

Residential Real Estate Analysis

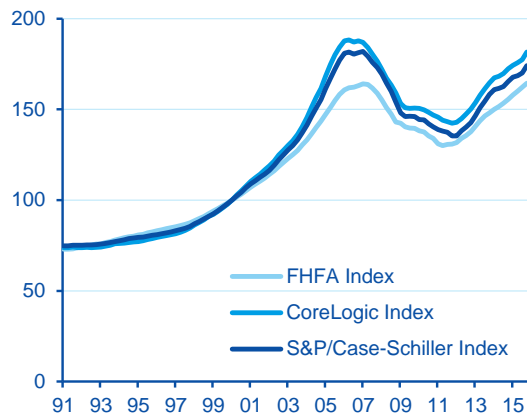
Not All Booms Are Created Equal: Home Prices vs. Fundamentals

Filip Blazheski, Kan Chen

- **No signs of a national bubble, despite a 19% increase in home prices since 2012**
- **Home prices in line with fundamentals in most large cities**
- **Resilience to adverse shocks varies significantly by city**

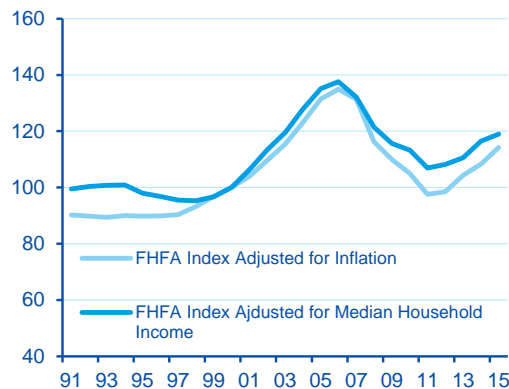
Home prices in the U.S. have been growing at a strong pace (19%) since they bottomed out in early 2012, as a result of the subprime mortgage crisis. While home prices are likely to continue to grow for some time thanks to sustained economic growth and labor market improvements, the last recession has made investors, economists, and policymakers¹ very attentive to any risks building up in the housing market. Nominal home prices are now close to pre-recession peaks (Chart 1). As household income growth has been slower than home price growth, real home prices today are again significantly higher than the prices before 2001, when they were relatively stable (Chart 2).

Chart 1
Home Prices, Index (Q1 2000=100)



Source: FHFA, CoreLogic, S&P and BBVA Research

Chart 2
Real Home Prices, Index (Q1 2000=100)



Source: FHFA, BLS, Census and BBVA Research

Although housing bubbles were common before the latest housing bust, there is little consensus on how to measure them, especially at the metropolitan statistical area (MSA) level. Besides the conventional problems of lack of data and choosing the appropriate variables to capture economic fundamentals, there are two main obstacles to measuring bubbles in home prices. First, home prices are known to be highly inert. In other words, home prices may seem to be insensitive to economic fundamentals in the short run, although they are generally consistent with them in the long run. Second, housing markets are highly heterogeneous across different regions because they are impacted by different geographic, regulatory, economic and demographic forces.

¹ For example, economists at the Federal Reserve Bank of San Francisco compared the latest housing boom to the previous one: <http://www.frbsf.org/economic-research/publications/economic-letter/2015/november/what-is-different-about-latest-housing-boom-mortgage-debt-ratio/>

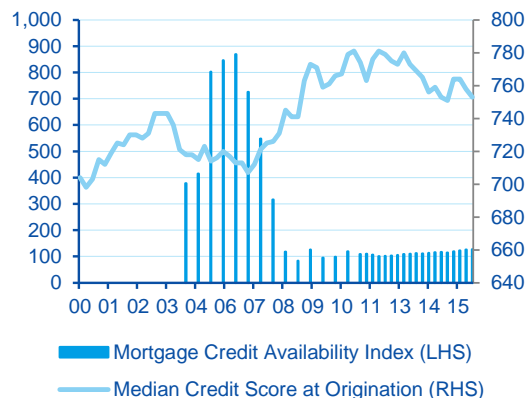
However, the last housing bust has shed light on how to tackle the above-mentioned obstacles. The collapse of home prices helped remove the inertia and reset them. The magnitude of the corrections in each MSA can also be used as an indicator for the markets' resilience in adverse scenarios. For instance, San Francisco, one of the most expensive housing markets in the U.S., lost only 23% of its house price index as a result of the correction, recovered quickly thereafter, and now significantly surpasses the previous cycle's high point. On the other hand, in much less expensive Las Vegas, home prices dropped by 60%, and current prices are still nowhere near their last cycle high.

Our analysis of the current housing boom was inspired by the insights gained from the last boom-bust cycle. We studied today's home prices in three steps. First, we analyzed the current situation of the housing market at the national level. Second, we produced an estimate of misalignment of home prices from economic fundamentals in the pre-recession boom for each MSA² and studied the relationship between the level of misalignment at the height of the bubble and the severity of the subsequent housing bust. Finally, we estimated and compared the misalignment for each MSA in 2015 and 2006. This comparison, together with the magnitude of the correction in the housing bust, presents a reasonable assessment of risks. To further ensure that the analysis is reflecting reality, we also compared the misalignment estimate for 2015 to the ratio of median home prices to median rents by MSA in Q4 2015, as reported by Zillow.

National Market Indicators: No Signs of a Bubble

Even though today's nominal and real home prices might look elevated, there are three ways in which the current housing market differs from the housing market during the first half of the 2000s. First, lending standards today have improved significantly compared to the last bubble period. This has helped limit the number of new market entrants (Chart 3), one of the reasons why home prices inflated as much in the first half of the 2000s. Second, while the previous cycle (2002 to 2005) was characterized by booming mortgage debt, growing by almost 15% YoY, the current one (2012 to present) is characterized by shrinking or stagnating levels of net outstanding mortgage debt (Chart 4). Last but not least, housing affordability is significantly higher compared to any period between 1991 and 2008 (Chart 3), mainly due to low interest rates, which are likely to persist for some time. These differences dispute the worries that we are in the midst of another national housing bubble. That said, this may not be the case at the local level.

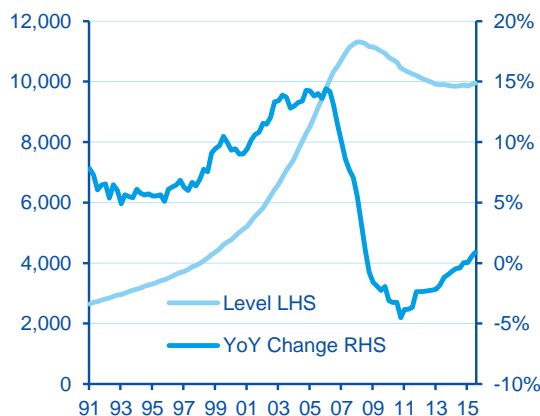
Chart 3
Lending Standards and Mortgage Availability Index and Score



Source: FRBNY, MBA and BBVA Research

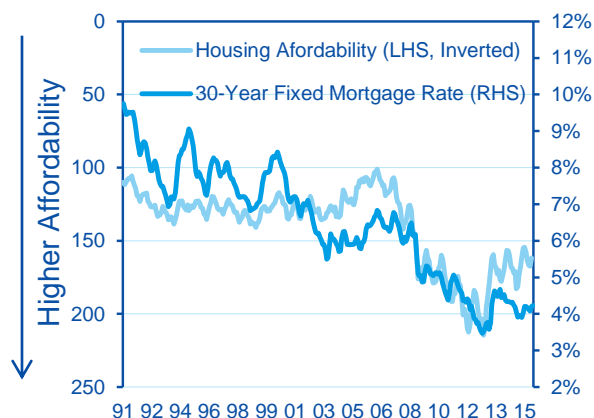
² We studied the 20 MSAs included in the Composite 20 S&P/Case-Shiller Home Price Index, but replaced Los Angeles with Houston in order to arrive to a sample that contains two MSAs for each of the three most populous states: California, Texas and Florida. The cities in our sample are: Atlanta, Boston, Charlotte, Chicago, Cleveland, Dallas, Denver, Detroit, Houston, Las Vegas, Miami, Minneapolis, New York, Phoenix, Portland, San Diego, San Francisco, Seattle, Tampa, and Washington D.C.

Chart 4
Mortgage Debt Outstanding: 1-4 Family Residences (\$ Billion and %)



Source: FRB and BBVA Research

Chart 5
Housing Affordability and Interest Rates Index and %



Source: NAR, FRB and BBVA Research

Misalignment and Correction: The Case of the Last Boom-Bust Cycle

Bubbles in home prices are notoriously difficult to detect. It is especially hard to tell how much of the price increase is driven by overly-optimistic expectations and speculation when the economy grows fast. For example, in June 2005, Greenspan, the Chairman of the Federal Reserve, stated that there was no bubble in the national market, but only “froth” in some local markets.³ And four months later, Bernanke, the Chairman-nominee at the time, told Congress that home prices “largely reflect strong economic fundamentals.”⁴ In fact, home prices at the end of 2005 were at or close to their peak.

For this analysis, we developed a fundamentals-based measure of house values for each MSA as a benchmark of home prices.⁵ The benchmark is estimated exclusively by economic fundamentals that affect home prices, including median family income, population, payroll, interest rates, inflation, and unemployment rates.⁶ Plots of the benchmarks against the actual home price indices for each of the 20 MSAs is available in the appendix. Next, we compared the benchmarks with the actual FHFA house price indexes and derived their misalignments. A large gap between the index and the benchmark would indicate strong misalignment between home prices and economic fundamentals. That said, it is important to note that a strong misalignment for a MSA does not necessarily indicate that there is a high risk of a severe correction, because the housing market in each MSA has unique characteristics that cannot be captured by the econometric model. For example, in 2006, San Diego had the third highest misalignment in our sample, yet proved to be relatively resilient in the downturn – to a large extent because of its limited housing supply and a disproportional share of high-income families that suffered relatively less in the downturn.

³ Testimony of Chairman Alan Greenspan, The Joint Economic Committee, U.S. Congress Cong. (2005). Print.

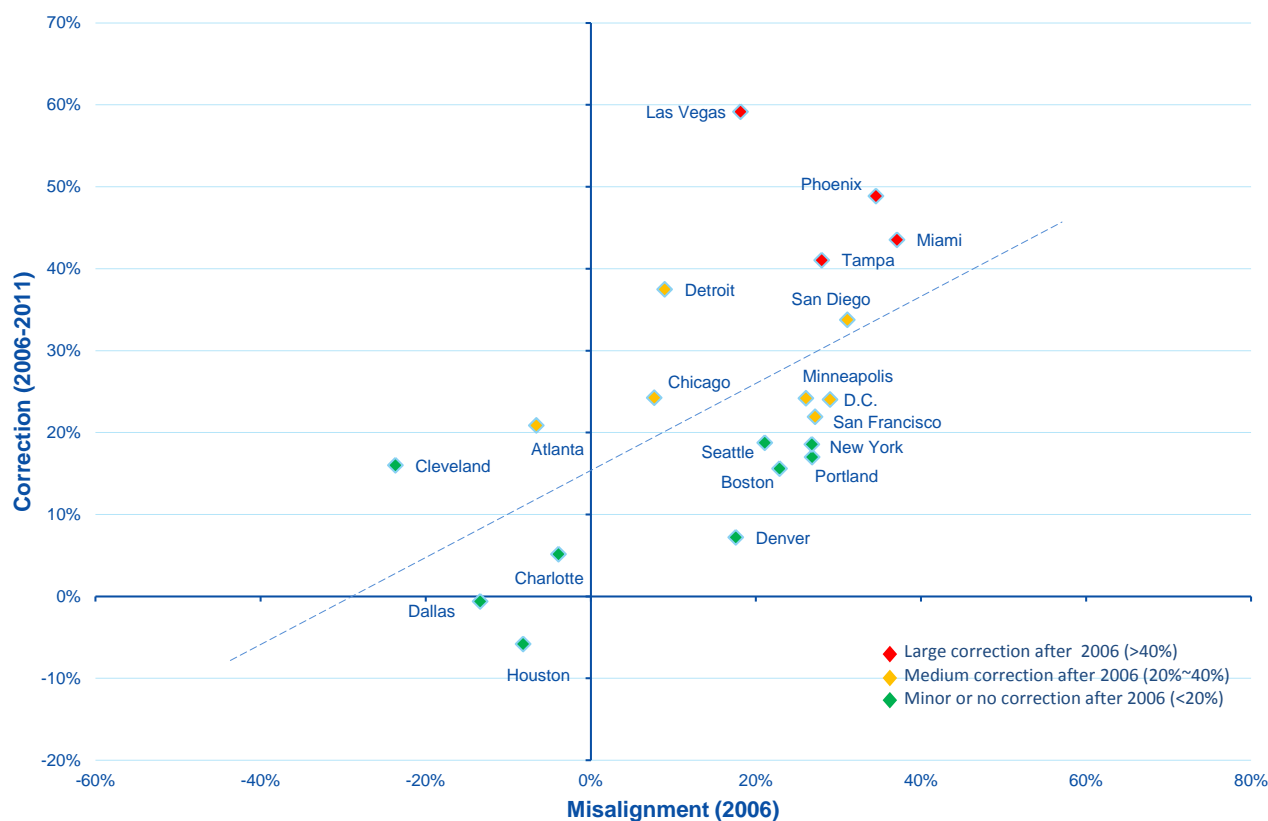
⁴ Henderson, Nell. “Bernanke: There’s No Housing Bubble to Go Bust.” *The Washington Post*. 27 October, 2005: Print.

⁵ We use a panel data model for this estimation with data series of each MSA from 1991 and 2014.

⁶ Other variables were also tested but provided little new information. Also, our results remained robust with additional variables.

We visualize the relationship between the misalignment in 2006 and the magnitude of the price correction in the last boom-bust cycle in each of the MSAs in a scatter plot (Chart 6). Some interesting patterns emerge. First, the misalignment in 2006 is positively correlated with the magnitude of the price correction in the 2007-2011 housing bust.⁷ Higher misalignment in the boom period indicates a stronger correction in the bust period. Second, the level of resilience significantly varies across different MSA markets. The most notable example is Las Vegas, which is high above the trend line. In 2006, Las Vegas had a 20% misalignment, but its home prices dropped 60% during the housing bust. This indicates that the housing market in Las Vegas is fragile. On the other hand, most cities with high home prices, such as San Francisco, Washington, New York, and Boston, are well below the trend line, indicating they were more resilient to the adverse shocks. Chart 6 in essence shows which MSAs were the “at-risk markets” – MSAs that developed significant misalignments between home prices and the underlying economic fundamentals in the run-up to the crisis and had strong corrections after the crisis.

Chart 6
Misalignment in 2006 and Correction in Prices, 2006-2011 by MSA
%



Source: FHFA and BBVA Research

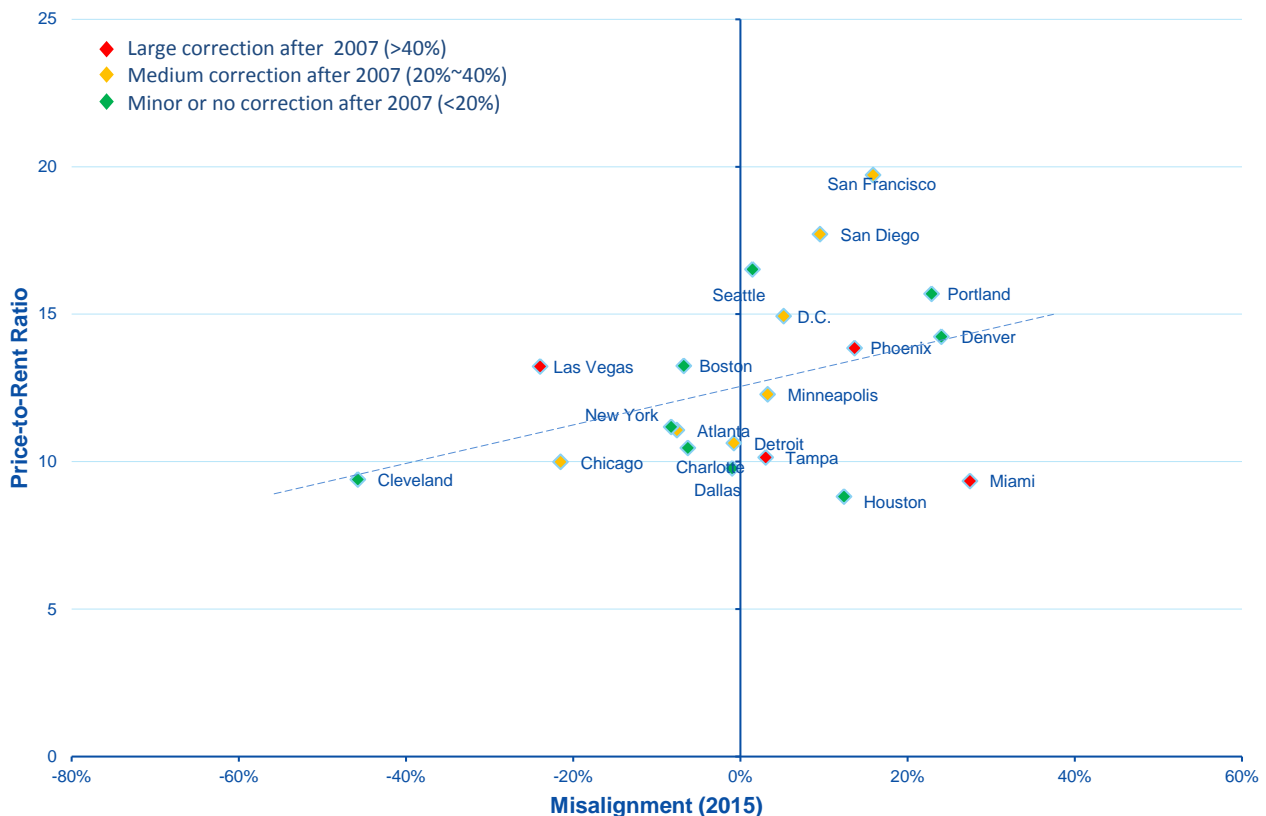
⁷ The correlation coefficient between the correction and misalignment is 0.6.

The Case of the Current Boom

After studying the patterns based on past performance, the question that we addressed next was how robust the current housing market is. Based on the same methodology and the most recent data, we calculated the misalignment between home prices and economic fundamentals for 2015. Moreover, we cross-referenced our estimates with another popular housing market indicator, the price-to-rent ratio, in order to validate our misalignment estimates. The price-to-rent ratio provides an intuitive comparison of costs between owning and renting a property, as they both produce housing services with certain costs. A low price-to-rent ratio in one location means that it is much better to buy than to rent. On the other hand, a high ratio means that it is much better to rent than to buy.

The scatter plot in Chart 7 shows the relationship between the price-to-rent ratio and our misalignment estimate for each MSA. The chart shows a positive correlation between the two variables.⁸

Chart 7
Price-to-Rent Ratio and Current Misalignment by MSA in 2015
 Ratio and %



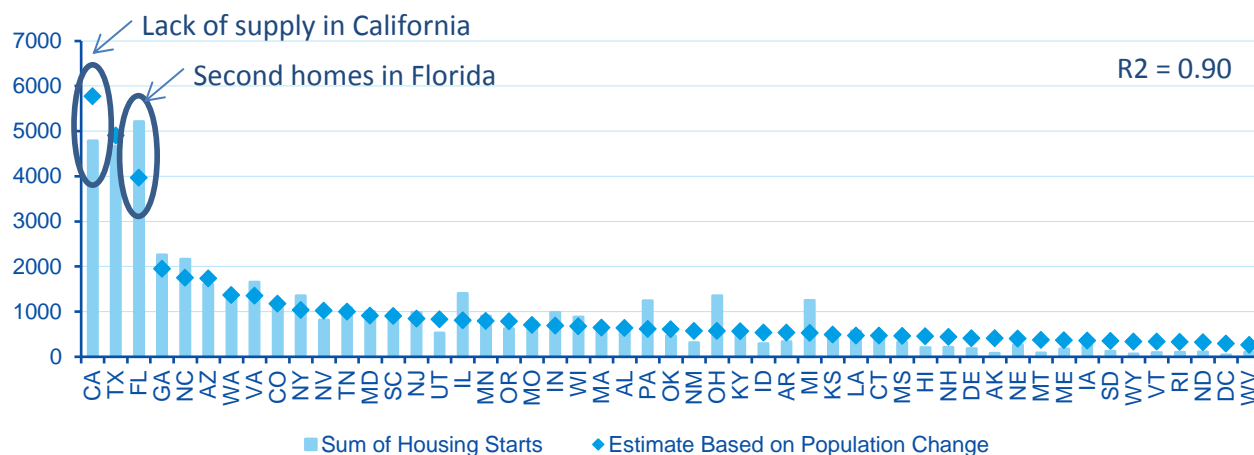
Source: FHFA, Zillow and BBVA Research

⁸ The correlation coefficient is 0.4 for the whole sample and 0.7 if San Francisco, Houston and Miami are excluded from the sample.

From Chart 7, we can find that the misalignment in all MSAs is much lower than in the last housing boom. The misalignment today stays well below 20% for most metro areas, which was not the case before the recession. There are four metro areas (regions) worth noting. The first one is Miami. Even though it suffered one of the strongest corrections during the recession, its house prices have been recovering at a dazzling speed, and its misalignment from our fundamentals-based benchmark is again high. Moreover, despite high prices and high misalignment, Miami's price-to-rent ratio is very low. For other MSAs, high misalignment generally means high price-to-rent. These anomalies are likely caused by real estate investors and non-Florida residents purchasing second homes, as Florida is an attractive location for foreigners and senior citizens (Chart 8).⁹ This particular demand—both speculative and non-speculative—has also spurred the construction of luxury condos, which feature expensive rents.

Another interesting case is California, whose two MSAs, San Francisco and San Diego, have top price-to-rent ratios. California has built significantly less housing units in the 1980-2014 period than it would have been expected to relative to its population increase (Chart 8) – a likely result of a mix of regulatory and geographic constraints. Because of this, California has a housing market prone to high valuation increases during economic expansions, but one that is also resilient in downturns, as could be seen from the performance of the San Francisco and San Diego housing markets before and after the sub-prime mortgage crisis.

Chart 8
Actual vs. Estimated Total Housing Starts by State Based on Population Change, 1980-2014
 Thousands



Source: Census and BBVA Research

Texas did not experience the subprime bubble in the pre-recession housing boom. Since 1993, home prices in Houston and Dallas have moved more or less in line with fundamentals. This means that price corrections that could occur due to the current downturn in the oil and gas industry, to which these two MSAs are exposed, will mostly depend on the development of housing market fundamentals, without an added backlash of large misalignment, as was the case in many markets after the subprime mortgage crisis.

⁹ According to a report by the Miami Downtown Development Authority published in July 2014, “over 90% of Downtown pre-construction condos are being purchased by foreign buyers in all cash transactions.”

Chicago and Cleveland are the opposites of the California MSAs in many respects, as they represent the part of the country that has been traditionally more dependent on manufacturing sectors that have experienced intensive competition from overseas. As a result, these MSAs have seen many firms relocating or exiting the market, along with people moving away in search of new opportunities. Chicago's population, for example, has been stagnant in the last 15 years. Moreover, Chicago did not experience a large bubble in the mid-2000s, but suffered significantly during and after the recession, with above average unemployment rates, to which home prices reacted with a significant correction. Meanwhile, Cleveland's home prices reflect, to a large degree, depopulation. The loss of population in this city has been the strongest in our sample, and has been ongoing since the early 1970s, with a short break in the early 1990s. In fact, Cleveland's population decreased 4% from 1995 to 2014 and 11% since 1970, while the U.S. population increased 20% and 57% during the same periods.

Bottom Line

Strong housing data since 2012 has raised concerns that the current housing boom will end, once again, in another housing bust. However, our analysis shows that home prices today are generally in line with their fundamentals. The cities where home prices overinflated the most and suffered the strongest busts during the last cycle generally do not seem to be at risk at this point of time. Moreover, the cities with high home prices today showed resilience in the last cycle.

The last housing boom-bust cycle was fueled by lax lending standards, booming mortgage debt, and regulatory weakness. Today, banks and other financial institutions are subject to much stronger regulation, and households are still deleveraging. Therefore, the systemic risk is much lower than in the previous boom. Still, high home prices can negatively affect households' discretionary income and further suppress demand for consumption, so banks and policymakers should stay cautious if the trend continues.

DISCLAIMER

This document was prepared by Banco Bilbao Vizcaya Argentaria's (BBVA) BBVA Research U.S. on behalf of itself and its affiliated companies (each BBVA Group Company) for distribution in the United States and the rest of the world and is provided for information purposes only. Within the US, BBVA operates primarily through its subsidiary Compass Bank. The information, opinions, estimates and forecasts contained herein refer to the specific date and are subject to changes without notice due to market fluctuations. The information, opinions, estimates and forecasts contained in this document have been gathered or obtained from public sources, believed to be correct by the Company concerning their accuracy, completeness, and/or correctness. This document is not an offer to sell or a solicitation to acquire or dispose of an interest in securities.

Appendix: FHFA Home Price Indexes and Benchmarks by MSA

Chart A1
Atlanta

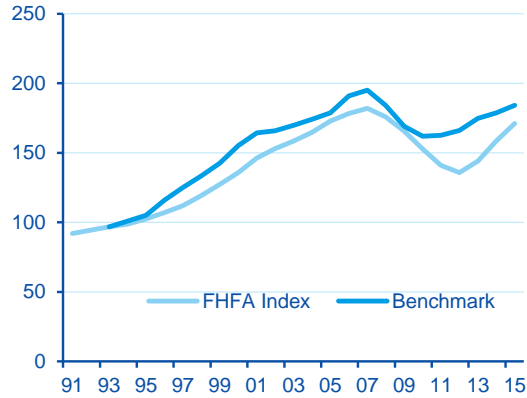


Chart A2
Boston

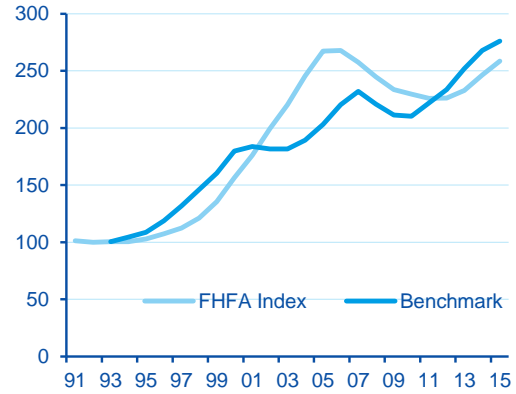


Chart A3
Charlotte

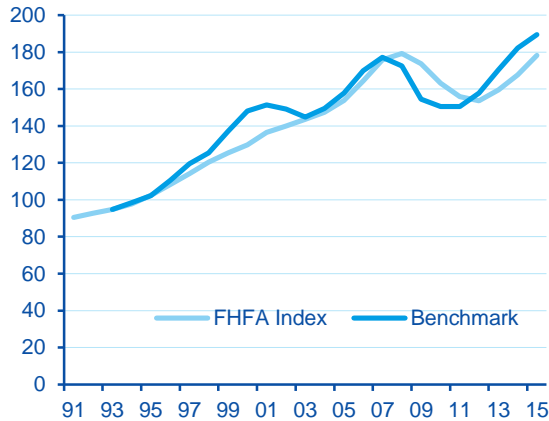


Chart A4
Chicago

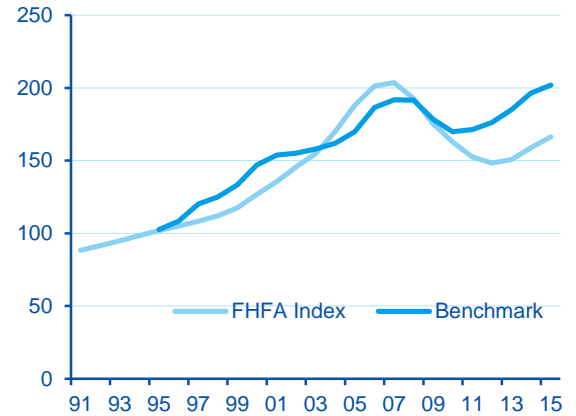


Chart A5
Cleveland

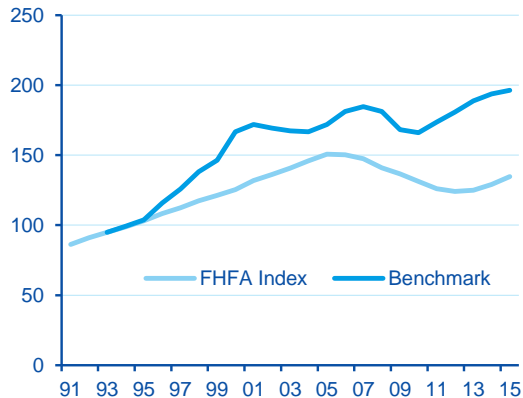


Chart A6
Dallas

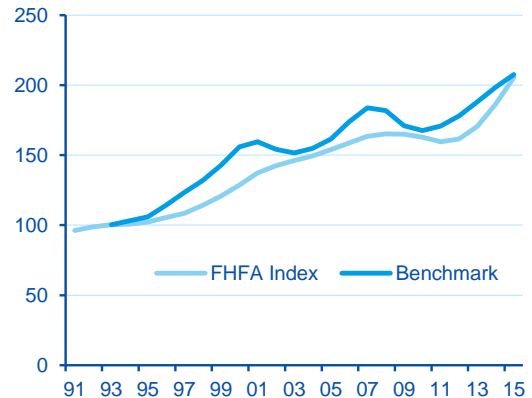


Chart A7
Denver

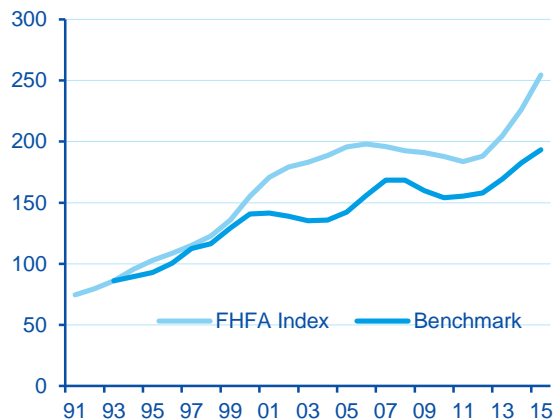


Chart A8
Detroit

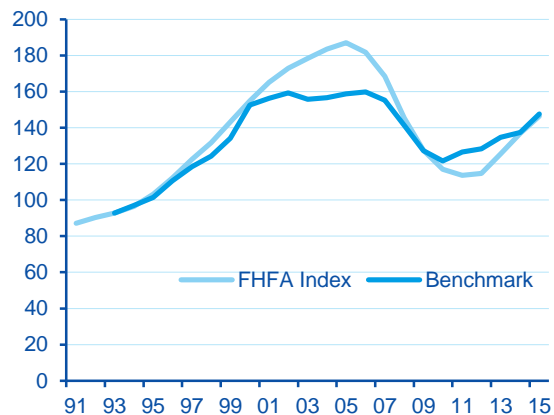


Chart A9
Houston

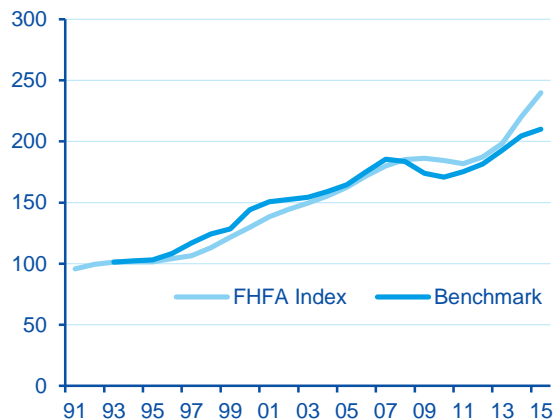


Chart A10
Las Vegas

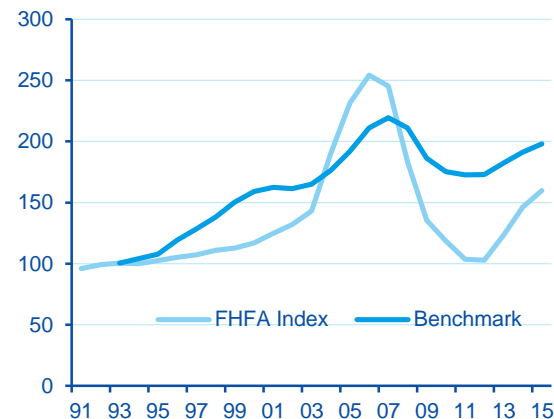


Chart A11
Miami

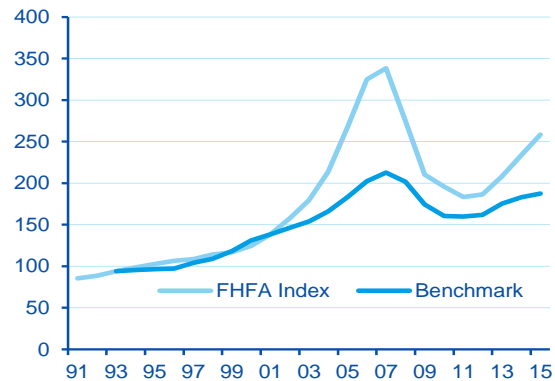


Chart A12
Minneapolis

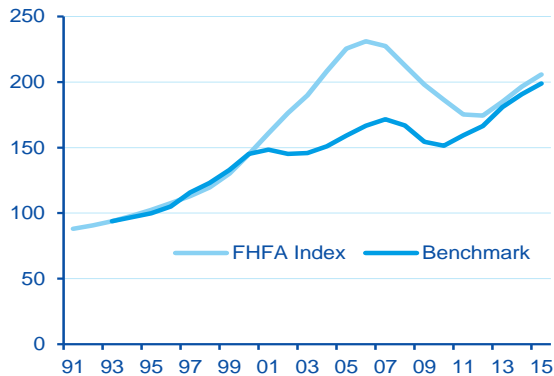


Chart A13
New York

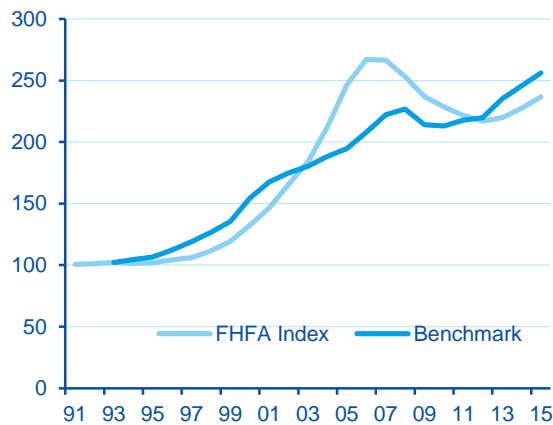


Chart A14
Phoenix

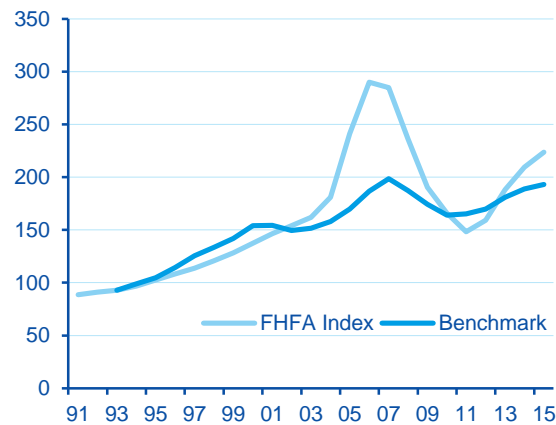


Chart A15
Portland

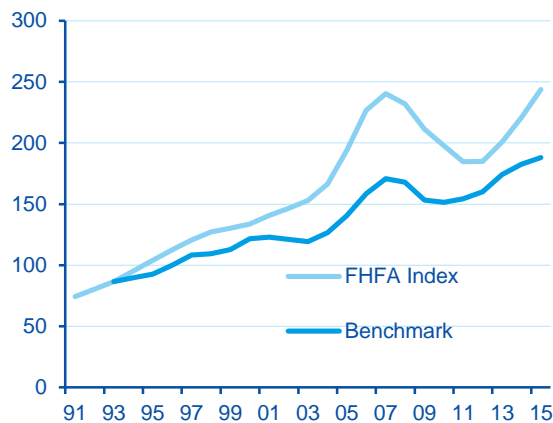


Chart A16
Seattle

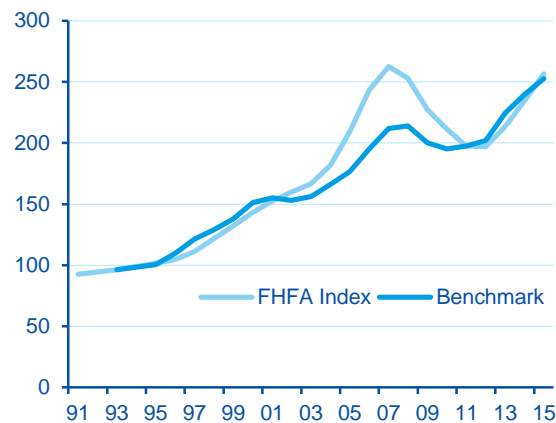


Chart A17
San Diego

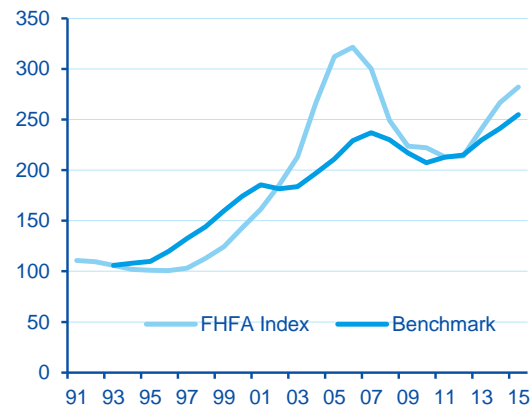


Chart A18
San Francisco

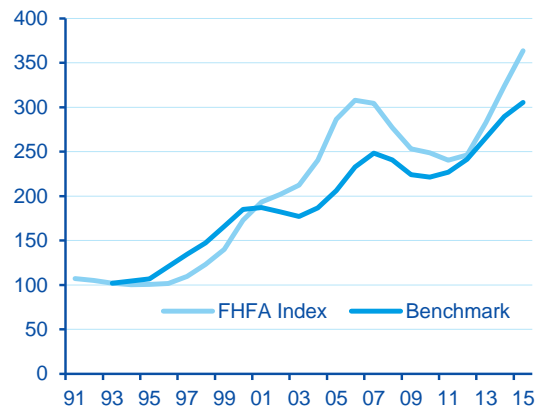
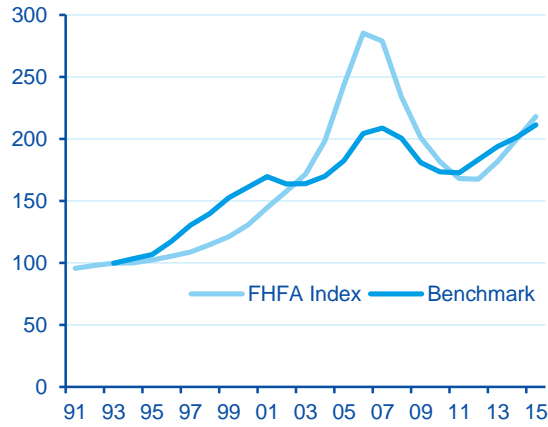


Chart A19
Tampa



Source: FHFA and BBVA Research

Chart A20
Washington

