

VEROHPI METHODOLOGY

Whitepaper

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VeroHPI Methodology

Introduction

VeroHPI is both an old and new offering from Veros Real Estate Solutions. Since the company was founded in 2001, a historical home price index (HPI) has been an integral part of many of the company's proprietary analytic products. Among those are the company's flagship automated valuation model (AVM), VeroVALUE. The VeroVALUE suite of products includes VeroVALUE Preferred, VeroVALUE Advantage, VeroVALUE REO and VeroVALUE Portfolio. VeroHPI is also used extensively in VeroFORECAST, the company's future-looking residential real estate market forecast tool.

The new aspect to the offering is that for the first time this highly accurate and proprietary tool is available to entities outside of Veros as a standalone product.

Development

VeroHPI was created in 2001. It was (and is) developed and maintained by expert statisticians, mathematicians, and econometricians, who have highly qualified backgrounds in this field.

In the early days of VeroHPI, simple time series models were commonly used, however, when Veros began integrating the time series models into other analytics (such as the forecasting models) it became apparent that the singular model approach did not fully address the complexities of market dynamics. In 2004 the company shifted VeroHPI to a repeat sales model approach, which clearly proved to be the right step when the market downshift occurred in 2006/2007. The downturn brought about distinct shifts from historical norms in the absorption of certain product types and price tiers. This occurrence validated that a time series model alone is not sufficient for an accurate index model.

Data

The data used in VeroHPI comes from a variety of record sources such as the county assessors' office, county recorder, multiple listing service (MLS), etc. MLS data is legally obtained (not "scraped") and where closed transaction data is available within the MLS, it is incorporated into the models. Listing data from the MLS is not incorporated.

Veros believes that all the care, attention and resources that the company has dedicated to managing its data sources has substantially contributed to the top rankings its analytic tools have received in independent blind tests.

Models

Repeat sales models are the foundation of VeroHPI. The repeat sales methodology is widely accepted as one of the most accurate ways to determine residential real estate price changes. Very simply, these models use properties which have two or more sales prices over time to develop the models which ensures that the price changes calculated are as "apples to apples" as possible. All of these "apples to apples" price changes for many properties in a given market are then aggregated mathematically to produce the repeat sales based HPI index.

VeroHPI emphasizes a repeat sales model, as evidenced by its CBSA coverage. Since these models are best employed where there is sufficient data, an alternate course of action is taken when limited data is available. These data limitations can occur either as a result of a less populous CBSA or when the market is part of a non-disclosure area. Veros does, however, have coverage in some non-disclosure areas through strategic data purchases which specifically help to fill this data gap. In the event that there is no coverage for a desired area in VeroHPI, a time series / local smoothing type model is recommended as a best fit to all of the data rather than just to repeat sales data. The time series models, although not always ideal, will allow the estimation of a house price change in scenarios where a repeat sales models is no longer optimal.

Are there other types of models which could be used?

Yes. The most common are time series based models which plot all sales prices of all properties over time using time series types of models (i.e., a "best fit" curve to the data over time). However, these models are difficult to use to get accurate house price changes for all time periods as there are other uncontrolled variables changing. For example, if prices in a given period of time for a specific market are unchanging by the repeat sales approach, but because more entry level homes are currently selling compared to their historical norms, it will appear that the market is depreciating according to the non-repeat sales based time series model. This is why a repeat sales based model is so important to accurately quantify a given market.

Performance

VeroHPI's quality data is a key driver in the accuracy of Veros' other proprietary analytic tools which utilize the index.

VeroVALUE is an industry-leading AVM with top-tier accuracy as evidenced by independent testing by third party testing organizations and large national lenders. Likewise, since the introduction of VeroFORECAST in 2003, Veros has been the leader in accurate residential real estate predictive analytics as measured by R-squared and median absolute error. In every year VeroFORECAST has proven to be a more accurate and reliable tool.

Veros' proprietary index data, combined with sound modeling techniques, have contributed to strong and consistent correlations mortgage leaders can rely on.

About Veros

Veros Real Estate Solutions provides essential tools for comprehensive property valuation and risk assessment to mortgage lenders, servicers, rating agencies and the investment community, both private and government sponsored. Innovating mortgage technology since 2001, Veros continues to hold a leading role in the mortgage industry's collateral valuation space. Veros has excelled as a premium provider of automated valuation models (AVMs), and as a thought leader in the field of mortgage analytics. The company is focused on combining its predictive analytic prowess with its industry expertise to create advanced forms of business intelligence software. These platform solutions enable companies to better predict and control portfolio risk, mortgage fraud, and regulatory compliance all with the streamlined efficiency afforded by industry solution experts.

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