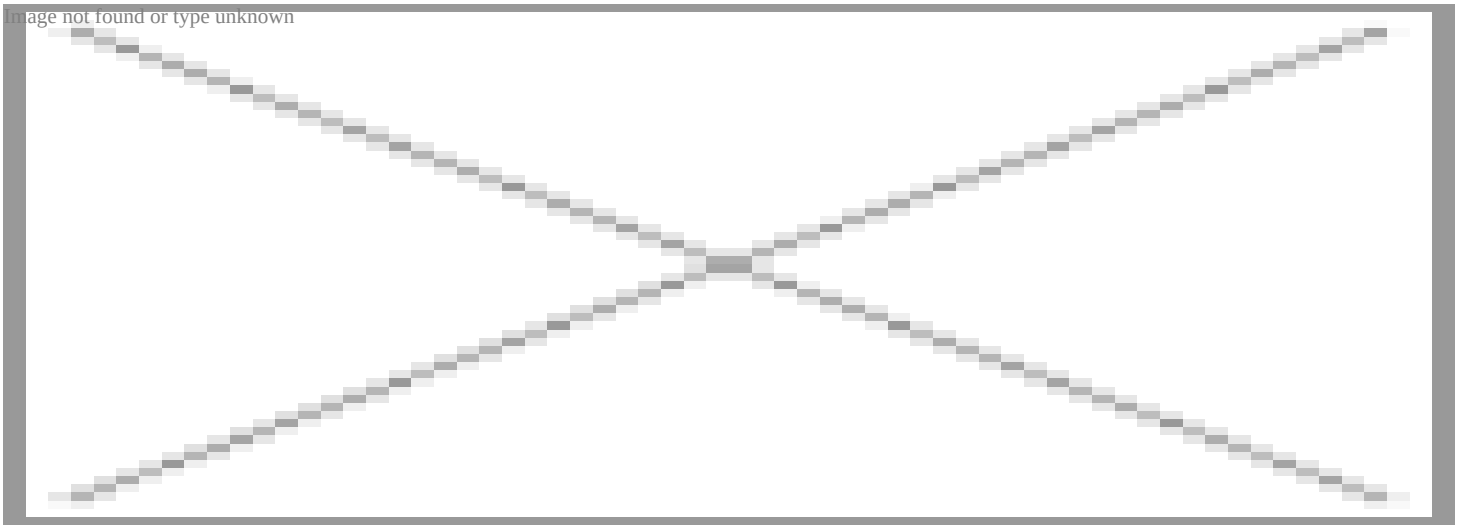
Insight

The House Price Indices

ANDY WINKLER | AUGUST 27, 2013

All of these indices are highly correlated and show prices charting similar courses through the housing crisis. However, some very obvious differences do exist. Depending on the index, prices may have fallen during the housing bust anywhere from 20 percent to 33 percent (See Table 1). Since hitting bottom, prices nationally may also increased anywhere from 7 percent, according to Zillow, to 18.5 percent, according to CoreLogic. Analyses must be careful highlighting any particular index, which can risk either understating or overstating the level of improvement in house prices since the nearly unprecedented decline we saw starting in 2006.

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TABLE 1. HPI COMPARISON OF PRICES (JAN 2000 – MAY 2013)

	S&P/CASE-SHILLER*	FHFA	ZILLOW	CORELOGIC	FREDDIE MAC
Peak Date	April 2006	April 2007	May 2007	April 2006	May 2007

Trough Date	January 2012	March 2011	October 2011	February 2012	January 2012
2000 to Peak	105.4%	65.1%	75.9%	99.9%	76.9%
Peak to Trough	-33.8%	-20.3%	-23.3%	-32.9%	-27.1%
Trough to May 2013	14.7%	11.6%	7.0%	18.5%	13.3%
Current Value As % of Peak Value	76.0%	88.9%	82.0%	79.5%	82.6%
Pearson's *r***	–	0.94	0.94	0.99	0.98

Sources: S&P/Case-Shiler; FHFA; Zillow; CoreLogic; Freddie Mac; Based on Author's Calculations

*S&P/Case Shiller's 20-City Index (Not the Quarterly National Index)

** Correlation Between S&P/Case-Shiller & Other Indices

Shown in Table 1, many aspects of house price trajectories over the last few years, as measured by these indices, vary; no two indices have house prices hitting bottom at the same time. Furthermore, current average prices now represent anywhere from 76 percent to 89 percent of their value at the peak of the market. These differences arise from the way each index is calculated, which can emphasize certain types of sales, geographic locations, etc. The chart below breaks down the differences in methodology, sample, and source used to generate the five different indices in this post. Most, though not all, use some form of repeat sales methodology in which the change in home price each time it is resold is noted and used collectively to put together an index.

	METHODOLGY	SAMPLE	SOURCE
S&P/CASE-SHILLER[1]	The S&P/Case-Shiller Home Price Indices are based on observed changes in house prices otherwise called repeat sales. Most notably, they produce monthly indices from data in 20 major metropolitan areas as well as a quarterly national index. The indices are value-weighted, giving trends among more expensive homes greater influence on overall estimated price changes. The indices apply a three-month moving average algorithm to home sale pairs using price data to keep sample sizes large enough.	The indices only incorporate price changes in existing single-family homes. Idiosyncratic sale pairs and those with short time intervals between sales are removed or down-weighted. The index only takes into account data available from county deed assessors across the country, which can come delayed.	These indices obtain price data from county assessor and recorder offices.

FHFA[2]	The Federal Housing Finance Agency (FHFA) releases both quarterly and monthly indexes tracking the movement of single-family house prices. Their house price index (HPI) is a weighted, repeat-sales index, meaning that it tracks price changes when a home is resold or refinanced. FHFA releases indexes based on only purchases (much like S&P/Case-Shiller) and a quarterly index that includes all transactions, i.e. purchases and refinance appraisals. Price trends are weighted equally for all properties.	The index is limited to conforming, conventional mortgages that are purchased or securitized by Fannie Mae or Freddie Mac. Conforming loan limits are set at $417,000, with exceptions for high-cost areas of the country.[3] The FHFA HPI covers all states and MSAs in the country.	Fannie Mae and Freddie Mac provide price information on mortgages they purchase or securitize.
ZILLOW[4][5]	Zillow, in contrast to both FHFA and S&P/Case-Shiller, does not use a repeat sales methodology. Zillow uses statistical models to generate valuations for all homes in any given area, which are aggregated to determine the Zillow Home Value Index. An estimate for any given property is meant to indicate the fair value of a home sold as a conventional, non-foreclosure, arms-length sale.	The Zillow Home Value Index is reported for 165 metropolitan areas and generates valuations several times a week for more than 80 million homes.	Statistical models use information from sales, tax assessments, etc. to generate valuations for homes in a given geographic region.
CORELOGIC[6]	CoreLogic utilizes the widely used repeat sales methodology to produce multiple indices that track change in price for the same home over time.	CoreLogic reports using data from 1,163 counties (84 percent of the total U.S. population), representing at least part of every state. Like other indices, it produces more than one index including various types of sales.	Indices are comprised using price information from a variety of sources including property assessments and servicing databases.
FREDDIE MAC[7]	Freddie Mac's House Price Index uses a repeat transactions methodology and attempts to exclude outlier properties that could sway the index away from a more accurate estimate of appreciation. The index differs from the FHFA HPI and others that use the repeat transactions methodology based on the inclusion of appraisal values for refinances, different geographic weights, and the method for determining outliers.	Freddie Mac publishes index values for all 50 states and DC, and 367 metropolitan areas. Data is limited to transactions on one-family detached and townhome properties purchased by Freddie Mac or Fannie Mae, pulled from a joint dataset. Limited to first-lien conventional and conforming loans.	Price information is derived from a joint dataset of Fannie Mae and Freddie Mac purchases and securitizations.

[1] S&P/Case Shiller, "S&P Case-Shiller Home Prices Indices Methodology;" http://www.spindices.com/index-family/real-estate/sp-case-shiller