![Real Info logo]

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Overview of realTrend™, Real Info's Home Price Index

Real Info's Home Price Index, known as "realTrend™" was originally developed in the early 2000's and was primarily authored by Charles Calhoun, PhD. The realTrend model shares many characteristics with other well-known house price indices such as CoreLogic's Case Shiller Index and the Federal Housing Finance Agency's Home Price Index, but stands out among indices by virtue of its additional granularity.

Methodology

The realTrend index is a weighted repeat sales (WRS) index that expands on methodologies first proposed by Case and Shiller in the late 1980's. These methods estimate historical house price change rates over equally spaced time periods, usually measured in months or quarters; realTrend uses a quarterly interval.

There are three basic steps in the process of building the index:

1. All properties in the database with two or more historic sales are extracted to create a repeat sales price and date table. All transactions are validated using Real Info's proprietary methodologies so that only valid, arm's length sales remain.
2. A three stage regression process is applied to the data to construct the final database to which the weighted repeat sales methodology will be applied.
3. The index is constructed producing all appreciation/depreciation factors and the associated error rates for _all_ possible pairs in the entire index series.

The output is based on quarterly intervals, however monthly index numbers can be interpolated from the quarterly data as needed.

The realTrend index is also incorporated into Real Info's flagship automated valuation model, i-Val™ as one of several valuation components of this AVM.

Geographic Granularity

There are many house price indexes available today that range widely in degree of granularity from a CBSA or MSA level, down to census tract level with many stops in between. A key distinguishing feature of the Real Info realTrend HPI is our ability to cascade through geographic options to find the optimum level for each submitted property address. The following geographic aggregation levels are calculated where enough data is available, and our cascade runs through to the most granular level available for a given address:

- State
- CBSA – Core Based Statistical Area
- MSAD – Metropolitan Statistical Area Division
- County

- Zip5
- Census Tract

We recognize that HPI data at the most granular of levels, while quite useful, has limitations. Smaller cities and semi-rural communities often lack the transaction volumes necessary to develop statistically sound data sets, necessitating the use of wider geographic boundaries. However, even in such cases, the realTrend index can be a useful tool for isolating loans within a distressed loan pool that require the additional detail affording by property-specific valuation tools such as an automated valuation model (AVM), Desktop Appraisal or broker price opinion (BPO).

Just as with other valuation methods, including appraisals, the relative homogeneity of the properties or their communities play a big role in the overall reliability of the results, and how a particular valuation method will impact the decision making process.

Price Tiers

The next level of detail is at the price tier level. Again, where data is sufficient, we break the geographic area down into price quartiles based on the median price for that particular geography. This enables us to produce indices that are price level specific. Our users find this to be valuable because properties can be in very similar geographic areas but compete in different market segments, each of which can perform quite differently from other market segments in the same geography.

Real Info's index is also run by property type, separating single-family properties from condominiums and multifamily (2 to 4 unit) properties.

Frequently Asked Questions

Question #1: Does Real Info use appraisal data or refinance data in the realTrend Home Price Index?

At present we do not use appraisal data to develop our repeat sales. Given the substantial research and literature on the subject of bias in house appraisals, those indexes that use appraisal data perform a series of calculations designed to remove the inherent bias in refinance appraisals and use the adjusted refinance appraised value as a proxy for sale price. We believe this practice can introduce error because the presence of and degree of appraisal bias is difficult to quantify. We find the resulting index is superior in quality when that data is omitted rather than attempting to remove the bias factor from the appraisal data.

Further, given that most appraisals for purchase loans produce valuations that exceed the negotiated sales price, using appraisal data from purchase transactions likely adds upward bias as well. These transactions almost always close at the lower contract price rather than the appraisal price, while appraisals below the negotiated sales price typically result in a downward adjustment to the sales price. Whether above or below the contract price, appraised values differ from final prices and add noise to the data[i].

A purchase-only index such as realTrend will reflect appraised values only to the extent that the final purchase price is adjusted as a direct result of the appraisal. Even still, the appraisal itself is not considered, only the recorded purchase price is used in the index.

Question #2: Does Real Info use MLS data in the realTrend Home Price Index?

The realTrend HPI uses some MLS data to create "sale" pairs when there is a very recent MLS entry for a property that has only a single prior sale. The recent active listing or off-market listing (pending sale or withdrawn listing) is used as a proxy for a current sale to create a sale pair. Although the listed price may not be the final sale price, it is a current expression of the seller's perception of market value and an excellent proxy for sale price. In fact, list-to-sale price ratios tend to be tighter than measured bias in refinance appraisals and are more reflective of market value as determined by market participants than values developed where no transaction is present.

Question #3: The index is said to be a "weighted repeat sales" index. What weighting methods are applied in realTrend?

There are several ways in which transaction pairs are weighted within the model. The simplest pairing involves two transactions for the same house at different times. The first sale is paired with the second sale, the difference in the two prices is evenly distributed over the time interval and the result is shown as the percentage change over the interval.

Generally speaking, the longer the interval between the two sales, the more likely it becomes that some other influence has been introduced; often this is either an addition, renovation or remodel, or it can also be an accumulation of deferred maintenance. Generally, the shorter the interval between two sales, the more likely the change in price results exclusively from market change.

Based on these factors, sale pairs with shorter intervals are weighted differently than sale pairs with longer intervals. All sale pairs are subjected to proprietary algorithms to isolate "fix-and-flip" transactions which do not reflect market forces alone.

There are also many properties for which three or more historic transactions are available. This produces multiple pairings and a series of intervals. Multiple pairings are weighted differently than single pairings in the model.

Question #4: What is the minimum number of data pairs required for developing an index at a given geography?

There is no defined minimum number of pairs required to develop a WRS index at any given geography. Our goal is to produce the highest quality index possible, and to provide maximum coverage. As the number of transactions decreases, the dispersion of results increases. This risks producing results that do not reflect the true price trend. Real Info employs a variety of internal tests and techniques to assess the quality of the output. When there is too much volatility in an index, we do not deliver that level (e.g. zip code level) to our customers; instead, we move up incrementally until we reach a level at which results are reliable.

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[i] Using appraised values in addition to sales prices produces four potential types of data pairs: sale-to-sale, sale-to-appraisal, appraisal-to-appraisal and appraisal-to-sale. These pairings are useful for studying appraisal bias, and increase the number of pairings available, but we believe they do not enhance the credibility of the final index. Detailed discussion of this topic can be found in OFHEO Working Paper 06-1 by Andrew Leventis, February 2006.