METHODOLOGY

Introduction

The Mortgage Bankers Association's (MBA) Weekly Applications Survey (the "Survey") offers a comprehensive analysis of mortgage application activity. Since the Survey's inception in 1990, its indices have been leading indicators of housing and mortgage finance activity. This document describes the methodology and most recent developments to the Survey.

Previously, MBA had estimated that the Survey regularly captured roughly 50 percent of all retail mortgage application volume. Due to the importance of MBA's Weekly Application Survey for the mortgage industry and financial markets, MBA has recently recruited additional companies to participate. With these additional participants, we now estimate that the Survey captures more than 75 percent of all retail and consumer-direct channel application volume.

In addition to the expansion in the coverage of the Survey, MBA is now collecting more detailed information regarding the composition of applications. As a result, there is now additional information on the geographic and product mix of applications. Subscribers to the Survey will have access to reports with this increased level of detail.

Although the sample has been expanded, the initial index values for the new sample were set equal to index values for the old sample as of January 14, 2011. This was done so that market participants will be able maintain their frame of reference regarding the level of application activity, and may be able to continue to use predictive models based upon the existing index values. MBA staff have tracked the performance of the old ("Current Sample") and new versions ("Expanded Sample") of the index. The two series are highly correlated and have similar levels of volatility, as would be expected. Additional details regarding this comparison are discussed below.

The following sections give a description of the Survey data elements; discussions of seasonal and holiday adjustments; a description of reported mortgage interest rates and points; and historical information about Survey data.

Description

MBA's Weekly Mortgage Application Survey provides valuable information to mortgage originators, servicers, investors, other participants in the housing market and economists and others interested in the current pace of economic activity. The Survey is a comprehensive overview of the nationwide and regional mortgage markets. Application information is collected for the prior week (Saturday–Friday) and is released on Wednesdays. As of September 21, 2011, ***the Survey is projected to cover more than 75 percent of all U.S. mortgage applications originated through retail and consumer direct channels.*** Loan applications delivered through wholesale broker or correspondent channels are not covered in this Survey.

The Survey tracks the overall level of mortgage applications through the construction of an index. Separate indices are created for purchase and refinance applications, for conventional (including both conforming and jumbo, prime and non-prime) and government (FHA, VA, RHS, etc.) applications, and for the major product types (fixed rate, adjustable rate). In total, 15 indices monitor the application levels of different categories (see flow chart on next page). All purchase application indices are calculated on both seasonally adjusted and unadjusted bases. Refinance application indices are not seasonally adjusted, but do include adjustments for holidays.

The U.S. holidays that MBA typically adjusts for include:

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving
- Christmas

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The Survey offers important and timely information to different groups:

- Mortgage lenders can use the measures of overall application activity, as well as loan type and product breakdowns, to gauge how their own application levels and composition compare to market trends. The seasonally adjusted series indicate how current market activity compares, controlling for regular seasonal variation in home purchase activity.
- Financial institutions specializing in mortgage-backed securities (MBS) will find the various refinancing indices to be of paramount interest in forecasting near-term prepayment speeds of different types of MBS (GNMA, FHLMC, FNMA, etc.).
- Housing economists can use the various purchase indices to monitor the pace of housing activity. The purchase indices typically lead home sales measures by four-six weeks, as buyers typically apply for their loan with sufficient lead time prior to closing.

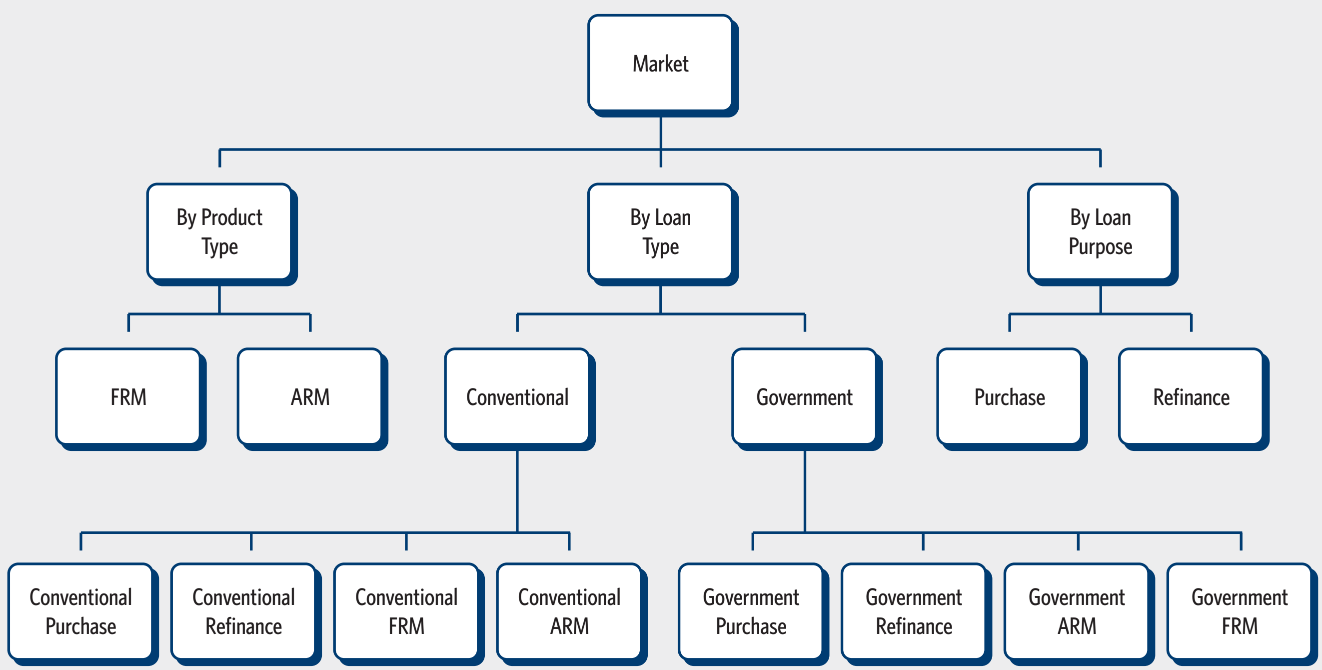
It is important to note that not all applications result in a loan origination. Applications can be withdrawn or denied for a number of different reasons. The percentage of applications that successfully close (known as the "pull-through" rate) changes in response to economic and credit conditions, and can be different for every Survey participant. These differences in pull-through can sometimes cause application indices and other post-closing housing measures to track differently.

The Survey also includes comprehensive measures of weekly mortgage rates: contract mortgage rates and applicable points and fees, as well as corresponding effective interest rates are reported for common fixed-rate and adjustable-rate mortgage products.

Survey indices

The Survey data are used to derive 15 different indices. The entire market is represented by the Market Index that is then divided by three different criteria:

1. Loan Purpose — Purchase or Refinance
2. Loan Type — Conventional or Government
3. Product Type — Fixed Rate or Adjustable Rate



Market Composite Indices

All mortgage applications are included in the Market Index. Applications are also divided by loan purpose (purchases of refinances), loan type (conventional or government) and major product (fixed rate or adjustable rate). Therefore, there are seven market composite indices. All indices, with the exception of the refinance indices, are presented as both seasonally adjusted and unadjusted, for a total of 15 series. The refinance index, conventional refinance index, and government refinance index are presented as either holiday-adjusted or unadjusted.

Market Index

The Market Index covers all mortgage applications during the week. This includes all conventional and government applications, all fixed-rate mortgages (FRMs) and all adjustable-rate mortgages (ARMs), whether for a purchase or to refinance. The Market Index is available both seasonally adjusted (which includes holiday adjustments where applicable) and unadjusted.

Purchase Index

The Purchase Index includes all mortgage applications for purchases of single-family homes. It covers the entire market, both conventional and government loans, and all products. The Purchase Index is available both seasonally adjusted (which includes holiday adjustments where applicable) and unadjusted.

Refinance Index

The Refinance Index covers all mortgage applications to refinance an existing mortgage. It is the best overall gauge of mortgage refinancing activity. The Refinance Index includes conventional and government refinances. The Refinance Index is offered on unadjusted and holiday-adjusted bases.

Conventional Index

The Conventional Index covers all conventional refinance and purchase mortgage applications. It includes all products and loan balances of any amount. Conventional mortgages are originated by many types of lending institutions. Both conforming and jumbo loans are included in the conventional indices. The Conventional Index, as described in the Market Composite Index section, includes both purchases and refinancings and all product types. Conventional loans are also divided by purchase or refinance, and by product group (FRMs, ARMs) to produce four indices, each of which represents a subgroup of the Conventional Index.

Government Index

Several federal government programs exist to assist selected borrowers purchase homes. Federal Housing Administration (FHA) programs are geared to low-income borrowers and first-time homebuyers. The most common FHA program is the 203(b) fixed-rate mortgage. Veterans Administration (VA) programs do not originate mortgages but instead guarantee them for eligible veterans. The Rural Housing Service within the Department of Agriculture provides government-guaranteed loans in rural areas. The Government Index includes all Federal Housing Administration (FHA), Veterans Administration (VA) and Rural Housing Service (RHS) loans. These loans carry a federal government guarantee and may be securitized by the Government National Mortgage Association (GNMA). The Government Index includes both purchases and refinances and all product types. Government loans are also divided by purchase or refinance, and by product group (FRMs and ARMs).

FRM Index

The FRM Index covers all fixed-rate products, both conventional and government, for purchases and refinances. Examples:

- FRM 30-year
- FRM 15-year
- Other FRM terms (i.e., FRM 20-year)
- FHA 203 (b)
- Other FHA fixed-rate products
- VA guaranteed fixed-rate mortgages

ARM Index

The ARM Index covers all adjustable-rate products, both conventional and government, for purchases and refinances:

- 1-year Treasury- and LIBOR-indexed ARMs
- 3/1, 5/1, 7/1, and 10/1 hybrid ARM products
- Other conventional ARMs
- FHA ARMs
- VA guaranteed ARMs

Calculation Of Indices

All indices are derived using similar statistical techniques. The number of mortgage applications in each application group is used to determine index levels and rates of change. For the unadjusted series, initial index levels are calculated from the raw data gathered from lenders, and weekly rates of change are applied to the previous week's index level. For the seasonally adjusted series, statistical methods are used to adjust for seasonal and holiday effects.

Derivation

The index level for a given week is calculated by applying the week-over-week percent change to the index level in the previous week.

Thus, if:

N_t = total number of applications in week t

P_t = percentage change in number of applications in week t over week t-1

I_t = level of the index in week t

"t" represents time

Then:

$P_t = ((N_t / N_{t-1}) - 1) * 100$

And:

$I_t = I_{t-1} * (1 + (P_t / 100))$

For example, if:

number of applications for conventional purchases in week t = 1250 $_{t-1}$ = number of applications for conventional purchases in a week (t-1) = 1100 $_{t-1}$ = conventional purchase index in week (t-1) = 125.5$_t$ = conventional purchase index in week t

Then:

$P_t = ((1250/ 1100) - 1) * 100$
$= 13.63$ percent

And:

$I_t = 125.5 * (1 = (13.63 / 100))$
$= 142.6$

Seasonality And Holiday Effects

Most time-series data are subject to seasonal variations, and data on the housing sector are certainly no exception. Housing starts and home sales, (new and existing) display a pronounced and regular seasonality. It is therefore necessary to remove such seasonal effects from the data so that the underlying economic movements in the series can be better analyzed and clearly interpreted.

In addition to seasonal effects, weekly or higher-frequency business and economic time-series data are also subject to holiday effects. Holidays have a very pronounced influence on mortgage lending. The slowdown of application activity during the shorter weeks around Thanksgiving, or between Christmas and New Years, is due to a holiday effect and should not be interpreted as a signal of lending downturn. The true variation in time-series data are better understood if these special effects are factored out. Finally, holidays which do not fall on the same day of each year need to be appropriately adjusted.

A model-based approach which uses spectral representation (i.e., frequency domain) of a time series is applied to adjust the raw indices for seasonal effects. Holiday adjustments are based upon analysis of historical data regarding the impact of different holidays and contemporaneous information regarding lender work schedules.

Mortgage Rates And Points

Each week mortgage lenders report their weekly interest rates and associated points in the Survey along with their mortgage application volumes. For conventional loans, the contract interest rates are for an 80 percent loan-to-value (LTV) loan. FHA loans have higher average LTVs. The points measure includes both origination fees and discount points.

The following interest rates are covered:

FRM 30-year (conforming)
FRM 15-year
FRM 30-year jumbo
5/1 ARM
FHA 203(b)

The contract interest rate, total points and the effective interest rate are all calculated as simple averages, with outliers removed from the calculation. Survey participants must contribute a minimum number of each loan type to enter the calculation for this average.

Historical Data and 2011 Benchmark

Historical index data are available back to the original start date of the MBA Weekly Mortgage Application Survey in 1990, with all unadjusted indices equal to 100.00 for the week of March 16, 1990.

The index constructed with the expanded Survey sample was benchmarked as of January 14, 2011. This benchmarking was accomplished by setting the new index levels, calculated using application counts from the new sample equal to the existing index values at that date, and then building the indices for the weeks following, using the percent changes from the new sample. Despite the differences in the underlying data, we ascertained that correlation between the old and new series was high for the January–September period. Prior to the release date, MBA research staff tracked the performance of each index utilizing both the old and the new samples.

For Additional Information

The Weekly Mortgage Application Survey is a product of the Research & Economics Division of the Mortgage Bankers Association and is available on a subscription basis to both members and non-members. Please contact MBAResearch@Mba.org with any technical questions or call (202) 557-2821 to order your subscription today.