

Commentary on House Price Trends

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July 27, 2009

Prepared for the Housing Policy Symposium: University of California: Irvine, February 19-20

From 1970 through the mid to late 1990s, changes in real (deflated) house prices were relatively minimal. Those changes that occurred were clearly linked to changes in the macroeconomic cycle and interest rates. Wheaton and Nechayev ("What will it take to restore the Housing Market?") document that changes in these fundamental factors and population explained house price movements during this time. However, W-N find that their statistical model of MSA level house prices greatly underpredicts real house price changes from 1999 through 2005. After 2006, real house prices declined and thus house price levels are again converging toward the model's predicted values. The question addressed in the paper is what path real house prices will take in 2009-2011.

Predicting the future depends on understanding the past. W-N suggests that the 1998-2005 boom in house prices was caused, in part, by the increase in credit availability during this period. One consequence was an increase in the ownership of second homes. In the post 2006 downturn in the housing market, there has been a decrease in credit availability and decrease in the investment demand for housing, including that for second homes.

Wheaton and Nechayev note that home prices and sales appear to move contemporaneously. However, their more careful analysis reveals that changes in home sales "Granger cause" changes in house prices, but higher house prices Granger cause lower sales. Rising home sales should reflect increasing demand and thus it is not surprising that a lagged response is increasing home prices. As will be noted in the following discussion about the relative cost model of homeownership, once house prices achieve high levels and are not expected to rise further, then the demand for housing will fall as will sales. Thus, W-N's conclusions are consistent with theory.

Based on their estimation results, W-N argue that for house prices to stabilize after 2009, home sales have to increase. To achieve increased sales, house prices will have to be lower than present in early 2009. In other words, once house prices have fallen sufficiently, sales will rebound and house prices will stabilize.

The inventory of houses for sale was particularly large in early 2009, in part, due to the large number of foreclosed homes that are available for sale. To achieve house price stability W-N argue housing inventories must shrink. How can this occur? Options include 1) reducing the rate of new foreclosures and the inventory of foreclosed homes (perhaps through policy innovations), 2) reducing the private sector's production of new homes (which has occurred), 3) increasing second home purchases, or 4) increasing renter to owner moves. However, the flow of renters moving to owning is relatively low in 2009. One cause is the tightening of mortgage

lenders' requirements for down payments. Another cause is that in the 2000-06 period a large number of renters moved to owning "prematurely" due to the relaxation of mortgage lender constraints during that time. W-N note that it will take time for current renters who never owned to accumulate a down payment. They conclude that it will be two or more years for house prices to recover, abstracting from the effects of new policy initiatives.

The W-N scenario may lead to an outcome worse than they predict. Haurin and Rosenthal (2005) show that there is great "churn" among households under age 40 in their rent-own-rent-own moves. Also, they find that the change from renter to first-time owner is quite different than that from renter to second time owner. Specifically, the transition back to ownership after a "failed" spell of ownership is very long, especially for minorities. This prediction will likely be especially true for households with foreclosures after 2006. Thus the flow of renter households back into homeownership is likely going to be lower than in previous years. If the 1998-2005 housing boom had not happened, many of the households now ending their spell of ownership would have remained renters. Thus, they might have been more likely to become homeowners in 2010-12 compared to their current low probabilities of becoming owners. The resultant lower demand will tend to keep real house prices low, probably for longer than Wheaton and Nechayev predict.

A Traditional Perspective on House Price Changes

House prices, new construction levels, and the amount of sales of existing homes are the outcome of the interaction of housing supply and demand. In 2009 house prices are falling, new construction is extraordinarily low, and the sales volume of existing homes is low. What are the characteristics of supply and demand that could explain these observations?

On the supply side, using a national perspective, there appears to be a fairly elastic supply of "ownable" dwellings. In theory, the supply of owner-occupied units could come from new construction, sales from the existing stock of owner-occupied dwellings, or conversion of rental units or other structures to owner-occupied housing. Currently new construction is low, but past research suggests that the supply is relatively elastic and thus if real house prices rise, construction activity will rebound. The supply of existing homes that are for sale has been greatly augmented by the large number of foreclosed or bank owned properties being marketed. Evidence that the supply of existing homes is relatively elastic will be presented later in this commentary. Finally, the current number of conversions to owner-occupied dwellings is very low; the current trend being in the opposite direction. That is, structures built as condominiums

are being converted to apartments. A conclusion is that the current supply of owner-occupied units is relatively high and that it will be relatively responsive to future changes in house prices.

According to the relative cost theory of tenure choice, the demand for homeownership depends on the relative cost of owning to that of renting. The annual cost of owning can be expressed as multiplicative product of the asset price of a standardized amount of housing (p_h); for example, a 2,000 square foot house of a particular quality and the “user cost” of owner-occupied housing. The user cost (c) converts the asset price of owner-occupied housing to an annual flow and it depends on factors such as the mortgage interest rate (r), the property tax rate (t_p), the Federal income tax deduction for r and t_p , depreciation and maintenance costs ($d+m$), a risk premium for investments in owner-occupied housing (r^*), and households’ expectations of future house price appreciation rates.

$$c = [(1-t_y)(r+t_p)+d+m+r^*-\partial p_h^e/\partial t] \quad (1)$$

The annual cost of renting the same quality unit is summarized as p_r . Thus, this theory argues that the demand for homeownership depends on the ratio cp_h/p_r . What is the level of the demand for housing in 2009 and how will it change in the future? Evidence presented below indicates the demand for housing is lower than it was during the housing boom in 2003-2005 when it was at historically high levels. However, even though the demand for homeownership is lower, it is far from historic lows.

During 2003-2005, according to the relative cost theory, the demand for owner-occupied housing was high because mortgage interest rates were relatively low, the level of risk associated with owning housing was believed to be relatively low, and expectations of future changes in house prices were very high. In support of the claim that house price expectations were high, Case-Shiller (2003) noted that surveys of households’ house price expectations suggested a substantial degree of over optimism. For example, respondents in a 2003 survey in four cities (Los Angeles, San Francisco, Boston, and Milwaukee) indicated that the average annual increase in house prices for the next ten years would be 13.1%, 15.7%, 14.6%, and 11.7%, respectively. The result of these high house price expectations was a reduction in the user cost of housing to a low level, making home ownership an attractive investment.

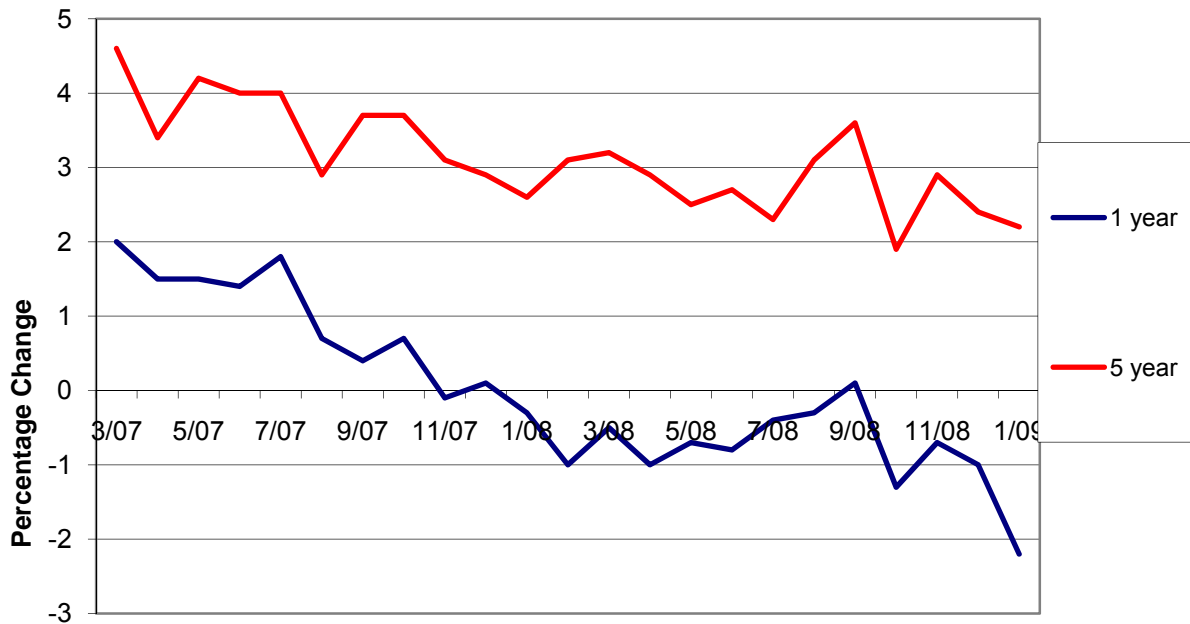
How has the demand for owner-occupied housing changed since the housing boom? Since then, nominal mortgage interest rates have trended downwards and the real price level of homes (p_h) has decreased. Real rental rates have changed relatively little. These changes tend to lower the relative cost of ownership and would increase housing demand. However, the key

factor is the post-boom change in households' expectations of future house price movements. Evidence from the Reuters/Michigan Survey of Consumers sheds light on this change. This national survey reports that in March 2007, households expected house prices to rise at a 2% annual rate in the following year, and rise at a 4.5% annual rate over the next five years. Two conclusions follow: 1) house price expectations in 2007 were substantially lower than in 2003 and 2) households' expectations continued to be overly optimistic compared to the actual change in house prices over the following year which was -4.4% according to the Conventional Mortgage House Price Index (CMHPI). The reduction in house price expectations had the effect of raising the relative cost of ownership, offsetting the effects noted above. Further, it is reasonable to argue that the risk factor associated with owning a home began to increase in 2007.

Since March 2007, there has been a further decline in expected house price changes (see Figure 1). However, house price expectations remain far above reported values of actual price changes. For example, in September 2007, the survey reports that the one-year expected price increase was 0.5% while the observed change over the next 12 months was -7.1%. In January 2009, the one-year ahead price expectations had fallen to -2.2%. Even though the mean is negative, only 25% of respondents said house prices would decrease in the next year, while 63% say they will be unchanged. Thus, since the boom in house prices, it is likely that the demand for owner-occupied housing fell, but not dramatically because the positive effect of the decline in interest rates and house price levels would offset the negative effect of falling house price expectations.

Looking forwards beyond 2009, a plausible conclusion is that house price expectations will continue to fall until they are more in-line with observed changes. It also is reasonable to argue that households' perception of the risk of investing in housing is rising. Both of these future changes should further increase the user cost of housing and thus reduce the demand for housing. Further substantial reductions in mortgage interest rates appear to be unlikely, although lower house price levels will moderate the reduction in demand. Eventually, the perceived risk of investing in owner-occupied housing will stabilize as will the change in expected house prices. But, it is very likely that this process will not occur until late 2010 and possibly later.

Figure 1: One and Five Year Annual Expected House Price Appreciation



Source: Reuters/University of Michigan Survey of Consumers

Other Factors Affecting the Demand for Owner-Occupied Housing

The relative cost model of tenure choice is limited and been extended to include additional factors that influence the demand for homeownership such as households' demographic characteristics and mortgage lenders' constraints. Typical demographic factors include marital status, family size, and race/ethnicity. Over a relatively short time horizon such as five years, none of these demographic factors is likely to change much. Mortgage lender constraints have been shown to be important factors influencing the demand for homeownership (Linneman and Wachter 1989; Haurin, Hendershott, and Wachter 1997), including both the down payment constraint and the ratio of monthly housing related payments to income. As noted in the essay by Wheaton and Nechayev, the down payment constraint was substantially relaxed during the 1996-2005 time period. Further, innovations in the mortgage market such as 2/28 and 3/27 adjustable rate loans with low initial "teaser" interest rates had the effect of relaxing the monthly payment constraint. Other mortgage innovations reduced the required documentation needed to secure a mortgage.

The impact of these changes was to increase the breath of households that "qualified" for a mortgage. This of course increased the aggregate demand for homeownership and resulted in an increase in the homeownership rate. The rise in demand outstripped the increase

in the supply of houses available for owner-occupation, resulting in increasing real house prices. This price rise fed households' overly optimistic house price expectations as noted above.

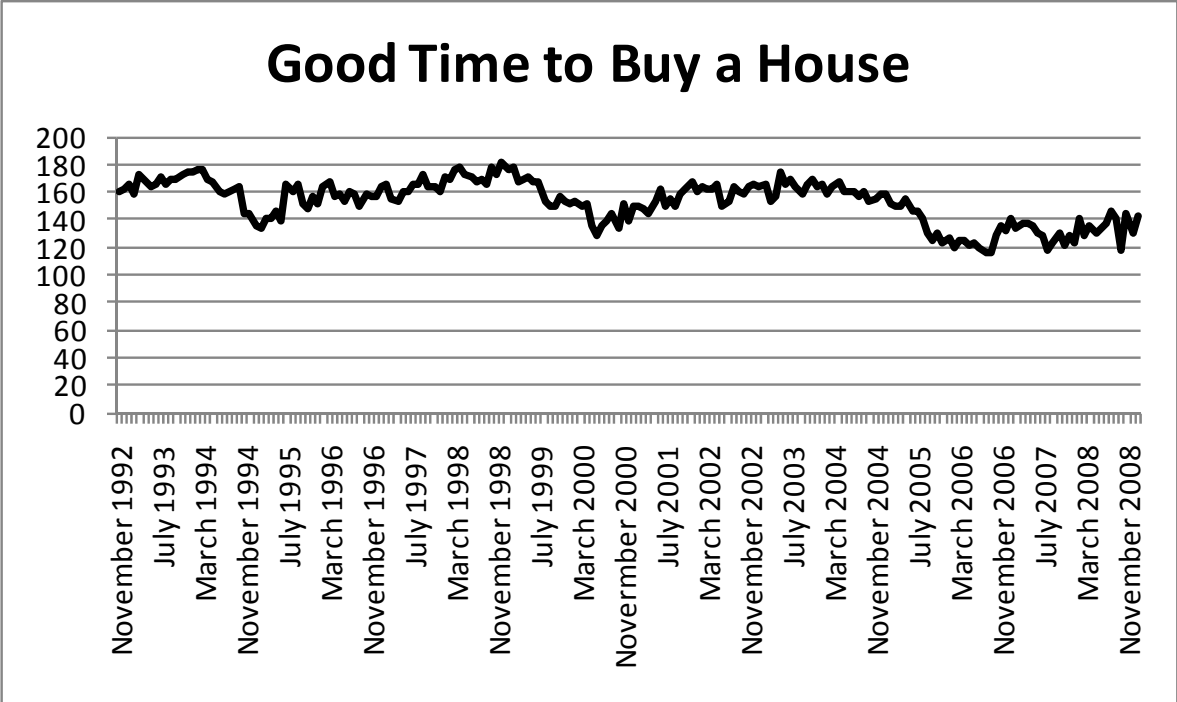
Since 2006, mortgage lenders have tightened their constraints, moving toward the down payment levels required during the early 1990s. Exact measures of the minimum down payment constraint are not available; however, the loan to value ratio of first-time homebuyers is falling, consistent with the argument that constraints are tightening. This tightening has affected the ability of households to qualify for mortgages and thus negatively affected housing demand in 2008-2009. Predicting the future path of the tightness of mortgage lenders' constraints is difficult because of government intervention in the market through FHA, Freddie Mac, and Fannie Mae. However, it appears unlikely that the mortgage market will soon return to the level of innovation and looseness of the 2003-2005 period. An implication is that consideration of mortgage constraints does not suggest that the demand for homeownership will rise soon after 2009. More likely, the tightening of mortgage lender constraints will have a dampening effect.

Measures of the Demand and Supply of Owner-Occupied Housing

In early 2009, the housing market is characterized by falling real house prices, very little new construction, and a relatively low number of transactions in the existing home market. Compared to 2003-2005, the traditional analysis identified factors that suggest the demand for housing in 2009 has fallen somewhat but not dramatically. On the supply side, the marginal costs of producing housing have likely decreased somewhat due to reduced real wages in the construction sector. Combined, these changes help to explain falling real house prices and the low volume of transactions.

To confirm these impressions, the Reuters/University of Michigan Survey of Consumers data can be used to track the demand for homeownership and to track the supply from existing homeowners. The measure of demand is the response to the question "Is it a good time to buy a house?" (GTTB). This question is asked to a nationally representative sample of renters and homeowners. The index ranges from 0 to 200 and the time series is displayed in Figure 2. It peaked in 1998 and 2003 at a value of 180, which implies that 90% of the respondents answered "yes" while only 10% answered "no". The index declined slightly to about 160 in 2005, still very high in historical context. GTTB declined sharply in 2006 to 120 (60% yes, 40% no) and it has bounced around between 120 and 140 since then.

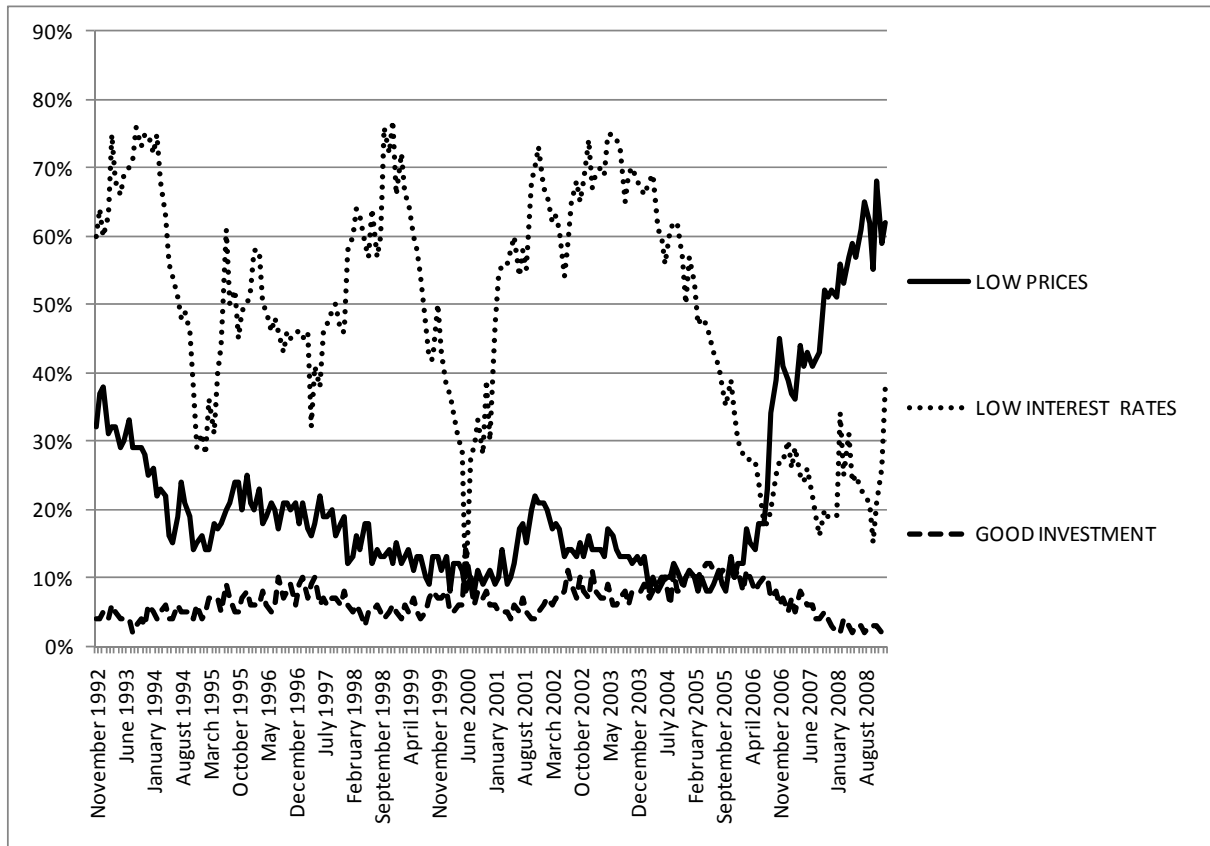
Figure 2: Households' Perception about whether it is a Good Time to Buy a House



Source: Reuters/University of Michigan Survey of Consumers

The changes in GTTB suggest that demand has fallen following the boom, but not precipitously, this pattern consistent with the discussion above. The survey reports that in early 2009, households perceive that mortgage interest rates and house prices are relatively low (see Figure 3). Previously, it was noted that households expect only a modest decline in real house prices in the short term, and an increase over the next five years. Thus, it appears that demanders of owner-occupied housing are ready to jump back into the housing market in late 2009, raising demand, and stabilizing prices. However, house price expectations continue to adjust downwards, which should continue to put downwards pressure on the demand for housing. As noted in Figure 3, housing is perceived as being a very poor investment. Thus, it is reasonable to argue that demand will not increase in late 2009 or 2010.

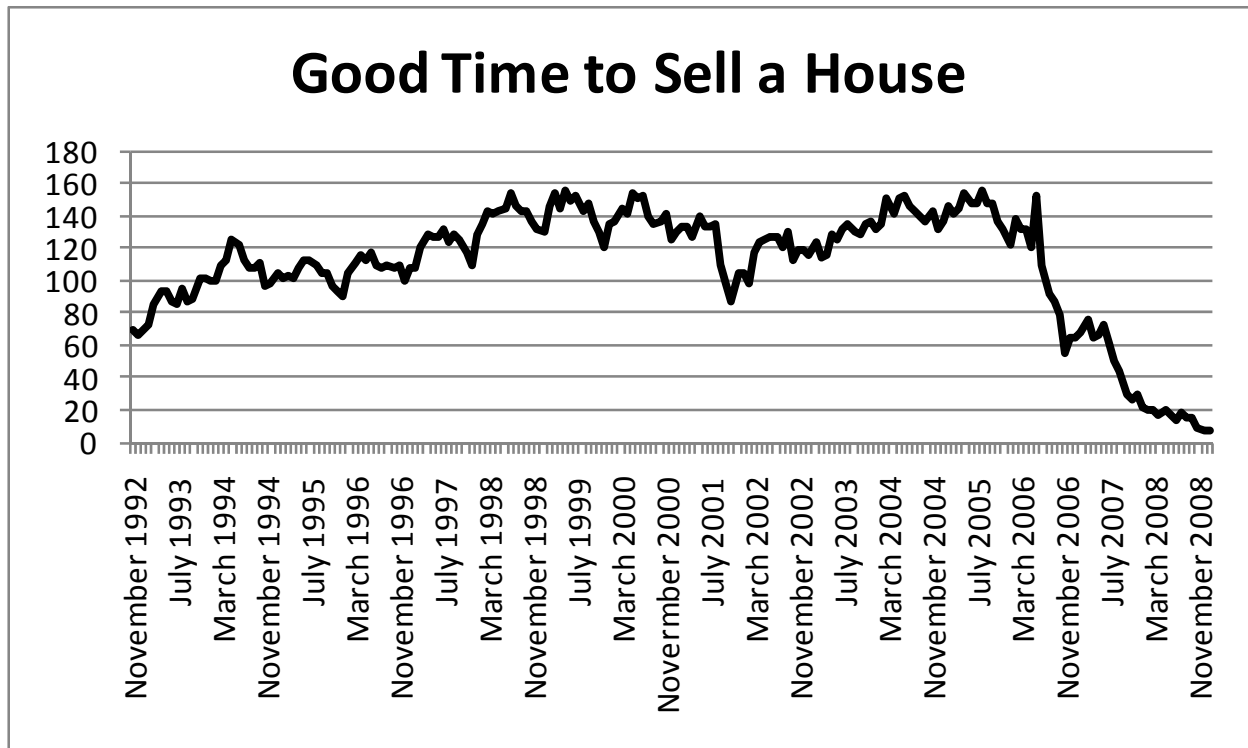
Figure 3: Reasons Explaining the Level of the Demand for Housing



Source: Reuters/University of Michigan Survey of Consumers

If the demand for housing is not extraordinary low, why is the volume of both new and existing home sales so low in 2009? The new home sales are extraordinarily low because builders' supply has rapidly adjusted downwards. Building permits and housing starts have fallen, this behavior consistent with falling house prices and recognition of the large supply of foreclosed homes. Regarding existing home sales, Figure 4 displays data from the Reuters/Michigan survey (now limited to only homeowners), reporting answers to the question: "Is it a good time to sell a house?" (GTTS) The series peaked at near 160 in 1999, 2003, and 2005, this pattern being very similar to the GTTB series. That is, through 2005, supply and demand moved in tandem through the housing cycle and prices cleared the market. However, in 2006 and thereafter there is a sharp divergence as GTTS has fallen to an all time low level of 5, indicating almost uniform agreement that it is a bad time to sell.

Figure 4: Households' Perception about whether it is a Good Time to Sell a House

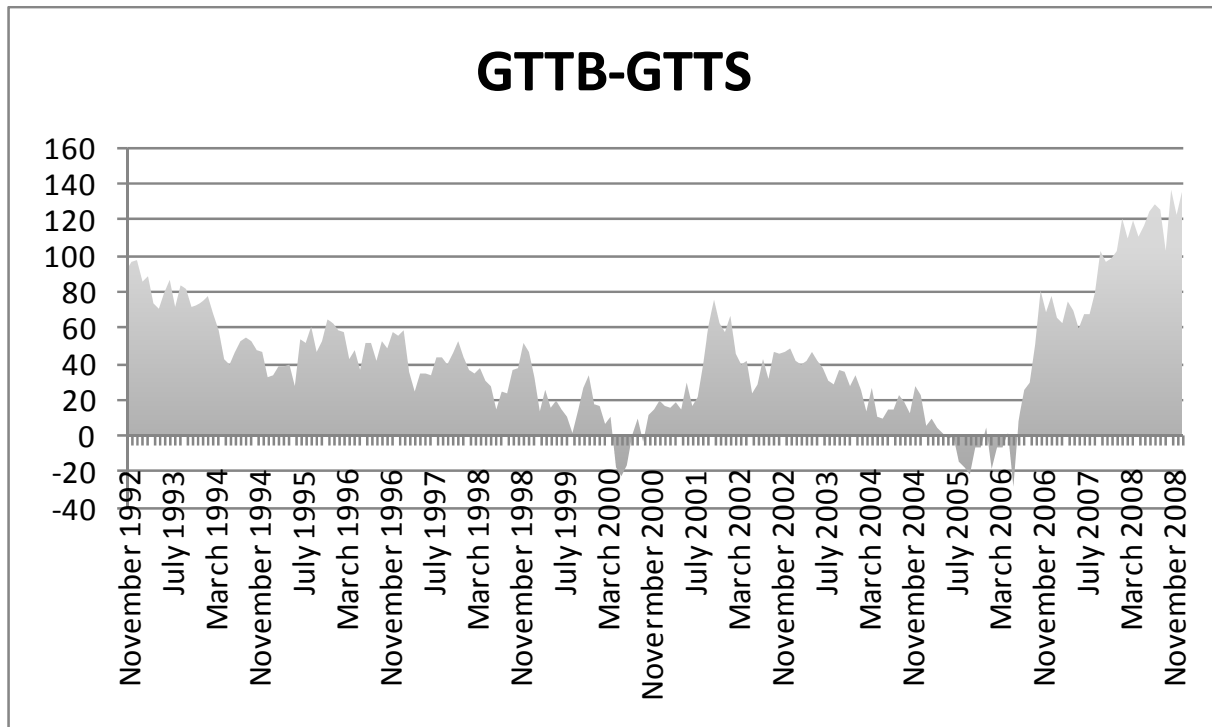


Source: Reuters/University of Michigan Survey of Consumers

The primary reason for this perception stated by the potential suppliers of existing housing is that the current price of housing is low (mentioned by 70% of respondents). Also mentioned frequently was a concern that the owner would “lose money” if they sold now. Thus, the evidence suggests that current homeowners are not willing to sell their house after a period of falling house prices. Some have negative equity, others may be averse to nominal losses in house price, and some may expect house prices to recover in the future.

Figure 5 displays the difference between GTTB and GTTS, a measure of disequilibrium in the housing market. As can be clearly seen, the market is substantially out of equilibrium in March 2009, where the divergence between GTTB and GTTS is the largest in during the 1992-2009 period. During boom periods house prices adjusted upwards rapidly; however, during downturns house prices are sticky. This stickiness is due to existing homeowners' reluctance to sell their homes at a “low” price. Rather, they prefer to forego selling their homes, causing a significant reduction in the volume of home sales.

Figure 5: A Measure of Disequilibrium in the Housing Market



Source: Reuters/University of Michigan Survey of Consumers

Resolution of the Housing Market Disequilibrium

What are the likely future paths of the demand and supply of existing housing? How will house prices evolve along this path? From the demand side, households' expectations of future changes in house prices are likely to continue to fall, adjusting toward observed levels. This change should put downward pressure on the demand for housing. Recession and rising unemployment also contributes to depressing demand. Offsetting effects could come from government intervention in the housing market or a strong economic recovery. Overall, demand is likely to remain stable or fall during 2009 and during the first part of 2010, suggesting continued downward pressure on house prices.

Housing supply comes from new construction, foreclosed properties, and existing home sales. New construction is likely to remain very low through mid-2010 and foreclosures are likely to remain high through 2011 as Alt-A and option mortgages reset their interest rates. As house prices fall, existing homeowners will continue to be reluctant to sell. An implication is that there will be an increasingly large backlog of sellers. These observations suggest that the volume of sales of existing homes, other than foreclosures, is likely to remain low through 2010.

How will real house prices evolve? Over time, existing homeowners' reluctance to sell at the then current market price will decline, and supply will again align with demand (which is likely lower in 2010 and 2011 than 2009). Supply and demand will come into equilibrium at a lower real house price level than observed in early 2009. The path that will lead to this outcome would be one where nominal and real house prices fall through 2010. They will then stabilize, initially in nominal values, and later in real values. Thus, the prospects for the national average of real house prices to rise in the 2009-2011 period are slim. (Of course, real price increases could be observed in selected metropolitan areas.) Any upwards movement in house prices will result in some of the backlog of existing homeowners marketing their houses, tending to again stabilize prices. Based on this observation that the supply of new residential construction and existing homes is very elastic, a tentative conclusion is that it is much more likely that real house prices will be lower in 2015 compared with 2008 than the opposite.

Conclusion

What path will real house prices follow after 2008. Different approaches lead to the same conclusion: real house prices will continue to fall in 2009 and 2010. While nominal house prices may stabilize thereafter, it is possible that real house prices will continue to fall in 2011 and perhaps longer. Predictions for these longer horizons depend on government actions regarding foreclosures, FHA policies, and the actions of Fannie Mae and Freddie Mac.

References

Karl E. Case and Robert J. Shiller. 2003. "Is There a Bubble in the Housing Market?" *Brookings Papers on Economic Activity* 2: 299-362.

Haurin, Donald R., Patric H. Hendershott, and Susan M. Wachter. 1997. "Borrowing Constraints and the Tenure Choice of Young Households," *Journal of Housing Research* 8: 137-154.

Haurin, Donald R. and Stuart Rosenthal. 2005. "The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells," Working Paper, Department of Economics, Ohio State University.

Linneman, Peter and Susan M. Wachter. 1989. "The Impacts of Borrowing Constraints on Homeownership," *Real Estate Economics* 4: 389-402.

Wheaton, William C. and Gleb Nechayev. 2009. "What will it take to restore the Housing Market?"