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Real estate markets

US housing market - Groundhog Day | 25 January 2016

CIO WM Research
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- We view the opportunities and challenges for the housing market in 2016 to be very similar to that of 2015. The one key difference is that although we believe prices will continue to appreciate nationally, the rate of appreciation will slow from 2015.
- The dearth of available inventory, positive GDP growth, low interest rates and increased access to mortgage credit will likely be supportive of further price gains.
- Conversely demographic forces, affordability challenges and mixed data on wage growth and employment are likely to be headwinds for housing. We continue to believe that the headwinds cited above are likely to keep the pace of single family housing starts and new and existing home sales below longer-term averages for the foreseeable future. In addition we continue to believe the rental market (both single family and multifamily) has a longer runway.
- It is essential for investors to distinguish between housing and shelter. The consensus view is that there is significant pent up demand for housing (ownership-based). We would argue that demographic and economic realities portend pent up demand for shelter - which could be either ownership or rental based.

In 2015 the housing market witnessed continued price appreciation (albeit at a significantly slower pace than 2013 and 2014) as both interest rates and available inventory remained low. Single family housing starts and new and existing home sales remained well below longer-term averages as the realities of demographics, low wage growth and new mortgage underwriting regulations weighed on the market. Based on our analysis of a variety of factors (discussed in depth below) we believe 2016 will likely be Groundhog Day for the housing market.

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The laws of economics are alive and well

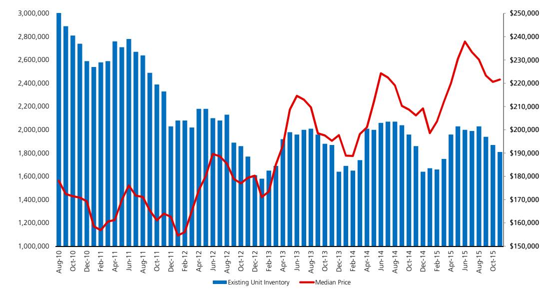
Whether measured by absolute inventory (Figure 1) or months of supply available-for-sale (Figure 2), housing inventory remains well below historical averages. The impact of this dearth of supply has been to put significant upward pressure on home prices nationally (Figure 3). We believe several factors are contributing to the restrained supply situation including homeowner psychology ("I will sell when my house gets back to what I paid for it"), limited options for selling homeowners due to restrained affordability and the likelihood that more retirees are electing to hold onto their homes and transfer them to heirs in the estate process. Regarding the last point we would highlight the data in Figure 4. As can be seen in the chart those homes at higher price points have significantly higher levels of equity and significantly lower loan-to-value (LTV) ratios. As it is likely that owners of homes at higher price points are more concerned with estate planning it is certainly possible that these homes are going to be transferred to children or other heirs as opposed to sold.

One thing that could certainly help free up additional inventory is the continued decline in the number of underwater mortgages and the associated rise in homeowner equity. As can be seen in Figure 5 there has been a very substantial decline in the number of underwater mortgages and the level of negative in equity between 1Q 2010 and 3Q 2015. In addition, the degree of severe negative equity (> 125% LTV) is significantly lower. We believe one of the key impediments to available inventory pursuant to the bursting of the housing bubble was the severe level of negative equity. As that situation continues to ameliorate it could lead to additional inventory being available for sale.

Single-family rentals – do they represent a cyclical force or a structural change?

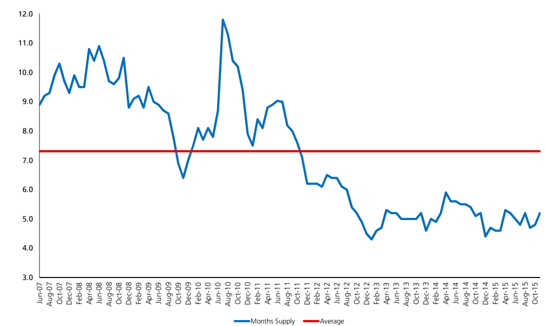
In analyzing available supply one of the key variables that needs to be considered is the single-family rental market. Although single-family rentals have been around for a very long time, it has largely been a mom and pop business. Pursuant to the bursting of the housing bubble a number of large institutions entered the market. As can be seen in Figure 6, the number of single-family homes for rent has increased by almost 4 million units since 2010 and currently represents almost 14% of total housing units, up from approximately 11% in 2010. Time will likely tell whether the increase in single-family rentals is cyclical or structural. That said, in our view the institutionalization of the single-family rental business has contributed to the reduced availability of for-sale supply.

Fig. 1: Single Family Inventory and Median Price Trends



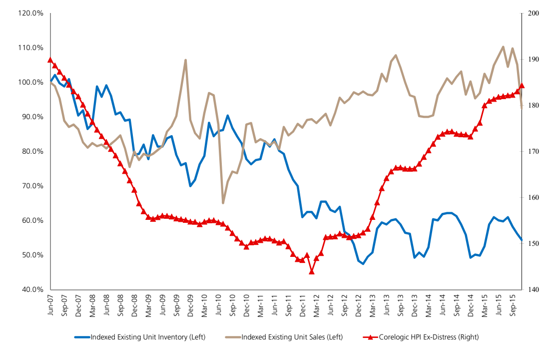
Source: NAR

Fig. 2: Trends in Months Supply of Existing Single Family Homes



Source: NAR

Fig. 3: The Impact of Supply and Demand on the Price Trends for Single Family Homes



Source: NAR, Corelogic

Interest rates & access to mortgage credit

Despite the recent increase in short-term rates by the Federal Reserve mortgage rates remain very subdued at around 4% for a 30 year fixed rate mortgage. The obvious question is what happens if/when mortgage rates begin to rise? Leaving aside the psychological impact rising rates may have as that is difficult to forecast, the economic realities are interesting. Based on the median home price in the US of approximately USD 220,000, a 1 percentage point increase in mortgage rates would add approximately 12% to one's monthly payment. However, this represents approximately only 2.5% of their pre-tax income (Figure 7). The relationship between interest rates and purchasing power is roughly as follows – every 25 basis points increase in mortgage rates impacts purchasing power by approximately 2.7% (Figure 8). As such we believe the economic impact for the median home buyer is manageable. Obviously for homes in higher priced area rising rates will likely have a more substantial impact.

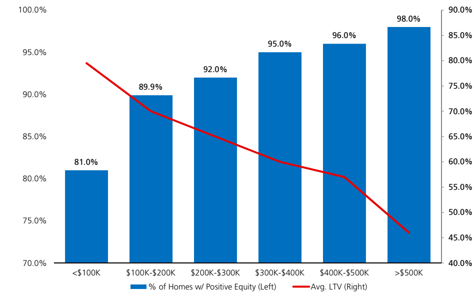
Regarding access to mortgage credit, the picture is likely not a bleak as some believe. Although new mortgage underwriting standards that became effective in early 2015 certainly impacted mortgage availability for lower quality borrowers, data from the Mortgage Bankers Association (Figure 9) and Ellie Mae (Figure 10) indicate continued slow but steady opening of the mortgage credit box. We certainly do not expect lenders to revisit the bad old days of non-existent underwriting standards witnessed during the housing bubble. That said we continue to believe a further broadening of mortgage credit access will continue in 2016.

Demographics will continue to have a significant impact on housing

Interestingly much of the focus in the news media and the investment community over the past decade has been the aging of the US population. Although we recognize the importance of the over 55 demographic the millennials (ages 15-34) represent the single largest demographic in the country (Figure 11). Millennials are having, and will continue to have, a very significant impact on many industries and housing is no exception. In our view the attitudes and consumption patterns of the millennials are significantly different from prior generations. We believe this is driven by a number of factors including a globally integrated economy and workforce, access to paradigm changing technology, a greater desire for work/life balance and economic realities that push "adult decisions" farther into the future.

One of the key attitudinal differences we are witnessing with the millennials is the attitude towards home ownership. As the data in Figure 12 indicate the home ownership rate of the millennials is less than one half that of the baby boomers. Although it would be a reasonable conclusion that the millennials would be the logical buyers of the retiring boomers homes we would highlight Figure 13. As the data indicate the millennial home ownership rate has declined from 43.1% in 2004 to 34.8% today. It is important to recall that the millennials were the largest buyers of homes by a factor of 3x during the housing bubble.

Fig. 4: Homeowner Equity and Average Loan-to-Value by Price Point



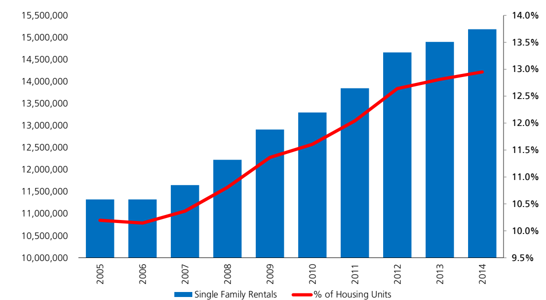
Source: Corelogic

Fig. 5: Trends in Homeowner Equity

	1Q 2010	3Q 2015
% of Mortgages w/ Negative Equity	25.9%	8.1%
# of Mortgages w/ Negative Equity (MM)	12.1	4.1
Total Negative Equity ($BN)	$822	$301
Average Loan-to-Value	71.3%	57.0%
Net Homeowner Equity ($TN)	$3.5	$6.8
Negative Equity Mix	1Q 2010	3Q 2015
100%-105%	4.0%	1.6%
105%-125%	9.7%	3.5%
>125%	12.2%	3.0%
Total	25.9%	8.1%

Source: Corelogic

Fig. 6: Single Family Rentals as a % of Total Housing Units



Source: US Census

Although we do not believe the millennial home ownership rate will decline significantly from current levels we think it is unlikely to appreciate substantially over the next several years. This is driven by several factors including:

- Since 2004 more than 5 million millennials moved back home with their parents (Figure 14). Currently more than 31% of millennials live at home – a multi-decade high. As these millennials ultimately leave their parents home we believe their first choice of shelter will be the rental market as opposed to the ownership market. In our view this thesis is validated by the data in Figure 15. Since the peak of the housing bubble there has been a net increase of 8.3 million in the number of rental households and a net decrease in the number of owner households of 975,000. The positive news for housing in Figure 15 is that the first 9 months of 2015 actually showed an increase in owned households. It appears much of this increase in 2015 was driven by the 35-44 year old demographic.

- The number of shared households has increased substantially since 2010 (Figure 16). We believe this has been driven by a combination of the overall reduced affordability of shelter (ownership and rental) and the societal comfort of a sharing economy amongst millennials;

- Millennials are getting married and having children substantially later than in prior generations (Figures 17 and 18). This delaying of "adult decisions" is likely reducing the need for larger, more suburban-oriented homes;

- Student debt has grown by more than 330% since 2003 to almost USD 1.3 trillion (Figure 19). In addition the number of 25 year olds with student debt has more than doubled to 43% as of 2013 (Figure 20). At the same time, the cost of a college education is far outstripping the growth in income and home prices (Figure 21). This, combined with the effective federalization of the student loan program makes it likely that student debt levels will continue to rise.

We have gotten a lot of push-back on the student debt issue – specifically that student debt should not be an impediment to home ownership as the average student loan balance is only approximately USD 29,000. Our issue is not with the overall balance as it is with the level on monthly payment and delinquency rates. As can be seen in Figure 22 the number of people under 40 years old with a monthly student loan payment between USD 250-500/month has more than doubled since 2005 to 3.8 million. This is a crucial point because the more stringent mortgage underwriting rules that have been put in force over the past several years have put a very significant focus on a borrower's income relative to their total monthly financial obligations – this is also known as the debt-income-ratio (DTI). Based on median home prices and household incomes, it does not take much in the way of a monthly student loan payment to put potential mortgage borrowers at risk of not qualifying under the Ability-to-Repay guidelines based

Fig. 7: Housing Market Sensitivity to Rising Mortgage Rates

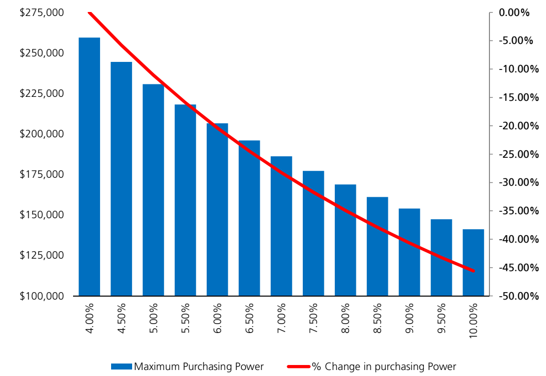
Base Case	
Current Median U.S. Home Price	$221,600
Down Payment	10.00%
Current 30 Year Fixed Mortgage Rate (a)	3.95%
Monthly Payment	$946.42
Front End Debt-to-Income Ratio	21.2%

	Change in Mortgage Rates From Current Levels					
	+50BPS	+100BPS	+150BPS	+200BPS	+250BPS	+300BPS
Monthly Payment	$ 1,004.62	$ 1,064.55	$ 1,126.15	$ 1,189.34	$ 1,254.05	$ 1,320.19
Percent Change in Monthly Payment	6.1%	12.5%	19.0%	25.7%	32.5%	39.5%
Incremental Monthly Payment	$58.20	$118.13	$179.73	$242.92	$307.63	$373.77
Monthly Median HH Income	$4,458	$4,458	$4,458	$4,458	$4,458	$4,458
Incremental Payment as a % of HH Income	1.3%	2.6%	4.0%	5.4%	6.9%	8.4%
Front End Debt-to-Income Ratio	22.5%	23.9%	25.3%	26.7%	28.1%	29.6%

a) Source: Freddie Mac as of 12/29/2015

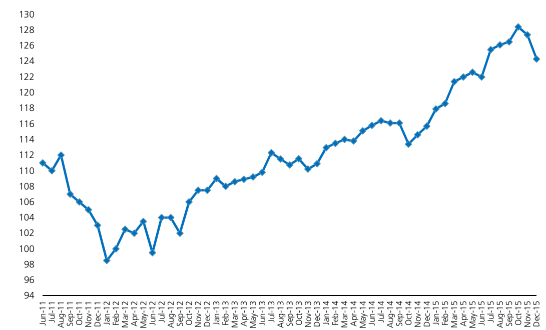
Source: UBS

Fig. 8: Housing Purchasing Power Sensitivity to Interest Rates



Source: UBS

Fig. 9: MBA Mortgage Credit Availability Index



Source: MBA

on back-end DTI ratios. Further complicating the picture is the fact that student debt cannot currently be discharged in bankruptcy.

It is not just the millennials that are driving increased demand for rental properties in the urban core. As can be seen in Figure 23 with the exception of 35-44 year olds every adult age demographic has witnessed a decline in home ownership rates. In addition, the two age demographics that have seen the great increase in rental households are the 55-64 and 65+ demographics (Figure 24). It appears that retiring baby boomers more and more are valuing the work/life/play simplicity of renting in the urban core similar to their millennial brethren.

We wish to be clear – we do believe that many millennials will ultimately purchase homes. That said we maintain our multi-year view that millennials are likely to purchase closer to their mid-late 30s as opposed to their late 20s to early 30s due to the factors we previously discussed. In our view the data in Figures 17 and 18 support this thesis.

Jobs and wages – partly sunny, partly cloudy

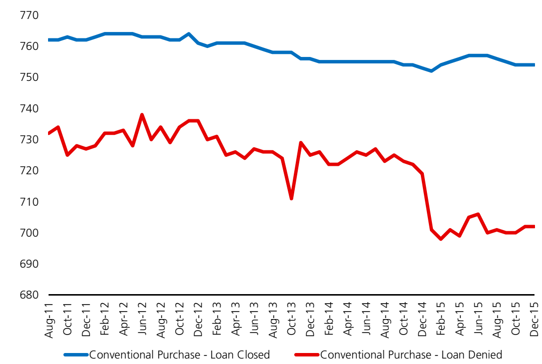
One of our key jobs as strategists is to look beneath the surface of the headlines. Nowhere has this been more important than in the monthly employment reports. The post-2008 financial crisis has certainly provided some good news on the employment front:

- Full-time job creation has grown substantially (Figure 25) and the unemployment rate has declined from a 2009 high of 10% to 5%;
- The number of unemployed persons looking for work as a multiple of job openings has declined from 7 to 2 (Figure 26);
- The employment-to-population ratio for the key millennial demographic of 25-34 has increased solidly from recession lows (Figure 27);
- The steep decline in oil and natural gas prices (Figures 28 and 29) should be a tailwind for consumer spending (perhaps with the exception of energy-centric markets).

The positive news notwithstanding there are some potential headwinds in the labor market that could impact the demand for shelter, including:

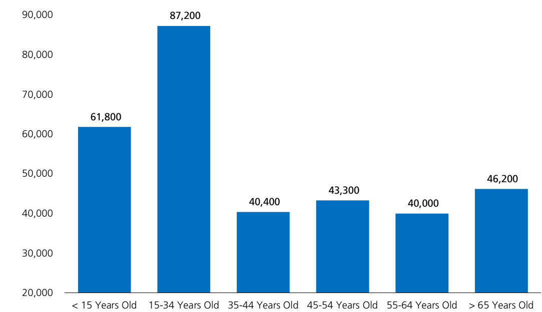
- Despite the creation of many full time jobs post-recession, the growth in wages and hours worked has been frustratingly slow (Figure 30);
- Average annual earnings growth (based on nominal earnings) for the 25-34 demographic has significantly lagged that of the overall population and the 35-44 demographic (Figure 31);
- Household income growth over the past decade has been negative when measured in 2014 constant dollars (Figure 32). The bigger concern is that the second and third income quintiles are the key income ranges for a significant portion of the US markets. As the data indicate, in addition to witnessing a substantial decline

Fig. 10: Trend in FICO Scores for Closed and Denied Conventional Mortgages



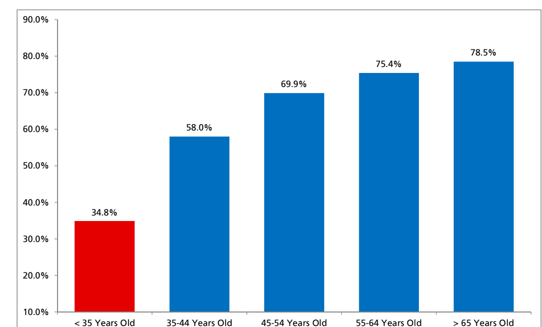
Source: Ellie Mae

Fig. 11: US Population by Age Range



Source: US Census

Fig. 12: Home Ownership Rate by Age Range



Source: US Census

in household income since 2000, these income ranges have seen de minimus income growth since 1990 (in 2014 constant dollars);

- Despite the significant decline in the headline unemployment rate (U3) to 5%, a broader measure of unemployment and underemployment (U6) is substantially higher at almost 10% (figure 33). In addition, the decline in both U3 and U6 has been largely mirrored the decline in the labor force participation rate (LFPR). This is important because as the size of the labor force declines it is possible that the true rate of unemployment is being understated. It has been postulated by some economists that the steep decline in the LFPR has been driven largely by retiring baby boomers and those filing permanent disability claims. Although we agree that these factors account for some of the decline, we do not believe the data completely supports that view. As the data in Figure 34 highlights between 2010 and 2015 despite a significant increase in the size of the labor force for the 55+ demographic the LFPR remained unchanged whereas it has declined for all other adult age ranges.

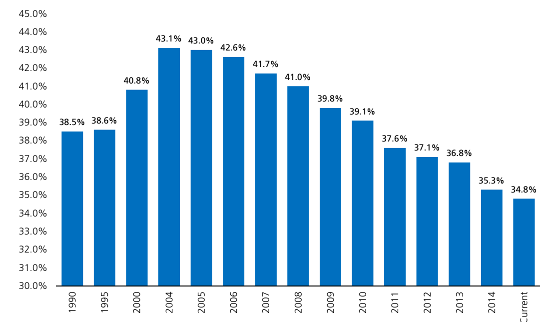
- U3 has declined across all age ranges over 20 years of age. That said, the unemployment rate for the 20-24 and 25-29 age ranges remains above older age ranges and the overall economy (Figure 35). In our view greater job creation at higher wages will be required for these age ranges to help spur further home buying.

The importance of job and wage growth should not be underestimated as it pertains to future home price appreciation. In Figure 36 we highlight the relationship between year-on-year home price appreciation against the three job growth rate for a cross section of metropolitan statistical areas (MSA) in the US. As one would expect there is a high degree of correlation between job growth and home price appreciation. Although we recognize other factors may have contributed to price appreciation in a given MSA, the importance of job growth cannot be over emphasized.

Affordability - less than meets the eye

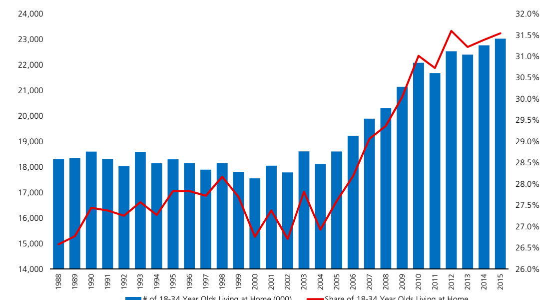
Closely linked to demographics, jobs and wages is the issue of affordability. If one were to look at the National Association of Realtors Affordability Index (NARAI), they would conclude that housing was widely affordable. The key flaw in that argument is that the NARAI assumes a 20% down payment in their calculations. Based on the growth of FHA mortgages and the Fannie Mae/Freddie Mac 3% down payment mortgage programs, many buyers are putting down substantially less than 20%. This not only makes monthly payments significantly higher but could also lead to the imposition of either private mortgage or FHA insurance fees. The housing bulls point to the fact that, on a national basis, monthly mortgage payments are almost at parity with apartment rents (Figure 37) and mortgage payments as a % of median household income is well below peak levels (Figure 38). Certainly, the drop in mortgage rates has lent credence to this on a national basis.

Fig. 13: Home Ownership Rate Time Series for Millennials



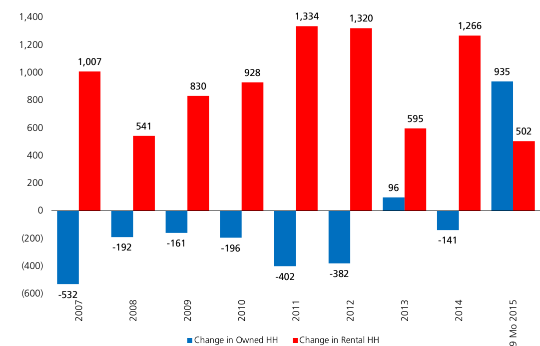
Source: US Census

Fig. 14: Trend of Millennials Moving Back Home



Source: US Census

Fig. 15: Trend in Household Owner and Renter Household Formations



Source: US Census

However, as Figure 38 also indicates median home prices as a multiple of median household income is approaching the levels seen in the period leading up to the housing bubble. In addition, as Figure 39 indicates the growth in median home prices are once again running far ahead of the growth in median household income. Although we are not making the case for a decline in home prices, we recognize that this situation cannot continue unabated.

Further, looking at markets individually and assuming a 10% down payment (something we believe more closely resembles reality), we find that in a vast majority of the top markets in the US (by population) renting remains more economically viable than owning, particularly when the need to secure a down payment and mortgage approval remain a challenge for many potential buyers (see Figure 40 on page 16). In short, the recovery in home prices pursuant to the bursting of the housing bubble has been generally positive. That said, over the past several years, home price growth has far outstripped wage growth. In our view, faster wage growth will be required to sustain home price growth longer term.

Is the market too complacent regarding future default risk?
One of the bright spots for housing over the past few years has been the substantial decline in the rate of serious delinquency and foreclosures (Figure 41). Although we are not calling for a near-term ramp up in delinquency and/or foreclosure rates we would highlight a few points that the market should be focused on over the longer term regarding this topic, including:

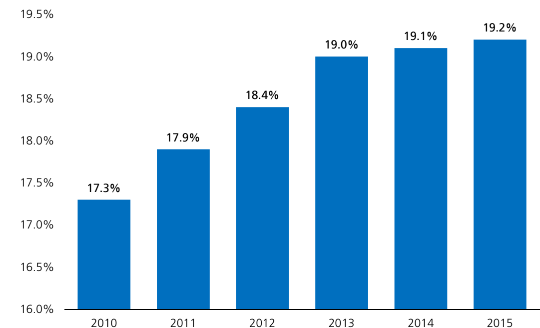
- Fannie Mae, Freddie Mac and the FHA/VA account for approximately 80% of the mortgage underwriting in the US (Figure 42). Of note is the significant growth of the FHA/VA channel since 2012. We highlight this because the FHA, in most cases, only requires a 3.5% down payment and generally lends to borrowers with lower credit quality scores as measured by FICO (Figure 43);

- On a national basis there is a strong inverse correlation between mortgage borrower's FICO score and their level of down payment (Figure 44);

- The percent of first time buyers with down payments less than or equal to 6% has risen sharply since early 2014 (Figure 45).

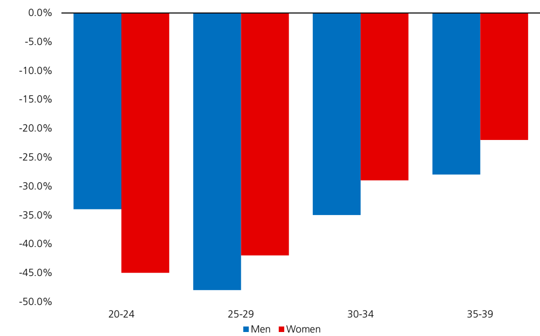
We have long postulated that the more skin in the game home buyers have, the less willing they would be to default. This was a particularly acute risk during the housing when we witnessed the phenomenon known as the "strategic default'. We believe the data in Figure 46 supports our view of the relationship between credit quality, down payment levels as measured by cumulative loan-to value (CLTV), debt-to-income (DTI) ratios and default rates. Figure 46 highlights the default data as of 2012 for Freddie Mac-backed mortgages underwritten in 2007. As the data indicate as FICO score declined and CLTV increased, default rates grew exponentially. We recognize that the severity of the global financial crisis may have exacerbated default rates. In addition the plethora of government programs aimed at addressing the housing crisis may have made some borrowers more comfortable with

Fig. 16: Shared Households as a % of Total Households



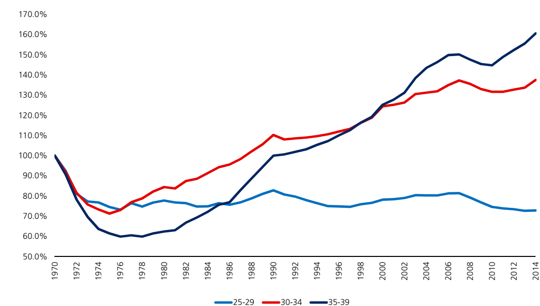
Source: US Census

Fig. 17: Change in Share of the US Population that is Married 1970-2013



Source: US Census

Fig. 18: Trends in Birth Rates/1000 by Age Range



Source: CDC

defaulting. That said we stand by our belief that lower down payment levels and lower credit quality increase default risk.

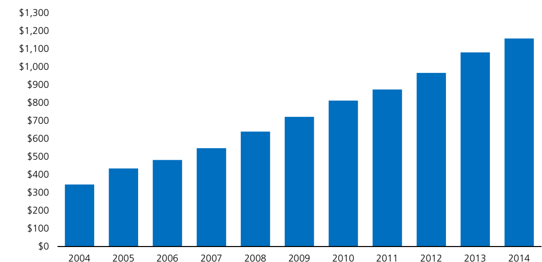
Are resetting HELOCs a potential land mine?
According to data from RealtyTrac as of April 2015 (Figure 47) ,there are more than 2.2 million home equity lines of credit (HELOCs) that are going to transition from interest only to fully amortizing between 2015-2018. Of those almost 50% are concentrated in five states and 46% of the homes they back are seriously underwater (>125% LTV). When these loans become fully amortizing it is likely that monthly HELOC payments will increase substantially. It is certainly possible that banks will work with HELOC borrowers in an effort to forestall reset payment shock, much like they did in the primary mortgage market. However we did want to highlight the potential risk that is not getting much public scrutiny.

Is the strong dollar negatively impacting international buyers?
International buyers, particularly from China, Eastern Europe, and South America (Figure 48) have been an increasingly important source of demand for housing, especially in coastal markets such as California, New York, and Florida (Figure 49). The ongoing strength of the US dollar has many investors concerned that currency will be an impediment to further demand from international buyers. Although it is possible in any discreet period of time that sharp currency movements can temporarily weigh on overseas investment, we remain of the belief that primary drivers of international demand for US real estate assets are the stability of our political system, the strength and consistency of our capital markets, and the strength of our system of property rights. As such, we believe international investors will continue to view the US as a safe haven for housing assets over the longer term.

Will 2016 finally be the year we reform Fannie Mae and Freddie Mac?
Fannie Mae and Freddie Mac (the government-sponsored enterprises, or GSEs) remain a dominant force in the home mortgage market. Our perspective on GSE reform remains consistent with last year (and frankly every year since the bursting of the housing bubble). We continue to believe a significant modification of the structure of the GSEs will be difficult to implement for several reasons, including:

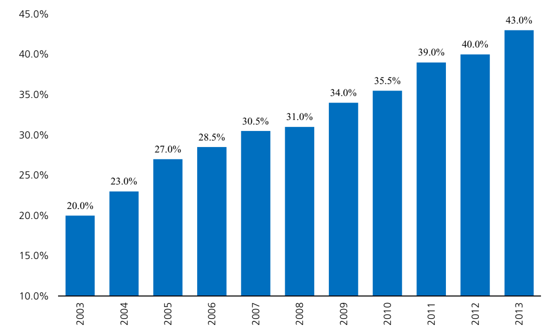
- The housing market and the participation of the agencies is a politically charged issue that will not be easily resolved in a divided Congress, particularly in a presidential election year;
- The GSEs own or guarantee more than USD 5 trillion of the outstanding USD 9+ trillion of first-lien mortgage debt in the US;
- The GSEs along with the FHA/VA still account for more than 80% of mortgage issuance. These last two points make it unpractical to unwind the agencies in an expeditious manner.

Fig. 19: Growth in Student Debt (USD in millions)



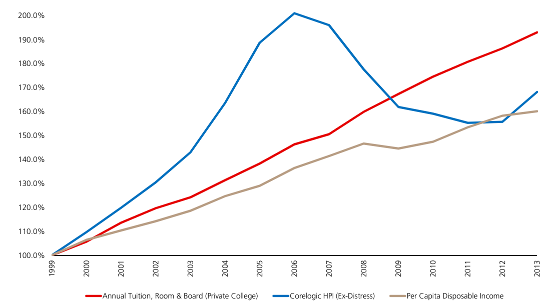
Source: FRBNY

Fig. 20: % of 25 Year Olds With Student Debt



Source: FRBNY

Fig. 21: Indexed College Costs, Home Prices and Per Capita Disposable Income



Source: The College Board, Corelogic, BEA

Are labor shortages impacting the housing market?

One of the key issues that has been raised by both national and regional homebuilders is the difficulty in securing labor, particularly for such skilled positions as framing, masonry, and concrete (Figure 50). This has extended construction cycle times, negatively impacted builder margins, and led some builders to push out deliveries. We believe a number of factors have contributed to this labor shortage including:

- The rise of the domestic oil & gas industry coincided with the bursting of the housing bubble. It is likely that a good portion of skilled trades migrated from residential construction to energy. Given the recent challenges in the domestic energy business it is possible some of this skilled labor will find its way back to residential construction.

- It has been speculated that a reasonable portion of the residential construction labor force during the housing bubble were undocumented workers. The bursting of the housing bubble combined with the immigration crosscurrents that exist in the recent political discourse may have led many of these workers to seek employment in their home countries.

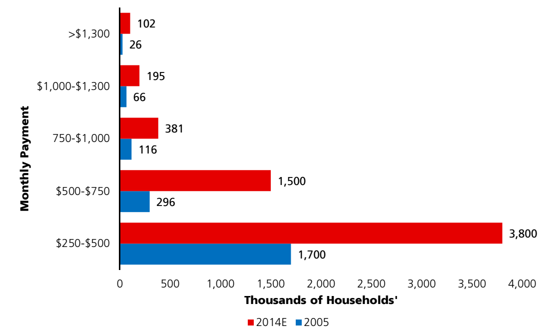
In our view, this issue is going to be a key differentiator in the relative success of builders as long as skilled labor shortages persist. We believe there will continue to be a bifurcation among those builders that have the national scale and access to capital, and believe those builders will outperform their peer group.

What are the implications for home prices?

One of the key factors that contributed to the substantial price appreciation in the housing market over the past several years was the emergence of institutional capital in the distressed home market. The institutions recognized that in many markets the high level of serious delinquency/foreclosure activity and the wide gap between distressed and non-distressed prices provided very attractive risk-adjusted return opportunities. As such we believe the data in Figures 51 and 52 portend a significant slowing in distressed opportunities. Figure 51 indicates that the level of foreclosure and short sale activity has declined precipitously. Although this is generally a positive for the market and the economy in general it will likely lead to reduced investor activity and, by extension, upside pressure on prices. Figure 52 highlights the trend in distressed and non-distressed national home prices. When the gap between the two was very wide (in 2009-2011) institutional capital entered the market in a big way. The upshot of all this investor activity is that the "distress discount" has largely evaporated. We believe this will also lead to reduced investor activity and, by extension, upside pressure on prices.

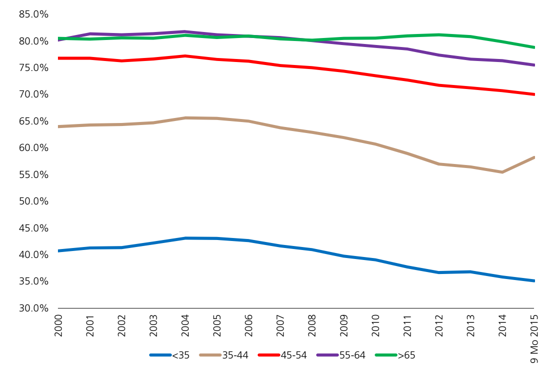
Another factor we believed provided a positive environment for existing home price growth was the significant gap between new and existing home prices (Figure 53). As can be seen in the chart in periods when the gap became too large (owing to new home price appreciation), existing home prices subsequently saw strong appreciation. There has been significant commentary from the national and region-

Fig. 22: Trends in Monthly Student Debt Payment Levels



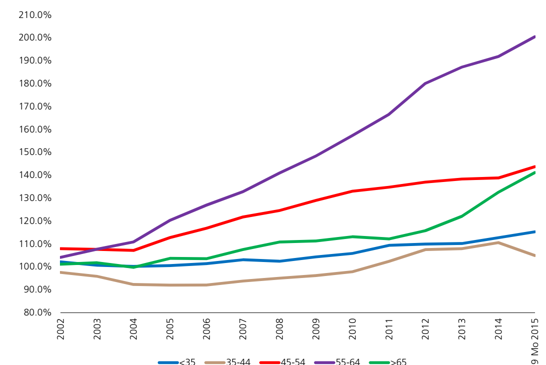
Source: FRBNY

Fig. 23: Trends in Home Ownership Rates by Age Bracket



Source: US Census

Fig. 24: Indexed Rental Households by Age Bracket



Source: US Census

al builders that pricing power is getting harder to come by. If this continues to be the case it is unlikely that existing home prices can continue rise significantly.

A further factor we believe will be crucial for future price appreciation, particularly a the lower end is the return of the first time buyer. The post-bust housing recovery has been largely driven by the move up and luxury buyer while the first time buyer has been relegated to the sidelines (Figure 54). In our view additional wage growth, high paying job growth and a further opening of the credit box will be required for the first time buyer to return to historical levels.

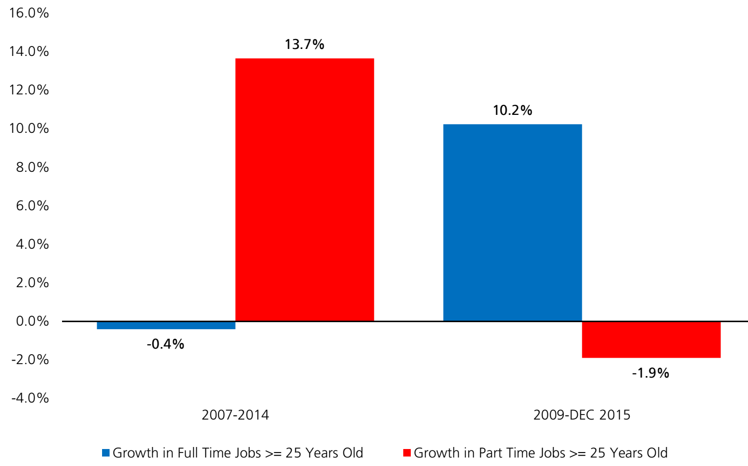
So what does all this data mean for unit sales volumes and new construction going forward?

In the analytical community it is very tempting to take the last data point or two and extrapolate it forward as the "new normal". At the risk of being accused of doing so we believe the trends in single family housing starts and new and existing home sales is likely to resemble what we witnessed in 2015 (Figure 54). We recognize that many housing bulls continue to point how far below prior levels housing activity is as well as the significant level of "pent up demand" for housing. We would make two observations here:

- In our view the housing bulls are confusing housing and shelter. We absolutely agree that there will be a need for significantly more shelter units as the population grows and millennials enter the workforce. However, based upon the plethora of data we have presented we believe, at least for the foreseeable future, there will be a strong need for rental-oriented shelter. As such we believe single family housing starts and unit sales will not return to previous levels for quite some time;

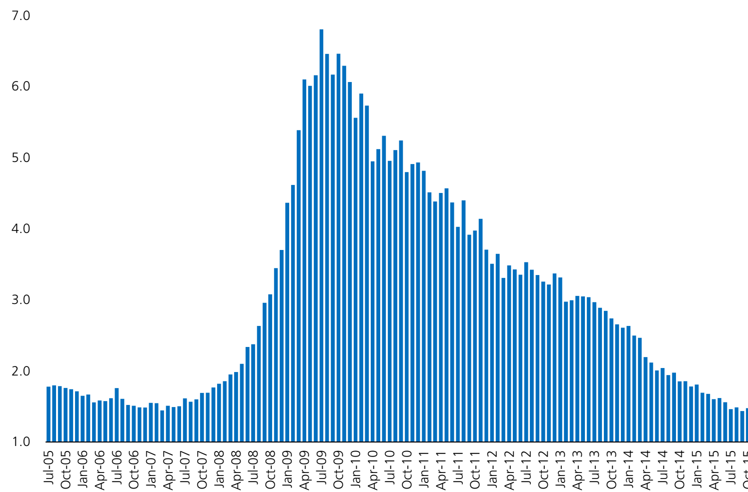
- Pent up demand can stay pent up for quite some time. Purchasing a home remains the single largest investment for the vast majority of people. Given the myriad challenges we have addressed in this report we continue to believe many potential home buyers will carefully scrutinize the timing and magnitude of their shelter decisions.

Fig. 25: Trends in Full Time and Part Time Job Creation



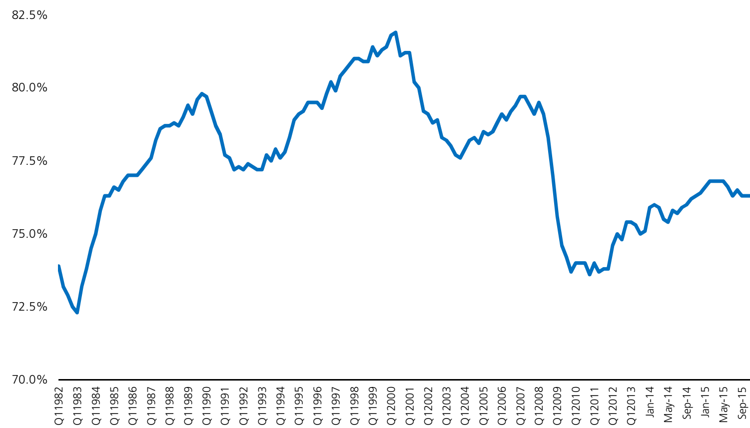
Source: BLS

Fig. 26: Number of People Unemployed and Looking For Work per Job Opening



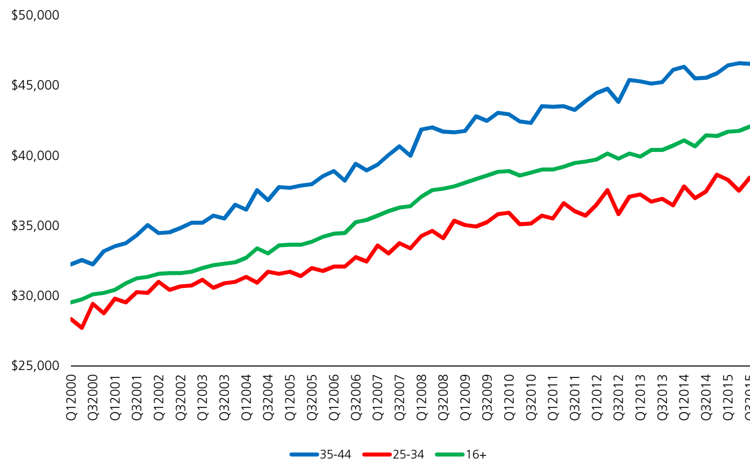
Source: BLS

Fig. 27: Employment to Population Ratio 25-34 Year Olds



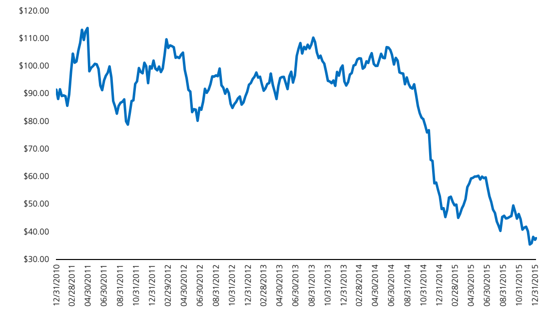
Source: BLS

Fig. 31: Wage Growth Trends by Age Range



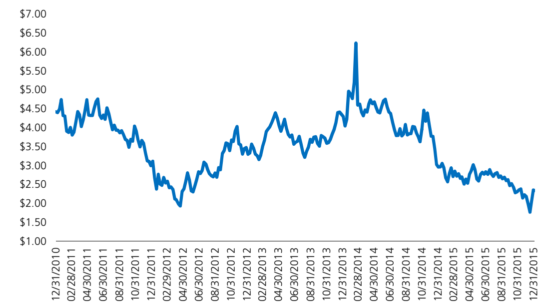
Source: BLS

Fig. 28: Oil Price Trends (WTI)



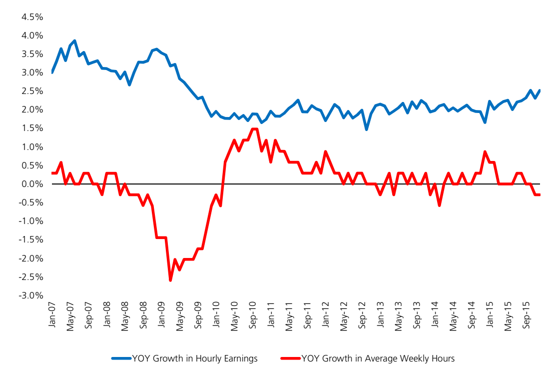
Source: Bloomberg

Fig. 29: Natural Gas Trends (USD/MMBTU)



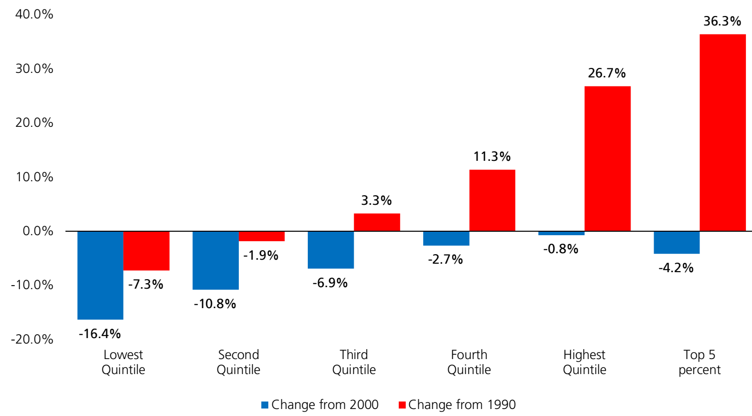
Source: Bloomberg

Fig. 30: Trend in Average Hourly Earnings and Hours Worked



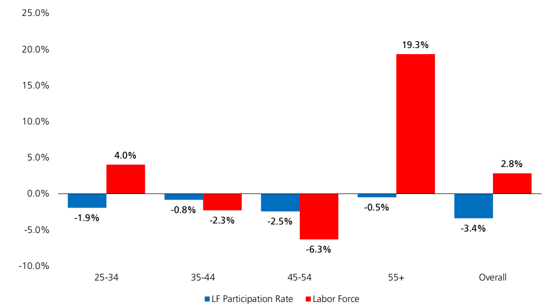
Source: BLS

Fig. 32: Household Income Growth Trends by Quintile



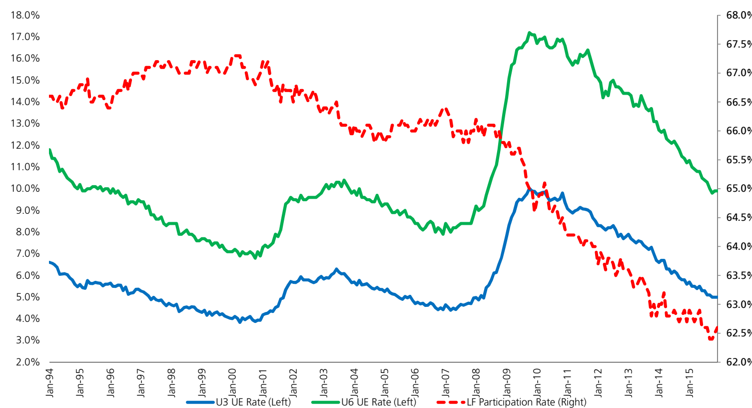
Source: U.S. Census

Fig. 34: Changes in the Labor Force and Participation Rate by Age 2010-2015



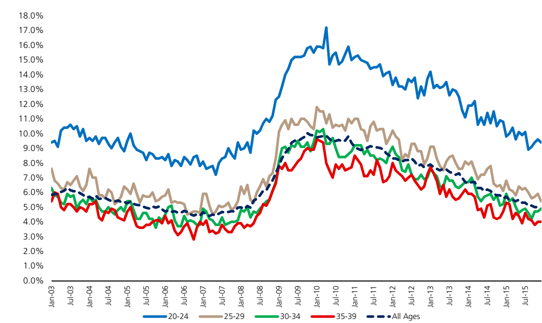
Source: BLS

Fig. 33: U3 vs. U6 vs the Labor Force Participation Rate



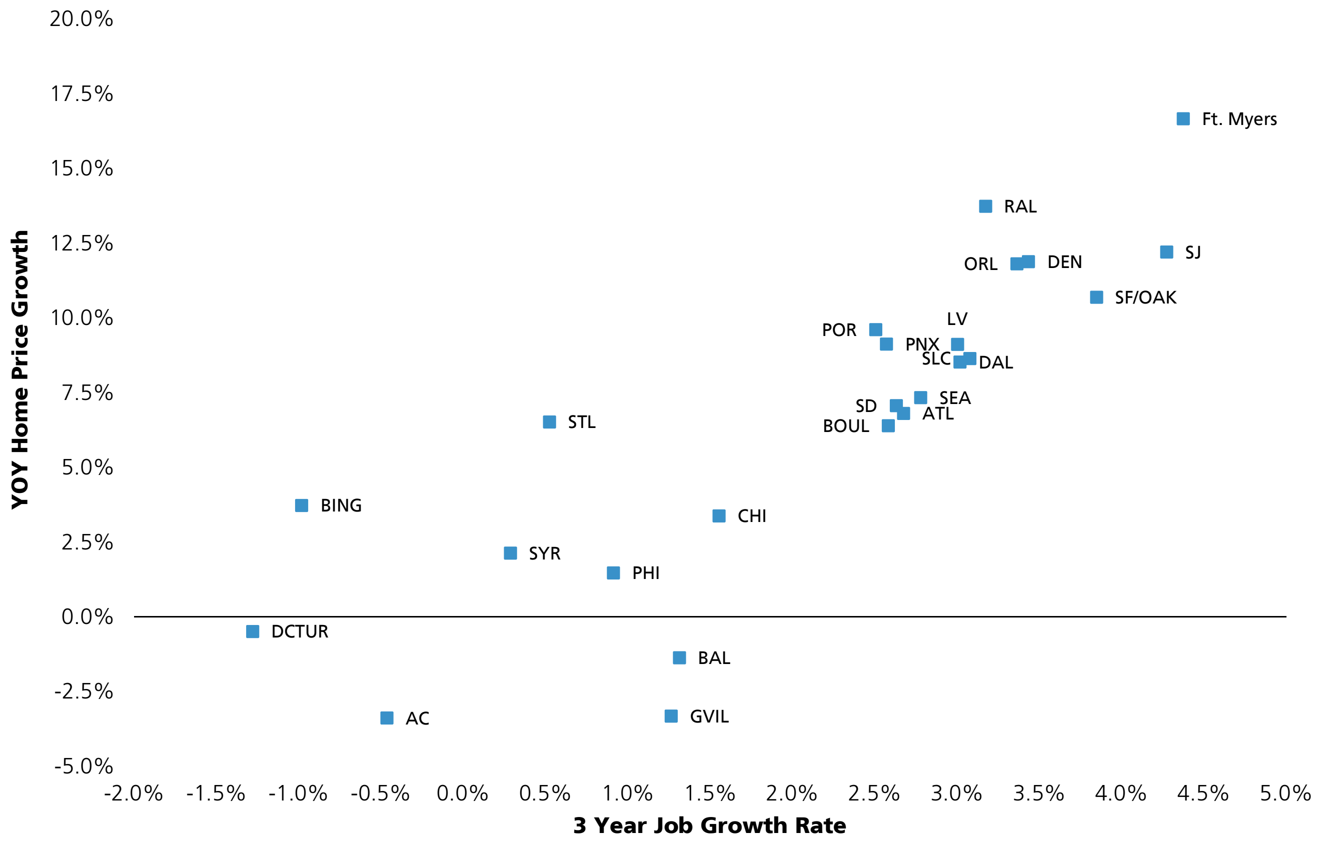
Source: BLS

Fig. 35: Unemployment Rate Trends by Age Range (US)



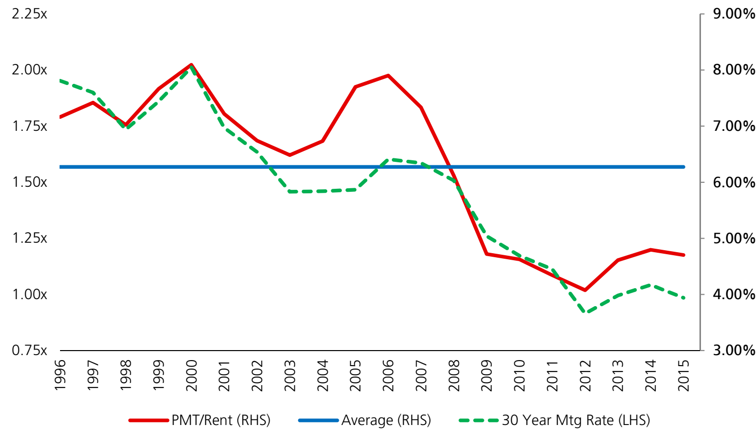
Source: BLS

Fig. 36: YOY Home Price Growth and 3 Year Job Growth for Select MSAs



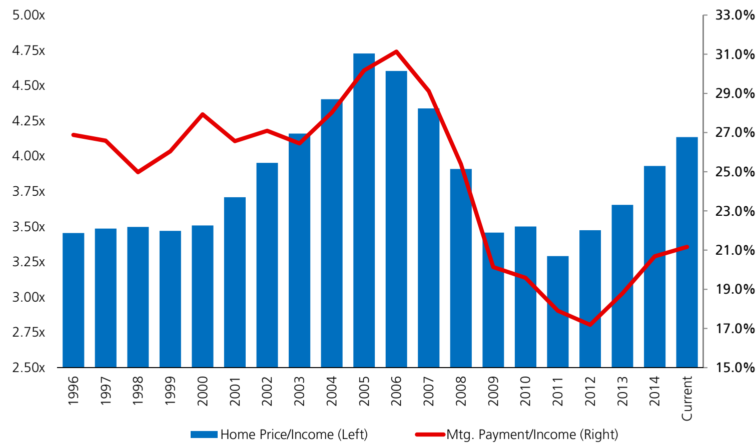
Source: NAR

Fig. 37: Median Monthly Mortgage Payment & Apartment Rent Trends



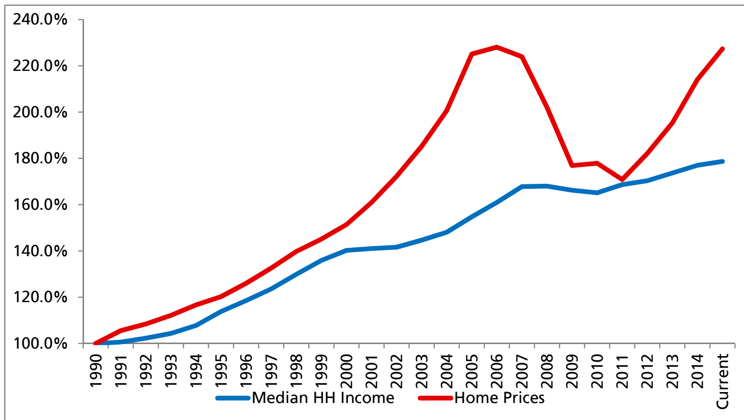
Source: US Census

Fig. 38: Median Home Price/Median Income and Mortgage Payment/Income Trends



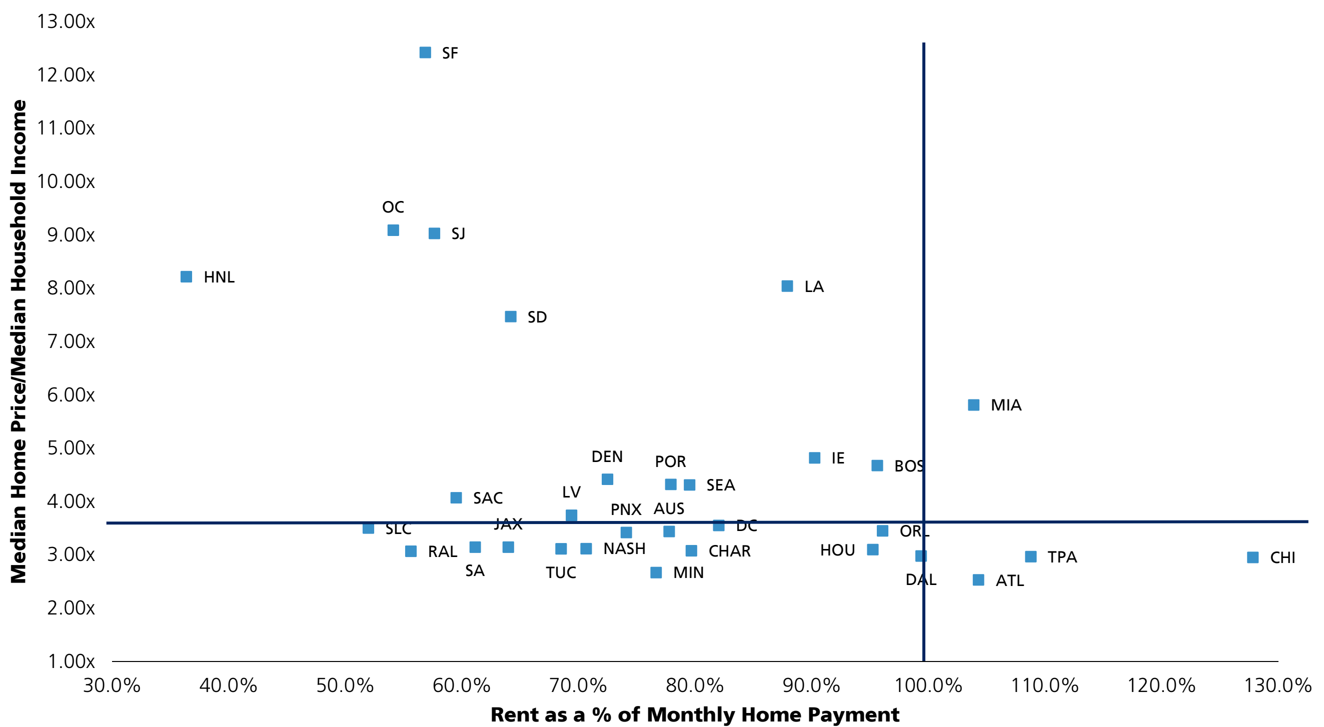
Source: NAR, US Census, CIO WMR

Fig. 39: Indexed Median Home Prices and Median Household Incomes



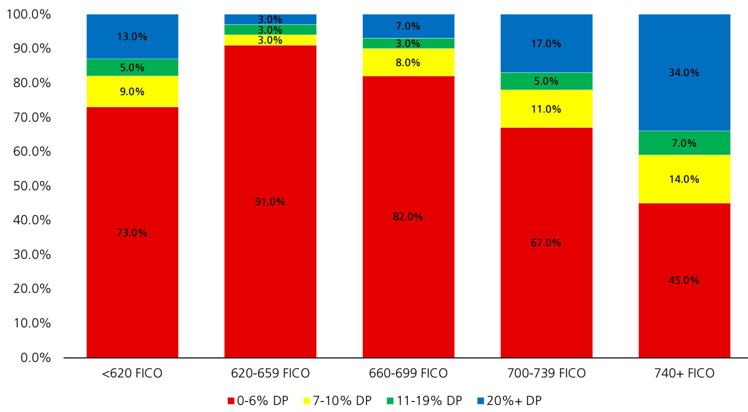
Source: NAR, US Census

Fig. 40: Rent (2BR Apartment) vs Buy Analysis for Select MSAs



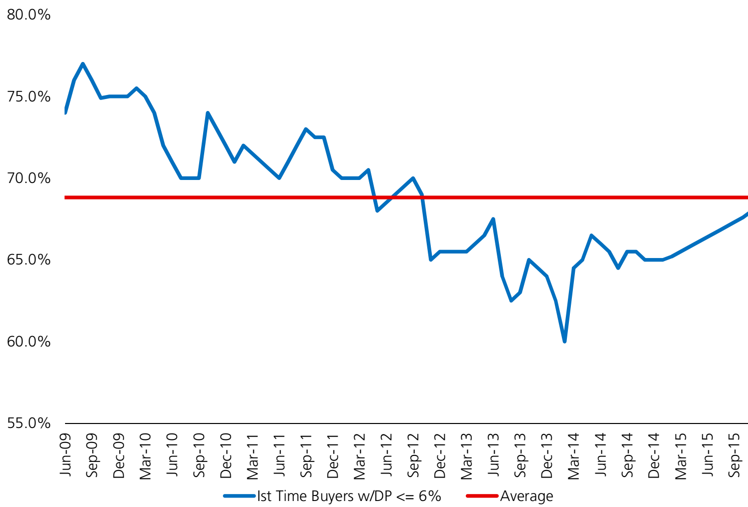
Source: CBRE, NAR, Local MLS, BEA, Freddie Mac, CAR, UBS

Fig. 44: Down Payment Levels by FICO Score



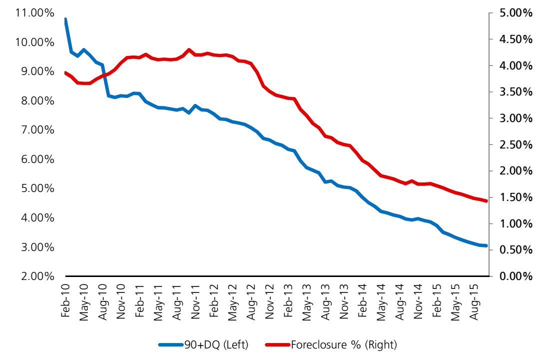
Source: NAR

Fig. 45: % of First Time Buyers With a Down Payment Less Than 6%



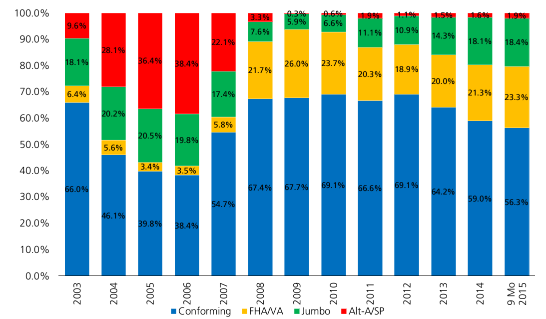
Source: NAR

Fig. 41: 90+ Delinquency and Foreclosure Trends



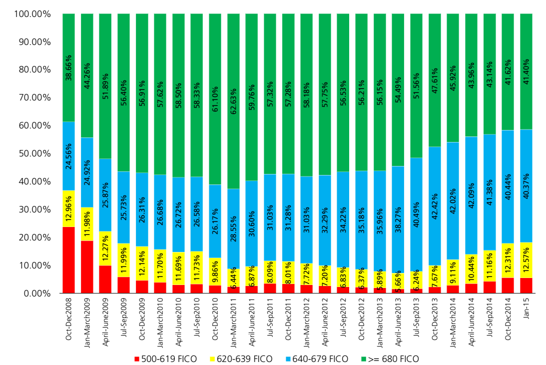
Source: BKFS

Fig. 42: Mortgage Issuance Trends by Channel



Source: Inside Mortgage Finance

Fig. 43: Trends in FHA Underwriting by FICO Score Bucket



Source: HUD

Fig. 46: Default Data for 2007 Vintage Freddie Mac Mortgages - Data as of 2012

FICO	CLTV	Total DTI	Default Rate
>= 770	61% - 70%	<= 33%	0.8%
720 - 769	76% - 80%	34% - 38%	4.2%
690 - 719	81% - 85%	39% - 43%	9.3%
660 - 689	91% - 95%	44% - 50%	22.7%
620 - 639	> 95%	> 50%	45.8%

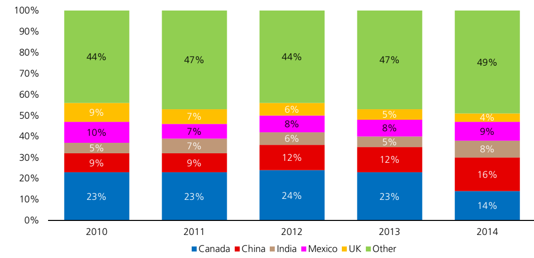
Source: AEI

Fig. 47: Current State of HELOCs Resetting Between 2015-2018

State	Resetting HELOCs	% of Total HELOCs O/S	Homes With HELOCs Seriously Underwater Total	%
California	645,872	19.8%	423,706	65.6%
Florida	513,229	15.7%	364,393	71.0%
Illinois	158,199	4.8%	112,321	71.0%
Texas	158,017	4.8%	56,886	36.0%
New Jersey	145,312	4.5%	68,297	47.0%
Ohio	136,327	4.2%	N.A.	N.A.
New York	122,749	3.8%	N.A.	N.A.
Arizona	122,749	3.8%	N.A.	N.A.
Pennsylvania	110,493	3.4%	N.A.	N.A.
Washington	110,372	3.4%	N.A.	N.A.
Total	2,223,319	68.2%	1,025,603	46.1%

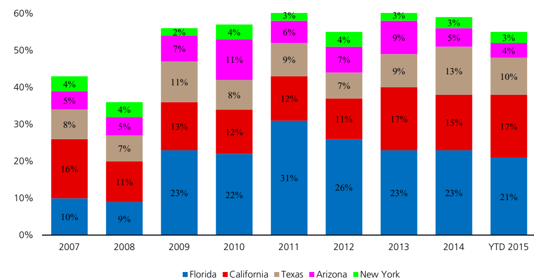
Source: RealtyTrac

Fig. 48: Distribution of International Buyers by Country of Origin



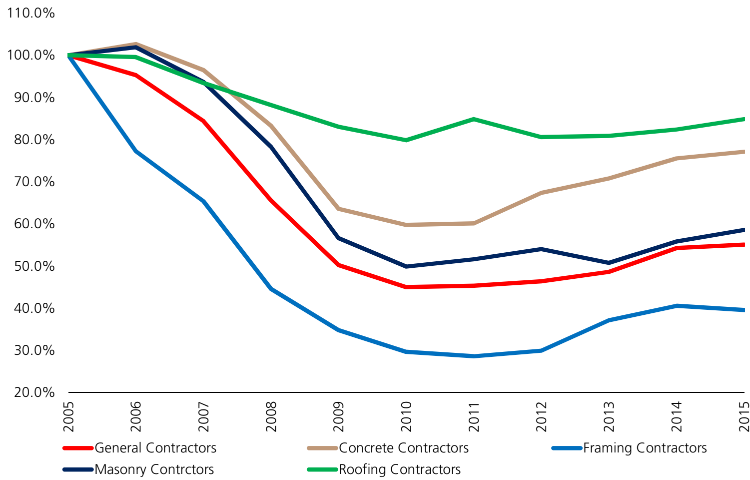
Source: NAR

Fig. 49: Distribution of international Buyers by Targeted States



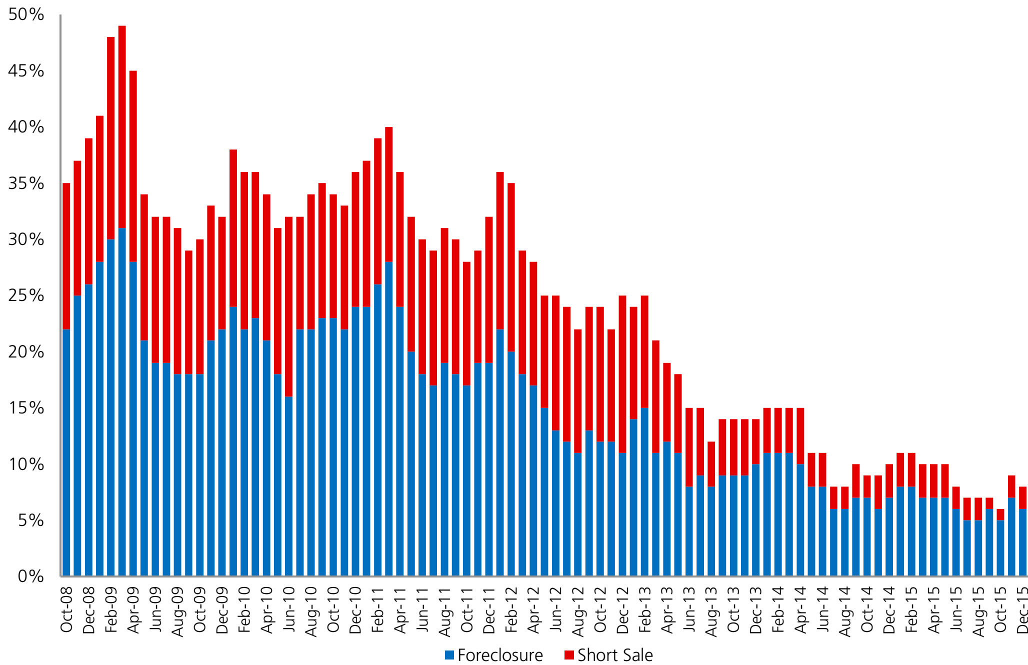
Source: NAR

Fig. 50: Trends in Skilled Labor Employment in Residential Construction



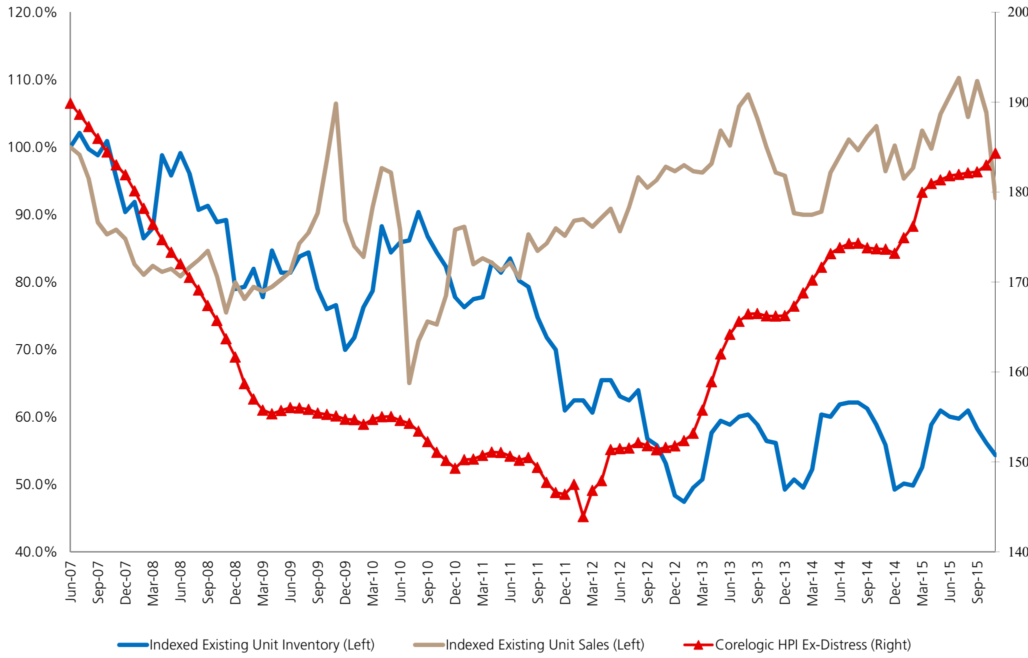
Source: BLS

Fig. 51: Foreclosure and Short Sale Trends



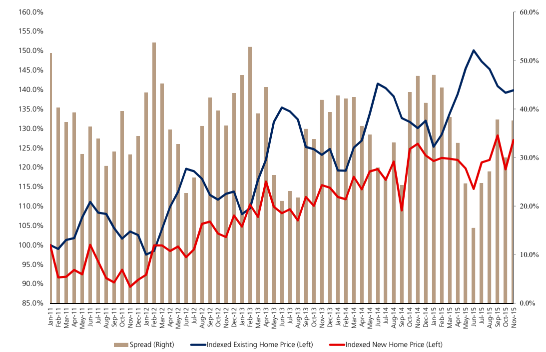
Source: NAR

Fig. 52: Distressed and Non-Distressed Home Price Trends



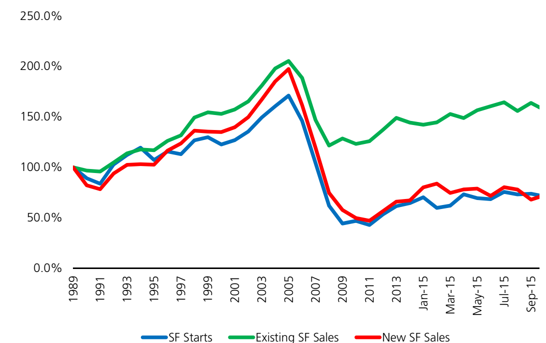
Source: Corelogic

Fig. 53: Existing and New Single Family Home Price Trends



Source: NAR, U.S. Census

Fig. 54: Single Family Home Starts and New & Existing Unit Sale Trends



Source: NAR, U.S. Census

Appendix

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