

PREPAYMENT MODEL

Prepayment and credit risks are the most important considerations in valuing mortgage cash flows.

Prepayment and credit risks are the most important considerations in valuing mortgage cash flows. LPS Applied Analytics has produced a state-of-the-art behavioral mortgage Prepayment Model that moves beyond traditional prepayment models to provide a flexible trading-quality system.

The model uses a powerful open-architecture system that integrates directly with your proprietary trading, portfolio management or valuation system or can be used on a stand-alone basis. This gives clients the flexibility to manage their portfolios and make more informed valuation or trading decisions.

About the Model

LPS Applied Analytics' Prepayment Model is based on borrowers' reactions to changes in the environment that cause prepayments (such as housing turnover or refinance), and, as such, is very stable. Because these reactions change very slowly, this model is also slow to change.

Modeling Methodology

Prepayments are influenced by both borrower constraints and economic incentives that change every day. Driving forces modeled by LPS Applied Analytics include interest rates, house prices, structure of burnout and dynamic loan characteristics such as current loan-to-value and payment status. Loan attributes that have explanatory power for prepayment behavior include original loan amount, original loan-to-value ratio, geographic location, loan type, loan purpose, property type, occupancy and borrower credit score. Other attributes that reflect borrowing and payment capacity at origination include points paid and extent of premium coupon relative to comparable market transactions.

Modeling House Prices

The Prepayment and Default Models use LPS Applied Analytics' House Price Index (HPI), which is produced using the repeat-sales methodology: it is based on properties which have undergone multiple arms-length, non-REO transactions. The underlying home sale data is taken from roughly 20 million repeat sales records, dating from the mid 1990s, compiled by LPS Applied Analytics and produced at the MSA and ZIP-code level when statistically significant. The LPS Applied Analytics HPI is supplemented with OFHEO HPI for periods prior to the mid-1990s and locations with sparse data coverage. As with other model parameters, clients can adjust national, state and MSA level HPI projections to reflect alternate assumptions.



Modeling Sources of Prepayment

With the LPS Applied Analytics model, clients can adjust the calculation of prepayments to reflect projected behavior. There are four sources of prepayments:

- Housing turnover
- Borrower refinancing activity
- Principal curtailment
- Loan default

Housing Turnover – As a subset of overall housing market conditions, the total housing turnover related prepayments are also modeled. Factors incorporated include:

- House price appreciation – higher appreciation leads to more sales activity
- Current mortgage rates
- Borrower points (higher up-front costs lead to less prepayment activity)
- Mortgage age
- Seasonality (a borrower is significantly more likely to move in the summer)
- Type of loan

Borrower Refinancing Activity – LPS Applied Analytics researches and models the underlying factors that motivate a borrower to refinance. A keen understanding of borrower behavior under varying economic conditions allows for a projection of accurate future borrower refinancing activity. A year after origination, for example, high premium-originated collateral tends to be more sluggish in response to refinance incentives versus current coupon-originated collateral simply because there was usually a reason for the high premium origination.

Borrower refinancing activity factors incorporated in LPS Applied Analytics' model include:

- Spread – spread between the current market rates and loan note rates, with separate spreads for subprime, Alt A, jumbo and several conforming categories.
- Burnout factor – LPS Applied Analytics models burnout by assuming the pool is not homogeneous, but consists of several subpools with different propensities to refinance. As faster pools deplete, slower mortgages begin to dominate the composition. The overall refinancing speed not only decreases, but the entire structure of response to refinancing incentive changes as well. In the real world, a loan that has been exposed to a 150 basis-points (bps) opportunity will not refinance for 100 bps, but will very much come to life for a 250 bps opportunity.
- Degree of publicity – When mortgage market rates reach historic lows, the resulting publicity motivates otherwise complacent borrowers to take advantage of the refinance opportunity. Pools that were considered burnt-out begin to refinance again, and overall responsiveness is heightened.

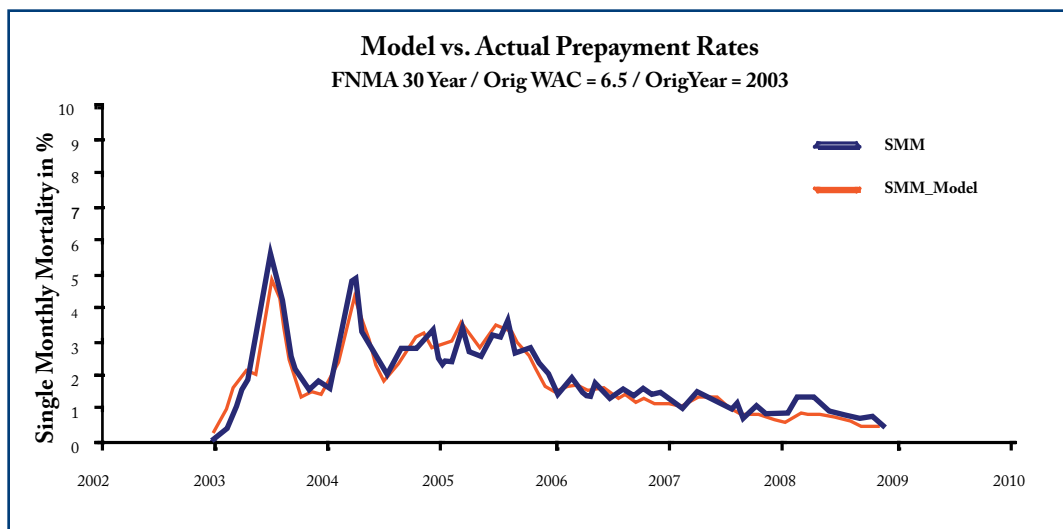
- House price appreciation – appreciation may spur refinancing activity while depreciation reduces ability to refinance
- Loan age
- Seasonality
- Pools with mortgages whose coupons are much higher than prevailing mortgage rates at the time of origination – this often decreases the refinancing activity as “normal” loans.

Principal Curtailment – Borrowers can send extra payments to reduce their principal balance. Curtailments are not a significant contributor to prepayments (typically less than .25 CPR).

Loan Default – To fully assess voluntary and involuntary prepayments, use LPS Applied Analytics’ Default Model together with the Prepayment Model for a fully integrated approach to modeling loan behavior.

Performance History

LPS Applied Analytics monitors the mortgage market for any changes that may affect prepayment and continuously tracks model performance versus actual experience. LPS Applied Analytics modifies the parameters and the functional form of the model from time to time to better account for the more unusual collateral such as very high premium or low-discount originated mortgage. Using the LPS Applied Analytics’ Prepayment Model, OAS-based durations have been comparable to those observed in the mortgage market (as measured against movements in the FNMA commitment rate).



Adjustable Rate Mortgages (ARMs)

Projecting ARM prepayments has been considered an extremely difficult and, according to some, essentially impossible task. LPS Applied Analytics finds that ARMs, although somewhat more volatile than fixed rate mortgages, are quite tenable if one takes advantage of all the reset information available.

Customer Support

LPS Applied Analytics provides the highest level of support available in the marketplace. The support staff consists of individuals who understand what you are facing everyday. Customer support is provided as part of your software license agreement without cost. Training is also available for technical and system implementation.

About LPS Applied Analytics

LPS is the number one provider of integrated data, analytics and servicing technology solutions to mortgage lenders, servicers and investors. These solutions are augmented by award-winning support services, and are why 39 of the top 50 banks have chosen LPS solutions to sharpen their competitive edge. LPS' Applied Analytics division brings together all of LPS' comprehensive data and analytics solutions to provide unparalleled insight into performance trends, proactive risk management and collateral value that are driving the mortgage market today, including:

- Mortgage performance data
- Real estate data
- Loan and portfolio analytics
- Portfolio acquisition management
- Property valuations

**Add the power of LPS
Applied Analytics to
your portfolio.**



APPLIED ANALYTICS
A LENDER PROCESSING SERVICES COMPANY

lpsAAsales@lpsvcs.com

603.890.1513

www.LPSVCS.com