

LOAN DEFAULT MODEL

New Tools. New Insights.

Fluctuating interest rates, retreating home prices and uncertain credit conditions – in this environment, the potential for borrower default has never been greater. For many institutions, however, modeling the risk of loan default is an afterthought or lacks analytical rigor.

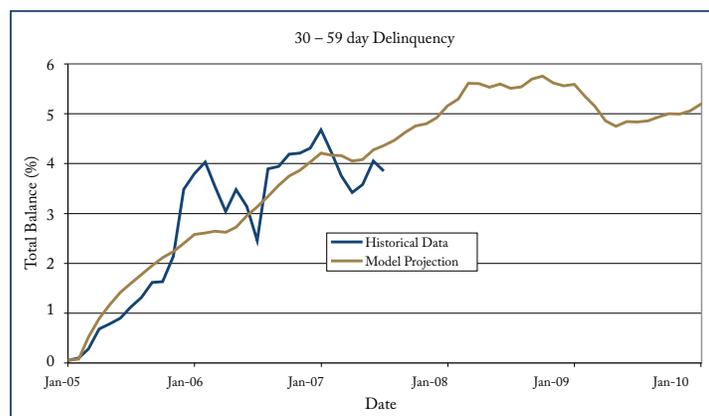
LPS Applied Analytics offers Loan Default Model, the latest tool in a suite of software applications and models developed for mortgage professionals. This model characterizes and projects a propensity toward prepayment, delinquency, default and loss/severity for MBS, CMOs and mortgage loan portfolios of all collateral types (agency-qualified, Alt-A, jumbo, subprime and second lien (closed-end and lines of credit)).

Behavior-Based Approach

LPS Applied Analytics' Loan Default Model implements a behavior-based approach to modeling borrower response to economic activity. Drivers that are fundamental to the model are not abstract macroeconomic conditions, but instead are factors that are directly experienced by individual mortgage holders.

For example, in the case of hybrid adjustable rate mortgages (ARMs), periodic rate resets often result in increases in the minimum monthly payment – increases that can lead to a higher rate of delinquency and default.

Performance-Based Outputs



With the Loan Default Model, you can accurately project the percentage of your loan portfolio that will default each month – in both unit and dollar terms – as well as understand how much of your portfolio population is moving closer to default.

The model uses a vector of projected monthly home prices at the metropolitan statistical area (MSA) to produce per-period forecasts in each of six delinquency cohorts (0, 30, 60, 90+ days late, foreclosure and REO), default rate, loss severity and other key measures. By exposing the movement of loans from the first delinquency cohort to the last, the model presents borrower default as a progression that can be expected and managed.



Model Design – Rigorous, Adjustable, Tested

The LPS Loan Default Model is made up of a set of functions (one pertaining to each of the factors that drive the model) and a status transition matrix to implement the model's methodology.

Transition Matrix - Example -		"To" Status							
		Current	0-29	30-59	60-89	90+	In Forcl	REO	Prepaid
"From" Status	Current	91.5%	5.5%						3.0%
	0 – 29	30.6%	46.9%	18.4%					4.1%
	30 – 59	13.0%	24.6%	30.7%	28.3%				3.3%
	60 – 89	9.5%	7.9%	14.6%	22.9%	30.0%	11.6%		3.5%
	90+	1.4%	0.9%	0.8%	1.9%	86.0%	5.5%		3.5%
	In Forcl	0.3%	0.1%	0.7%	4.6%	6.1%	80.4%	5.9%	2.4%

A Range of Outputs Exposes the Default Progression

The model outputs monthly projections for the remaining life of the subject collateral (maximum 360 months) for:

- Delinquency cohorts – proportion of loans projected to be delinquent by less than 30 days, between 30 and 59 days, between 60 and 89 days, and 90 days or more
- Foreclosure – proportion projected to be in default
- Prepayment – proportion projected to prepay
- Default – percent of loans projected to move into real estate owned (REO) status
- Loss (severity) – percent of total outstanding principal balance lost due to projected defaults

Sample Model Projections	Status			
	Prepaid	60+	Default	Loss
1 Year	3.2%	40.9%	3.2%	18.5%
2 Years	8.4%	31.4%	21.7%	12.6%
3 Years	10.6%	16.7%	37.8%	22.0%
Lifetime (Baseline)			55.0%	32.0%
Alternate Loss Scenarios				
Optimistic - 22.5%				
Pessimistic - 48.1%				



LPS Applied Analytics' Open-Model Architecture Maximizes Your Investment

The Loan Default Model uses LPS Applied Analytics' open architecture, allowing full access to the factors that drive output projections. Users can review and modify parameters, interest rates, fixed-cost assumptions or House Price Index (HPI) vectors using a simple text editor. It is fully extensible.

The model is technology-neutral, so it is easy to integrate into internal programs or third-party applications – protecting your investment in existing tools.

Model Drivers

Model drivers include:

- House price appreciation – a primary driver of the model, now powered by LPS Applied Analytics' HPI
- Payment changes over time – increase or decrease in monthly payment level
- Loan age – months or years since origination
- Seasonality – monthly effect on delinquencies
- Loan to value (LTV)
 - Original LTV (OLTV) as recorded at origination
 - Current LTV (CLTV) reflecting scheduled amortization history and house-price movements, using a housing price index (HPI) that measures changes in home prices for each specific MSA over time
- Accumulated refinancing – calculated using LPS Prepayment Model
- Loan-level attributes

House Price Index

The Prepayment and Default Models use LPS Applied Analytics' 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.

Loan-level attributes include:

- Geography (State, MSA, ZIP code)
- Borrower's FICO score
- Amortization type (amortizing, interest only, possible negative amortization)
- Level of documentation
- Occupancy type (owner-occupied/investor property)
- Property type (single-family/multifamily)
- Loan purpose (purchase, refinance, cash-out refinance)
- Loan size

Innovation from LPS Applied Analytics

Developed by LPS Applied Analytics – the leader in prepayment models and analytics – the Loan Default Model provides a rigorous analytical approach to modeling borrower default. Going far beyond simple percentages and rules of thumb, the Loan Default Model shows the extent of the default risk as well as its timing.

About LPS Applied Analytics

Lender Processing Services (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



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