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The Measurement And Application Of Fallout Tendencies

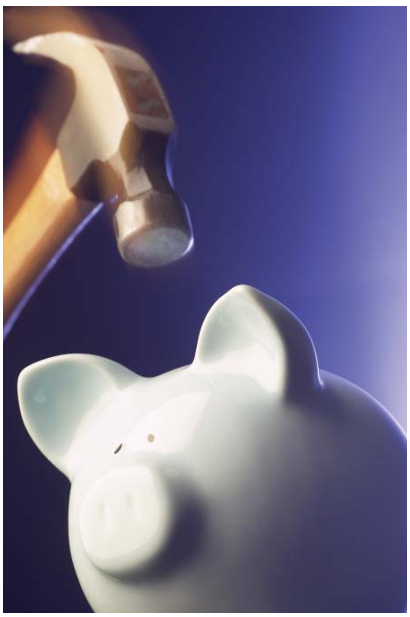
Using fallout tendencies to measure the favorable or unfavorable sensitivity of the hedged pipeline allows risk managers to make informed decisions.

By Greg Crosby and Jay McKee

Performance hedging seeks to measure and manage volatility in its various forms. Loan fallout is one form of volatility that demands attention. Tracking and applying fallout tendencies is often considered to be one of the key tools that can improve hedging performance and support a successful hedging strategy.

Loan fallout is often thought of as the risk that a rate-locked loan will not close. However, there is more to fallout than meets the eye. There are other factors, such as whether or not a rate-locked loan will close according to the original terms of the rate lock, the level of market interest rates when the fallout event occurred, what status the loan was in when the fallout event occurred, and whether or not the fallout event would have occurred regardless of the level of market interest rates.

Most fallout models are able to track whether or not a loan closed. However, as mentioned previously, this information by itself is not enough. The key is providing a framework that allows risk managers to capture loan-level fallout history, key loan-level features and market interest history in a way that conforms to the risk manager's risk and renegotiation policies. Moreover, it is essential that once the data has been captured, the risk manager needs to be able to analyze the data in order to determine the fallout tendencies for various subsets and market periods, and then be able to apply the results to the risk model.



To accurately collect information that will prove useful in providing the valuation and exposure reporting engine fallout assumptions, several key infrastructure components must be in place. These components serve to manage the pitfalls that can derail a serious measurement and assessment of fallout tendencies.

Performance hedging is not an exact science. Thus, the fallout tendencies are not exact predictions of which loans will or will not close; the goal is to position oneself against adverse potential outcomes. Additionally, by tilting the model to the conservative side, a tendency to produce favorable variances to the forecasted outcomes will likely occur. This will promote confidence and credibility in actions taken and forecasts made.

With fallout, like other dynamic model drivers, separate stages can be identified that comprise an adapting process loop.

Capture stage

The capture stage involves the act of collecting loan- and market-level data. Components of the capture stage include the following:

- Identification of loan-level data that might serve as grouping aspects or provide insight as to why a fallout reason was triggered,
- Creation of rules that define the events or modifications that

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constitute fallout and/or pull-through experience,

■ Creation of rules to track how loans progress through key underwriting stages,

■ Application of the fallout reasons and underwriting stage rules to the pipeline to determine which loans meet the criteria and archive the results, and

■ Archiving key market interest rate data.

There are typically five types of loan-level information captured:

■ Data used to gauge whether or not a fallout-relevant event occurred,

■ Data used to indicate when the fallout-relevant event occurred,

■ Information thought to influence fallout behavior,

■ Fallout classification, and

■ Other supporting information.

Clearly, key pieces of information such as product code, note rate, buy price/discount, lock date, lock expiration date, close date and status code are important to determine whether or not a fallout event has been triggered. For example, the status code may indicate that the loan has been closed, denied or withdrawn. Additionally, other pricing-related fields may indicate a pricing concession has been granted.

It is equally crucial to know when the fallout event occurred as it is to know what changed. This time-frame information provides beginning and ending points to which specific market activity can be applied. Without this information, cataloguing fallout events would be impossible because the fallout analysis would lack the context and granularity needed to best stage fallout tendencies.

Most secondary marketing managers agree that product type, purpose (purchase vs. refinance) and production channel (retail vs. wholesale) influence fallout behavior. This type of information, along with the underwriting stage (approved, docs out) and remaining term of the lock commitment, can, in certain cases, be seen as significant influences on fallout levels and pull-through volatility.

The best fallout models consider that fallout events must be interpreted differently over a given time/rate series. There are three components of the fallout classification:

Closed or non-closed

■ Closed is a classification that indicates the loan is now closed.

■ Non-closed events indicate that the loan is not yet closed and has been subjected to adverse changes to the original terms of the rate lock or has been terminated.

Hard fallout or soft fallout

■ Hard fallout is the risk that a locked loan will not close and is no longer considered part of the pipeline. This is often caused by some terminating event in the life of the loan, such as the loan being denied in underwriting or the borrower or correspondent withdrawing the loan.

■ Soft or partial fallout is the risk that a locked loan will not close according to original terms. In this case, the loan does not terminate; rather, the terms of the rate lock are modified. Usually, these concessions make the loan less valuable in the secondary market.

Rate sensitive or non-rate sensitive

■ Rate sensitivity indicates that the fallout event generally occurs due to the path of market interest rates.

■ Non-rate sensitivity indicates that the fallout event would occur regardless of the path of market interest rates. A loan that is denied for bad credit would likely be denied if rates went up or rates went down.

For example, a concession that lowers a borrower's note rate without an increase in the discount points is generally classified as a non-closed, rate-sensitive, soft fallout event. A denied loan is generally classified as a non-closed, non-rate sensitive, hard fallout event. Closed loans should always be classified as closed, rate-sensitive events.

It may also be useful to capture other information that can be used to evaluate a loan officer, branch, correspondent, channel and/or product lines. Although risk managers may not be able to capture statistically significant amounts of data during relative time periods, the information provided serves to help shape pricing and lock management strategies. The improved structural hedges may help reduce fallout volatility and therefore reduce the overall cost of hedging and production.

Capture process

Generally speaking, the process of identifying loan-level fields and rules used to capture the fallout events usually occurs early on during the configuration process. Applying rules to the changing pipeline and collecting market information should be performed daily.

Captured data is time stamped, categorized and stored in the loan history table. The capture process can be performed as part of the loan import process or scheduled as a recurring event. An applicant likely will have multiple fallout reasons and definitely multiple underwriting stages logged by the system. This separation of fallout events from a single borrower is a powerful component of the capturing process. It is one that enables more sophisticated studies to be produced.

Measurement stage

Understanding a pipeline's fallout tendencies requires routine measurement. The best fallout drivers differentiate tendencies over a matrix that includes loan characteristics as well as market movement by isolating subsets of the captured population for specific time periods. By comparing the results over time, the risk manager can apply closing ratios to the pipeline that reflect a more well-formed perspective. When performing a fallout analysis study, there are many traps that can prevent one from getting a useful assessment:

■ Evaluating both soft (partial/modifications) and hard (complete/terminations) fallout events.

■ Discerning data corrections from actual term changes and events.

■ Providing criteria-specific measurements to understand the aspects

that influence rate-driven fallout behavior and represent a nontrivial percentage of the pipeline.

■ Isolating market movement from the actual pricing for a specific loan.

■ Considering the path that interest rates have taken, noting the largest downward shifts that occurred prior to the loan falling out or closing rather than the net difference from start to finish in interest rates. Often, the rate move that caused a borrower to fall out occurred a number days prior to fallout event notification.

■ Comparing results for various time frames, market volatilities and production volume levels. Comparisons provide a better context in understanding both the consistency in the closing experience as well as the mean (average) experience.

■ Screening out market spike anomalies. Market spikes are those scenarios where the market dropped or rose dramatically for a single data point but then quickly reversed itself. Many risk managers feel such a spike would not allow the borrower a large enough window of opportunity to exploit.

■ Reconciling the answers received through a dynamic measurement of fallout activity with those received from a legacy (existing) approach.

■ Studying the mortgage pipeline using a dynamic context. Many testing approaches deal with population as a snapshot and do not incorporate the fact that a borrower's loan application may experience multiple fallout events.

■ Generating a closing ratio profile that an option model cannot replicate. Some risk management systems use an option model to calculate the value of canceling an existing rate lock with a lender. The fallout factor is then introduced to the risk management reports by running variables through the fallout option model. The curves benefit further from being based upon a risk manager's own experience rather than a conceptual framework of fair value and rational behavior.

Application stage

By using a series of fallout analyses to populate closing ratio grids, one can apply a closing ratio (reciprocal of fallout) to the dollar amount of a loan. This closing ratio will vary depending upon the characteristics of the loan and the path interest rates have taken and/or are projected to take over the remaining life of the commitment. A closing ratio is determined for each loan based on the path of market interest rates during the lock period. This impacts the net profit (value) of the loan for the mark to market and for scenarios where interest rates move away from current market conditions.

Evaluation stage

Since most risk managers treat each business day as a hedge period, it is useful to evaluate which dynamics worked upon the pipeline during the hedge period. The daily analysis can lead one to understand how production flow, markets, modifications, underwriting progress and data quality issues are influencing the expected and realized value of the pipeline.

Determining which dynamics should and can be managed is an obvious benefit. This insight supports the mortgage banker, as invariably, the hedge position is adjusted daily to accommodate volume flows, delivery fulfillments, trade expirations and changes in closing ratio expectations.

These keys may well lead to risk management through a blend of structural, policy and capital market position modifications. SME