The Bottom Line
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VIEWPOINT:

IMPROVING THE INVESTOR'S PERSPECTIVE ON CREDIT RISK: Non-Agency Investors and the Secondary Market

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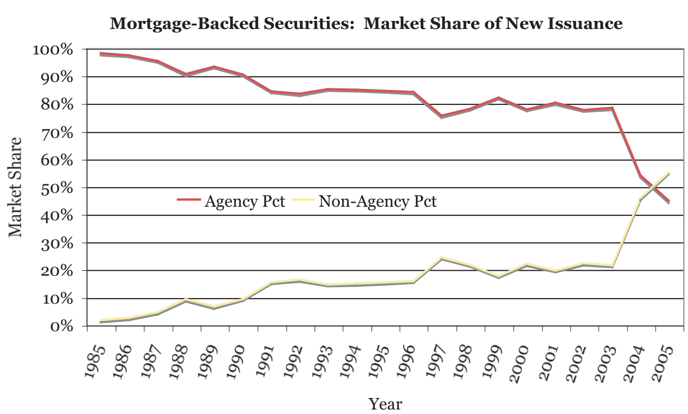
Investors in the secondary mortgage market historically worried most about interest rate and prepayment risks. The vast majority of issued securities came from the agencies – Fannie Mae, Freddie Mac, and Ginnie Mae – and the agency guarantees transformed all credit risk into a minor part of prepayment risk.

As the chart below indicates, however, the non-agency market in the last few years actually exceeded the agency market in terms of new issuance. Investors in non-agency securities have added credit risk to their list of concerns.



Investors' worries about credit risk have been exacerbated by the proliferation of new products in the primary market. Mortgage products such as interest-only loans or loans with 40 years terms are unfamiliar to most investors, and most investors fear that these new products do not share traditional risk profiles observed in the historical data.

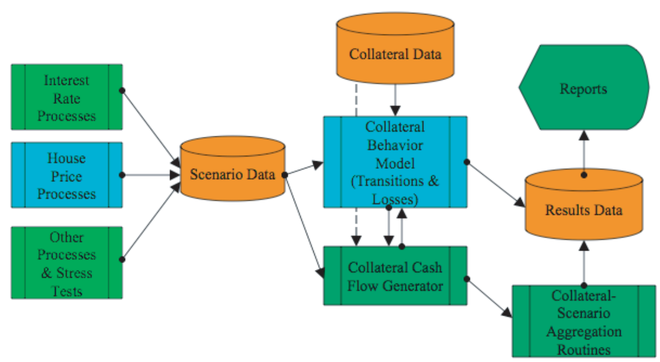
Investors face a "double whammy" with these new products. On the one hand, these products often have little, no, or even negative principal amortization. Moreover, there is a perception in the market that originators, particularly in Alt-A or subprime products, have expanded their underwriting criteria in an effort to sustain volume. There is sufficient concern for the regulators to have proposed new rules to monitor exposure to these "non-traditional" mortgage products.

What's Required to Address Investors' Needs

Clearly today's investors in non-agency MBS/ABS face a combination of market and credit risks that can affect substantially the value of their investments. As a result, non-agency investors have a tremendous interest in better understanding borrower behavior and its:

- direct impacts, such as delinquency triggers, on bond cash flows; as well as
- indirect impacts, such as prepayments or defaults, on bond cash flows via collateral cash flows.

Historically, investors performed scenario-based analyses of market risks for MBS, calculating metrics such as option-adjusted spread (OAS) using software tools built internally or by vendors such as QRM, Wall Street Analytics, etc. The schematic below illustrates a typical "process flow" for evaluation of market and credit risk for MBS.



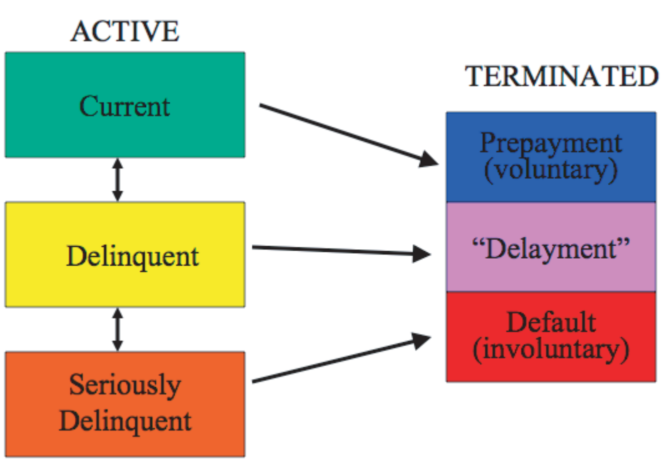
This process flow differs from a standard OAS-type analysis in two important ways. First, interest rates are not the only ingredient of future scenarios. In order to address credit risk, one needs the ability to include a path of house prices (and potentially other risk drivers) as part of a scenario. Second, the collateral behavior model in an OAS analysis typically is a prepayment model built internally or provided by a vendor such as AD&Co. To address credit risk, however, the borrower behavior model must account for prepayment, delinquency, and default in order to address investors' needs.

New Insights into Borrower Behavior

If we look more closely at these models of borrower behavior, we see some important differences from the prepayment ("total termination") models to which investors are accustomed. A prepayment model looks at all active loans (both current and delinquent), and projects the transition from an active status to a terminated status. Consequently, prepayment models treat prepayment and defaults equivalently (as terminations), or must decompose observed "terminations" implicitly into prepayments and defaults.

Increased availability of loan-level data, on the other hand, makes it possible to observe directly which terminations are prepays and which are defaults. Models which predict prepayment and default behavior simultaneously are known as "competing risks" models. These models are popular with Wall Street firms and large mortgage portfolio owners.

In order to include the additional impact of delinquency, however, it is necessary to extend the "competing risks" framework. A "transition" model is simply a competing risks model in which all loans in the "active" status are further subdivided into various states of delinquency (see the diagram below for an example).



Treating active loans differently based upon their delinquency status is not just a "mechanical" adjustment needed to project future delinquency and its effect on bond cash flows. Andrew Davidson & Company (AD&Co) has done research revealing that borrower behavior tends to differ significantly based upon the loan's payment status.

For example, the vast majority of loans that terminate from a current payment status are rate-driven refinancings ("refis"). In contrast, loans that prepay from delinquency generally are not rate motivated, but rather involve sales of the home intended to re-capture invested equity and stave off foreclosure. Also, lender choices and geography tend to dominate the termination behavior of loans which are seriously delinquent (say, 6 or more months delinquent).

AD&Co has found that the transition from a current status to a terminated status is the equivalent of what most of us think of as a prepayment. It is no surprise, therefore, that this prepayment transition is driven by variables such as current spread, loan size, and LTV, and that the model resembles a traditional prepayment model. Similarly, loans that move from delinquency (say ,2-5 months missed payments) to a seriously delinquent status correspond quite closely with traditional competing risk views on default, in which LTV and FICO play a prominent role. On the other hand, it is interesting to note that the "delinquency" transition - from current status to delinquent status (2-5 months of missed payments) - is impacted by FICO score, payment changes, etc.

The AD&Co research is revealing because the traditional competing risks view on default is a "one step" process (active status to terminated status). As a result, such models typically model default as being driven in large part by the combination of both FICO and LTV. A transition model approach, on the other hand, breaks default down into delinquency, then serious delinquency, then termination. This approach reveals that the initial step toward default (the delinquency transition) is primarily a "cash flow"-driven phenomenon, while increased delinquency (the transition from delinquent to seriously delinquent) and termination out of serious delinquency tend to be more driven by LTV ratios. AD&Co has developed a credit model based upon this research that provides prepayment, delinquency, and default projections at the loan level.

Kyle Lundstedt leads development of Andrew Davidson & Company's new suite of loan- level prepayment and default models. To learn more about the AD&Co credit model, and its use in evaluating market and credit risk for MBS and ABS, please contact Ilda Jacobsen (ilda@ad-co.com) for more information.

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