

Literature Survey: Measuring Speculation in Housing Bubbles

A housing bubble is defined by rapid increases in property values to the point of unsustainable levels followed by a steep decline to the point in which the mortgage debt exceeds the value of the property itself (Bianco, 2008). Just as financial crises are not identified until a downward spiral has occurred, the housing bubble was not recognized until 2006 when market correction was already in stride.

The impact of the housing bubble exceeded experts' forecasts. As a national average, house prices in the United States grew 6.5% per year in real terms between the late '90s and early 2000s (Goodman and Thibodeau, 2008). However, these price growths were especially prominent in cities along the East and West Coasts; California cited an average annual increase of 15% between 2000 and 2005 (Goodman and Thibodeau, 2008). However, the meltdown was quick to reverse the prices just as quickly as they had risen. Most economists believed that the crisis would be contained within the housing market – particularly among mortgage issuers. As it turned out, the subprime crisis that led to the collapse of the housing bubble was the prime factor for the most recent recession, a recession that has spread well beyond the US economy and into economies worldwide. Domestically, the pop of the housing bubble led to a flurry of federal regulations for the financial industry, a drastic decrease in state and local budgets due to a fall in property tax revenues, as well as homelessness by those who have lost their homes to foreclosure or landlord defaults (Bianco, 2008).

While the general public blames speculators for driving prices up to artificial levels, Goodman and Thibodeau (2008) claim that much of the price increase can be attributed to changes in fundamental economic determinants. Across all literature surveyed, researchers recognized that the housing bubble was concentrated along coastal states. Galeser, Gyourko, and Saiz (2008) examine housing supply and housing bubbles in their working paper, and identified elasticity in the housing supply as the main independent variable affecting housing price increase, bubble frequency, and bubble duration. Utilizing data from the two most significant housing market bubbles in the past 25 years, Galeser et al. (2008) constructed a model of housing bubbles with supply as an endogenous variable. During the two most recent housing crises (the 1982-1996 Cycle and the Post-1996 Boom), this model indicated that building infrastructure on steep topography created inelasticity of supply, which created higher price booms (Galeser et al., 2008).

During the '80s, areas with elastic supply were hardly affected by the housing bubble occurring in supply elastic places (Galeser et al, 2008). When they did experience housing price booms, the duration of the bubble in these areas was also significantly shorter (Galeser et al, 2008). The model predicted that locations with inelastic housing supply experience greater increases in price compared to those with more elastic supply (all else held constant) (Galeser et al, 2008). Furthermore, inelasticity in housing supply is also positively correlated with bubble frequency and duration (Galeser et al, 2008).

Goodman and Thibodeau's research also took a supply side approach and supports the idea that expected rate of appreciation in house prices is highly contingent upon housing supply elasticity. However, in their deconstruction of the recent housing bubble between 2000 and 2005, Goodman and Thibodeau also incorporated the effects of

demand. Their analysis utilized data to parse out the portion of price appreciation attributable to fundamental economic determinants for house prices.

First, Goodman and Thibodeau (2008) addressed the increase in demand and its effect on homeownership rates: between the years of 1999 and 2006, the rate of homeownership in the US increased from 66.8 percent to 69 percent. While it may seem that the 2.2 percentage point increase is rather unimpressive, it is important to keep in mind that each percentage point in homeownership rate raises demand for owner-occupied housing by approximately one million units (Goodman and Thibodeau, 2008). The increase in demand is also attributed to an increase in real estate investment as well as to speculation in “continued house appreciation” (Goodman and Thibodeau, 2008). In terms of real estate investment, historically low nominal interest rates and the subsequent virtual removal of wealth and income as a barrier to homeownership in the US was cited as a main reason (Goodman and Thibodeau, 2008). Another reason was the cultural and political shift from renting to homeownership amongst single-family households (Goodman and Thibodeau, 2008). On the speculative side, rise in demand was attributed to the continuous development of the home-equity market. On the supply side, land prices and housing construction costs increased. The demand for homeownership by households that had historically rented and by preexisting homeowners alike rose at a more rapid pace than did the rise in supply of housing (Goodman and Thibodeau, 2008). Thus, due to the shortage in houses on the market, the real price of homes increased (Goodman and Thibodeau, 2008). A two-pronged approach was applied to answer the question of how much of this appreciation was driven by the justified economic fundamentals of local housing markets and what fraction was driven by speculation. The relationship between house price appreciation rates and supply elasticities were investigated via a simulation model of the housing market and estimates of metropolitan area housing supply elasticities were produced using cross-sectional place data of the non-bubble 1990-2000 period (Goodman and Thibodeau, 2008). The empirical analysis revealed statistically significant positive supply elasticities for 84 metropolitan statistical areas (MSAs) (Goodman and Thibodeau, 2008). Then, using the American Community Survey for 2000-2005 changes, Goodman and Thibodeau (2008) used computed expected rates of appreciation for these MSAs and compared the expected appreciation rates to the rates observed over the 2000-2005 period. The results indicated that the expected rate of appreciation in house prices is very sensitive to the assumed supply elasticity (Goodman and Thibodeau, 2008). Given that 30% of over the expected increase based on the data was used as the housing bubble threshold, only 25 of the 84 metropolitan areas with significantly positive supply elasticities exceed this threshold (Goodman and Thibodeau, 2008). Furthermore, these cities, with the exception of Las Vegas, were all coastal and within 75 miles of either the east or west coast. This led to the conclusion that speculative activity was extraordinarily localized to coastal areas where housing supply was inelastic (Goodman and Thibodeau, 2008).

Despite strong evidence of a relationship between supply elasticity and housing price increase and stronger speculative pricing effects, Wheaton et al. offers ... In their research, Wheaton and Nechayev (2008) also examined the inflation of house prices of the most recent bubble, albeit of a slightly earlier timeframe (1998 – 2005) and investigated its relationship to increases in demand fundamentals (population, income

growth, decline in interest rates) over this period. Then, Wheaton and Nechayev (2008) assessed and predicted patterns for housing price correction in the years following 2005.

The research incorporated data of 59 MSAs from 1998 through 2005, and constructed time series models to estimate markets and price changes (Wheaton and Nechayev, 2008). The aforementioned economic fundamentals were utilized to drive the models (Wheaton and Nechayev, 2008). Results from the models found that in all 59 markets, actual price growth between 1998 and 2005 was actually significantly higher than those forecasted (Wheaton and Nechayev, 2008). Wheaton and Nechayev (2008) were able to find that forecast errors are most prevalent in several types of MSAs: larger MSAs, MSAs where second home and speculative buying was prevalent, and MSAs where indicators suggest the sub-prime mortgage market was most active. Wheaton and Nechayev (2008) found two major factors that explained the most recent bubble and the commonly seen “excess” price increase in coastal cities: widespread availability of risk-priced mortgage credit and the unusually strong purchase of houses as second homes and investments. As a caveat, they noted the importance in inferring causality and thus stated that it is difficult to determine depth and duration of the housing correction. Since these factors are all unique to the recent housing market, assessing potential price “correction” after 2005 could not be done without inferring causality (something Wheaton and Nechayev were reluctant to do) (Wheaton and Nechayev, 2008). Thus, determine depth and duration estimates of the housing correction were not formulated.

Most of the literature focuses on identifying reasons behind recent housing booms, presumably for the purpose of understanding, identifying, and avoiding future bubbles. Most of the sources attributed the latest housing bubble to changes in market factors, particularly low interest mortgages and a trend in real estate investment and homeownership. Geospatial analysis of house prices over the time span of the last bubble also revealed a negative correlation between housing supply elasticity and susceptibility to speculative forces. The research reports a lack of optimism in correctly projecting correction terms as well as the nature of the next bubble. Moreover, since such projections and models are based solely on the most recent bubbles, the unique characteristics of the last case may interfere with prediction capabilities. Perhaps an in-depth analysis of the most significant bubbles (domestic and international) from the past century may allow researchers to weed out the unique characteristics of each case and identify several classic traits of real estate bubbles.

References

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