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# Economic Letter

*Insights from the*  
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## When Will the U.S. Housing Market Stabilize?

by John V. Duca, David Luttrell and Anthony Murphy

The hope that housing markets had stabilized in mid-2010 was dashed by subsequent declines in home construction and prices (Charts 1 and 2). Homebuilding peaked about five years ago, and housing prices almost four years ago. Amid such a prolonged downturn, a key question becomes, When will the housing market stabilize and support the economic recovery? We suggest that new home construction may stabilize and start recovering slowly within the next year or so. Our econometric results also indicate that national house prices may hit bottom late this year or in early 2012 and then recover slowly.

### Key Drivers of Housing Activity

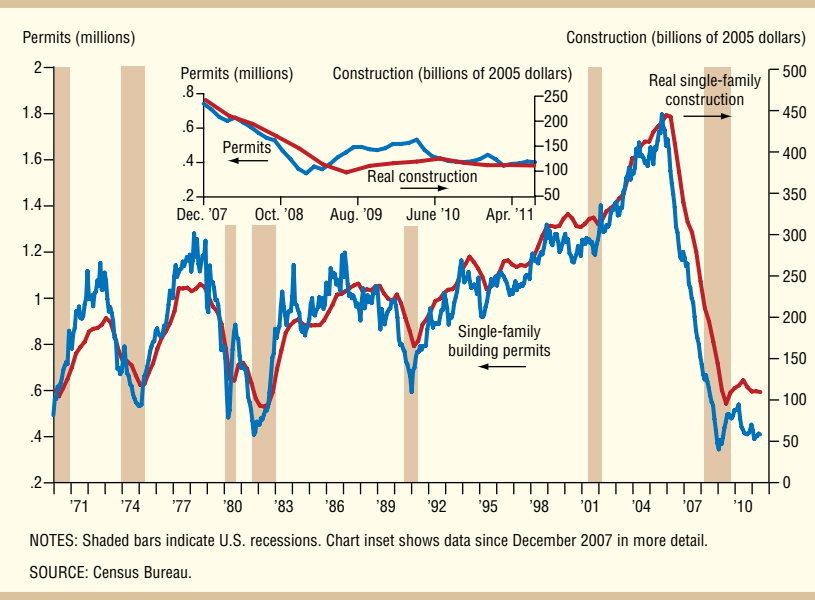
Conventional housing models focus on standard supply and demand factors. New construction is very cyclical and reacts with a lag to changes in house prices. Moreover, greater housing supply from construction booms, like that of the early to mid-2000s, tends to restrain house prices and, subsequently, construction.

Factors affecting demand include changes to personal income, after-tax mortgage interest rates and expected housing capital gains or losses. Greater income and expectations of future home price appreciation raise housing demand; higher interest rates restrain it. Low unemployment and income growth boosted housing from mid-2001 to mid-2007.

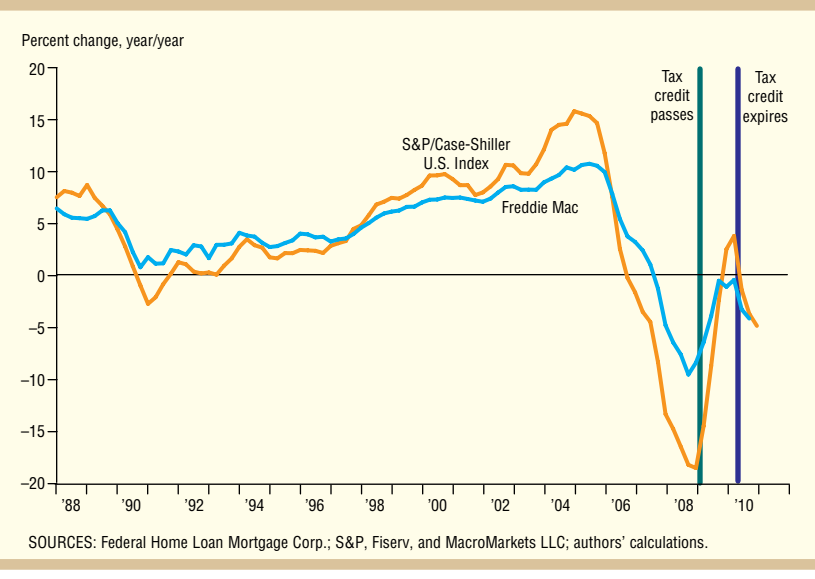
The most recent house price and construction run-up exceeded levels recorded during the 1990s economic expansion, when unemployment rates fell even lower and income grew faster. Why is this? Standard econometric models accounting for these factors simply cannot explain the surging house prices and building seen in the mid-2000s.



**Chart 1**  
**Housing Permits and Construction Bump Along Bottom**



**Chart 2**  
**Home Prices Decline After Tax Credit Expires**



Our research suggests the missing factor is mortgage credit standards, which, with other factors, determine whether potential homebuyers qualify for a loan.<sup>1</sup> More people qualified for a mortgage during the so-called subprime boom because lenders eased the mini-

mum down-payment ratios, maximum debt-payment-to-income ratios, minimum credit scores and other criteria.<sup>2</sup>

The relaxed credit standards can be seen in a new survey-based data series on the average mortgage-loan-to-house-price ratio, or loan-to-value

(LTV) ratio, for first-time homebuyers (Chart 3), or its counterpart, the down-payment ratio. The average, cyclically adjusted LTV ratio rose to as high as 94 percent (that is, a 6 percent down payment) at the height of the subprime boom, before retreating during the bust. The ratio was about 88 percent (12 percent down payment) during the 1990s.<sup>3</sup> As a result of lower down-payment requirements, the effective demand for housing rose in the mid-2000s, pushing up prices and construction. This fed into higher house-price expectations among borrowers and lenders, further boosting prices. During the bust, mortgage credit standards tightened, damping housing demand along with prices and construction.

### New Home Construction and Sales

During the subprime boom, construction of single-family homes surged to a high of 1.8 million units per year, far above the 1.1 million units required to cover population growth and physical depreciation of structures. Construction then collapsed, falling roughly 75 percent from the peak by mid-2009. After the economy hit bottom in June 2009, housing permits picked up somewhat, aided by a series of federal tax credit programs, many aimed at first-time homebuyers. As the tax credit effort expired in mid-2010, construction sagged. Homebuilding sank to record lows shortly after a California homebuying tax credit expired in late 2010 and as unusually severe winter weather struck much of the country. Before expiring, these tax credits temporarily boosted home transactions, partly by shifting sales forward, although the housing market's fundamental weakness remained.

Several factors are hindering the housing recovery.<sup>4</sup> First, many lenders are still cautious, requiring high down payments. Second, many houses are in foreclosure, and legal complications have delayed their resolution. Third, still other mortgage holders are deeply "underwater"—what they owe far exceeds the market value of their



property. By some estimates, there are about 5 million deeply underwater homes, amounting to 10 percent of mortgaged homes and 6.5 percent of all homes.<sup>5</sup> Many of these homes are at risk of foreclosure, which would further boost the supply of homes for sale and depress existing house prices and new construction.

Conversely, affordability has improved, and the impact of the supply overhang may be overstated because deeply underwater and foreclosed homes are concentrated in a handful of states, including Arizona, California, Florida and Nevada. With job growth expanding in areas where less overbuilding occurred, housing starts will likely pick up in states such as Texas. Additionally, as the economic recovery continues, the pace of household formation is likely to rise, bolstering demand. On balance, many forecasters see single-family home construction recovering slowly to around 500,000 units next year from an annual rate of 400,000 in early 2011.

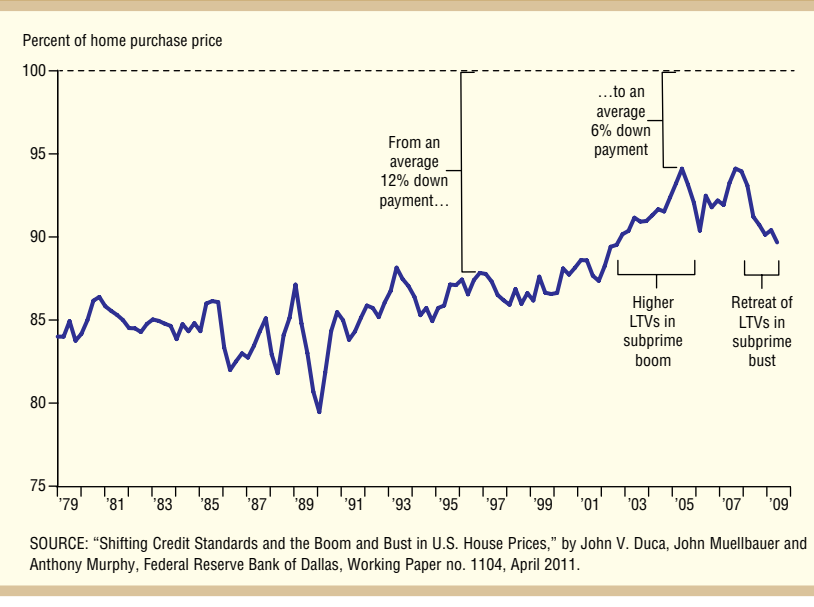
### Where Are House Prices Heading?

During the boom and subsequent bust, house prices were affected by unusual factors, including large swings in mortgage financing standards and tax credits for first-time homebuyers. The national tax credit was important, amounting to about 4 percent of the average price of a house bought by first-time homebuyers—the key marginal group in the housing market.

Our econometric models of U.S. house prices, estimated using data through third quarter 2009, take account of these factors, as well as conventional drivers of housing demand.<sup>6</sup> We used our model estimates and forecasts of underlying variables to simulate the future path of one house price index. This exercise, carried out in early 2010, predicted that house prices would resume declining after the expiration of the U.S. tax credit in mid-2010, falling about 5 to 6 percent after third quarter 2010 before likely hitting bottom

Chart 3

## Loan-to-Value Ratio Swings in Subprime Boom and Bust



in late 2011 or early 2012 (*Chart 4*). The simulation, designed to capture medium-run house price developments, shows nominal house prices overshooting fundamentals during the subprime boom, undershooting during the bust, and then slowly recovering and reverting to trend, barring any further major shocks. Since early 2010, our simulation has tracked the actual movement in the Freddie Mac purchase-only home price index.

Of course, the simulations are based on assumptions about the likely paths of a range of economic variables determining the fundamental or long-run prices of housing—incomes, interest rates, mortgage credit standards, etc.—some of which are hard to predict. We assumed that the income, interest rate and construction variables move in line with the average Blue Chip Economic Indicators forecasts and, perhaps more controversially, that average down-payment ratios stabilize at 2002 levels, just over 10 percent. We also implicitly assume that the medium- to long-run path of house prices is unaffected by the current high stock of foreclosed properties.

### Housing Wealth Prompts Spending

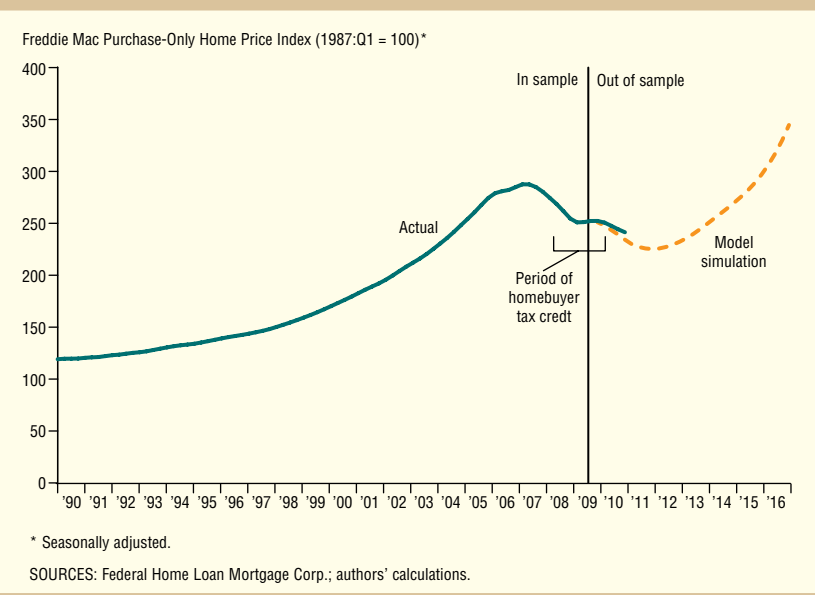
House prices alter housing wealth, which in turn affects consumer spending. During the housing boom, rising perceptions of wealth likely induced people to save less for retirement. Additionally, the ability of families to borrow against higher housing wealth increased, particularly from the mid-1990s until the housing bust. In our research on consumer spending, we find that these effects are both economically and statistically important. For example, a \$1,000 increase in housing wealth was associated with about a \$10 to \$15 rise in annual consumer spending in the mid-1990s; the impact tripled to nearly \$40 per \$1,000 by the mid-2000s, before receding. As a result, recent house price declines significantly slowed consumer spending. These negative effects will likely ebb and then turn positive after house prices start recovering.

### Anticipating a Slow Recovery

The housing sector contributes to gross domestic product growth directly via new home construction and indirectly through consumer spending. In

Chart 4

## Nominal House Prices Likely to Bottom in 2012



the early and mid-2000s, the contribution was large. When the subprime bubble burst, housing exerted a substantial drag on the economy. The loan losses and increased uncertainty that accompanied the bust also slowed the economy by impairing the ability of financial intermediaries and securities markets to provide finance.<sup>7</sup> Although the short-run outlook for the housing market is uncertain, it appears that new home construction and house prices at the national level will stabilize and start slowly recovering within the next year or so.

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### Notes

<sup>1</sup> "House Prices and Credit Constraints: Making Sense of the U.S. Experience," by John V. Duca, John Muellbauer and Anthony Murphy, *The Economic Journal*, vol. 121, no. 552, 2011, pp. 533–51.

<sup>2</sup> "The Rise and Fall of Subprime Mortgages," by Danielle DiMartino and John V. Duca, Federal Reserve Bank of Dallas *Economic Letter*, vol. 2, no. 11, 2007.

<sup>3</sup> "Shifting Credit Standards and the Boom and Bust in U.S. House Prices," by John V. Duca, John Muellbauer and Anthony Murphy, Federal Reserve Bank of Dallas, Working Paper no. 1104, April 2011. The LTV series comes from the biennial Survey of American Housing and is cyclically adjusted.

<sup>4</sup> "The Fallacy of a Pain-Free Path to a Healthy Housing Market," by Danielle DiMartino Booth and David Luttrell, Federal Reserve Bank of Dallas *Economic Letter*, vol. 5, no. 14, 2010.

<sup>5</sup> See "Housing Statistics Hit Rough Waters," by Carl Bialik, *Wall Street Journal*, Jan. 8, 2011.

<sup>6</sup> See note 3.

<sup>7</sup> For a discussion of these effects, see "Housing Markets and the Financial Crisis of 2007–09: Lessons for the Future," by John V. Duca, John Muellbauer and Anthony Murphy, *Journal of Financial Stability*, vol. 6, no. 4, 2010, pp. 203–17.

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