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An updated family of models will be available on October 22.

Update to the Salomon Smith Barney Prepayment Model

Mechanics of the Update

We have updated our family of agency and nonagency (Jumbo and Alt-A) models; the updated models will be available on the Yield Book™ over the weekend. For a period of three weeks, both the new and old models will be available to Yield Book™ users, with the old model initially being used as the default. The old model will continue to be the default for a period of two weeks, and during this phase, the new model can be accessed by clicking on the "New Vrsn" box. After two weeks, the two models will be switched so that the new model is the default model. A week after this switch, the old model will be removed. During the entire period when the old and new models are both available, we will post reports comparing OASs on the new and old models. These reports will be posted on manifold MB770, and on SSMB Direct. The article "Strategy Implications of the New Prepayment Model" analyzes the impact of the prepayment model updates on OASs and durations. Finally, our Key Issue package will switch to using the new model as of tonight (October 22).

Rationale

Our model does not employ short-term "error correction" factors.

Our philosophy of prepayment modeling emphasizes using a single prepayment model with a static set of parameters to project prepayments for the entire universe of mortgage vintages. In particular, we do not revise our modeling assumptions or introduce cohort-specific fudge factors based on short-term divergences between actual and projected speeds. The benefit of our modeling approach is that it provides a unified and cohesive framework that explains prepayments across the spectrum of vintages. Furthermore, because even an unbiased model will produce runs of errors,[7] our model is not "corrected" based on random noise.

Our updates focus on removing systematic error.

Our prepayment model updates correspond to the identification of what we feel are systematic biases in the model. In the 18 months since we last updated our model (May 1998), it has done a fairly good job, with the ratios of actual versus projected speeds being close to 1.0 for most vintages. However, we feel that an update is necessary because there have been significant and persistent errors in the model's predictions for certain classes of coupons and vintages. For instance, our model has continued to significantly underpredict speeds on new 1998 vintage above-market 7.5s and 8s, and it has overpredicted speeds on many 15-year coupons.

The updates we have made to our prepayment model fall into two categories. First, we have updated some of the data series used by the prepayment model. Second, as discussed previously, we have revised some of our modeling assumptions to cure systematic biases in the model. The details of these two types of changes are discussed in the next two sections.

Data Updates

One of the primary purposes of our data update is to incorporate the latest information about housing market indicators tracked by our model (existing home sales, seasonals, home prices). Also, the release of pool-level geographic data by Ginnie Mae allowed us to obtain better estimates of the equity accumulated by borrowers in Ginnie Mae pools. We can itemize our updates as follows:

- **Seasonal factors for home sales**. The most significant consequence of this change is a more pronounced drop in turnover levels at year-end.
- **Existing home sales data series**. The series has been updated to incorporate new benchmark numbers released recently by the National Association of Realtors.
- **Home price indices and loan sizes**. Our Fannie Mae/Freddie Mac home price data series has been updated to include home price data for the second quarter of 1999. The model also uses the recently released Ginnie Mae geographic and loan balance information.
- **Above-market spread and refinance percentage.** Our estimates of the above-market spread and refinance percentage for 1998 and 1999 vintages have been updated based on issuance data for the last year and a half.
- **Seasonal factors for refinancings.** The model now projects a more pronounced year-end slowdown in refinancing rates.

[7] See *Random Error in Prepayment Projections*, Lakhbir S. Hayre, Salomon Smith Barney, July 1996.

Changes in Modeling Assumptions

Our changes focus on five specific areas:

- **Newer (1996 and later) low premiums**. The refinance seasoning ramp (i.e., the transient "hassle" cost associated with refinancing a mortgage that is experienced by a new mortgage holder) has been lowered to capture the fast speeds and slower-than-expected declines on these coupons in 1999. This phenomenon was particularly evident in Ginnie Maes.
- **Introduction of a lender solicitation effect**. This effect kicks in at the tail end of a refinance wave and keeps speeds on high premiums from declining as quickly as assumed by our current production model. The idea is to mimic the post-refinance-wave behavior of brokers and lenders who start soliciting refinancings from higher-coupon borrowers in an attempt to bolster business that is suffering from declining refinance volume.
- **1998 and 1999 above-market conventionals (7.5s and higher)**. The initial population mix has been re-estimated to capture the sustained fast speeds during the past year.
- **Slower 15-year speeds**. The 15-year model has been slowed down, especially for conventionals, reflecting the slower-than-expected speeds in this sector over the last year.
- **Fine-tuning of seasoning and lock-in curves**. In particular, there is more of a slowdown in the turnover component of speeds if rates increase substantially.

The changes made to Jumbo and Alt-A models are similar in spirit to the changes described above. In general, our parameter modifications have been less pronounced for these models.