

HouseCanary HPI: Historical and Forecasted

The most comprehensive, accurate, and current view of home price trends, now and in the future

Summary

Comprehensive

- 40+ years of historical data
- 3-year monthly forecasts
- Geographic availability:
 - 50 States + DC
 - All 381 MSAs
 - 18,308 Zip Codes

Accurate

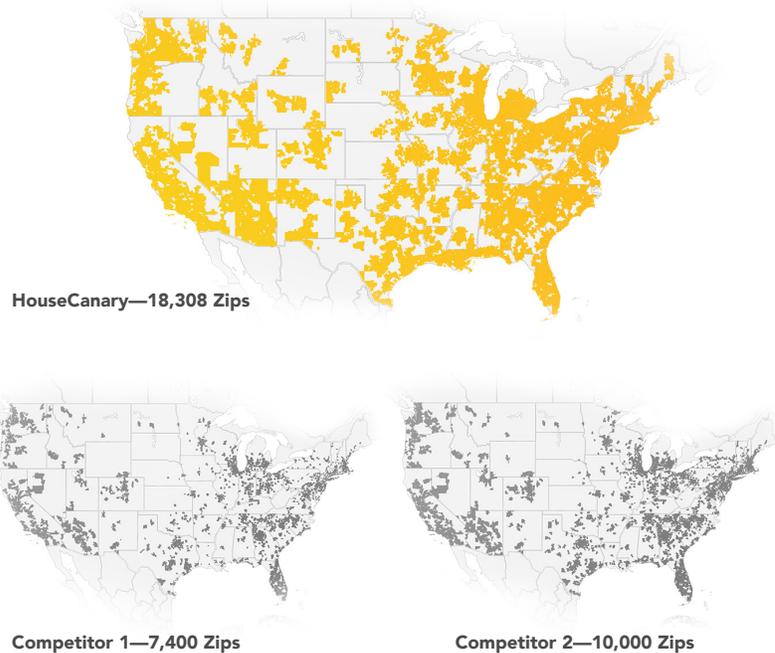
- Unmatched .7% error rate over 12-month forecast
- 20-year backtesting
- Exclusively arms length transactions

Current

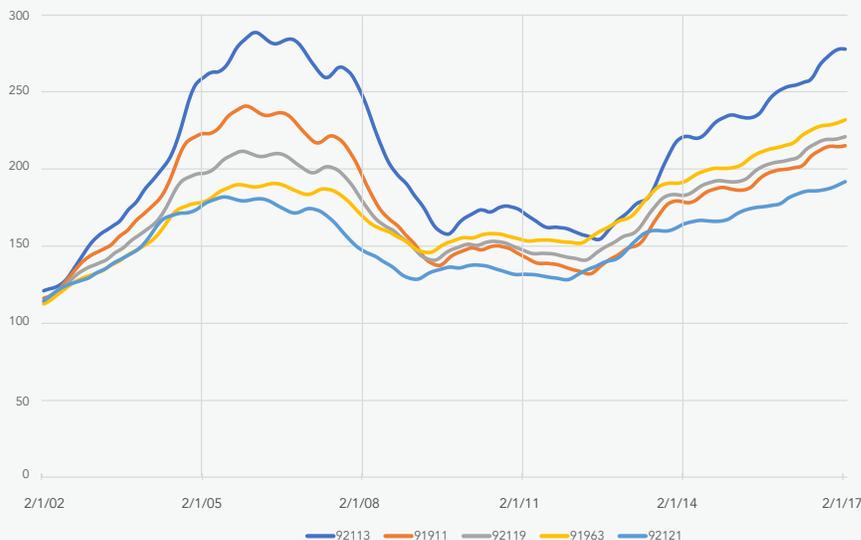
- Published monthly
- Time lag compressed to as little as 7-14 days, versus months for competing HPIs.

HouseCanary HPIs are powered by modern machine learning algorithms that meticulously analyze historic, current, and future price trends yielding forty years of history and a three year forecast. The algorithms intelligently rebuild their data models every month to continuously look for new home value trends within thousands of analyzed data points to provide coverage for areas beyond our competitors' reach.

Unprecedented breadth at zip code level depth



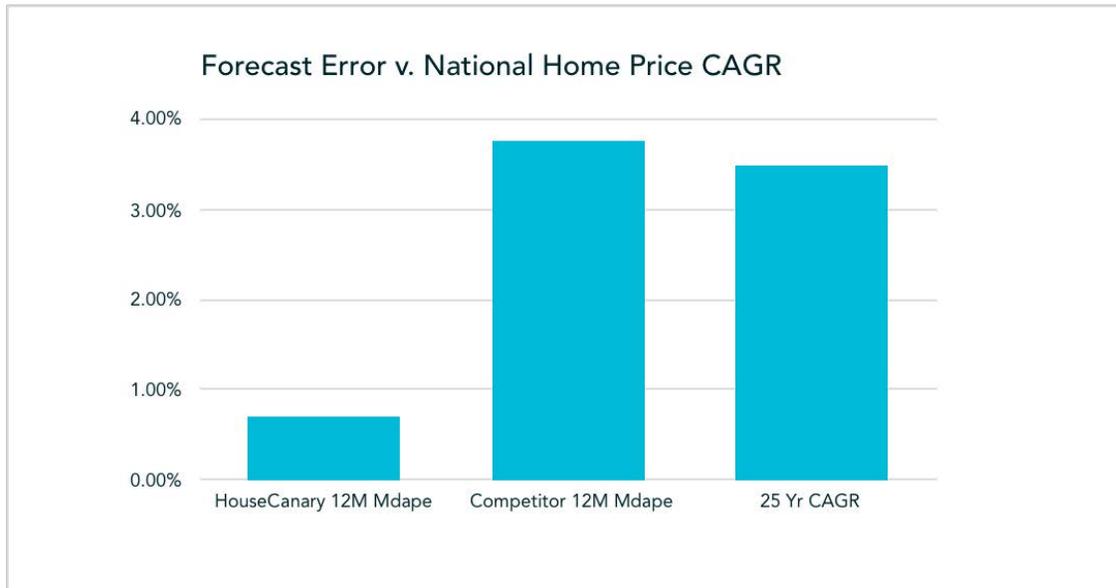
Dispersion Within San Diego County, By Zip



The localized nature of real estate makes MSA-level data insufficient to drive decisions on investment and risk. Within a single-county MSA, the most volatile zip code more than doubled the price move of the least volatile zip code.

Industry Leading Accuracy

HouseCanary Forecasted HPIs leverage inputs such as macroeconomic trends, local market indicators, and household demographics to predict market volatility. Out of sample backtesting using data from the past 20 years confirms that trends forecast within a twelve month period exhibited 94.3% directional accuracy.



HouseCanary's 12 month Median Absolute Prediction Error of 0.7% was over 5x more accurate than a competing HPI provider that publishes its test results. Furthermore, this competitor's error rate exceeded the 25 year compound annual growth rate (CAGR) of US home prices, meaning that its forecast would have been no better than a coin flip in predicting if absolute home prices would go up or down.

Methodology

Data Sources

Major sources of data include 1. raw property/transactional data records, 2. government sources: BLS, ACS, FHA, Federal Reserve, and others, 3. proprietary analytics derived from the first two categories.

Normalization

Prior to modeling any given market, automated systems gather, clean, and merge all available time series data stored in our database for the target market.

Modeling

Machine learning algorithms arrive at a solution by learning patterns from large amounts of data in order to make predictions. They minimize the error from predictions by applying a general rule using information from many different inputs.

Backtesting

The predictive performance of each simple model is measured by comparing how well it was able to predict the out-ofsample HPI observations.