The U.S. housing recovery: Understanding the dimensions and implications

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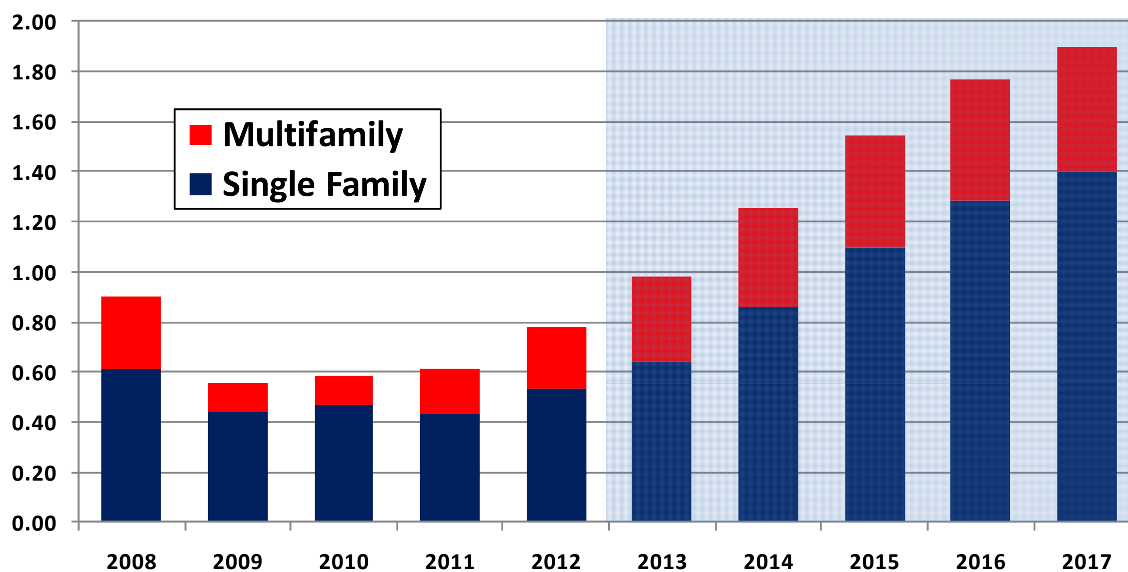
I. Executive summary

The housing industry is recovering from the most serious decline in starts since the Great Depression. After several years of extremely low housing starts, the outlook for 2013-17 is very positive. Forest Economic Advisors, and most other housing analysts, believe housing starts will approach 1.5 million units by 2015 and could even approach 2 million by 2017-18 (see Figure 1).

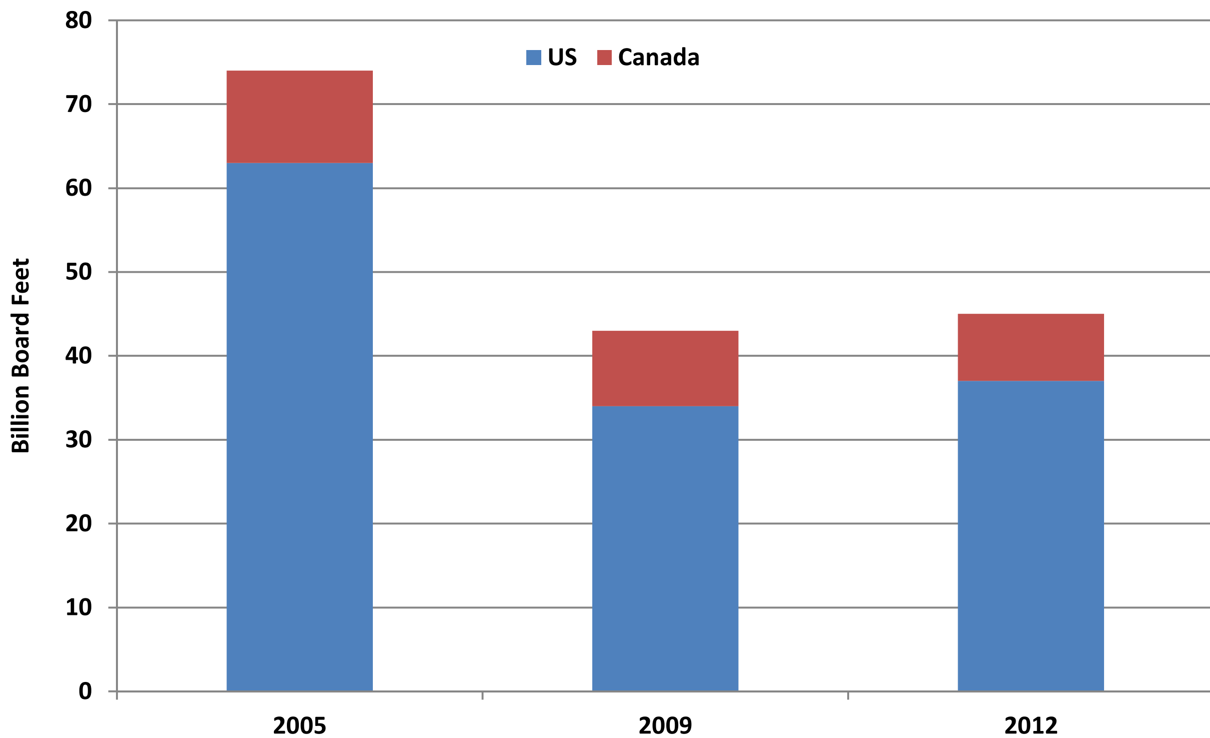
Figure 1: Housing starts projections



Source: Forest Economic Advisors

Still, despite low interest rates and record levels of affordability, the recovery has been painfully slow, particularly for single-family units which are critical to the demand for timber. Unlike previous housing downturns, this one was not caused by tight monetary policy (i.e., high interest rates), but by easy lending standards and a housing price bubble that fueled excess construction of single-family homes and condo units. By 2008, the excess inventory of vacant housing surged to 2.5 million units. The accompanying drop in single-family housing starts from 1.7 million units in 2005 to 0.4 million units in 2009 was the primary reason North American domestic lumber demand fell from 75.8 billion board feet (bbf) to 42.3 bbf (see Figure 2). Since a single-family unit uses about 15,000 board feet of lumber, the decline in starts equated to a drop of 26 bbf, or 77% of the fall-off in lumber demand. (Note: A multi-family unit consumes about 5,000 board feet per unit.)

Figure 2: North America domestic lumber demand



Source: Forest Economic Advisors

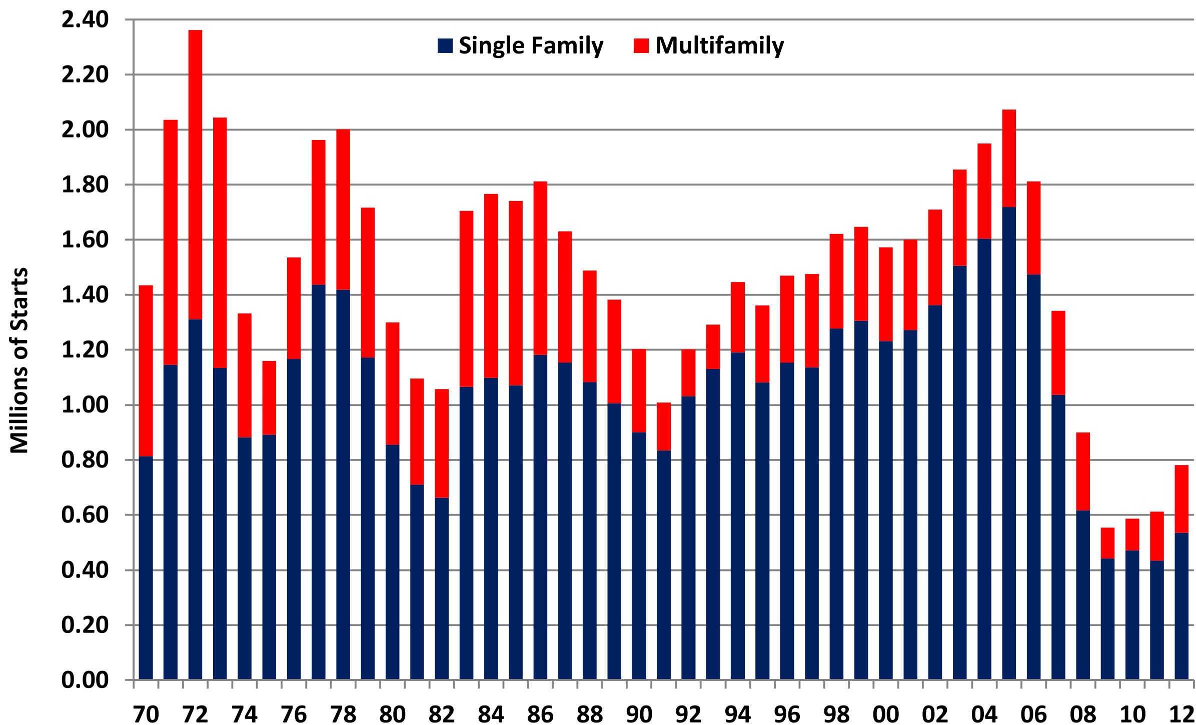
Importantly, the expected housing recovery will not be driven by interest rates, but by a rebound in household formations (which depends on employment growth) and how quickly excess vacant housing units are occupied. Some regional markets are already experiencing a shortage of housing units for sale.

Yet a number of uncertainties could temper our optimistic outlook, including domestic policy issues or international events with the ability to abort the U.S. economic recovery. Younger households that purchased during the boom and then went into foreclosure might be constrained in their ability to buy another home. Homeowners who are delinquent or owe more on their home than it is currently worth could also detract from single-family home ownership. Questions exist, too, over the type of units (single vs. multi-family) that will be needed given the demographic profile, poor employment situation for younger adults, and more stringent lending standards.

II. Background and key issues

A quick look at the history of housing cycles and their key drivers will help us to better understand the future potential as we recover from this downturn. As Figure 3 shows, housing start cycles vary in duration and amplitude. After the 1990-91 downturn, housing starts saw steady growth for 15 years. Aggressive Federal Reserve action after the dot-com bust in 2000-2002 kept housing healthy. Then a combination of events fueled the surge in single-family and condo housing demand and prices for the next four years. Single-family starts averaged 1.53 million units during 2002-2006, while the surge in condo units helped to fuel a jump in both the number and size of multi-family units built. All told, housing starts hit 2.1 million units in 2005, the best year since 1973.

Figure 3: Housing starts history

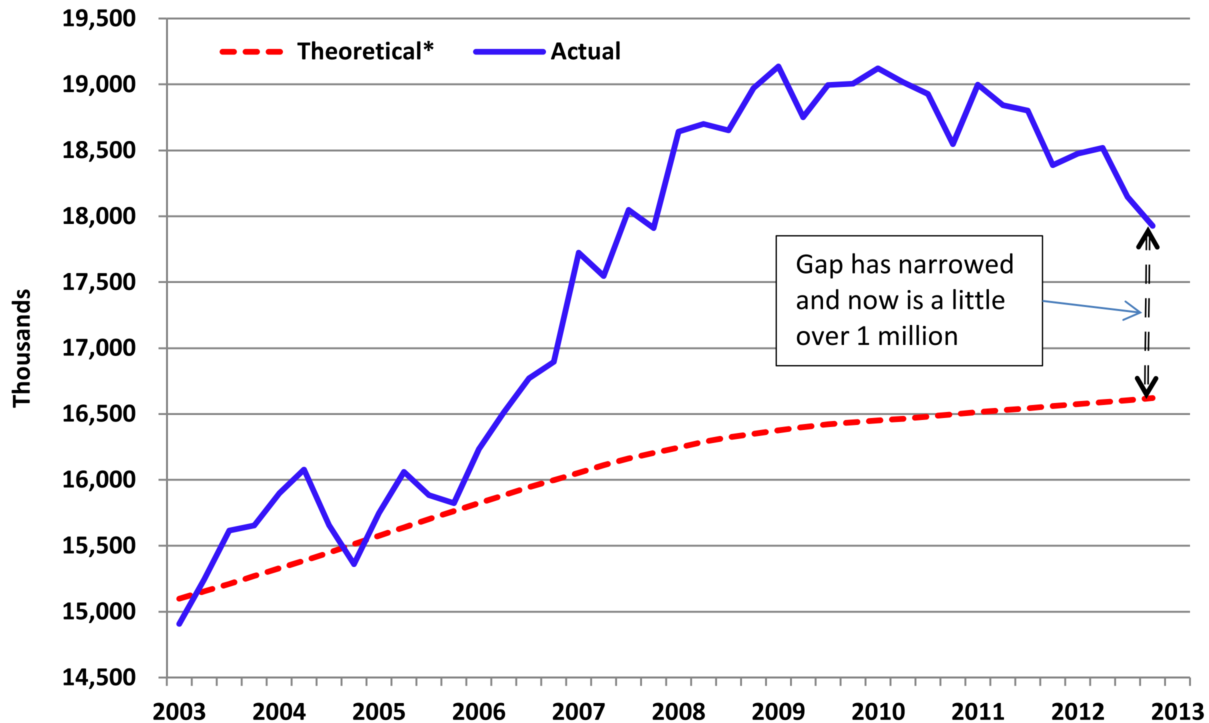


Source: U.S. Census Bureau

A variety of factors led to the inventory glut that emerged after 2006. By one measure (Figure 4), excess vacant stock surged to nearly 2.5 million units by 2008. (Historically, about 12.5% of the overall housing stock is vacant to accommodate relocation and transactions, represented by the "Theoretical" line in Figure 4.) The underlying causes included a decline in employment and, thus, in household formations; falling house prices; a slow decline in housing starts during 2006-7; and a surge in foreclosures. As with

any product, the need to produce new units is constrained when excess inventory exists. On the other hand, production can be expected to rebound after the excess inventory is eliminated.

Figure 4: Excess vacant stock

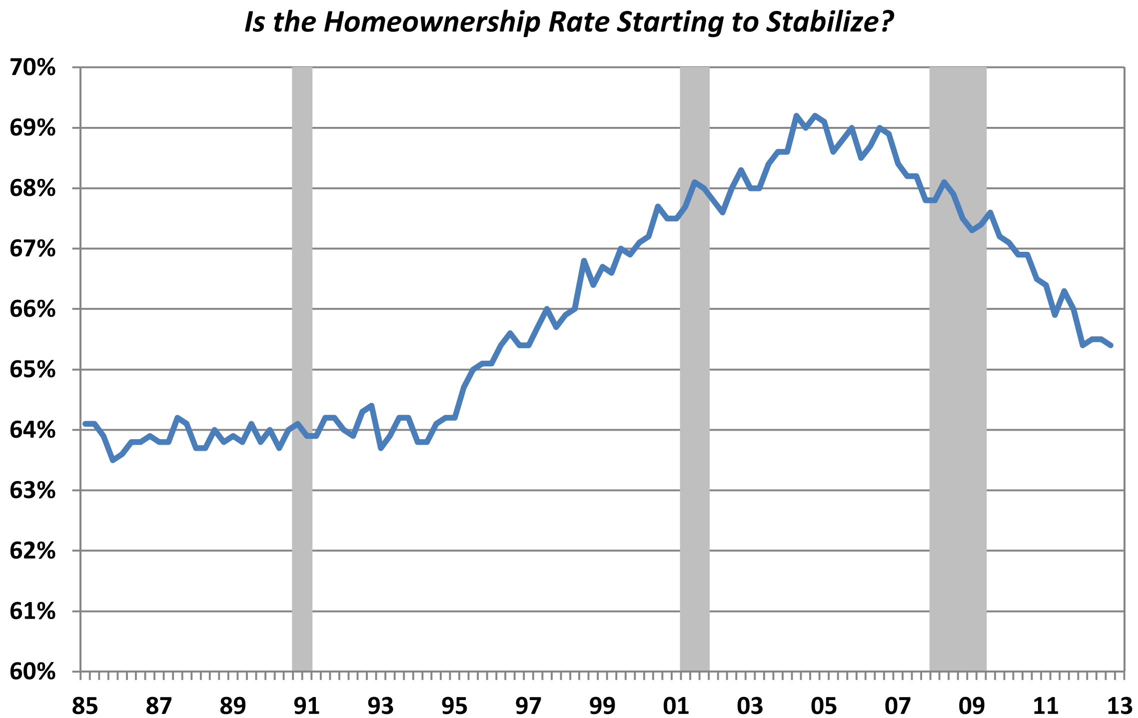


Source: U.S. Census Bureau / Forest Economic Advisors

Ownership is another key issue when it comes to understanding the boom-bust cycle of housing over the years. The level of home ownership became increasingly disconnected from basic demographic drivers and more influenced by abnormal housing market dynamics. As this happened, demand surged, fueling overbuilding.

As Figure 5 illustrates, the home ownership rate – which averaged almost 64% for most of the post-war period, approached 70% in 2005, and has since been in decline – is now near 65%. Some of this increase was expected due to the aging of the baby boom population (Table 3), as they are more likely to own than rent (table 4). But other, non-demographic factors also contributed to this increase, including easier lending standards by Fannie Mae and Freddie Mac, and the increase in securitizations in the mortgage market. As a result, a large number of people gained ownership with little or no down payment, and a questionable ability to afford houses over the long term.

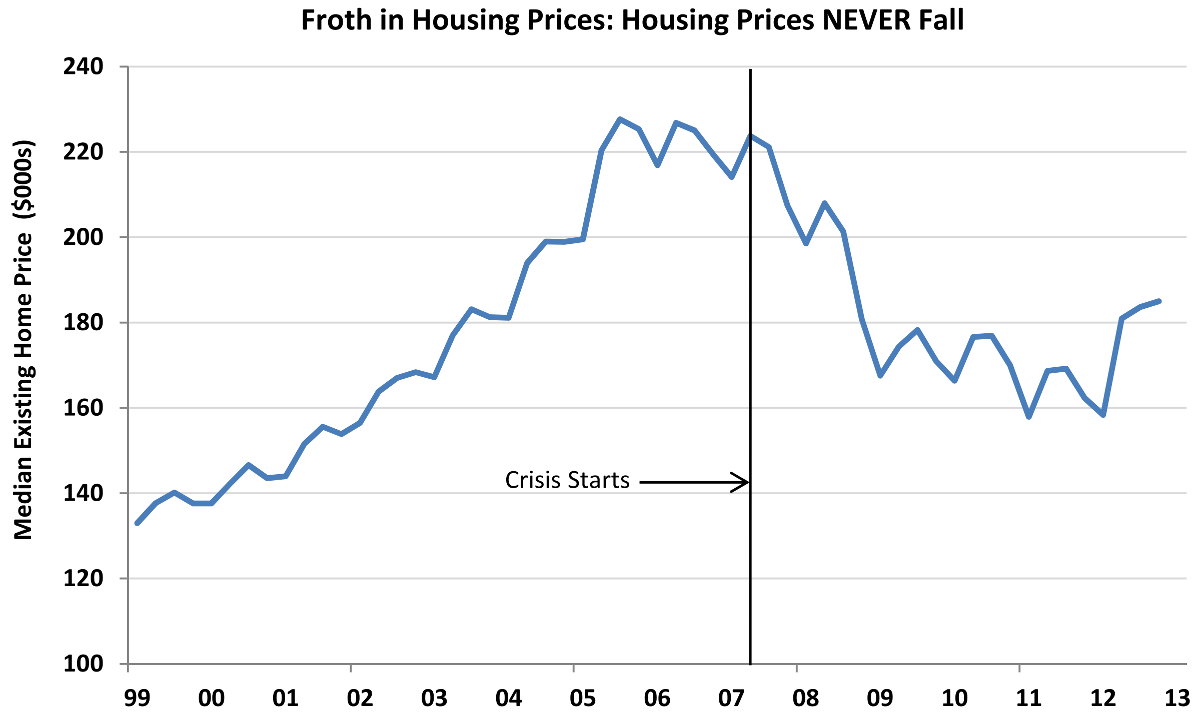
Figure 5: U.S. home ownership rates



Source: U.S. Census Bureau

Expectations of higher house prices also fueled the desire to own a home (figure 6). Housing became an investment which many believed had no risk. For instance, in California during 2004, prospective home buyers expected home prices to increase 22% per year for the next five years. Banks became eager partners – until lending became unhinged from reality. The issuance of credit default swaps surged and further supported inflated home values. The credit rating agencies rated very risky sub-prime loans as AAA quality when packaged in mortgage pools. By 2005, the mania was in full bloom and no less an authority than Federal Reserve Chairman Alan Greenspan said he didn't believe housing prices would fall – referring instead to the "froth" in the market. Indeed, they hadn't declined since World War II.

Figure 6: Housing price declines triggered financial crisis



Source: National Association of Realtors

When housing prices *did* fall they were a key part of the financial crisis that began in 2007, culminating in the September 2008 collapse of Lehman Brothers and panic in the financial markets. The financial crisis led to the Great Recession and the massive job losses in 2008 and 2009.

III. The housing outlook: correction process nearly complete

Forest Economic Advisors expects sustained and accelerating housing start activity during the 2013-17 period, driven by economic growth and falling unemployment as shown in Table 1. This will push household formations back to or above trend levels. Interest rates are expected to move higher after 2015, but should not significantly affect affordability until 2016-7. Lending standards are expected to ease, though they currently remain an uncertainty.

Table 1: Economic outlook assumptions

FEA Economic Outlook

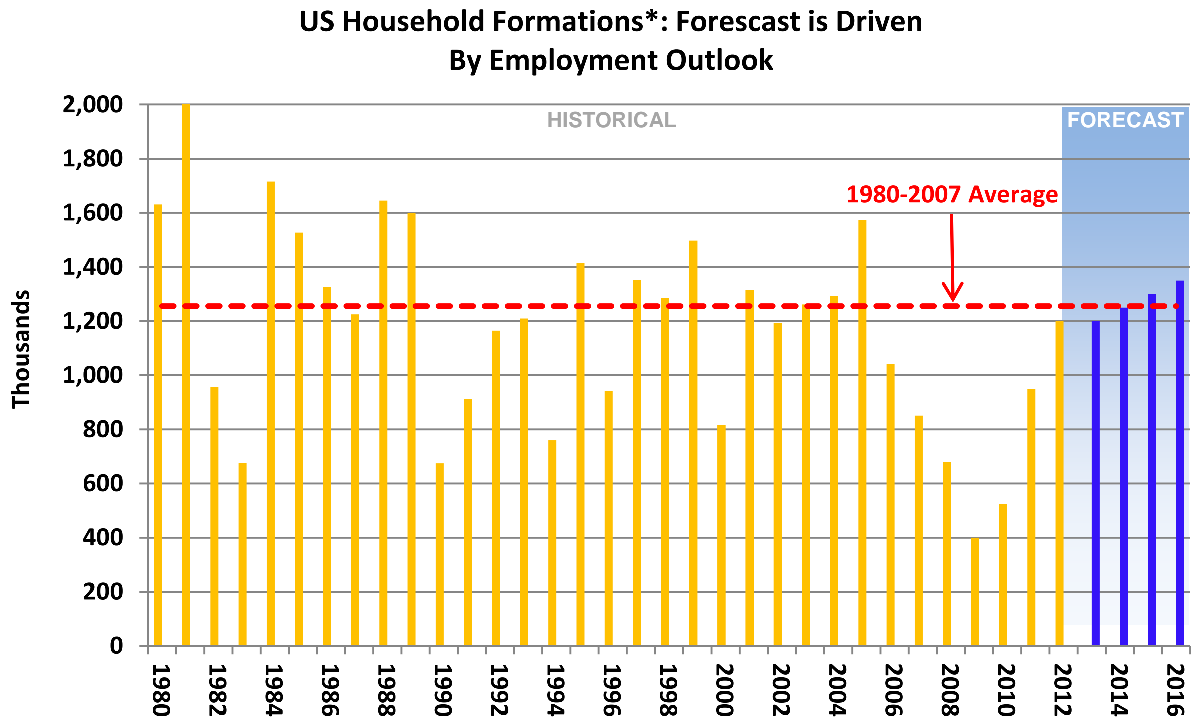
	2011	2012	2013	2014	2015	2016	2017
Variable (%)							
Real GDP	1.8	2.2	1.7	3.2	3.2	4.0	4.4
Unemployment Rate	8.9	8.1	7.8	7.5	7.2	6.7	6.0
30-Year Mortgage Rate	4.5	3.7	4.0	4.9	5.4	6.4	6.7

Source: Bureau of Economic Analysis, BLS, Forest Economic Advisor Projections

Household formations, which have already rebounded from cyclical lows (see figure 7), will continue to improve in sync with the employment situation. With improved employment, it is reasonable to expect a strong rebound in household formations, especially for younger adults. Recent employment reports have been promising, with employment rates for younger adults rebounding. The sharp decline in annual growth of households was primarily in the younger age groups, and now represents a form of pent-up demand since they are expected to form households as the employment situation improves.

Given the economic outlook, household formations should be near or above the historic average in the next five years, as shown in Figure 7 (Note that 1.3 million household formations implies a housing demand of 1.7-1.8 million housing units, since another 300,000-400,000 units per year are needed for replacement, second homes and inventory needs. The longer term trend is shown in Table 5).

Figure 7: Household formation forecast



Source: U.S. Census Bureau

The rebound in household formations, plus the current low level of starts, has already had an appreciable impact on excess vacant inventory, which is declining rapidly. As seen in Table 2 (and in Figure 4), vacant inventory stood at almost 1.1 million units at the end of 2012, compared to 2.5 million units in the 2008-10 period. Given our household formation and housing start forecasts, Forest Economic Advisors expect the inventory problem to be effectively eliminated by the end of 2013, though a few regional problems may persist.

Table 2: Inventory correction

Inventory Will Be Completed in 2014-15 Under Base Case Forecast

	2010	2011	2012	2013	2014	2015
HH Formations--	525	950	1200	1,200	1,250	1,300
Plus: Removals	300	300	300	300	300	300
Plus: New Home Inventory Change	-100	-35	0	25	50	70
Equals: Housing Demand	725	1215	1500	1525	1600	1670
Less: Housing Starts	590	610	780	980	1250	1550
Equals: Change in Existing Home Inventory	-135	-605	-720	-545	-350	-120
Year end excess	**2400***	**1795**	**1075**	**530**	**150**	**60**

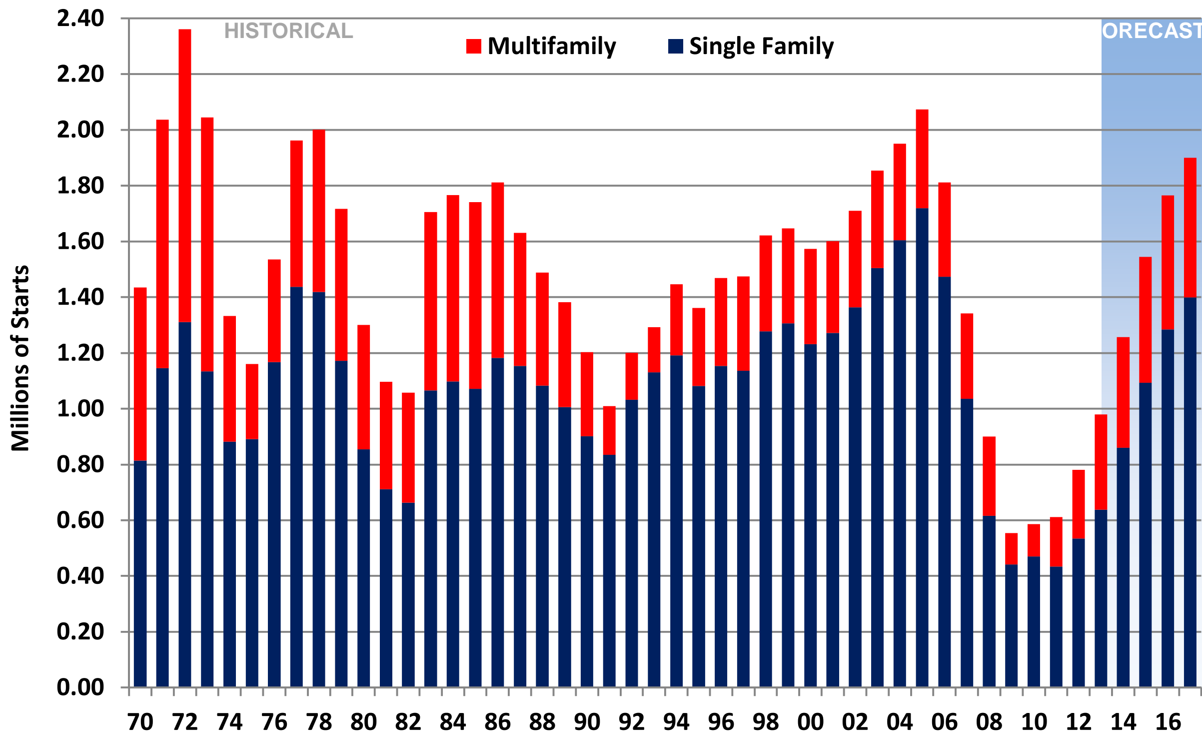
Source: U.S. Census Bureau, Forest Economic Advisors Projections

Recent improvements in housing prices (Figure 6, above; and Figure 11) underscore how dramatically the situation has improved for single-family housing. One development that put a floor under home prices was the number of homes purchased by investors and converted to rentals. As home prices rise and new foreclosure applications decline, housing will be less attractive for investors. If so, distressed sales should also fall and boost house prices, as well.

The vacancy rate is no longer a problem for rental units, either. Rising rents and low interest rates are making multi-family unit investments very attractive and should contribute to strong growth in multi-family projects in certain regions during 2013. In some markets (such as Seattle), the concern now is overbuilding and the risk of a surge in vacancy rates and falling rents.

Outlook for housing starts. As Figure 8 shows, Forest Economic Advisors expects housing starts to continue their recovery through 2017—possibly approaching 1.9 million units in that year. Driving these encouraging numbers will be the rebound in household formations, the assumed replacement demand for 300,000 units, and the need to rebuild inventory of units for sale. Inventory levels of new housing units are at a historic low point.

Figure 8: Forest Economic Advisors housing start outlook



Source: U.S. Census Bureau, Forest Economic Advisors Projections

Our outlook calls for a relatively healthy rebound in single-family starts. The share of single-family starts out of total starts is projected to return to 75% by 2016, fueled by the growth in households with owners aged 25-34 (see Table 3). The desire to own a home moves sharply higher for older households (see Table 4) as couples have children and want to be near good schools.

Several factors could constrain the single-family rebound, however. First, although there will be strong growth in households with owners aged 25-44,it is nearly offset by the significant decline in the 45-54 age group (refer to Table 3). This age group was crucial to the trade-up market and desire for bigger housing units during the boom.

Second, nearly all of the net growth in households is driven by the over-55 age group, especially over-65. Will this group still want bigger houses? Will it move to the Sunbelt? In our assessment, and that of many analysts, Forest Economic Advisors does not believe the dramatic aging of households will be that significant a driver of housing demand until after 2020.

Finally, the financing market for homes is also much different from the earlier period. Now, it is much more difficult for prospective homeowners to qualify for a loan, with a meaningful down-payment typically required.

Table 3: Household growth by age group

Household Growth by Age Group

(000 households)

Age Group	1990-00	2000-10	2010-20
Under 25	739	373	(28)
25-29	(903)	926	480
30-34	(942)	(296)	1,315
35-44	3,400	(2,436)	1,018
45-54	6,413	3,945	(2,369)
55-64	1,063	6,795	3,138
65+	1,558	3,526	8,389
Total	11,358	12,833	11,944

Source: U.S. Census Bureau

Looking ahead, the aging of the population will keep overall ownership high, since the ownership rate of the over-55 age group is near 80%, as seen in Table 4. But the current overall level masks the dramatic decline in younger age groups. The base case outlook assumes that younger households will be major buyers. A concern is the whopping decline in the ownership rate for younger households. It has dropped by 14% (from 43% to 37%) [check nos.; this is a 6% drop] since 2005. While the home ownership growth in the younger age groups has declined dramatically in the last seven years, it is expected to rebound. Every age group, except over-65, has a lower ownership rate today than it did in 1995.

Unlike the go-go period of 1995-2005, the average home owner has very little equity to use for trading-up. This is also where the "shadow" inventory rears its head. More specifically, will the nearly 10 million households with negative equity in 2012 (according to Core Logic) even be able to sell? Higher home prices are causing the shadow inventory to contract rapidly.. And like vacant inventory, the shadow inventory is expected to disappear by 2014 if house prices continue to move higher.

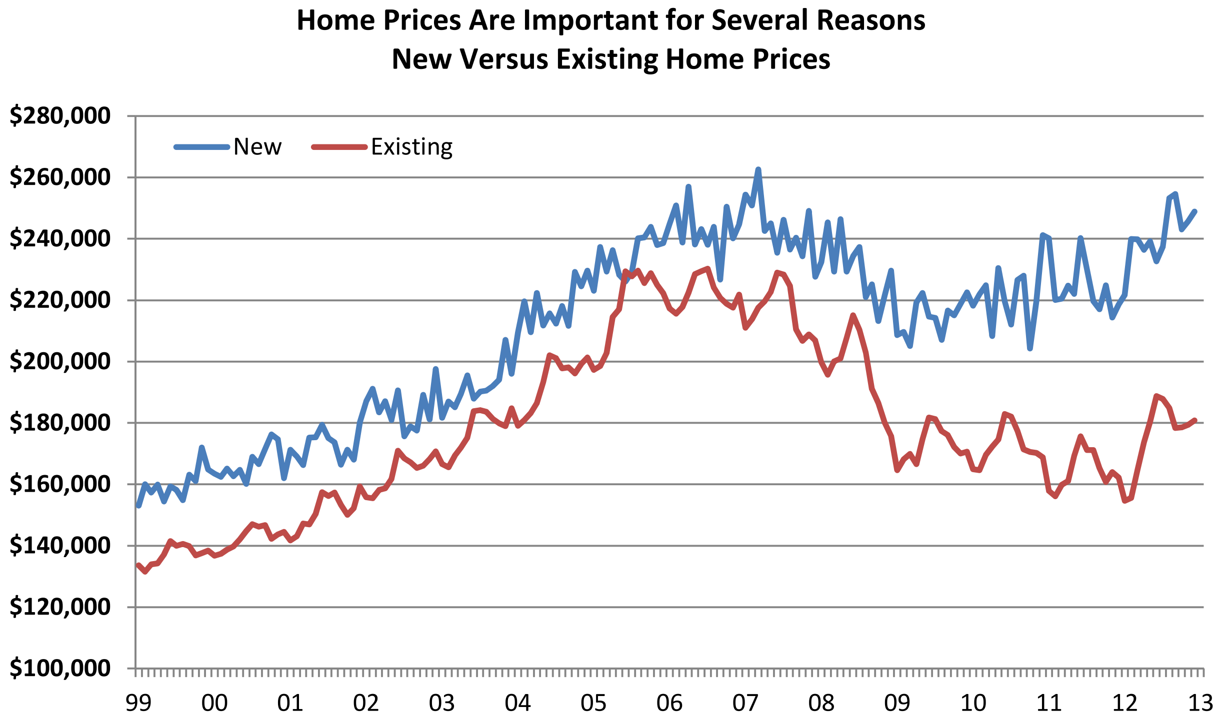
Table 4: Ownership rate by age group

Ownership Rate by Age Group (%)					
For	**1995**	**2000**	**2005**	**2010**	**2012**
Below 35	38.6	40.8	43.0	39.1	37.1
35-44	65.2	67.9	69.3	65.0	61.5
45 to 54	75.2	76.5	76.6	73.5	71.7
55 to 64	79.5	80.3	81.2	79.0	77.4
65 years +	78.1	80.4	80.6	80.5	81.1
OVERALL	64.7	67.4	68.9	66.9	65.4

Source: U.S. Census Bureau

The current dynamics --tougher lending standards and the need for a down-payment-- suggest that younger families might be forced to buy an existing home rather than a new one, because existing homes are much cheaper. New homes reflect construction costs, while existing homes trade at whatever the market will pay. As seen in Figure 9, the gap is at a near-historic high of $70,000 (it was $20,000 in 2005).

Figure 9: new vs. existing home prices



Source: National Association of Realtors, Dept. of Commerce, U.S. Census

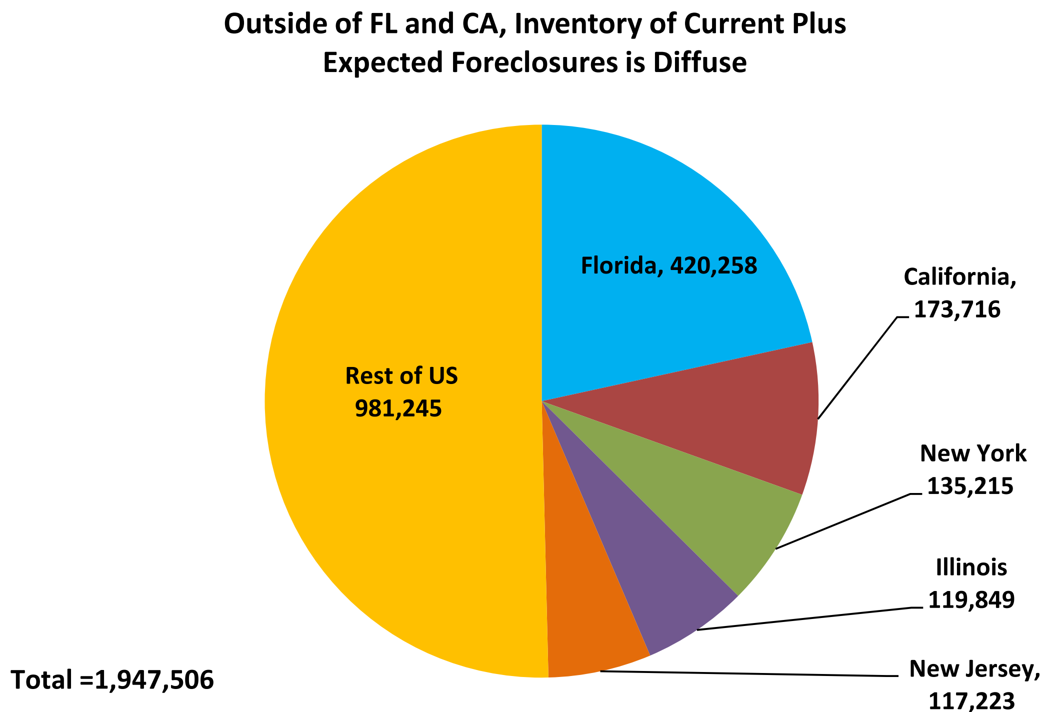
IV. Regional housing issues: rebound not uniform

In truth, housing is really a local market issue, not a national one. This was certainly true during the boom period when home prices were exploding in California and Arizona, but only growing slightly above inflation in Texas. The housing rebound will vary considerably by region, depending on:

- employment growth
- inventory of unsold existing units
- size of foreclosed and distressed units
- percent of owners in negative equity positions

As Figure 10 illustrates, nearly 50% of the foreclosure problem exists in just five states. One reason is the huge difference in foreclosure laws from one state to another. For instance, it takes 97 days to process a foreclosure in Texas, but over 800 days in Florida.

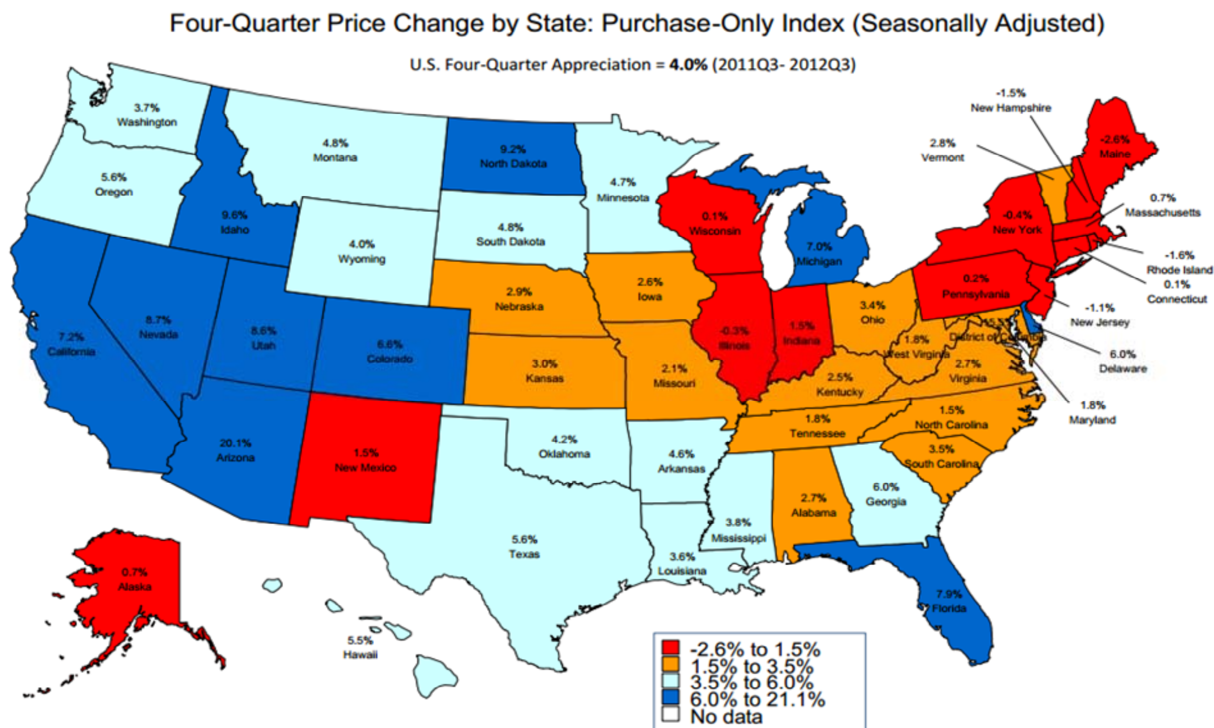
Figure 10: Foreclosures by region/state



Source: Mortgage Banker's Association

In addition, housing prices are rebounding at different rates from one region to the next. For instance, prices in Arizona are up over 20% during the past year, while in other states like Texas they're up only 6%. The divergence of the price recovery reflects, in part, the magnitude of the price cycles in various states. Because prices only declined 5% in Texas they're now near the peak levels of 2005. In Arizona, prices fell 45%, so despite the 20% increase they're still 22% [25%?] below peak levels. Texas start levels are also strong since employment is booming in Texas. A recent *Wall Street Journal* article found that six of the 14 metro markets in the U.S. where employment was back to 2006 levels were in Texas.

Figure 11: Map of regional house prices



Source: Federal Housing Finance (FHFA)

V. Plausible alternative scenarios

Because there is no clear historic precedent on which to model a forecast for the current period, it is necessary to introduce some plausible scenarios. The good news is that the range of uncertainty is much lower now that it was three years ago. Forest Economic Advisor's forecast is a reasonable starting point, citing factors that could affect both the level and type of units built over the next five years.

Factors that could drive a more optimistic scenario include:

- Stronger GDP growth in 2014-17 could boost employment and the ability to own a home among younger households.
- Improving house prices and economic growth could ease lending standards and offset most of the impact of higher interest rates after 2014.
- Shortages of housing units in several regional markets could boost starts faster than current forecasts, despite some pockets of excess inventory.

Factors that could drive a more pessimistic scenario include:

- Policy errors in the U.S. or an international crisis (such as collapse of the Euro) could derail the economic recovery.
- Younger households that purchased in the boom and then went into foreclosure might not be able to buy another home for 5-8 years, driving the ownership rate even lower for the under age 45 households.
- Investors might unwind their housing position over the next 3-5 years, keeping home price appreciation below historic averages. A boom in multi-family units that distresses rents would accelerate their desire to exit, as would higher rates of return in other investments.
- Younger adults who have been unemployed, even after attending to college, will not be able to save enough for a down-payment and will have to defer ownership.

VI. Trend demand beyond 2017

In summary, the picture for the housing industry appears to be very bright for the period ahead, despite the recent painful period. As Table 5 shows, household formations should average 1.3 million units per year over the next decade, which translates into housing starts of 1.7-1.8 million units (assuming modest immigration growth). These estimates are based on the most recent Census estimates of U.S. adult population growth and headship rates forecast by Forest Economic Advisors.

Table 5: Supply demand through 2030

US Housing
Supply and Demand Characteristics

	1990-2000	2000-10	2010-20	2020-30
Total Demand	1.61	1.73	1.64	1.75
Net Households	1.14	1.28	1.19	1.30
Net Removals	0.30	0.30	0.30	0.30
Other	0.18	0.15	0.15	0.15
Total Production	1.66	1.68	1.49	1.90
Conventional	1.37	1.54	1.39	1.72
Mobile/manuf.	0.29	0.14	0.10	0.18

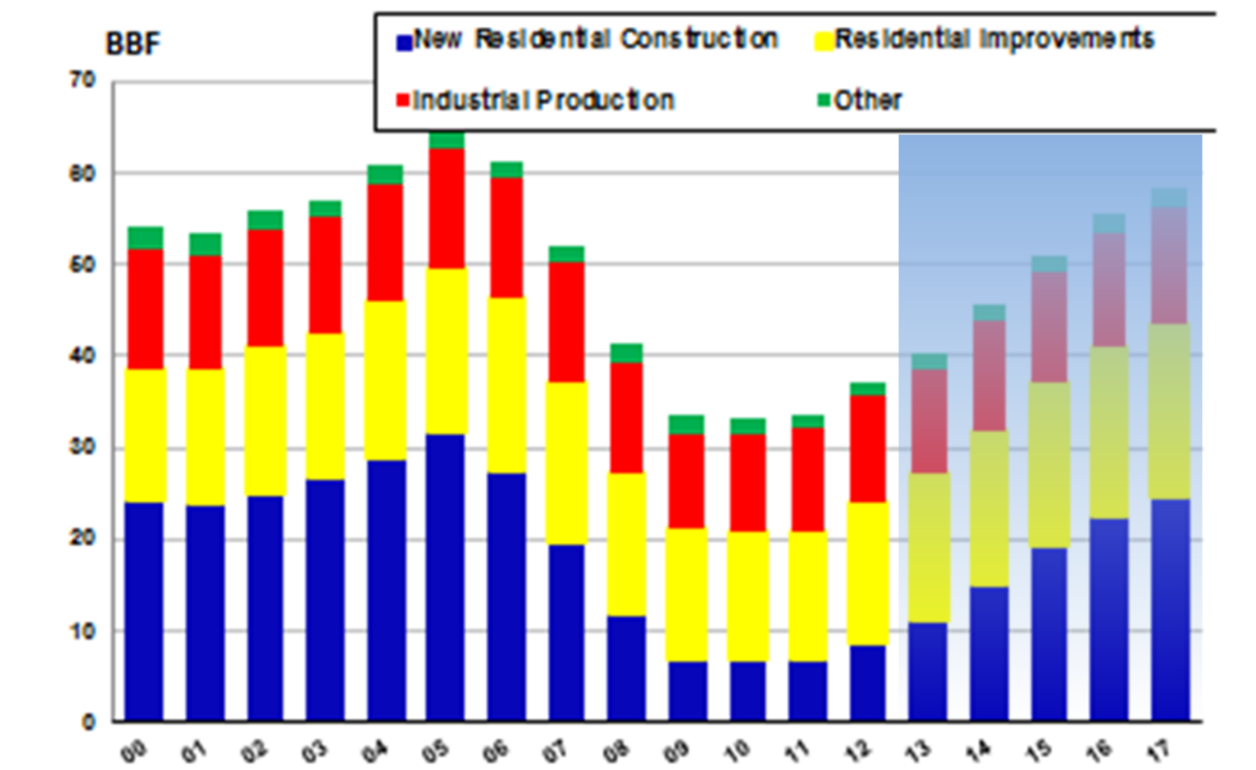
Source: U.S. Census Bureau, Forest Economic Advisors

As mentioned earlier, the big question for housing starts beyond 2020 will be the type of housing starts needed by a rapidly aging population. Since the role of housing starts is to adjust the stock of existing units to meet the specific needs of households and where their owners want to live, the key driver will be the over-65 age group (refer back to Table 3). Will they need ramblers associated with a retirement community? Will they want to migrate to the Sunbelt? These are just a few of the questions that could affect the type, size and regional location of starts in that decade.

VII. Summary and implications: demand for lumber and timber

What does the housing outlook mean for the lumber and timber industry? As discussed in Section I and seen in Figure 12, the drop in housing starts accounted for 77% of the decline in U.S. domestic lumber demand from 2005 to 2010. By the same token, a rebound in housing starts will drive the recovery in U.S. lumber demand (accounting for 65% of the rebound). The base case outlook means U.S. lumber demand will approach 60 billion bf in 2017. Adding in Canadian demand and net exports of lumber, the demand for North American lumber will be above 70 billion bf by 2017.

Figure 12: US lumber demand by end-use sector



The housing recovery underway begs the question: what will be the ability of the lumber and timber industry to meet the growing demand? Recent price surges have shown how tough it is for the industry to respond to an even modest increase in demand. After 2015, the demand is expected to push the overall industry operating rate above 90%, versus about 77% today. Clearly, the outlook suggests extremely positive prices and margins ahead for lumber and timber owners.