

What's in Store

By Andrew Davidson

The examination of mortgage securities is a multi-faceted challenge. Until now, the analysis of prepayments and the analysis of default risk, for the most part, have been treated as separate pair of problems. Our goal has been to integrate the two.

In studying the problem, we found that these two behaviors represent the end of a more complex process involving the dynamic transition of a borrower from current to delinquent to seriously delinquent. At each stage of the process, the borrower's sensitivity to economic factors changes. Our model, therefore, simulates the transitions of the borrower among these statuses and the changing economic drivers that occur as a result.

We constructed the model utilizing the active-passive decomposition methods applied to our traditional prepayment models. Thus, it benefits from our experience and knowledge of prepayment modeling in producing a solution which addresses the whole of loan dynamics.

The Loan Dynamics Model™ is really just one step in the overall valuation process for mortgage securities. Valuation of securities involves an assessment of the possible future states of the world, including interest rates, home prices, other economic factors and the interaction among these pieces.

Many investors are interested not just in mortgage loans as investments, but in securities that have mortgage loans as collateral.

These securities, usually, have been structured into classes with varying degrees of credit enhancement. For these securities, it is necessary not only to evaluate the loans, but also how the cash flows of the loans flow through to the securities.

Financial engineers have also created derivatives using these securities [credit default swaps(CDS)] and portfolios of securities and derivatives [collateralized debt obligations (CDOs)]. Each of these adds new levels of complexity to security valuation. We look forward to applying our newest tool to these problems.