**Index Rules & Methodology | October 18, 2021**

# Introducing the U.S. Residential Mortgage Rate Lock Index Series

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## Timely, data-driven indicators of U.S. mortgage rates

The ICE U.S. Residential Mortgage Rate Lock Index Series ("Rate Lock Indices") is a new series of indices using data from loan applications processed by ICE Mortgage Technology. The Rate Lock Indices are designed to track the average rate at which new residential home loans are locked each day, with additional detail such as average APR, FICO and LTV. The full index methodology is included in this report.

## Detailed sub-indices track loans by type, purpose and credit

In addition to a broad Composite index, ICE has launched sub-Indices focused on attributes including product type (Conforming or Jumbo 30-year fixed rate), loan purpose (purchase or refinance), and borrower attributes (FICO score, LTV, among others). With more than 80 indices in total, the Rate Lock Indices offers a deep source of market data to draw on. With history from December 2016, index statistics can be understood in the context of historical relationships.

## Available on the ICE Index Platform

The Indices have been integrated into the ICE Index Platform as a new index family, allowing quick access to current and historical data, as well as customized automated data feeds.

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# Introducing the U.S. Residential Mortgage Rate Lock Index Series

Residential mortgage interest rates are an essential economic measure for both homeowners and mortgage lenders, as well as mortgage-backed security investors. The Rate Lock Indices track mortgage rates and other statistics on U.S. residential mortgage loan applications where borrowers and lenders have committed to lock-in the interest rate prior to close. The Rate Lock Indices track rate-locked loan applications processed by ICE Mortgage Technology. The full index methodology is included at the end of this report.

By using anonymized data from ICE Mortgage Technology, which currently processes over half of all mortgages in the U.S., the Rate Lock Indices are calculated from actual loan applications and are designed to provide a more comprehensive, accurate and timelier reflection of current residential mortgage interest rates. The Rate Lock Indices offer several key benefits.

- **Timely**. The Rate Lock Indices are published the morning of each business day using the rates locked from mortgage loan applications on the prior business day, providing rates that reflect the primary mortgage market in a timelier manner.

- **Transparent**. The Rate Lock Indices are constructed from actual mortgage loan applications with a clearly defined rules-based methodology.

- **Representative**. The mortgage loan applications data upon which the Rate Lock Indices are built is sourced from ICE Mortgage Technology, an industry leading mortgage origination platform that currently covers about half the residential mortgage loans processed across the U.S. on a daily basis.

In addition to a broad Composite index, ICE has launched sub-indices focused on attributes including product type (Conforming or Jumbo 30-year fixed rate), loan purpose (purchase or refinance), and borrower attributes (FICO score, LTV, among others). With more than 80 indices in total, the Rate Lock Indices offer a deep source of market data to draw on. With history from December 2016, index statistics can also be understood in the context of historical relationships.

Within the ICE Index Platform, those relationships also extend to other segments of the financial markets. For example, the relationship of the ICE U.S. Conforming 30-Year Fixed Mortgage Rate Lock Index can be easily compared to the yield of the Current 10-Year Treasury Index to investigate the mortgage-Treasury basis (Chart 1). That key metric was at roughly 200 basis points in early 2017, and has averaged that over the last four-and-a-half years. The spread hit a low of 147 basis point in May of this year and stood at 168 basis points at the end of September.

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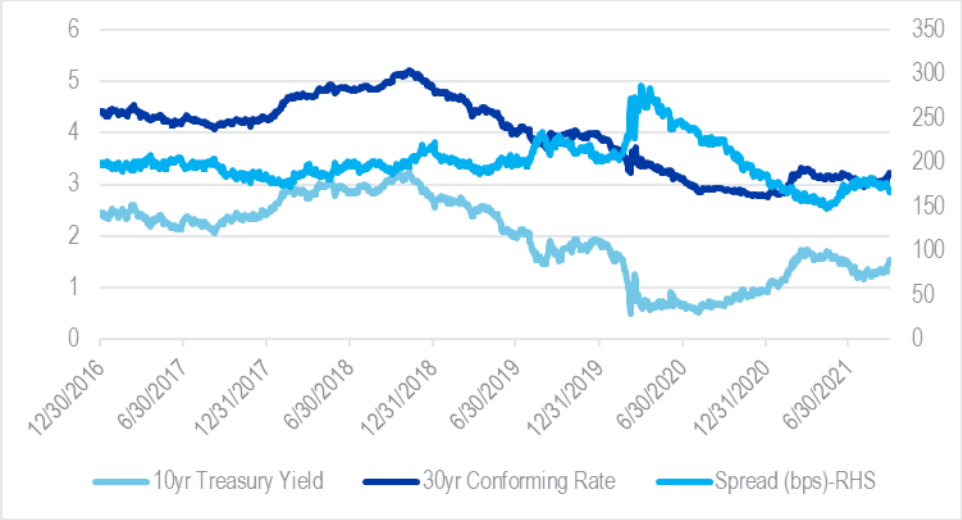
Chart 1. Conforming 30-Year Rate vs 10-Year Treasury Yield

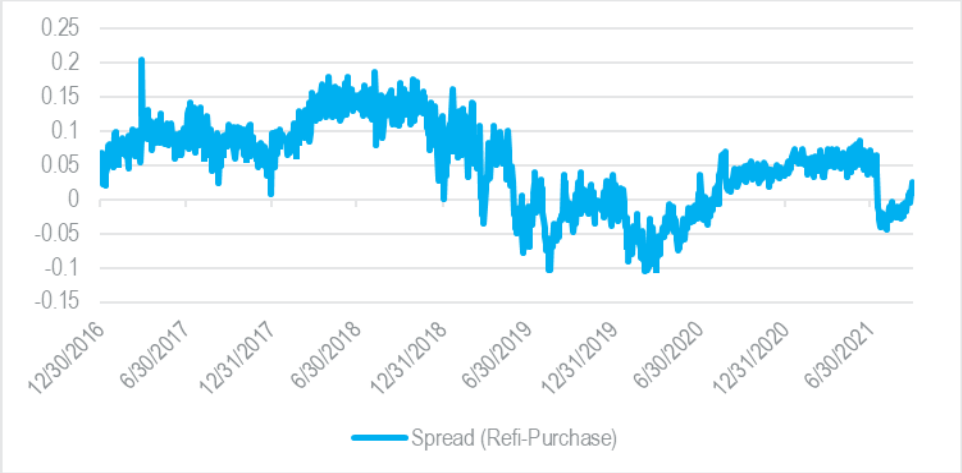



Source: ICE

With the wealth of data provided by the Rate Lock Indices far more subtle relationships can be monitored. This can be of great value to a range of participants in the mortgage market. Mortgage lenders and brokers can have a timelier and more accurate reference on where the prevailing mortgage lending rates are and gauge their offerings to maintain competitiveness in the market. This is designed to help promote market efficiency. Mortgage investors must consider the uncertainty of prepayment risk for their mortgage-backed security ("MBS") portfolios, and prepayment forecasting is crucial in mortgage-backed securities risk analytics. Mortgage rates are a critical input for mortgage prepayment modeling and forecasting. With timelier data from the Rate Lock Indices which are designed to reflect the actual primary mortgage lending market, prepayment modelers can build prepayment models that rely on a solid footing in the market and expect to produce more reliable prepayment projections and risk analytics for MBS investors.

With the index data, mortgage market participants can investigate a time series of aggregate loan characteristic data for a specific cohort, or between multiple cohort groups. For example, we can look at refinance versus purchase in general, and try to answer questions such as, how do the refi and purchase rates compare over time (Chart 2). We can see the answer to that easily by comparing the rates of the ICE U.S. Conforming 30-Year Fixed New Purchase Mortgage Rate Lock Index to that of its Refi counterpart (ICE U.S. Conforming 30-Year Fixed Refinance Mortgage Rate Lock Index).

Chart 2. 30-Year Conforming Rates: Refi vs Purchase




Source: ICE

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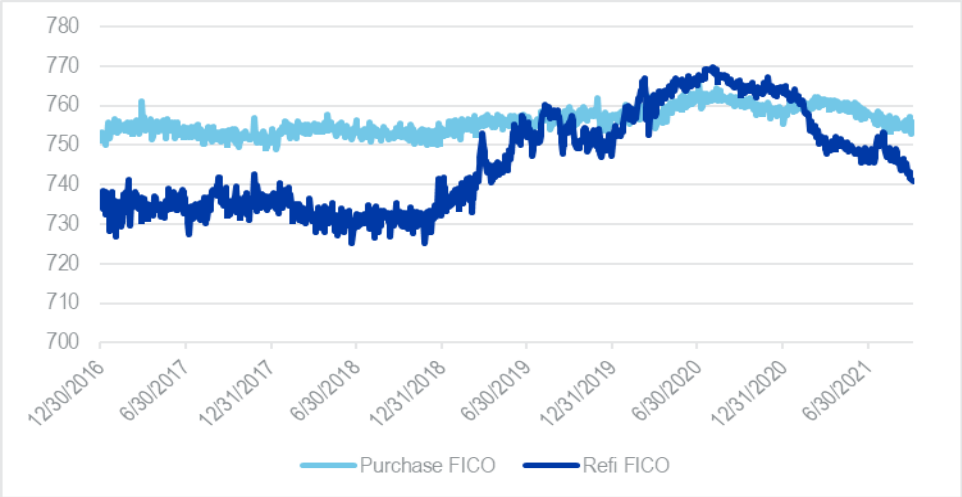
You can observe that over the past few years the refi rate and new purchase rates moved in sync, with little significant spread between the two for conforming 30-yr mortgage loans. Within a narrow band however the relationship does shift over time. One of the ways to investigate the evolution of the relationship between the refi and purchase rates is to look at the average FICO score of the two indices (Chart 3).

Chart 3. 30-Year Conforming FICO: Refi vs Purchase




Source: ICE

Looking at the FICO score profile time series in Chart 3 we can see that over the last few years the average FICO score for new purchases has been relatively stable around 750 while that of refinance loans has increased from about 730 in 2017 until late 2018, when it started to rise above the purchase FICO over time and peaked at 768 amid the pandemic in August 2020. The refinance FICO stayed above purchase FICO from March 2020 until February 2021 when it started to drop below the purchase FICO level and come down to around 740 in September 2021. There are several possible explanations for this, one being higher lender standards due to the shock of the pandemic; and another is that with the historically low rates from late 2020 to early 2021 (see Chart 2 above), loan application volume increased significantly, and went beyond lenders' processing capacity. In this case, lenders likely picked the applicants with higher FICO scores. As the impact of both these factors subsided it is reasonable to expect that lenders would begin making more loans to borrowers with lower FICOs.

It is interesting to note how the additional statistics on the indices can be informative in understanding the relationships of the rates themselves. Another example of this is the 30-Year FHA index, where the average lock rates are almost identical to those of the 30-Year Conforming index, even though FHA loan borrowers have significantly lower FICO scores (Chart 4) and much higher LTVs (Chart 5).

Chart 4: FICO - 30yr Conforming vs 30yr FHA

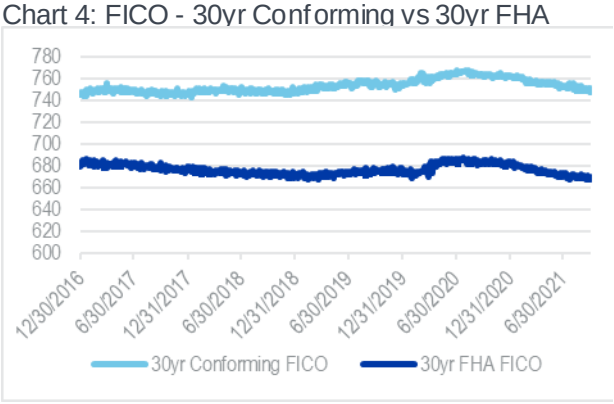
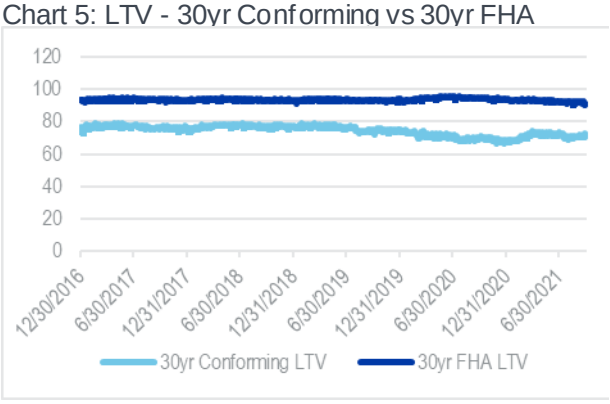



Chart 5: LTV - 30yr Conforming vs 30yr FHA




Source: ICE

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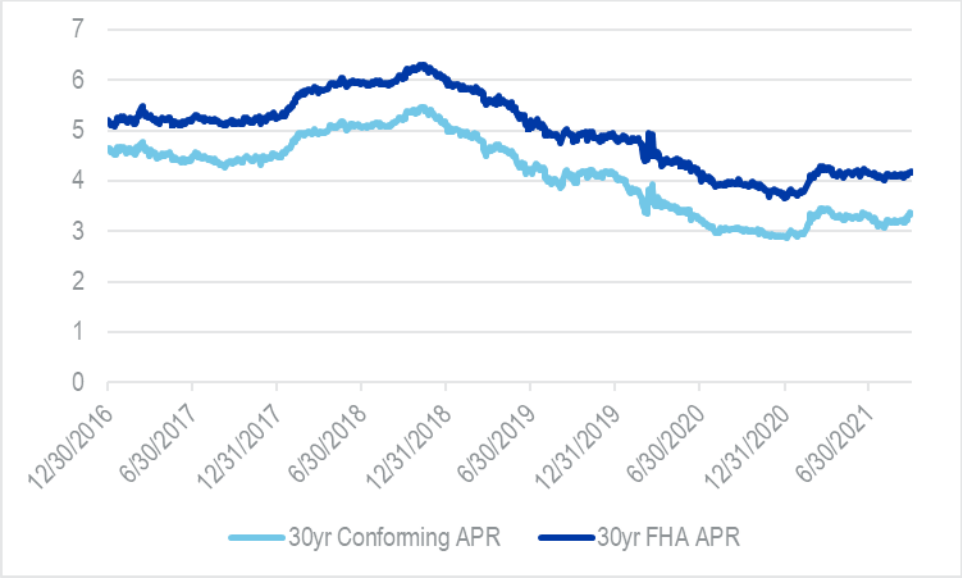
In fact, while the FICO score for conforming loan borrowers has been around 750, for FHA loan borrowers it is about 675. And while the LTVs have averaged about 75% for conforming loan borrowers that has been around 95% for FHA borrowers. So, why are the rates for Conforming and FHA index so close? The answer can be found in comparing the APR of the two indices (Chart 6). The difference in credit risk is absorbed as costs associated with the loan, most of which is due to the required mortgage insurance (MIP). In fact, the four-and-a-half year average APR gap is about 85 basis points – exactly in line with the required insurance premiums paid on most new loans.

Chart 6. APR - 30yr Conforming vs 30yr FHA

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# Rules & Methodology

## ICE U.S. Residential Mortgage Rate Lock Index Series

### ICE U.S. Residential Mortgage Rate Lock Composite Index (LRATEALL)

ICE U.S. Residential Mortgage Rate Lock Composite Index tracks mortgage rates and other statistics on U.S. residential mortgage loan applications where borrowers and lenders have committed to lock-in the interest rate prior to close. The index is calculated daily and is based on loans for which rates were locked that calendar day. The index tracks rate-locked loan applications processed by ICE Mortgage Technology.

The index tracks 10-, 15-, 20- and 30-year first-lien and subordinated mortgage applications on both single-family and multi-family properties. Included are fixed and adjustable-rate mortgage applications against primary residences, second homes as well as investment properties. Qualifying applications include conventional mortgage loans or those submitted under a U.S. government program, such as those offered by the Federal Housing Administration (FHA), the U.S. Department of Veterans Affairs (VA) or the Rural Housing Service of the U.S. Department of Agriculture (USDA). The index includes applications for mortgage loans associated with a new purchase, construction or refinance, including cash-out refinance loans.

In order to be included in the calculation of the index, qualifying loan applications must have a specified interest rate and APR, a designated mortgage type (conventional or government) and amortization type (fixed or adjustable), a loan amount, loan-to-value (LTV) and a valid FICO score between 300 and 850. Excluded from the index are loans with an LTV less than 10% or greater than 120%, loans of less than $1,000 or more than $5 million, and an interest rate or APR more than ten standard deviations from the arithmetic mean of all qualifying loans.

The index is calculated for each U.S. bank business day and published the morning of the following business day. The index lock rate is calculated based on the loan balance weighted average of all qualifying loans. A separate simple average rate is also calculated.

Sub-indices segment the index by one or more of several attributes:

- Purpose: Purchase, Refinance (no cash out), Refinance (cash out)
- Term: 30-year, 20-year, 15-year, 10-year
- Type: Conventional, FHA, VA, USDA
- Status: Conforming, Jumbo
- FICO credit score: >= 780, 740-779, 720-739, 700-719, 680-699, < 680
- LTV: <= 80, LTV > 80

Should any sub-indices on a day for which the indices are calculated have fewer than 30 qualifying loans, the 30-day trailing average differential of the sub-index rate to the rate of the reference higher-level sub-index is applied to derive that day's rate. In addition, if a sub-index has (1) fewer than five lenders, or (2) a single lender representing greater than 30% of qualifying loans for five or more consecutive business days, then the 30-day trailing average differential of the sub-index rate to the rate of the reference higher-level sub-index is applied to derive that day's rate. For example, should the sub-index of conventional 30-year cash-out refinance loans with FICO scores between 700-719 have too few loans to directly calculate


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the index on a given business day, the 30-day average differential of that sub-index's rate to that of the ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index (LRC30FRA) would be used to calculate the index. If that index is also not directly calculated, then the next higher level reference index in turn would be used to calculate both indices. The table of all indices and their corresponding reference indices is found in Exhibit 1.

On days for which the rates of a sub-index are derived, and not calculated directly, other statistics (such as FICO and LTV) are carried over from the prior day on which direct calculations were made. In the event that a sub-index's rates cannot be calculated directly for ten consecutive business days, the index will not be published again until it is directly calculated for 20 consecutive business days.

## Key Sub-Indices

### ICE U.S. Conforming 30-Year Fixed Rate Mortgage Rate Lock Index (LRC30FIX)

ICE U.S. Conforming 30-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 30-year first-lien mortgage applications on single-family conventional conforming loans. The index includes both new purchase and refinance loans, including cash-out refinance loans. Construction loans and loans for non-primary residences are excluded, as are jumbo loans and those originated through a government program, such as FHA, VA and USDA. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

### ICE U.S. Conforming 20-Year Fixed Rate Mortgage Rate Lock Index (LRC20FIX)

ICE U.S. Conforming 20-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 20-year first-lien mortgage applications on single-family conventional conforming loans. The index includes both new purchase and refinance loans, including cash-out refinance loans. Construction loans and loans for non-primary residences are excluded, as are jumbo loans and those originated through a government program, such as FHA, VA and USDA. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

### ICE U.S. Conforming 15-Year Fixed Rate Mortgage Rate Lock Index (LRC15FIX)

ICE U.S. Conforming 15-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 15-year first-lien mortgage applications on single-family conventional conforming loans. The index includes both new purchase and refinance loans, including cash-out refinance loans. Construction loans and loans for non-primary residences are excluded, as are jumbo loans and those originated through a government program, such as FHA, VA and USDA. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

### ICE U.S. Conforming 10-Year Fixed Rate Mortgage Rate Lock Index (LRC10FIX)


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ICE U.S. Conforming 10-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 10-year first-lien mortgage applications on single-family conventional conforming loans. The index includes both new purchase and refinance loans, including cash-out refinance loans. Construction loans and loans for non-primary residences are excluded, as are jumbo loans and those originated through a government program, such as FHA, VA and USDA. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

**ICE U.S. FHA 30-Year Fixed Rate Mortgage Rate Lock Index (LRF30FIX)**

ICE U.S. FHA 30-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 30-year first-lien mortgage applications on single-family loans originated through the FHA program. The index includes both new purchase and refinance loans, including cash-out refinance loans. Conventional loans, jumbo loans, construction loans and loans for non-primary residences are excluded. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

**ICE U.S. VA 30-Year Fixed Rate Mortgage Rate Lock Index (LRV30FIX)**

ICE U.S. VA 30-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 30-year first-lien mortgage applications on single-family loans originated through the VA program. The index includes both new purchase and refinance loans, including cash-out refinance loans. Conventional loans, jumbo loans, construction loans and loans for non-primary residences are excluded. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

**ICE U.S. USDA 30-Year Fixed Rate Mortgage Rate Lock Index (LRU30FIX)**

ICE U.S. USDA 30-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate 30-year first-lien mortgage applications on single-family loans originated through the USDA program. The index includes both new purchase and refinance loans, including cash-out refinance loans. Conventional loans, jumbo loans, construction loans and loans for non-primary residences are excluded. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

**ICE U.S. Jumbo 30-Year Fixed Rate Mortgage Rate Lock Index (LRJ30FIX)**

ICE U.S. Jumbo 30-Year Fixed Rate Mortgage Rate Lock Index is a sub-index of the ICE U.S. Residential Mortgage Rate Lock Composite Index that tracks fixed rate jumbo 30-year first-lien mortgage applications on single-family loans. The index includes both new purchase and refinance loans, including cash-out refinance loans, and includes both conventional loans and those originated through a government


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program, such as FHA, VA and USDA. Conforming loans, construction loans and loans for non-primary residences are excluded. Also excluded from the index are loans having an interest rate or APR more than five standard deviations away from the arithmetic mean of all qualifying loans.

**Exhibit 1: ICE U.S. Residential Mortgage Rate Lock Index Series**

| Index Ticker | Description | Reference Index |
|---|---|---|
| **LRATEALL** | ICE U.S. Residential Mortgage Rate Lock Composite Index | n.a. |
| **LRC30FIX** | ICE U.S. Conforming 30-Year Fixed Mortgage Rate Lock Index | **LRATEALL** |
| **LRC30FI1** | ICE U.S. Conforming 30-Year Fixed FICO >= 780 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FI2** | ICE U.S. Conforming 30-Year Fixed FICO 740-779 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FI3** | ICE U.S. Conforming 30-Year Fixed FICO 720-739 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FI4** | ICE U.S. Conforming 30-Year Fixed FICO 700-719 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FI5** | ICE U.S. Conforming 30-Year Fixed FICO 680-699 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FI6** | ICE U.S. Conforming 30-Year Fixed FICO < 680 Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FNA** | ICE U.S. Conforming 30-Year Fixed New Purchase Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30N01** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO >= 780 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N02** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 740-779 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N03** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 720-739 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N04** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 700-719 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N05** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 680-699 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N06** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO < 680 LTV <= 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N07** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO >= 780 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N08** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 740-779 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N09** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 720-739 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N10** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 700-719 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N11** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO 680-699 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30N12** | ICE U.S. Conforming 30-Year Fixed New Purchase FICO < 680 LTV > 80 Mortgage Rate Lock Index | **LRC30FNA** |
| **LRC30FRA** | ICE U.S. Conforming 30-Year Fixed Refinance Mortgage Rate Lock Index | **LRC30FIX** |
| **LRC30FR1** | ICE U.S. Conforming 30-Year Fixed Refinance FICO >= 780 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FR2** | ICE U.S. Conforming 30-Year Fixed Refinance FICO 740-779 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FR3** | ICE U.S. Conforming 30-Year Fixed Refinance FICO 720-739 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FR4** | ICE U.S. Conforming 30-Year Fixed Refinance FICO 700-719 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FR5** | ICE U.S. Conforming 30-Year Fixed Refinance FICO 680-699 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FR6** | ICE U.S. Conforming 30-Year Fixed Refinance FICO < 680 Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FCA** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30FC1** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO >= 780 Mortgage Rate Lock Index | **LRC30FCA** |
| **LRC30FC2** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO 740-779 Mortgage Rate Lock Index | **LRC30FCA** |
| **LRC30FC3** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO 720-739 Mortgage Rate Lock Index | **LRC30FCA** |
| **LRC30FC4** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO 700-719 Mortgage Rate Lock Index | **LRC30FCA** |
| **LRC30FC5** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO 680-699 Mortgage Rate Lock Index | **LRC30FCA** |

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**Exhibit 1: ICE U.S. Residential Mortgage Rate Lock Index Series**

| Index Ticker | Description | Reference Index |
|---|---|---|
| **LRC30FC6** | ICE U.S. Conforming 30-Year Fixed Cash-Out Refinance FICO < 680 Mortgage Rate Lock Index | **LRC30FCA** |
| **LRC30FOA** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance Mortgage Rate Lock Index | **LRC30FRA** |
| **LRC30O01** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO >= 780 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC30O02** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO 740-779 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC30O03** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO 720-739 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC30O04** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO 700-719 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC30O05** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO 680-699 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC30O06** | ICE U.S. Conforming 30-Year Fixed No Cash-Out Refinance FICO < 680 Mortgage Rate Lock Index | **LRC30FOA** |
| **LRC20FIX** | ICE U.S. Conforming 20-Year Fixed Mortgage Rate Lock Index | **LRATEALL** |
| **LRC20FRA** | ICE U.S. Conforming 20-Year Fixed Refinance Mortgage Rate Lock Index | **LRC20FIX** |
| **LRC20FCA** | ICE U.S. Conforming 20-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRC20FRA** |
| **LRC20FOA** | ICE U.S. Conforming 20-Year Fixed No Cash-Out Refinance Mortgage Rate Lock Index | **LRC20FRA** |
| **LRC15FIX** | ICE U.S. Conforming 15-Year Fixed Mortgage Rate Lock Index | **LRATEALL** |
| **LRC15FNA** | ICE U.S. Conforming 15-Year Fixed New Purchase Mortgage Rate Lock Index | **LRC15FIX** |
| **LRC15FRA** | ICE U.S. Conforming 15-Year Fixed Refinance Mortgage Rate Lock Index | **LRC15FIX** |
| **LRC15FCA** | ICE U.S. Conforming 15-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRC15FRA** |
| **LRC15FOA** | ICE U.S. Conforming 15-Year Fixed No Cash-Out Refinance Mortgage Rate Lock Index | **LRC15FRA** |
| **LRC15FO1** | ICE U.S. Conforming 15-Year Fixed No Cash-Out Refinance FICO >= 780 Mortgage Rate Lock Index | **LRC15FOA** |
| **LRC10FIX** | ICE U.S. Conforming 10-Year Fixed Mortgage Rate Lock Index | **LRATEALL** |
| **LRG30FIX** | ICE U.S. Government 30-Year Fixed Mortgage Rate Lock Index | **LRATEALL** |
| **LRG30FNA** | ICE U.S. Government 30-Year Fixed New Purchase Mortgage Rate Lock Index | **LRG30FIX** |
| **LRG30FN1** | ICE U.S. Government 30-Year Fixed New Purchase FICO >= 780 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FN2** | ICE U.S. Government 30-Year Fixed New Purchase FICO 740-779 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FN3** | ICE U.S. Government 30-Year Fixed New Purchase FICO 720-739 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FN4** | ICE U.S. Government 30-Year Fixed New Purchase FICO 700-719 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FN5** | ICE U.S. Government 30-Year Fixed New Purchase FICO 680-699 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FN6** | ICE U.S. Government 30-Year Fixed New Purchase FICO < 680 Mortgage Rate Lock Index | **LRG30FNA** |
| **LRG30FRA** | ICE U.S. Government 30-Year Fixed Refinance Mortgage Rate Lock Index | **LRG30FIX** |
| **LRG30FR2** | ICE U.S. Government 30-Year Fixed Refinance FICO >= 740 Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FR3** | ICE U.S. Government 30-Year Fixed Refinance FICO 720-739 Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FR4** | ICE U.S. Government 30-Year Fixed Refinance FICO 700-719 Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FR5** | ICE U.S. Government 30-Year Fixed Refinance FICO 680-699 Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FR6** | ICE U.S. Government 30-Year Fixed Refinance FICO < 680 Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FCA** | ICE U.S. Government 30-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRG30FRA** |
| **LRG30FOA** | ICE U.S. Government 30-Year Fixed No Cash-Out Refinance Mortgage Rate Lock Index | **LRG30FRA** |
| **LRF30FIX** | ICE U.S. FHA 30-Year Fixed Mortgage Rate Lock Index | **LRG30FIX** |
| **LRF30FNA** | ICE U.S. FHA 30-Year Fixed New Purchase Mortgage Rate Lock Index | **LRF30FIX** |
| **LRF30FRA** | ICE U.S. FHA 30-Year Fixed Refinance Mortgage Rate Lock Index | **LRF30FIX** |
| **LRF30FCA** | ICE U.S. FHA 30-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRF30FRA** |
| **LRV30FIX** | ICE U.S. VA 30-Year Fixed Mortgage Rate Lock Index | **LRG30FIX** |

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**Exhibit 1: ICE U.S. Residential Mortgage Rate Lock Index Series**

| Index Ticker | Description | Reference Index |
|---|---|---|
| **LRV30FNA** | ICE U.S. VA 30-Year Fixed New Purchase Mortgage Rate Lock Index | **LRV30FIX** |
| **LRV30FRA** | ICE U.S. VA 30-Year Fixed Refinance Mortgage Rate Lock Index | **LRV30FIX** |
| **LRV30FCA** | ICE U.S. VA 30-Year Fixed Cash-Out Refinance Mortgage Rate Lock Index | **LRV30FRA** |
| **LRU30FIX** | ICE U.S. USDA 30-Year Fixed Mortgage Rate Lock Index | **LRG30FIX** |
| **LRJ30FIX** | ICE U.S. Jumbo 30-Year Fixed Mortgage Rate Lock Index | **LRC30FIX** |
| **LRJ30FNA** | ICE U.S. Jumbo 30-Year Fixed New Purchase Mortgage Rate Lock Index | **LRJ30FIX** |
| **LRJ30FRA** | ICE U.S. Jumbo 30-Year Fixed Refinance Mortgage Rate Lock Index | **LRJ30FIX** |

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ICE Data Indices, LLC ("IDI") is the Index Sponsor and the Index Administrator. IDI is responsible for the day-to-day management of the Indices, including retaining primary responsibility for all aspects of the index determination process, including implementing appropriate governance and oversight, as required under the International Organization of Securities Commission's Principles for Financial Benchmarks (the IOSCO Principles). The Governance Committee is responsible for helping to ensure IDI's overall compliance with the IOSCO Principles, by performing the Oversight Function which includes overseeing the development, design, issuance and operation of the indices, as well as reviewing the control framework. IDI is also responsible for decisions regarding the interpretation of these rules and the Governance Committee is responsible for reviewing all rule book modifications with respect to the Index to ensure that they are made objectively, without bias, and in accordance with applicable law and regulation and IDI's policies and procedures. Consequently, all IDI's and the Governance Committee discussions and decisions are confidential until released to the public.

Exceptional market conditions and corrections

IDI retains the right to delay the publication of the index level. Furthermore, IDI retains the right to suspend the publication of the level of the index if it believes that circumstances prevent the proper calculation of the index. If relevant loan data is not available, the index will not be recalculated unless IDI decides otherwise. Reasonable efforts are made to ensure the correctness and validity of data used in index calculations. Where errors have occurred in the determination or calculation of an index, the decision to make a restatement will be assessed on a case by case basis. Such decision will take account of the significance; impact; age; and scale of the error. In the event that there is a market-wide event resulting in data not being available, IDI will determine its approach on a case by case basis, taking into account information and notifications provided by ICE Data and relevant data sources. Market-wide or industry specific events include, but are not limited to, the following:

- Technological Problems / Failures
- Natural Disaster or Other BCP-Related Event

IDI will communicate any issues with publication of the indices during the day through the regular client communication channels; in addition, IDI may also contact clients directly; post a notice on the IDI website; send a message via the market data portal, or use other such forms of communication.


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## Expert Judgment

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## Periodic Review of Index Rules

Rules and methodologies are reviewed periodically, in accordance with IDI's policies and procedures, to ensure the Index continues to meet its objective. The Index Administrator shall announce changes in Rules and methodologies, along with their implementation dates, in accordance with its policies and procedures. As it relates to material changes, the Index Administrator will also consult on proposed material changes that affect the Index prior to making such changes, in accordance with IDI's consultation policy: https://www.theice.com/publicdocs/Consultation_Policy.pdf.

## Rule book changes

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All indices produced by IDI (the "Indices") may be subject to potential limitations in terms of the number of qualifying constituents or underlying loans and diversification. In some cases, this is by design – for example, some Indices are designed to narrowly measure a specific theme, sector or geography. In addition, changes in the economy, changes in regulation or accounting rules, changes in market share of the input data provider, consolidation in certain sectors or industries, or other factors could materially impact an Index such that it is no longer representative of the market it is intended to measure in accordance with its objective. Another potential limitation includes the ability of the Index to operate in the event the volume of mortgage applications processed decreases. IDI seeks to manage and mitigate these limitations through the Index design, review and oversight process.

## ESG Disclosures

The indices in the ICE U.S. Residential Mortgage Rate Lock Index Series do not take into account ESG factors.

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Definitions

Rate lock: A rate lock is an agreement between a borrower and a lender that allows the borrower to lock in the interest rate on a mortgage for a specified time period at the current market rate. A rate lock provides the borrower with protection against a rise in interest rates during the lock period while the loan application process is completed.

Conventional: A conventional mortgage is any type of home loan that is not offered or secured by a government entity. Conventional mortgages are available through private lenders, such as banks, credit unions, and mortgage companies.

Conforming: A conforming mortgage is one whose underlying terms and conditions meet the funding criteria of Fannie Mae and Freddie Mac and are eligible to be purchased, guaranteed, or securitized by Fannie Mae or Freddie Mac.

Jumbo: A jumbo mortgage is a home loan that exceeds the limits set by the Federal Housing Finance Agency (FHFA) and is not eligible to be purchased, guaranteed, or securitized by Fannie Mae or Freddie Mac.

Loan balance: The size of the requested loan on the application at the time of the rate lock.

Loan-to-value (LTV): The loan-to-value (LTV) is a ratio of the amount of your mortgage relative to the appraised value of the property.

APR (annualized percentage rate): The annualized percentage rate (APR) is the annual cost of a loan to a borrower, including fees.

FICO: A FICO score is a credit score created by the Fair Isaac Corporation (FICO) as a method of quantifying and evaluating an individual's creditworthiness. FICO scores range from a low of 300 to a high of 850.

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