. Like Pru Home, RFC's loss severities have improved each year since 1990.

According to RFC, its average loss severity has not topped the standard loss-severity assumption (25%) since 1990 (when its average loss severity was 35%, as shown). Furthermore, from 1994 to 1997, RFC's average loss severity has been below 20%. For the most recent origination years (1996 and 1997), its loss severity has averaged 15%.

Figure 33. Historical Loss-Severity Experience for RFC 30-Year Jumbo FRMs, May 99

	Origination Year						
	1996[a]	**1995**	**1994**	**1993**	**1992**	**1991**	**1990**
Loss Severity (%)	15	16	18	22	24	24	35

[a] Includes some 1997 originations.
Sources: RFC and Salomon Smith Barney.

Rationale

Improvements in underwriting, servicing, technology, and favorable macroeconomic conditions have helped lower loss severity.

We contend that loss severity has decreased dramatically during the 1990s for several key reasons.

- Underwriting practices have improved greatly. Underwriting guidelines have become more clearly defined and been more consistently applied since the early 1990s.
- Servicing techniques are far more aggressive now than at any time before. Included in this observation are clearly defined loss-mitigation criteria for delinquent loans. (Loss-mitigation efforts alert the servicer early about potentially problematic loans.)
- New technology has created more sophisticated servicing mechanisms that provide the servicer with (among other things) the most up-to-date information about borrower/loan status.

- ➤ Strong real estate prices and sound economic fundamentals that have been intact for the past several years have provided the underpinnings for favorable credit performance.

Loss-Adjusted Yield Comparison

Loss severity can have a substantial impact on the yield of below-investment-grade subordinate MBSs. In Figure 34, we show loss-adjusted yields for a representative single-B-rated mortgage class. Recent experience indicates that 25% Standard Default Assumption (SDA) is in-line with reasonable default expectations.[11] However, to more clearly illustrate the impact loss severity can have on yield, we show the analysis with a more conservative default frequency assumption of 50% SDA.

Loss severity can have a substantial impact on loss-adjusted subordinate MBS yields.

When holding prepayment speed and delay constant, a decrease in loss severity from 30% to 20% is immaterial at a default frequency setting of 25% SDA. As shown below, those yields remain over 14.8%. However, at a more rigorous default frequency, 50% SDA (as shown), a **decrease in loss severity from 30% to 20% results in an additional 620bp of yield**, from 8.661% to 14.856%.

Figure 34. Loss-Adjusted Yields for a Representative Single-B-Rated Class,[a] 18 Jun 99

SDA(%)	Loss-Adjusted Yields	
	Loss Severity(%)	
	20	30
25	14.836%	14.854%
50	14.856	8.661

[a] Priced at $58.976, other assumptions: 250% PSA, 12-month delay.

Source: Salomon Smith Barney.