

THE ECONOMIC IMPLICATIONS OF THE DEVELOPING U.S. HOUSING SHORTAGE

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The evidence is mounting day by day. With a few exceptions, the recent numbers on the U.S. housing sector are showing signs of a bottom, if not an incipient upturn. Could it really be that housing is on the verge of a sustained recovery after the biggest bust in modern history? The consensus is that the sector will remain in the doldrums for years to come, and many prominent forecasters still see a further decline in home prices of 15% or more over the next few years. But experts often lag the big turning points.

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THE DATA DEBATE

Some of the early data is already providing support for an improved outlook in housing, particularly house prices. In a market economy, price is the regulating mechanism. Prices are established by the interaction of supply and demand. When prices get too high, consumers stop buying. A period of excess supply then follows, and prices go back down. Eventually, after the market clears off the excess supply, prices bottom out and start to climb again in response to increased buying. Important data releases suggest that such a turning point might have finally been reached for housing demand, with profound implications for the economy as a whole. Here are ten key points to make the case.

Prices Corrected

After rising excessively during the middle of the past decade, house prices have since fallen sharply. The widely-followed Case-Shiller Home Price Index has fallen by about a third from its peak in June 2006 to a new low for the cycle. Note, however, that the latest Case-Shiller reading is for the month of February 2012 and the index is a three-month moving average, which means the reported number is the average of December, January, and February; at the time of writing it is almost May. Other series have begun to turn upwards. The Federal Housing Finance Agency publishes its own house price

index that shows selling prices in February were up 0.3% compared to the prior month and up 0.4% from the year before. Meanwhile, other sources show asking prices in a clear upturn since the start of the year – the first year-to-year increase in almost half a decade.

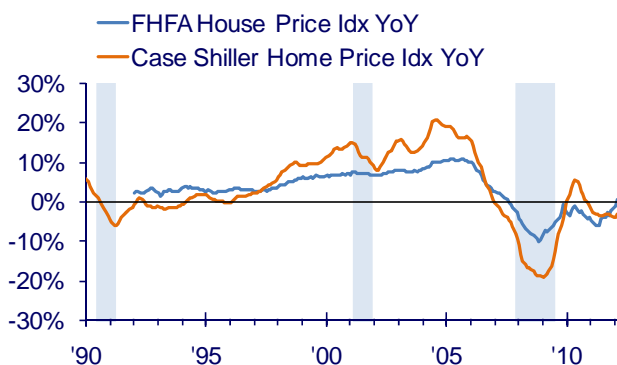
Key Takeaway: The bubble in home prices is largely corrected.

Record Affordability

Price is only one factor in the calculation of home affordability. Since most people finance the purchase of a home, the borrowing cost can be just as important. With mortgage rates at record low levels, the combination of low prices, low mortgage rates, and steady incomes makes housing more affordable than at any time in modern history. The 30-year mortgage rate has fallen from 6.8% five years ago to 4.3% now; combine that with the drop in prices, and the monthly nut for the average family to own a home has dropped by well over 40%. Meanwhile, although the unemployment rate remains high and has only recently begun to come down, at 8.2% it is well below its cyclical peak of 10.0% and overall incomes have still been rising. All of these factors are pulled together in the National Association of Realtors' Housing Affordability Index; it reached an all-time record high in January.

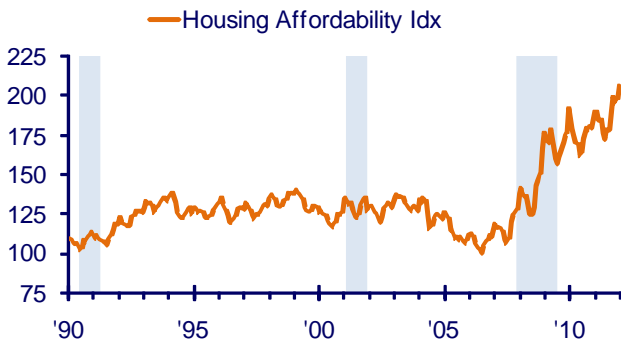
Key Takeaway: The typical American household now has twice the income needed to qualify for the purchase of a median-priced home.

THE ROAD TO RECOVERY



Source: Haver Analytics, Catalpa Capital Advisors

HOUSING AFFORDABILITY



Source: Haver Analytics, Catalpa Capital Advisors

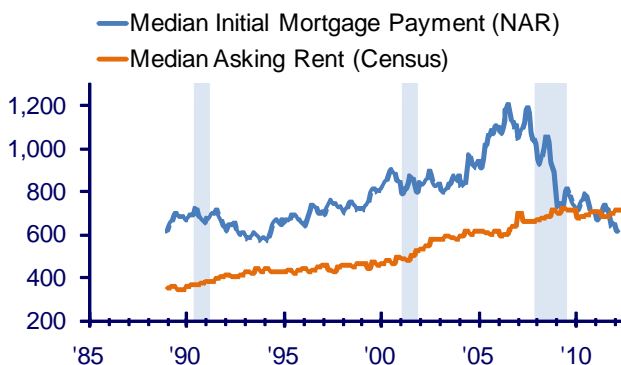
Rent/Buy Tradeoff

While housing affordability has been high and inventories have been lower for some time, several other factors seem to have reached a tipping point. A good reason to believe that the time is ripe for buyers to start to nibble is simple economics. People need a place to live. But they don't need to take on the financial burden of home ownership just to have a place to live. During the prolonged housing downturn, many prospective buyers chose to rent rather than purchase a home that might fall in value.

As rental vacancy rates have fallen, rental rates have risen ... to the point where the tradeoff between renting and buying has shifted in favor of buying.

More recently, as rental vacancy rates have fallen, rental rates have risen to the point where the tradeoff between renting and buying is now shifting sharply in favor of buying. At the peak of the bubble, it cost twice as much in monthly pay-

TO RENT OR BUY



Source: Haver Analytics, Catalpa Capital Advisors

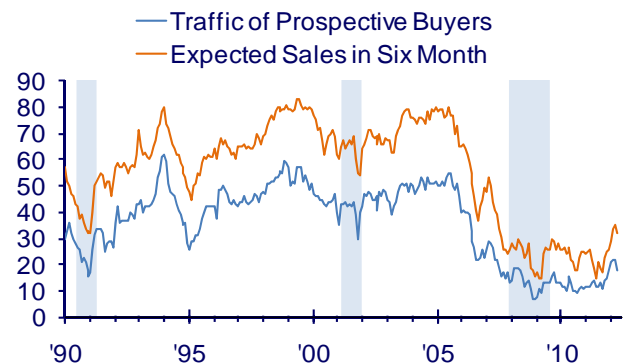
ments to buy rather than rent. But now median asking rents on single family homes are up 20% from early 2006 even as the typical monthly payments on a mortgage have dropped by 44%. According to Trulia, it is now cheaper to buy than to rent in 98 out of the 100 largest U.S. real estate markets.

Key Takeaway: *It is now far cheaper to buy than to rent!*

Buyer Traffic

Each month, the National Association of Homebuilders surveys its members about current housing conditions. The responses are then tallied into an index that is published with Wells Fargo. A reading above 50 indicates that homebuilders rate current conditions as good or fair. The Housing Market Index has been below 50 for nearly six years, a record stretch of homebuilder pessimism. At long last, however, homebuilder sentiment is now improving, with the index doubling

HOMEBUILDER SENTIMENT



Source: Haver Analytics, Catalpa Capital Advisors

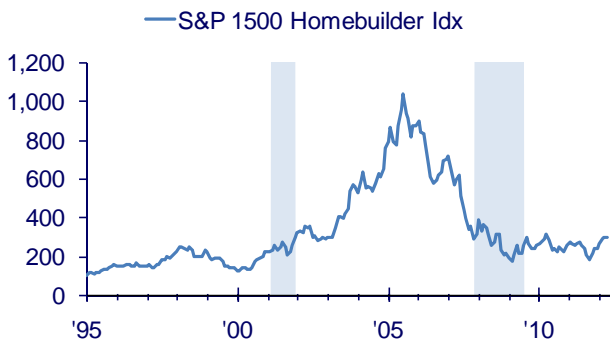
in just the last six months. There have been periodic upticks in this series ever since the bubble burst but nothing of the magnitude now seen in the data. Two of the sub-indexes within the survey are just as striking: readings on the traffic of prospective homebuyers and expectations of sales in six months have also doubled. All of these series ticked down a little in March but the uptrend is clearly intact. The broad surge in homebuilder sentiment could be a harbinger of a similar acceleration in housing starts that begins to unfold through the rest of this year.

Key Takeaway: *Buyers are looking in the market.*

Homebuilders Rally

Over the past six months, stocks of homebuilders have rallied strongly. The S&P 500 Homebuilder Index, for example, has doubled since October 3, 2011. While equities are usually thought of as a barometer of the fundamentals, in this case the share prices seem to have been more of a coincident indicator, peaking in 2005 around the same time that the housing data rolled over, hitting an absolute low in late 2008, and reg-

HOMEBUILDERS



Source: Haver Analytics, Catalpa Capital Advisors

istering a more recent low last Fall. The recovery is not just a market effect, as the homebuilders have outperformed the broader stock market by over 70%.

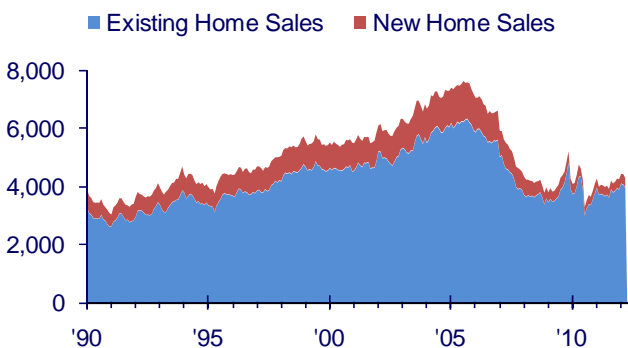
Key Takeaway: *Stock investors see a turn developing.*

Existing homes sales have soared by 32.3%.

Sales Already Rising

Although it would be hard to tell from the past year's headlines, home sales in the aggregate have already bottomed out. In fact, they hit a low point a year and a half ago and have already risen dramatically. But that is the sum of existing and new home sales, and there is a huge divergence between the two. Existing homes sales have soared by 32%, from the low of an annual rate of 3.4 million units in July 2010 to the most recent reading of 4.6 million. Such resales are still well below the bubble peak of 7.2 million in September 2005 but are only about a million short of the more normal level of their pre-

HOUSE SALES



1,000s saar. Source: Haver Analytics, Catalpa Capital Advisors

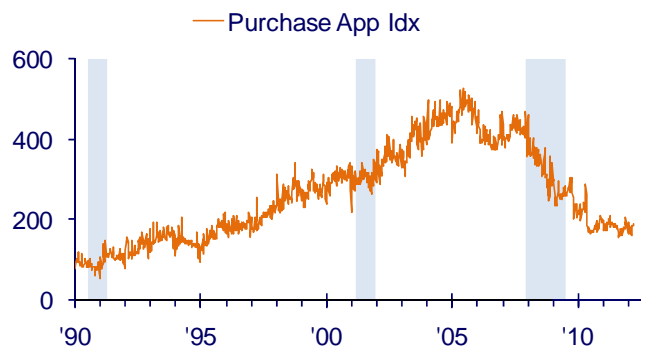
bubble trend. New home sales, in contrast, hit an annualized peak of 1.38 million units in July 2005 and then sank steadily to the 300 to 400 thousand range, where they have been stuck for the past three years. But data like the homebuilders' survey suggest that new home sales could soon pick up, just as existing sales already have.

Key Takeaway: *Existing home sales are already strong and an upturn in new home sales could be imminent.*

Mortgage Applications

The Mortgage Bankers Association compiles a weekly index of applications for mortgage applications, including to refinance an existing mortgage or to take out a new mortgage. It is the new applications for purchases that matter here. Just like the trends in buyer traffic that the homebuilders have reported, purchase applications peaked in the summer of 2005 then

MORTGAGE APPLICATIONS



Source: Haver Analytics, Catalpa Capital Advisors

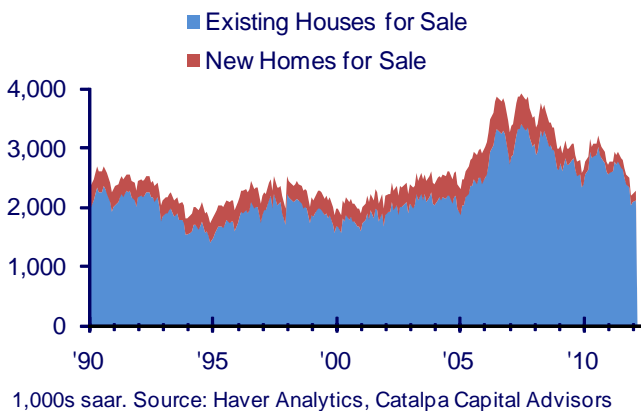
collapsed. Over the past two years they have been slowly but steadily building a base, while clearly lagging the strength in existing home sales, partly because of an increase in alternative financing and particularly cash sales, which are running about a third of the total.

Key Takeaway: *Mortgage applications are building a base.*

Inventory Depletion

The inventory of unsold housing stock has fallen to the point where the number of existing homes available for sale is back to where it was before the boom and the supply of new homes is lower than at any time since the data started being compiled. Existing home inventories are down 39% from their peak of 3.4 million units in July 2007 to 2.1 million as of March 2012, which is about where they were a decade ago. Meanwhile, there are currently only 144,000 new homes for sale in the U.S. Housing economists often report this data in terms of month's supply, or the level of inventories divided into the latest monthly sales. The months-supply ratio for existing homes is down by roughly half from the July 2010 peak of 12.1

VISIBLE INVENTORY



to 6.3 as of March 2012. The months-supply ratio for new homes is down from 12.2 in January 2009 to 5.3 today.

Key Takeaway: *Visible inventories will be inadequate*

The fear that the wholesale dumping of the shadow inventory onto the market will depress prices completely ignores the fact that there is also a shadow or “pent-up” demand.

Shadows Everywhere

Skeptics claim there is a continuing glut and point not just to inventories of unsold housing stock but also to shadow inventories. By definition, any shadow inventory will be impossible to quantify in concrete terms and different sources have widely different estimates of what the total might be, rendering the “shadow” argument hard to pin down. At an extreme, one might say, for instance, that every homeowner in America will to put their house up for sale as soon as there are signs of a bid. That would mean over 70 million new listings. Many less absurd but nonetheless frightening assertions about shadow inventories abound, with data of decidedly uneven quality.

One of the more respected series is compiled by CoreLogic. In their tally, there are three components to the total shadow picture: real estate actually now owned by banks but not yet listed for sale, real estate in foreclosure, and severely delinquent mortgages. The bearish argument is that all of these homes are poised to come pouring into the market, particularly in the wake of the recent settlement between mortgage issuers and many of the state attorneys general.

However, this shadow inventory line of argument has several flaws. First of all, there is always some level of “shadow inventory” and the estimate of it does not have to go to zero. A look back at the pre-crash levels shows a “normal” shadow inven-

tory at around 400,000 units. If the recent numbers dropped back to the 2005 level, it would mean, at most, 1.2 million units getting dumped on the market. But even that is an overstatement because it ignores the fact that some amount of the delinquent mortgages will be “cured” and new programs such as the recently announced Bank of America “Mortgage to Lease” are increasingly putting these properties into rental pools where they will be off the market indefinitely. Moreover, the Treasury and the FHFA may soon reach a consensus on a new program, in which the Treasury would help underwrite principal writedowns on mortgages that are deeply underwater. Most important, the fear that the wholesale dumping of the shadow inventory onto the market will depress prices completely ignores the fact that there is also a shadow or “pent-up” demand.

Key Takeaway: *Inventories are depleted.*

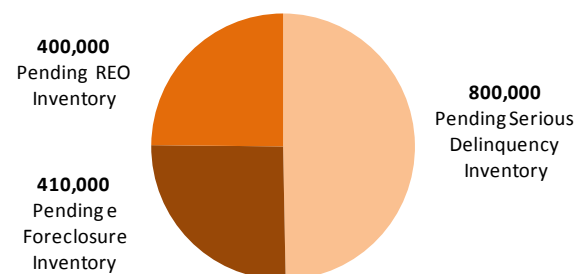
Shadow Demand

The Commerce Department tracks the construction of new privately owned houses in the U.S. During the bubble, housing starts peaked at an annual rate of 2.3 million units and then plunged 57% before hitting a cycle low in March 2009. Since then, starts have mostly been bouncing along the bottom and just recently began to climb. The latest reading is up 34% from its low but still down 42% from its peak. The single family sub-series was up smartly in the latest reading.

Prior to the bubble and the crash, housing starts in the U.S. oscillated around a long-term average level of around 1.5 million units. Because about 250,000 units are lost each year to natural disasters, fires, teardowns, fall downs, etc, the net additions to the housing stock have been more like 1.2 million per year – roughly in line with the natural demand that comes from long-run population growth and household formations. During the bubble years, 2.2 million units over this trend were built. But since the crash, there has been a cumulative 3.5 million unit gap below that long-term trend, a net shortfall that can be thought of as pent-up demand. Moreover, no one, including Catalpa, believes housing starts will surge back to

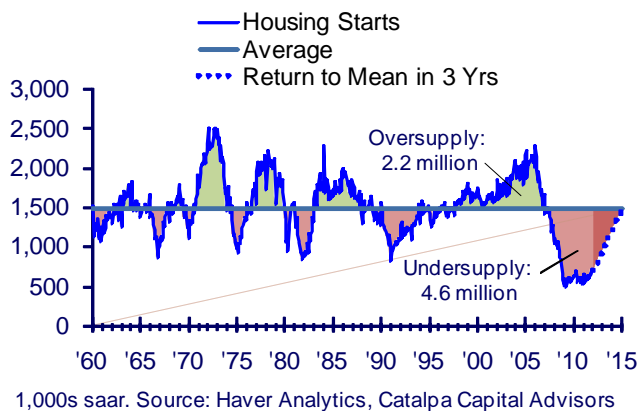
"SHADOW" INVENTORY

Estimated U.S. houses yet to enter the market, thousands of units



Source: CoreLogic, Catalpa Capital Advisors

HOUSING STARTS & PENT-UP DEMAND



the long-term average tomorrow. A recovery back to trend could take at least three years, which would add another 1.1 million units, for a total of 4.6 million units. Thus, the cumulative shortfall of 2.4 million units is twice the size of the “shadow” inventory that lurks in the headlines. It all adds up to a potential shortfall of residential housing that will impact the supply-and-demand dynamics for existing housing dramatically. Perhaps that is why housing permits have risen 27% in the past six months.

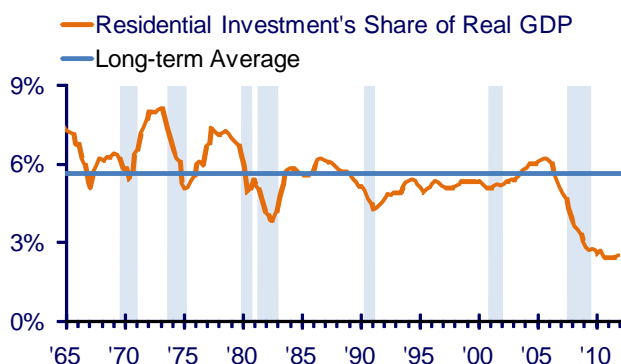
Key Takeaway: *Shadow demand cannot be ignored.*

Even if the recovery process is spread out over another three years, residential investment would still add over 1% to growth per year.

ECONOMIC IMPACT

Housing has historically been among the first major sectors to recover after the end of a recession. In a typical downturn, slower economic growth leads to a fall in demand for credit,

HOUSING AND THE ECONOMY



so the central bank cuts interest rates to revive lending activity. As mortgage rates come down, prospective homebuyers begin to nibble and homebuilders start to build. The subsequent rise in housing activity helps lead the economy into a new growth phase.

Since 1950, the economy has grown at an average annualized real rate of 4.8% in the first ten quarters of a new economic expansion, with housing accounting for about 0.8 percentage points of total growth. In the first ten quarters of this cycle, real GDP grew an average of just 2.4%, partly because a key piece of recovery was missing: the net contribution of residential investment to this cycle has been exactly zero.

This time has been truly different. The financial crisis was so severe that credit was hard to find even as the economy bottomed out in mid-2009. The Fed had turned highly accommodative but house prices kept falling and unemployment continued grinding higher. In that inhospitable environment, buyers were not to be found and banks were in no mood to add new mortgages. Efforts to stimulate activity failed to have lasting impact, such as the government's First-time Home Buyers Tax Credit. As its expiration approached in 2009, home sales temporarily surged by borrowing future housing activity from the fourth quarter and beyond; after expiration, all of the housing data subsequently rolled over to new lows. But in the past six months, building permits, which tend to lead starts by several months at turning points, have risen some 40%, suggesting an upturn in long-moribund construction is imminent.

The delayed recovery of housing could deliver a huge boost to GDP growth over the next couple of years. For instance, over the long run, residential investment has accounted for an average of close to 6.0% of total economic activity; right now it is just 2.5%. If housing returns just to its long-term average share of GDP, it will add over 3.0% to the level of GDP, roughly consistent with housing starts getting back to their long-term trend of 1.5 million per year. Even if the recovery process is spread out over another three years, residential investment would still add over 1.0% per year to growth. And these admittedly superficial calculations ignore the peripheral effects of stronger housing activity.

The indirect impact of housing recovery on the economy can be just as significant. When times are good and jobs aplenty, for instance, construction workers buy pickup trucks. More jobs also means more spending in stores, restaurants, and so on. Entire communities are affected. A return to pre-bubble levels of employment in residential construction alone could push the unemployment rate down with additional positive feedback effects on consumer and business sentiment. Altogether, our best estimate is that the housing upturn will add 1.5 percentage points to annual GDP growth over the next several years. If the rest of the economy merely continues along as it has, in other words, there could be a multi-year acceleration in the growth rate to the 3.5% to 4.0% range.

SOURCES OF U.S. GROWTH

First 10 quarters of real growth in full U.S. cycles since 1960, quarterly saar. Catalpa estimates.

	Last 50 Yrs	This Cycle	Next 3 Yrs
Residential Investment	0.8%	0.0%	1.0%
Rest of the Economy	4.0%	2.4%	2.4%
Total GDP Growth	4.8%	2.4%	3.4%

Source: Haver Analytics, Catalpa Capital Advisors

PRICE RECOVERY IMPLICATIONS

The stronger data on housing sales and homebuilding is being increasingly recognized by the media and the markets. House prices are another story. The consensus view is that a recovery in house prices remains on the distant horizon. Indeed, some experts are still predicting further declines – some quite dramatic. Zillow, a widely-followed website for housing data and commentary, recently forecast national house prices would decline another 3.7% by the end of the year. Noted

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SELLERS ARE ASKING FOR MORE

DISCERN/Altos 20-City Composite Median Asking Price for Single Family Homes, Weekly Data, \$1,000s



Source: DISCERN and Altos Research, Catalpa Capital Advisors

economist Gary Shilling sees another 20% decline ahead and no recovery until 2015.

Catalpa disagrees. Not only do we see an imminent strong pickup in home sales and new construction, but our own view is that house prices have bottomed and will start going back up before the end of the year and then rise significantly over the next three years.

A rapid and unexpected rise in house prices could be a big boost to the economy on multiple fronts. It is estimated that some 11 million households with home mortgages own homes that are worth less than the mortgage principal owed. Many have been living with this “underwater” condition for going on five years. The psychological boost of having positive – or even less negative – home equity would be dramatic. Financial institutions still holding debt instruments linked to home values would be bailed out and their own balance sheets repaired. Even the Federal Government still stuck with the Fannie Mae and Freddie Mac obligations would see its finances improve.

Just how high home prices can rise is hard to say but the costs of construction can be suggestive. Wages and raw materials account for about three-fifths of the total cost of a new house; both of those components have gone up, not down, over the past five years. Land accounts for about another fifth; given the plunge in house prices, the implied price of the land underneath has plunged. In the meantime, however, land values in farming have soared: Over the past 10 years, the average price of an acre of Iowa farmland has more than doubled. Admittedly, an acre of tillable land on an Iowa farm and a vacant lot in a New Jersey suburb are not fungible. But there is clearly a disconnect.

We do not know how soon prices will start to recover or how fast they will rise. Our best guess is that the rise will commence this year and gain momentum in 2013. Just a 10% price recovery could have a powerful effect on consumer and financial institution balance sheets. Already there is evidence of an upturn in numerous local markets. A new index from DISCERN and Altos Research tracks asking prices and shows a clear upturn since the start of the year. Many locales are beginning to report bidding wars erupting. We believe these anecdotes and sub-index data confirm our conviction that a turn in residential real estate prices is at hand.

In summary, home prices have stabilized. Homebuilders are getting more optimistic. The homebuilder stocks are outperforming the broad market. The supply of houses is extremely low as shadow demand has swelled and actual demand is picking up. Add it all together and the next crisis in U.S. housing may well be a SHORTAGE of homes.