# National Mortgage Database (NMDB®) Aggregate Mortgage Statistics

# Data Dictionary and Technical Notes

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# NMDB® Aggregate Statistics Data Dictionary

| Field Position | Field Name | Field Description | Max. Length | Field Type | Field Values or Examples |
|---|---|---|---|---|---|
| 1 | SOURCE | Data Source | 4 | String | NMDB |
| 2 | FREQUENCY | Frequency of the Series | 7 | String | Annual<br>Quarterly<br>Monthly |
| 3 | SERIESID | Statistic Field Identifier | 19 | String | New Residential Mortgages, see Appendix B<br>Outstanding Mortgages, see Appendix C<br>Performance Statistics, see Appendix D |
| 4 | GEOLEVEL | Level of Geography | 15 | String | National<br>Census Region<br>Census Division<br>State<br>Metro Area |
| 5 | GEOID | Geography Identifier | 5 | String | See Appendix E<br>e.g.,<br>USA<br>RW<br>DNE<br>FL<br>23420 |
| 6 | GEONAME | Name of Geography | 25 | String | See Appendix E<br>e.g.,<br>United States<br>West<br>New England<br>Florida<br>Fresno, CA |
| 7 | MARKET | Mortgage Market, Submarket | 50 | String | See Appendix A<br>e.g.,<br>All Mortgages<br>Enterprise Acquisitions (home Purchase<br>Government (Refinance)<br>Other Conventional |

(Continued)

# Aggregate Statistics Data Dictionary (Cont.)

| Field Position | Field Name | Field Description | Max Length | Field Type | Field Values or Examples |
|---|---|---|---|---|---|
| 8 | PERIOD | Time Period: Year Quarter or Month | 6 | String | e.g.,<br>2009<br>2009Q2<br>200906 |
| 9 | YEAR | Year | 4 | Numeric | e.g., 2009 |
| 10 | QUARTER | Quarter | 1 | Numeric | e.g., 2 |
| 11 | MONTH | Month | 2 | String / Numeric | e.g., 06 (includes leading zeros) |
| 12 | SUPPRESSED | Indicator for Value Suppression | 1 | Numeric | 1 = Suppressed<br>0 = Not Suppressed |
| 13 | VALUE1 | Values Weighted by Number of Loans | 10 | Numeric | All Statistics/Aggregates are weighted by the number of mortgages at the end of the quarter |
| 14 | VALUE2 | Values Weighted by Dollar Loan Volume<br>(New Residential Mortgage Originations and Outstanding Mortgages Data Only) | 10 | Numeric | Origination Statistics/Aggregates are weighted by the value of the origination loan amount<br><br>Outstanding Mortgage Statistics/Aggregates are weighted by the value of the unpaid principal balance (UPB) of the mortgage as of the end of the quarter |

## NMDB® Mortgage Statistics Technical Notes

The NMDB® is a de-identified loan-level database of closed-end first-lien residential mortgages. It is representative of the residential mortgage market as a whole; contains detailed, loan-level information on the terms and performance of residential mortgages, as well as characteristics of the associated borrowers and properties; and is continually updated. The core data in NMDB represent a statistically valid 1-in-20 random sample of all closed-end, first-lien mortgages active since January 1998 and reported to one of the three national credit bureaus.[1] A complete description of the NMDB is available in the NMDB Technical Documentation at www.fhfa.gov/nmdbdata.

[1] While the NMDB provides an excellent and comprehensive representation of mortgages for owner-occupied and site-built homes, investor mortgages and mortgages for manufactured homes are not as well represented. This is because mortgages taken out by non-persons are not reported to the credit bureaus by servicers and loans for manufactured homes are not well-defined in the credit bureau reporting standards.

When the NMDB program began, an initial sample was drawn from all mortgage files outstanding at any point from January 1998 through June 2012. Since then, the sample has been updated on a quarterly basis with mortgages newly reported to Experian. Mortgages (and their borrowers) are tracked in NMDB from at least one year prior to origination to one year after termination of the mortgage, whether that termination is through prepayment, adverse termination, or maturity.

The sample used is large enough to support almost all types of statistically valid analyses but small enough to manage logistically, thus dramatically reducing both contract and personnel costs. The restriction of the NMDB frame to closed-end loans was made for two reasons. First, it mimics the reporting requirements of the Home Mortgage Disclosure Act (HMDA) and second, it reflects the practical fact that administrative data, which is a critical input for the NMDB data, is available for very few open-ended loans.

To make core statistics available to the general public, FHFA is producing a series of aggregated data files. These files contain statistics aggregated by year, quarter, and month. State level data are available in the annual data files. Nationwide, Census Region and Census Division aggregates are available in all three time dimension aggregations. The aggregated statistics are also provided for various submarkets in addition to the single-family mortgage market as a whole. The defined submarkets are shown in Figure 1 and described in Appendix A. Information on the geographic areas included in the datasets is provided in Appendix E.

Figure 1.

<table>
<tr><th colspan="4">Mortgage Market*</th></tr>
<tr><td colspan="4">All Mortgages</td></tr>
<tr><td colspan="3">Conforming Market</td><td rowspan="3">Jumbo Market</td></tr>
<tr><td rowspan="3">Government**<br>/ Non-Conventional</td><td colspan="2">Conventional Conforming Market</td></tr>
<tr><td rowspan="2">Enterprise Acquired***</td><td>Other Conforming Market</td></tr>
<tr><td colspan="2">Other Conventional Market</td></tr>
<tr><td colspan="3">Conventional Market</td></tr>
<tr><td colspan="4">*The NMDB includes mortgage originations from all 50 states and the District of Columbia. The NMDB is based on the first-lien, closed-end mortgages reported to one of three major credit bureaus. The NMDB is a 5% sample and not a census of the mortgage universe.<br>**Government loans includes loans issued by the Federal Housing Administration (FHA), U.S. Department of Veterans Affairs (VA), and the Rural Housing Rural Housing Service (RHS) of the U.S. Department of Agriculture (USDA).<br>***Enterprise acquired loans include loans acquired by either Fannie Mae or Freddie Mac.</td></tr>
</table>

Since the NMDB is based on a 5 percent sample, aggregated data in small cells are not statistically reliable. Also, there may be privacy concerns when statistics are based on few observations. Therefore, aggregated statistics are suppressed when they are based on fewer than 3 loans. Suppressed data are indicated by the SUPPRESSED field.

## New Residential Mortgage Statistics

New originations are mortgage loans that are initially funded, as determined by the account opening date. They are categorized as home purchase (purchase money) mortgages or refinance mortgages. These datasets include two analysis variables, VALUE1 and VALUE2. VALUE1 statistics are weighted based on mortgage counts, where each sample mortgage represents 20 actual mortgages. VALUE2 statistics are weighted by the origination loan amount of the mortgage.

Appendix B describes the set of aggregate statistics produced for new originations.

The following data sets providing aggregate statistics on new originations are available on the FHFA website: https://www.fhfa.gov/DataTools/Downloads/Pages/National-Mortgage-Database-Aggregate-Data.aspx.

Nationwide and Census Areas:

nmdb-new-mortgage-statistics-national-census-areas-annual.csv
nmdb-new-mortgage-statistics-national-census-areas-quarterly.csv
nmdb-new-mortgage-statistics-national-census-areas-monthly.csv

State Level data:

nmdb-new-mortgage-statistics-states-annual.csv

All Geographic Delineations (large file):

nmdb-new-mortgage-statistics-all-annual.csv

## Outstanding Residential Mortgage Statistics

Outstanding mortgage statistics are a stock measure of active mortgages taken at the end of each calendar quarter when the NMDB is updated. Current active mortgages are equal to previous active mortgages plus new originations less mortgages that are paid off or otherwise terminated. These datasets include two analysis variables, VALUE1 and VALUE2. VALUE1 statistics are weighted based on mortgage counts, where each sample mortgage represents 20 actual mortgages. VALUE2 statistics are weighted by the amount of each mortgage's unpaid principal balance (UPB) at the end of the indicated quarter.

Appendix C describes the set of aggregate statistics produced for outstanding mortgages.

The following data sets providing aggregate statistics on active mortgages are available on the FHFA website: https://www.fhfa.gov/DataTools/Downloads/Pages/National-Mortgage-Database-Aggregate-Data.aspx.

Nationwide and Census Areas:

nmdb-outstanding-mortgage-statistics-national-census-areas-quarterly.csv

State Level data:

nmdb-outstanding-mortgage-statistics-state-quarterly.csv

All Geographic Delineations (large file):

nmdb-outstanding-mortgage-statistics-all-quarterly.csv

## Residential Mortgage Performance Statistics

The NMDB data show three mutually exclusive performance categories: a) 30 or 60 days past due date, b) 90 to 180 days past due date, and c) in the process of foreclosure, bankruptcy, or deed-in-lieu. The data reflect performance in the last month of each quarter. In addition, a new series has been added to provide

the forbearance rate beginning with the fourth quarter of 2019. Performance and forbearance rates are calculated on only active loans starting the quarter after origination to the quarter before termination.[2]

The NMDB Mortgage Performance Statistics show the payment past due status of a representative sample of first lien closed-end mortgages as reported in consumers' credit reports. Servicers and lenders generally report loan payment status only once a month. However, past due status as legally reported to the credit bureau is determined strictly by the number of calendar days that a payment is past due, e.g., 30, 60, 90, etc. For example, in a credit report, a missed April (first of the month) payment after a prompt March payment does not appear as 30 days past due until May 2nd and thus will not be reflected in servicer reports before that date. The CARES Act, passed March 28, 2020, presents another reporting issue. Under the CARES Act, when forbearance is granted to current loans, they must be subsequently reported as current regardless of whether or not payments are made. Finally, although most servicers report loan performance monthly (about 97 percent) a small number do not. This can happen because loans are in dispute, the servicer only reports on a quarterly basis, or for some seriously past due loans there is no change in status. The NMDB statistics accommodate this issue with a "stale account rule" similar to those embedded in credit scores. Monthly statistics reflect the most recent report status for a loan within three months even when it is not reported in the current month. The most recent report within 24 months is used for mortgages 180 days or more past due and mortgages in the process of foreclosure, bankruptcy, or deed-in-lieu.

These factors mean that the monthly NMDB statistics may not strictly align with other performance metrics which determine past due status on a monthly basis, treat non-payments for loans under forbearance differently or use different stale account rules. Historically, lenders have granted forbearance to loans in areas hit by natural disasters. In the aftermath of Hurricane Katrina, for example, loans in Louisiana showed no increase in delinquency despite the fact that many borrowers were not making payments. Also, in rare cases, the foreclosure process can be drawn out longer than two years in states with judicial foreclosure rules like New Jersey, Connecticut and Florida, and particularly during the mortgage crisis. In these cases, the two-year stale account rule could actually reduce delinquency measures.

Due to the time lag in the reporting of new mortgages to the credit bureaus (up to 6 months), performance statistics reported in the latest two quarters should be treated as preliminary estimates that may be revised in the future as the reporting gap closes. Generally, initial estimates of delinquency and forbearance are higher than the revised numbers. During periods of higher-than-normal origination activity in the mortgage market, the effect of the reporting lag could be more acute.

The following data sets providing aggregate statistics on mortgage performance are available on the FHFA website: https://www.fhfa.gov/DataTools/Downloads/Pages/National-Mortgage-Database-Aggregate-Data.aspx (See Appendix B for descriptions of series elements and other definitions and notes.)

Nationwide and Census Areas:

nmdb-performance-statistics-national-census-areas-quarterly.csv

[2] Active loans are loans that are not closed or terminated for which there exists performance data. Termination means the trade line is closed, whether through a mortgage refinance or the balance was otherwise paid off or settled. The NMDB is based on a 5 percent nationally representative sample of first-lien, closed-end mortgages reported to one of the three major credit bureaus. While the NMDB provides an excellent and comprehensive representation of mortgages for owner-occupied and site-built homes, investor mortgages and mortgages for manufactured homes are not as well represented because mortgages taken out by non-persons are not reported to the credit bureaus and loans for manufactured homes are not well-defined in reporting to the credit bureaus.

State Level data:
nmdb-performance-statistics-state-quarterly.csv

Metro Area Level data:
nmdb-performance-statistics-metro-quarterly.csv

All Geographic Delineations (large file):
nmdb-performance-statistics-all-quarterly.csv

## Appendix A

**MARKET DEFINITIONS**

| CATEGORY | Market Definition |
|---|---|
| All Mortgages | All single-family mortgage originations from NMDB. Coverage includes all 50 States and the District of Columbia (5% sample of credit reports) |
| All Mortgages (Home Purchase) | Subset of All Mortgages, includes only home purchase (purchase money) loan originations |
| All Mortgages (Refinance) | Subset of All Mortgages, includes only refinance loan originations |
| Conventional Market | Subset of All Mortgages, includes all non-government insured/guaranteed/direct loans |
| Conventional Market (Home Purchase) | Subset of Conventional Market, includes only home purchase (purchase money) loan originations |
| Conventional Market (Refinance) | Subset of Conventional Market, includes only refinance loan originations |
| Conforming Market | Subset of All Mortgages, includes all loans at or below the applicable FHFA conforming loan limit (adjusted for number of units)** |
| Conforming Market (Home Purchase) | Subset of Conforming Market, includes only home purchase (purchase money) loan originations |
| Conforming Market (Refinance) | Subset of Conforming Market, includes only refinance loan originations |
| Conventional Conforming Market | Subset of All Mortgages, includes all non-government insured/guaranteed/ direct loans at or below the applicable conforming loan limit (adjusted for number of units) |
| Conventional Conforming Market (Home Purchase) | Subset of Conventional Conforming Market, includes only home purchase (purchase money) loan originations |
| Conventional Conforming Market (Refinance) | Subset of Conventional Conforming Market, includes only refinance loan originations |

(Continued)

**MARKET DEFINITIONS (Continued)**

| CATEGORY | Market Definition |
|---|---|
| Enterprise Acquisitions | Subset of All Mortgages, includes all Enterprise (i.e., Fannie Mae and Freddie Mac) acquired loans (that are not guaranteed by a government agency) |
| Enterprise Acquisitions (Home Purchase) | Subset of Enterprise Acquisitions, includes only home purchase (purchase money) loan originations |
| Enterprise Acquisitions (Refinance) | Subset of Enterprise Acquisitions, includes only refinance loan originations |
| Government / Non-Conventional | Subset of All Mortgages, includes all government insured/guaranteed/direct loans |
| Government (Home Purchase) | Subset of Government / Non-Conventional, includes only home purchase (purchase money) loan originations |
| Government (Refinance) | Subset of Government / Non-Conventional, includes only refinance loan originations |
| Other Conventional Market | Subset of All Mortgages, includes other conventional loans after government insured/guaranteed/direct loans and Enterprise acquired loans are removed. Includes loans in the Federal Home Loan Bank Acquired Member Assets program, Credit Union, loans in private label mortgage pools and other portfolio held loans. (Includes the jumbo mortgage market) |
| Other Conventional Market (Home Purchase) | Subset of Other Conventional Market, includes only home purchase (purchase money) loan originations |
| Other Conventional Market (Refinance) | Subset of Other Conventional Market, includes only refinance loan originations |

(Continued)

**MARKET DEFINITIONS (Continued)**

| CATEGORY | Market Definition |
|---|---|
| Other Conforming Market | Subset of All Mortgages, other conventional conforming loans after government insured/guaranteed/direct loans, Enterprise acquired loans and jumbo loans are removed. Includes loans in the Federal Home Loan Bank Acquired Member Assets program, Credit Union and other portfolio held loans |
| Other Conforming Market (Home Purchase) | Subset of Other Conforming Market, includes only home purchase (purchase money) loan originations |
| Other Conforming Market (Refinance) | Subset of Other Conforming Market, includes only refinance loan originations |
| Jumbo Market | Subset of All Mortgages, includes all loans above the applicable FHFA conforming loan limit (adjusted for number of units) |
| Jumbo Market (Home Purchase) | Subset of Jumbo Market, includes only home purchase (purchase money) loan originations |
| Jumbo Market (Refinance) | Subset of Jumbo Market, includes only refinance loan originations |

*The NMDB is based on the first-lien, closed-end mortgages reported to one of three major credit bureaus. The NMDB is a 5% sample and not a census of the mortgage universe.
** The conforming loan limit is the location determined maximum loan amount that can be acquired by Fannie Mae or Freddie Mac.

## Appendix B

## STATISTICS FOR NEW RESIDENTIAL MORTGAGES

| Series Descriptions | | | SERIESID | Notes |
|---|---|---|---|---|
| Number of Originations (1,000s) | | | TOT_ORIG | VALUE1: 1,000s of originations<br>VALUE2: Millions of dollars ($) |
| Average Loan Amount (1,000 $) | | | AVE_LOANAMT | Rounded to nearest $1,000 |
| Average Initial Required Loan Payment after Origination | | | AVE_PAYMENT | Rounded to nearest dollar ($) |
| Average Purchase Price or Appraised Value (1,000 $) | | | AVE_PROPVAL | Rounded to nearest $1,000 |
| Average Contract Rate | | | AVE_INTRATE | Interest rate at time of origination |
| Percent Share Owner-Occupied Property | | | PCT_OWNOCC | Share of originations where the property is owner-occupied |
| Home Purchase Originations | Percent Share | First-Time Homebuyer Loans* | PCT_FTHB | Any of the borrowers is a first-time home purchase |
| | | Repeat Homebuyer Loans | PCT_REPEATHB | None of the borrowers is a first-time homebuyer |
| | | All Home Purchase Loans | PCT_HP | Purpose of the loan is to purchase a home |
| Refinance Originations | Percent Share | Cashout Refinance Loans** | PCT_CASHOUT | Purpose of the loan is to access equity through a refinance |
| | | Rate and Term Refinance Loans | PCT_OTH_REFI | None of the loans are cashout refinances (purpose of the loan is to take advantage of favorable rates and/or term through a refinance) |
| | | All Refinance Loans | PCT_REFI | Purpose of the loan is to refinance an existing mortgage |
| Mortgage Terms | Average Term to Maturity (Yrs.) | | AVE_TERM | Term to maturity at time of origination |
| | Percent Share by Term | Adjustable-Rate Mortgages | PCT_ARM | Adjustable-rate mortgage |
| | | 15-Year Fixed Rate Mortgages | PCT_TERM_FRM_15 | Fixed rate mortgage where term to maturity is less than or equal to 15 years |
| | | 20- and 30-Year Fixed Rate Mortgages | PCT_TERM_FRM_30 | Fixed rate mortgage where term to maturity is greater than 15 years |
| Back-End Debt-to-Income Ratio | Average DTI | | AVE_DTI | Average back-end debt-to-income ratio |
| | Percent Share by DTI | Less Than or Equal To 36 | PCT_DTI_LE36 | Debt-to-income ratio at or below 36% |
| | | More than 36 To 43 | PCT_DTI_3743 | Debt-to-income ratio between 36.1 and 43% |
| | | Greater Than 43 | PCT_DTI_GE44 | Debt-to-income ratio above 43% |
| All Borrowers' Credit Score | Average Loan Credit Score | | AVE_VANTAGESCR | Average VantageScore® Version 3.0 of all borrowers |
| | Percent Share of Loans by Borrowers' Credit Score*** | Very Poor Credit | PCT_VS_VERYPOOR | Average borrower VantageScore is 300-499 |
| | | Poor Credit | PCT_VS_POOR | Average borrower VantageScore is 500-600 |
| | | Fair Credit | PCT_VS_FAIR | Average borrower VantageScore is 601-660 |
| | | Good Credit | PCT_VS_GOOD | Average borrower VantageScore is 661-780 |
| | | Excellent Credit | PCT_VS_EXCELLENT | Average borrower VantageScore is 781-850 |
| Loan-to-Value | Average | Loan-to-Value | AVE_LTV | Loan-to-value based on first lien mortgage |
| | | Combined Loan-to-Value | AVE_CLTV | Loan-to-value based on first and contemporaneous subordinate liens mortgage |
| | Percent Share by CLTV | 70.0% or Less | PCT_CLTV_LE70 | Combined Loan-to-value (CLTV) at or below 70% |
| | | 70.1 - 80.0% | PCT_CLTV_7080 | Combined Loan-to-value between 70 and 80% |
| | | 80.1 - 90.0% | PCT_CLTV_8090 | Combined Loan-to-value between 80 and 90% |
| | | 90.1 - 95.0% | PCT_LTV_9095 | Combined Loan-to-value between 90 and 95% |
| | | 95.1 - 97.0% | PCT_LTV_9597 | Combined Loan-to-value between 95 and 97% |
| | | Greater Than 97.0% | PCT_LTV_GT97 | Combined Loan-to-value greater than 97% |

(Continued)

## STATISTICS FOR NEW RESIDENTIAL MORTGAGES (Continued)

| Series Descriptions | | | SERIES | Notes |
|---|---|---|---|---|
| Percent Market Share | | Government | PCT_GOVERNMENT | Government insured/guaranteed/direct loans |
| | | Enterprise | PCT_ENTERPRISE | Non-government loans acquired by an enterprise |
| | | Other Conforming (Portfolio) | PCT_OTHERCONFORMING | Non-government, non-enterprise conforming loans |
| | | Jumbo Market | PCT_NONCONFORMING | Loans above the conforming loan limit |
| Percent Share of Loans by All Borrowers' Race | | All White alone | PCT_WHT | All borrowers are White |
| | | All Black or African American alone | PCT_BLK | All borrowers are Black or African American |
| | | All Asian alone | PCT_ASN | All borrowers are only Asian |
| | | All Native Hawaiian and Other Pacific Islander alone | PCT_HPI | All borrowers are Hawaiian or Pacific Islander |
| | | All American Indian and Alaska Native alone | PCT_AMI | All borrowers are American Indian or Alaska Native |
| | | Multiple races | PCT_MIX | (a) One or more borrowers reported more than once race, or (b) where each borrower reported one race, but the borrowers were from different races |
| Percent Share of Loans by All Borrowers' Ethnicity | | All Hispanic or Latino | PCT_HIS | All borrowers are Hispanic or Latino (including single borrower) who may be or any race |
| | | At least one Hispanic or Latino | PCT_HSP | One borrower is Hispanic or Latino (among two or more borrowers) who may be of any race |
| | | All White alone, not Hispanic or Latino | PCT_WNH | All borrowers are White and not Hispanic or Latino |
| | | Multiple races or race other than White, not Hispanic or Latino | PCT_MNH | All borrowers are not Hispanic or Latino and (a) one or more borrowers reported more than once race, or (b) where each borrower reported one race, but all the borrowers were of race other than White |
| All Borrowers' Ages | Average Age | | AVE_AGE_BORROWER | Average age of all borrowers |
| | Percent Share of Loans by Age | Less Than 25 | PCT_AGE_LT25 | Average borrower age is less than 25 |
| | | 25 to 34 | PCT_AGE_2534 | Average borrower age is 25 to 34 |
| | | 35 to 44 | PCT_AGE_3544 | Average borrower age is 35 to 44 |
| | | 45 to 54 | PCT_AGE_4554 | Average borrower age is 45 to 54 |
| | | 55 to 64 | PCT_AGE_5564 | Average borrower age is 55 to 64 |
| | | At Least 65 | PCT_AGE_GE65 | Average borrower age is at least 65 |
| Percent Share by Number of Borrowers and Gender | | Single Borrower - Male | PCT_MALEBOR | One borrower and that borrower is male |
| | | Single Borrower - Female | PCT_FEMALEBOR | One borrower and that borrower is female |
| | | Two Borrowers | PCT_TWOBOR | Two borrowers |
| | | More Than Two Borrowers | PCT_MULTIBOR | More than two borrowers |

*First-time homebuyer is determined by reviewing the credit data of every borrower for prior mortgages. When no prior mortgage is found for the borrower, that borrower is defined as a first-time homebuyer. If any borrower associated with a loan is a first-time homebuyer, that loan is defined as a first-time homebuyer loan.
**Cashout refinance is defined as when the new first lien amount plus any second lien amounts is more than five percent above the previous first and second liens' Unpaid Principal Balance (UPB), at the time of the refinance, added together.
***https://www.experian.com/blogs/ask-experian/credit-education/score-basics/what-is-a-good-credit-score

## Appendix C

## STATISTICS FOR RESIDENTIAL MORTGAGES ACTIVE AS OF THE END OF THE QUARTER

| Series Descriptions | | | SERIESID | Notes |
|---|---|---|---|---|
| Outstanding (Active) Loans | | | TOT_LOANS | VALUE1: 1,000s of mortgages<br>VALUE2: Billions of dollars ($) |
| Percent Share of Loans by Geography | | | PCT_LOANS | Number of outstanding loans in the State divided by total Nationwide outstanding loans |
| Origination Loan Volume ($ Bil.) | | | TOT_LOANAMT | Total Loan Volume at Origination (billions of dollars ($), VALUE1 only) |
| Median Monthly Payment | | | MED_PAYMENT | Median principal, interest and escrow (where applicable) payment for the month ending the quarter (VALUE1 only) |
| Average Monthly Payment | | | AVE_PAYMENT | Average principal, interest and escrow (where applicable) payment for the month ending the quarter (VALUE1 only) |
| Mark-to-Market Loan-to-Value* | Average | | AVE_MTMLTV | Average mark-to-market loan-to-value* |
| | Percent Share by LTV | Less Than or Equal to 60% | PCT_MTMLTV_LE60 | Mark-to-market loan-to-value (LTV) at or below 60% |
| | | 60.1 - 70.0% | PCT_MTMLTV_61_70 | Mark-to-market loan-to-value between 60 and 70% |
| | | 70.1 - 80.0% | PCT_MTMLTV_71_80 | Mark-to-market loan-to-value between 70 and 80% |
| | | 80.1 - 90.0% | PCT_MTMLTV_81_90 | Mark-to-market loan-to-value between 80 and 90% |
| | | 90.1 - 100% | PCT_MTMLTV_91_100 | Mark-to-market loan-to-value between 90 and 100% |
| | | Greater Than 100% | PCT_MTMLTV_GT100 | Mark-to-market loan-to-value greater than 100% |
| Contract Interest Rate at Origination | Average | | AVE_INTRATE | Average interest rate at time of origination |
| | Percent Share by Interest Rate | Less Than 3% | PCT_INTRATE_LT_3 | Contract interest rate below 3 percent |
| | | 3.00 – 3.99% | PCT_INTRATE_3_4 | Contract interest rate between 3 and 4 percent |
| | | 4.00 – 4.99% | PCT_INTRATE_4_5 | Contract interest rate between 4 and 5 percent |
| | | 5.00 – 5.99% | PCT_INTRATE_5_6 | Contract interest rate between 5 and 6 percent |
| | | Greater Than or Equal to 6% | PCT_INTRATE_GE_6 | Contract interest rate at or greater than 6 percent |
| Mortgage Term | Adjustable Rate Mortgages | Originated Less Than or Equal to 4 Years Ago | PCT_TERM_ARM_1_4 | Adjustable Rate Mortgages (ARMs) that were originated within the prior 4 years |
| | | Originated More than 4 Years Ago | PCT_TERM_ARM_5PL | Adjustable Rate Mortgages (ARMs) that were originated more than 4 years ago |
| | Fixed Rate Mortgages | Term of 15 Year or Less | PCT_TERM_FRM_15 | Fixed Rate Mortgages (FRMs) with a term less than or equal to 15 years (primarily 15 year mortgages) |
| | | Term of More than 15 Years | PCT_TERM_FRM_30 | Fixed Rate Mortgages (FRMs) with a term of more than 15 years (primarily 20 and 30 year mortgages) |

(Continued)

## STATISTICS FOR RESIDENTIAL MORTGAGES ACTIVE AS OF THE END OF THE QUARTER (Continued)

| Series Descriptions | | | SERIESID | Notes |
|---|---|---|---|---|
| Credit Score at Current Quarter** | Average | | AVE_VANTAGESCR | Average VantageScore® Version 3.0 of all borrowers |
| | Percent Share of Loans by Borrowers' Credit Score | Very Poor Credit | PCT_VS_VERYPOOR | Average borrower VantageScore is 300-499 |
| | | Poor Credit | PCT_VS_POOR | Average borrower VantageScore is 500-600 |
| | | Fair Credit | PCT_VS_FAIR | Average borrower VantageScore is 601-660 |
| | | Good Credit | PCT_VS_GOOD | Average borrower VantageScore is 661-780 |
| | | Excellent Credit | PCT_VS_EXCELLENT | Average borrower VantageScore is 781-850 |
| Age of Mortgage Loan | Average (Months) | | AVE_AGE_LOAN | Average number of months since loan was originated |
| | Percent Share by Age | Less Than or Equal to 4 Years | PCT_TENURE_1_4 | Share of outstanding loans that were originated within 4 years |
| | | 4.01 – 7.00 Years | PCT_TENURE_5_7 | Share of outstanding loans that were originated 4.01 – 7.00 years ago |
| | | 7.01 – 10.00 Years | PCT_TENURE_8_10 | Share of outstanding loans that were originated 7.01 – 10.00 years ago |
| | | Greater Than 10 Years | PCT_TENURE_11PL | Share of outstanding loans that were originated more than 10 years ago |
| Percent Market Share | | Government | PCT_G0VERNMENT | Government insured/guaranteed/direct loans |
| | | Enterprise | PCT_ENTERPRISE | Non-government loans acquired by an Enterprise |
| | | Other Conventional | PCT_OTHER | Non-government, non-enterprise loans, includes jumbo market |

*Mark-to-market loan-to-value = current unpaid principal balance / ((origination property value / origination HPI) X current HPI)

**https://www.experian.com/blogs/ask-experian/credit-education/score-basics/what-is-a-good-credit-score

## Appendix D

**RESIDENTIAL MORTGAGE PERFORMANCE STATISTICS AS OF THE END OF THE QUARTER**

| Series Descriptions | SERIESID | Notes |
|---|---|---|
| Percent 30 or 60 Days Past Due Date | PD3060 | Number of active loans at least 30 or 60 days past due date (subject to the stale account rule) at the end of the quarter, divided by all active loans at the end of the quarter. |
| Percent 90 to 180 Days Past Due Date | PD90180 | Number of active loans at active least 90, 120, 150 or 180 days past due data (subject to the stale account rule) at the end of the quarter, divided by all active loans at the end of the quarter. |
| Percent in the Process of Foreclosure, Bankruptcy, or Deed in Lieu | FBD | Number of active loans in the process of foreclosure, bankruptcy or deed in lieu (subject to the stale account rule) at the end of the quarter, divided by all active loans at the end of the quarter. |
| Percent in Forbearance | FBR | Number of active loans indicated as being in forbearance at the end of the quarter, divided by all active loans at the end of the quarter. |

**RESIDENTIAL MORTGAGE PERFORMANCE STATISTICS NOTES**

| Notes | Descriptions |
|---|---|
| Active Loans | Mortgage loans that are not closed or terminated for which there exists performance data. |
| Loans Recently Originated | It may take months for newly originated loans to appear in the credit history. Even though the performance classification is missing, these loans are treated as current until a valid performance code is found and are included in the denominator. |
| Timing of Reported Loan Performance | Application of Metro2® credit bureau reporting guidelines can affect the timing of the reporting of loan performance status, particularly for those servicers that report at the end of a calendar month. |
| Credit History Suppression | Credit history of an individual is suppressed when the individual disputes his or her credit report. Credit histories of individuals affected by federally declared natural disasters are also suppressed in the affected regions and time periods. |
| Credit Purge Seven Years After Default | Per Fair Credit Reporting Act (FCRA) rules, credit history of a loan is purged seven years after the loan first goes into default. To create the historical NMDB, two credit bureau archives were used: the first archive was obtained at the end of December 2005, and the second archive was obtained six and half years later at the end of June 2012. Reconciliation of the two archives was done carefully. However, as a result of the FCRA rules, a number of loans that were in a state of past due at the end of 2005 had been purged from the credit bureau data in the June 2012 archive. Through a limited matching of loan records to intermediate archives, the dissolution of many of these loans were resolved. However, NMDB has some undercounting of seriously past due loans from 2006 to 2012, but the undercounting diminishes the closer the time period is to the end of 2012. |

**ADDITIONAL RESIDENTIAL MORTGAGE PERFORMANCE STATISTICS CONCEPTS**

| Concept | Definition |
|---|---|
| Days Past Due | The percent days past due in the Table tab reflect what a person sees when they request a credit report. The days past due follow the Metro 2® credit bureau reporting guidelines, such that loans are classified as current or past due 29 or fewer days; 30 to 59 days past due; 60 to 89 days past due; 90 to 119 days past due; 120 to 149 days past due; 150 to 179 days past due; and 180 or more days past due. For more information on alternative measures of mortgage performance, see National Mortgage Database Technical Report 1.2, October 30, 2017. |
| Stale Account Rule | For loan performance and forbearance status beginning 2012, a three-month stale account rule is used, i.e., if a quarter-ending performance code is missing, the stale account rule requires looking back month by month up to two months until an actual performance code is recorded and that performance code is applied to the current month. For loan performance prior to 2012, a six-month stale account rule is used. Additionally, a 24-month rule is applied to loans that are 180 or more days past due or in the process of foreclosure, bankruptcy, or deed in lieu. |
| Reporting Lag and Rapidly Changing Mortgage Volumes | Due to the time lag in the reporting of new mortgages to the credit bureaus (up to 6 months), performance statistics reported in the latest two quarters should be treated as preliminary estimates that may be revised in the future as the reporting gap closes. Generally initial estimates of delinquency are higher than the revised numbers. During periods of higher-than-normal origination activity in the mortgage market, the effect of the reporting lag could be more acute. |

## Appendix E

**NAMES OF GEOGRAPHY: CENSUS REGIONS, CENSUS DIVISIONS AND STATES**

| Census Region | Census Division | States |
|---|---|---|
| Northeast | New England | Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut |
| | Middle Atlantic | New York, New Jersey, Pennsylvania |
| Midwest | East North Central | Ohio, Indiana, Illinois, Michigan, Wisconsin |
| | West North Central | Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas |
| South | South Atlantic | Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida |
| | East South Central | Kentucky, Tennessee, Alabama, Mississippi |
| | West South Central | Arkansas, Louisiana, Oklahoma, Texas |
| West | Mountain | Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada |
| | Pacific | Washington, Oregon, California, Alaska, Hawaii |

**NAMES AND CODES OF GEOGRAPHY: STATES**

| State Name | Postal Code | FIPS Code |
|---|---|---|
| Alabama | AL | 01 |
| Alaska | AK | 02 |
| Arizona | AZ | 04 |
| Arkansas | AR | 05 |
| California | CA | 06 |
| Colorado | CO | 08 |
| Connecticut | CT | 09 |
| Delaware | DE | 10 |
| District of Columbia | DC | 11 |
| Florida | FL | 12 |
| Georgia | GA | 13 |
| Hawaii | HI | 15 |
| Idaho | ID | 16 |
| Illinois | IL | 17 |
| Indiana | IN | 18 |
| Iowa | IA | 19 |
| Kansas | KS | 20 |
| Kentucky | KY | 21 |
| Louisiana | LA | 22 |
| Maine | ME | 23 |
| Maryland | MD | 24 |
| Massachusetts | MA | 25 |
| Michigan | MI | 26 |
| Minnesota | MN | 27 |
| Mississippi | MS | 28 |
| Missouri | MO | 29 |

| State Name | Postal Code | FIPS Code |
|---|---|---|
| Montana | MT | 30 |
| Nebraska | NE | 31 |
| Nevada | NV | 32 |
| New Hampshire | NH | 33 |
| New Jersey | NJ | 34 |
| New Mexico | NM | 35 |
| New York | NY | 36 |
| North Carolina | NC | 37 |
| North Dakota | ND | 38 |
| Ohio | OH | 39 |
| Oklahoma | OK | 40 |
| Oregon | OR | 41 |
| Pennsylvania | PA | 42 |
| Rhode Island | RI | 44 |
| South Carolina | SC | 45 |
| South Dakota | SD | 46 |
| Tennessee | TN | 47 |
| Texas | TX | 48 |
| Utah | UT | 49 |
| Vermont | VT | 50 |
| Virginia | VA | 51 |
| Washington | WA | 53 |
| West Virginia | WV | 54 |
| Wisconsin | WI | 55 |
| Wyoming | WY | 56 |

**NAMES AND CODES OF GEOGRAPHY: 100 METRO AREAS**

| Metro Area | MSA Code |
|---|---|
| Akron, OH | 10420 |
| Albany-Schenectady-Troy, NY | 10580 |
| Albuquerque, NM | 10740 |
| Allentown-Bethlehem-Easton, PA-NJ | 10900 |
| Anaheim-Santa Ana-Irvine, CA (MSAD) | 11244 |
| Atlanta-Sandy Springs-Alpharetta, GA | 12060 |
| Austin-Round Rock-Georgetown, TX | 12420 |
| Bakersfield, CA | 12540 |
| Baltimore-Columbia-Towson, MD | 12580 |
| Baton Rouge, LA | 12940 |
| Birmingham-Hoover, AL | 13820 |
| Boise City, ID | 14260 |
| Boston, MA (MSAD) | 14454 |
| Bridgeport-Stamford-Norwalk, CT | 14860 |
| Buffalo-Cheektowaga, NY | 15380 |
| Cambridge-Newton-Framingham, MA (MSAD) | 15764 |
| Camden, NJ (MSAD) | 15804 |
| Cape Coral-Fort Myers, FL | 15980 |
| Charleston-North Charleston, SC | 16700 |
| Charlotte-Concord-Gastonia, NC-SC | 16740 |
| Chicago-Naperville-Evanston, IL (MSAD) | 16984 |
| Cincinnati, OH-KY-IN | 17140 |
| Cleveland-Elyria, OH | 17460 |
| Colorado Springs, CO | 17820 |
| Columbia, SC | 17900 |
| Columbus, OH | 18140 |
| Dallas-Plano-Irving, TX (MSAD) | 19124 |
| Dayton-Kettering, OH | 19430 |
| Denver-Aurora-Lakewood, CO | 19740 |
| Detroit-Dearborn-Livonia, MI (MSAD) | 19804 |
| El Paso, TX | 21340 |
| Elgin, IL (MSAD) | 20994 |
| Fort Lauderdale-Pompano Beach-Sunrise, FL (MSAD) | 22744 |
| Fort Worth-Arlington-Grapevine, TX (MSAD) | 23104 |
| Frederick-Gaithersburg-Rockville, MD (MSAD) | 23224 |
| Fresno, CA | 23420 |
| Gary, IN (MSAD) | 23844 |

(Continued)

**NAMES AND CODES OF GEOGRAPHY: 100 METRO AREAS (Continued)**

| Metro Area | MSA Code |
|---|---|
| Grand Rapids-Kentwood, MI | 24340 |
| Greensboro-High Point, NC | 24660 |
| Greenville-Anderson, SC | 24860 |
| Hartford-East Hartford-Middletown, CT | 25540 |
| Houston-The Woodlands-Sugar Land, TX | 26420 |
| Indianapolis-Carmel-Anderson, IN | 26900 |
| Jacksonville, FL | 27260 |
| Kansas City, MO-KS | 28140 |
| Knoxville, TN | 28940 |
| Lake County-Kenosha County, IL-WI (MSAD) | 29404 |
| Las Vegas-Henderson-Paradise, NV | 29820 |
| Little Rock-North Little Rock-Conway, AR | 30780 |
| Los Angeles-Long Beach-Glendale, CA (MSAD) | 31084 |
| Louisville/Jefferson County, KY-IN | 31140 |
| Memphis, TN-MS-AR | 32820 |
| Miami-Miami Beach-Kendall, FL (MSAD) | 33124 |
| Milwaukee-Waukesha, WI | 33340 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 33460 |
| Montgomery County-Bucks County-Chester County, PA (MSAD) | 33874 |
| Nashville-Davidson--Murfreesboro--Franklin, TN | 34980 |
| Nassau County-Suffolk County, NY (MSAD) | 35004 |
| New Haven-Milford, CT | 35300 |
| New Orleans-Metairie, LA | 35380 |
| New York-Jersey City-White Plains, NY-NJ (MSAD) | 35614 |
| Newark, NJ-PA (MSAD) | 35084 |
| North Port-Sarasota-Bradenton, FL | 35840 |
| Oakland-Berkeley-Livermore, CA (MSAD) | 36084 |
| Oklahoma City, OK | 36420 |
| Omaha-Council Bluffs, NE-IA | 36540 |
| Orlando-Kissimmee-Sanford, FL | 36740 |
| Oxnard-Thousand Oaks-Ventura, CA | 37100 |
| Philadelphia, PA (MSAD) | 37964 |
| Phoenix-Mesa-Chandler, AZ | 38060 |
| Pittsburgh, PA | 38300 |
| Portland-Vancouver-Hillsboro, OR-WA | 38900 |
| Providence-Warwick, RI-MA | 39300 |
| Raleigh-Cary, NC | 39580 |
| Richmond, VA | 40060 |

(Continued)

**NAMES AND CODES OF GEOGRAPHY: 100 METRO AREAS (Continued)**

| Metro Area | MSA Code |
|---|---|
| Riverside-San Bernardino-Ontario, CA | 40140 |
| Rochester, NY | 40380 |
| Sacramento-Roseville-Folsom, CA | 40900 |
| Salt Lake City, UT | 41620 |
| San Antonio-New Braunfels, TX | 41700 |
| San Diego-Chula Vista-Carlsbad, CA | 41740 |
| San Francisco-San Mateo-Redwood City, CA (MSAD) | 41884 |
| San Jose-Sunnyvale-Santa Clara, CA | 41940 |
| Seattle-Bellevue-Kent, WA (MSAD) | 42644 |
| St. Louis, MO-IL | 41180 |
| Stockton, CA | 44700 |
| Syracuse, NY | 45060 |
| Tacoma-Lakewood, WA (MSAD) | 45104 |
| Tampa-St. Petersburg-Clearwater, FL | 45300 |
| Tucson, AZ | 46060 |
| Tulsa, OK | 46140 |
| Urban Honolulu, HI | 46520 |
| Virginia Beach-Norfolk-Newport News, VA-NC | 47260 |
| Warren-Troy-Farmington Hills, MI (MSAD) | 47664 |
| Washington-Arlington-Alexandria, DC-VA-MD-WV (MSAD) | 47894 |
| West Palm Beach-Boca Raton-Boynton Beach, FL (MSAD) | 48424 |
| Wichita, KS | 48620 |
| Wilmington, DE-MD-NJ (MSAD) | 48864 |
| Winston-Salem, NC | 49180 |
| Worcester, MA-CT | 49340 |