August 4, 2014
Thematic Research

Millennials: The Housing Edition

Equity Research

Out of basements and into homes

A Millennial refresh

Millennials are one of the biggest generations in US history and are comprised of individuals born between 1980 and 2000. Millennials are more diverse, more educated, more in debt and more likely to be in the South and West. The peak millennial cohort is now only 23 years old. Because housing consumption increases sharply from age 25 to 45, millennials will be an important factor for the broader housing market going forward.

Large numbers will overpower restraints

While there are several impediments to homeownership (tight credit, lack of affordable inventory, elevated debt levels) we believe the sheer size of the millennial cohort can drive increased demand for housing.

Plans to marry, own and have kids

Generally, millennials want many of the same things as previous generations. However, life events such as marriage and having children are being pushed back for this group.

Divergence of fortunes raises concerns

The biggest challenge faced by millennials is weak income growth among those without college degrees – a structural risk if not addressed. The decline in interest rates over the past 30 years has compensated for the decline in real income for those without college degrees. However, if their real income declines further or interest rates increase, homeownership could become increasingly unaffordable.

Prefer college even with some debt

We find it takes at least $50,000 in student debt or student debt payments of at least 5% of income to have a significant impact on homeownership. While these buckets have been growing they still represent a small share of the population.

Improvement in credit is key

There has been limited easing of credit standards. Given that young adults tend to have the weakest credit, opening of the credit box should have the most positive impact on this group.

Eli Hackel, CFA
(212) 902-9672 eli.hackel@gs.com
Goldman, Sachs & Co.

Hui Shan
(212) 902-4447 hui.shan@gs.com
Goldman, Sachs & Co.

Millennial’s housing demand on the rise, lack of income growth is our biggest concern

Millennials (born 1980-2000) are one of the biggest generations in U.S. history with 82 million born in the US during these years. As they move into a life cycle stage when housing consumption increases sharply, their housing demand could be influential to the US housing outlook.

While the media inundates us with stories about ballooning student loans, recent college graduates having difficulties finding decent jobs, and young adults living with their parents, **we believe there should be increasing demand for housing from millennials.** We show, even in a pessimistic scenario analysis, to expect household formation of a minimum of 1mn, starts of at least 1.2mn/1.3mn, and new home sales climbing to 650K in the coming years. As a comparison, GS baseline forecasts point to 1.5mn housing starts and 740K new home sales in 2017.

We use a framework where all relevant drivers are divided into **internal factors**—life cycle, income, personal finance, attitude and preferences—and **external factors**—the availability of jobs, mortgages and affordable homes. We bring evidence from micro data and examine these drivers in turn.

Millennials demand for housing will increase even with constraints:

- The biggest challenge faced by millennials, in our view, is weak income growth among those lacking college degrees. Declining mortgage interest rates over the past three decades have offset the negative impact from falling income and rising house prices. But interest rates are more likely to rise than to fall going forward (GS economics forecasts 10-year Treasury yields increase from 2.5% currently to 4.0% by the end of 2017), raising the question whether this group will be able to afford buying homes if their income keeps declining and house prices continue to increase.
- However, the sheer size of the millennial cohort compensates for the challenges faced by young adults. Even assuming no improvement in the headship rate and homeownership rate among young adults, we still expect recovery, albeit a slower one, in the housing market. In addition, we expect continued job growth and gradual easing of mortgage standards (GS economics projects the unemployment rate falls to 4.8% in 2017 from 6.2% currently), both of which are positive forces for the housing market.

Key findings of our analysis:

- Millennials marry and have children later in life than earlier generations, but they expect to eventually marry and have children (see pages 6-7 for more detail).
- We find little evidence that young renters do not want to be homeowners anymore post crisis. However, there is some evidence that young homeowners increasingly prefer multi-family housing and living closer to work (see page 8 for more detail).
- Median income hides the diverging fortunes of college graduates and the less well educated. Young individuals with high school degrees or less face falling income and declining homeownership rate (see page 9 for more detail).
- Borrowing money for college has costs and benefits when it comes to housing consumption. The benefits outweigh the costs as long as the debt burden is not too large, the borrower finishes college, and the college degree offers better income prospects (see pages 12-13 for more detail).
- Tight mortgage credit hurts young individuals the most as they are likely to have low credit scores. Fear of being turned down, many individuals with low credit scores no longer apply for mortgages, which depresses housing demand (see page 14 for more detail).
- House price appreciation has outpaced income growth over the past 15 years. The lack of affordable entry-level homes on the market is a headwind to the millennials’ homeownership rate (see page 16 for more detail).
- Labor market conditions continue to improve and wage inflation should slowly pick up. Young individuals are also more optimistic about future income growth. These are positive signs for housing demand (see page 17 for more detail).

The millennials are coming: Over next 10 years 25-34 year old cohort could increase by 4mn

An overview of who millennials are and why they are important to US housing:

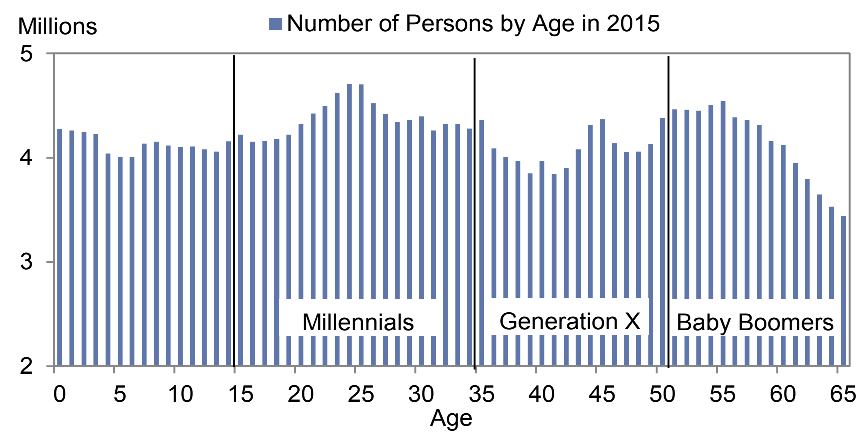
- Millennials are one of the largest generations and were born between 1980 and 2000 (15-34 years old as of 2014). The peak millennial cohort is now only 23 years old. They are around 27% of the adult population and will increase from there as non-adult millennials move into adulthood (Exhibits 1-3).
- Housing consumption increases sharply from age 25 to 45 (Exhibit 4). Thus, millennials are crucial to the US housing market in coming years.

Exhibit 1: Who are the generations?
Overview of various generations

Generation	Millennial Generation
Born	After 1980
Age of adult in 2014	18 to 33 years old
Share of adult population	27%
Share of non-Hispanic white	57%
Indep/Democrat/Republican	50% / 27% / 17%
Generation	**Generation X**
Born	1965-1980
Age of adult in 2014	34 to 49 years old
Share of adult population	27%
Share of non-Hispanic white	61%
Indep/Democrat/Republican	39% / 32% / 21%
Generation	**The Baby Boom Generation**
Born	1946-1964
Age of adult in 2014	50 to 68 years old
Share of adult population	32%
Share of non-Hispanic white	72%
Indep/Democrat/Republican	37% / 32% / 25%
Generation	**The Silent Generation**
Born	1928 to 1945
Age of adult in 2014	69 to 86 years old
Share of adult population	12%
Share of non-Hispanic white	79%
Indep/Democrat/Republican	34% / 32% / 29%

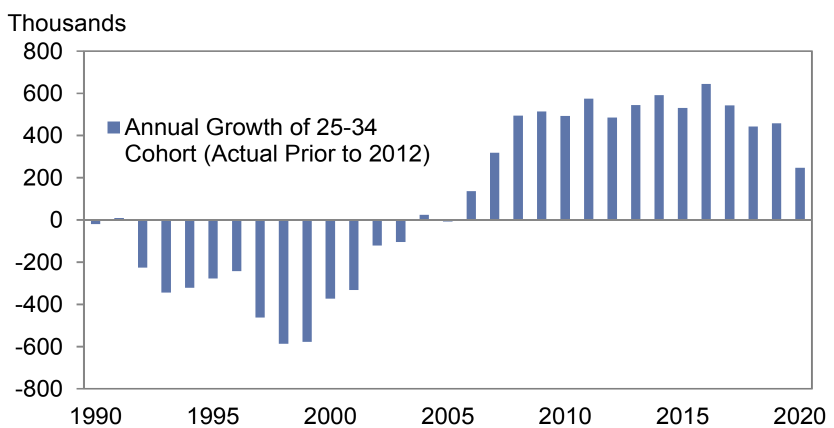
Source: Pew Research Center.

Exhibit 2: Millennials and Baby Boomers are the largest age cohorts
Number of persons by age in 2015



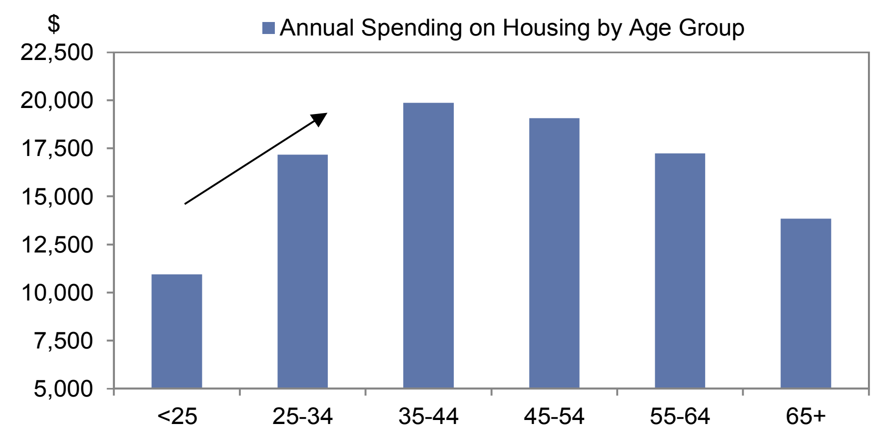
Source: Census Bureau.

Exhibit 3: A large increase in the 25-34 year old cohort in coming years…
Annual growth of 25-34 year olds



Source: Census Bureau.

Exhibit 4: …which has important implications for housing demand
Annual spending on housing by age group



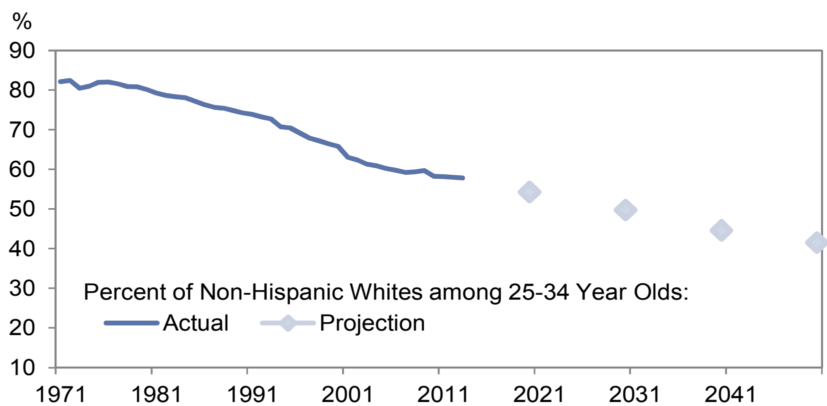
Source: BLS.

Millennials: Minority majority, South and West, education and psychology

A few key characteristics of the millennial generation:

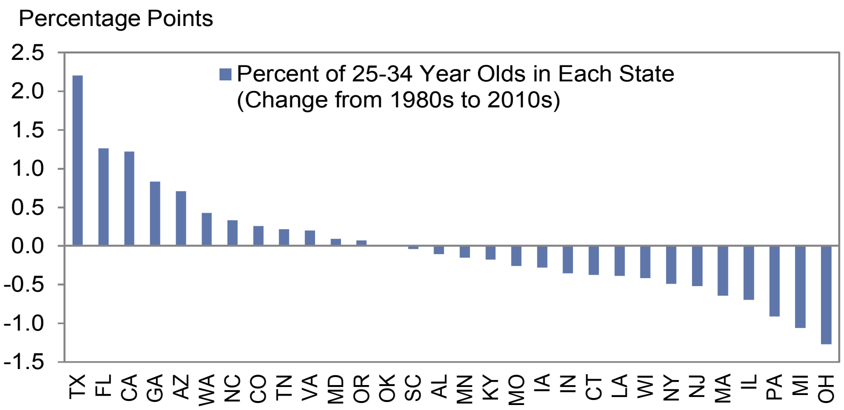
- The makeup of millennials is different from previous generations. For example, over 40% of today's 25-34 year olds are minorities vs. less than 20% in the 1970s (Exhibit 5), and a larger share of population in the 25-34 group is growing in the South and the West (Exhibit 6).
- Minorities have a lower homeownership rate and it is important to see if that trend holds as they are a greater percentage of the adult population.
- Today's 25-34 year olds are more educated than previous generations but the degrees they are choosing are different than in the past (Exhibits 7-8). To the extent that the college premium differs by fields of study, this may have implications for future income and housing consumption.

Exhibit 5: More likely to be minorities
Percent of non-Hispanic whites is declining



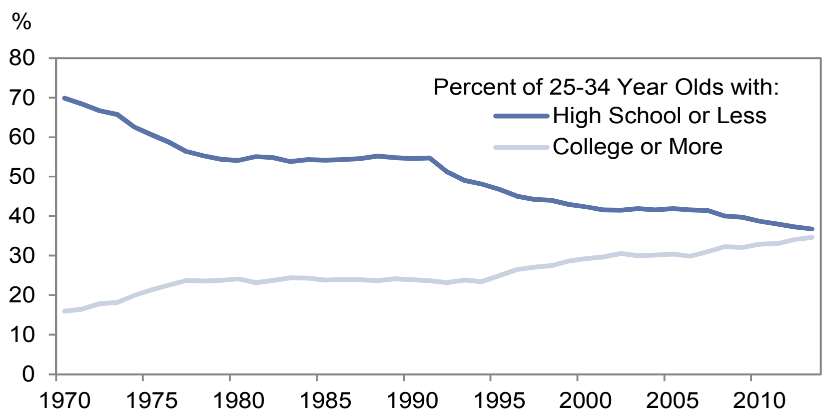
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 6: Increasing presence in the South and West
Change in distribution of 25-34 year olds across states



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 7: Have more education than previous generations
Percent with college degree is increasing



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 8: But with more degrees in psychology than in engineering
Top five bachelors' degrees awarded

	1980	2010
No. 1	Business	Business
No. 2	Education	Soc. Sci./History
No. 3	Soc. Sci./History	Health Professions
No. 4	Health Professions	Education
No. 5	Engineering →	Psychology

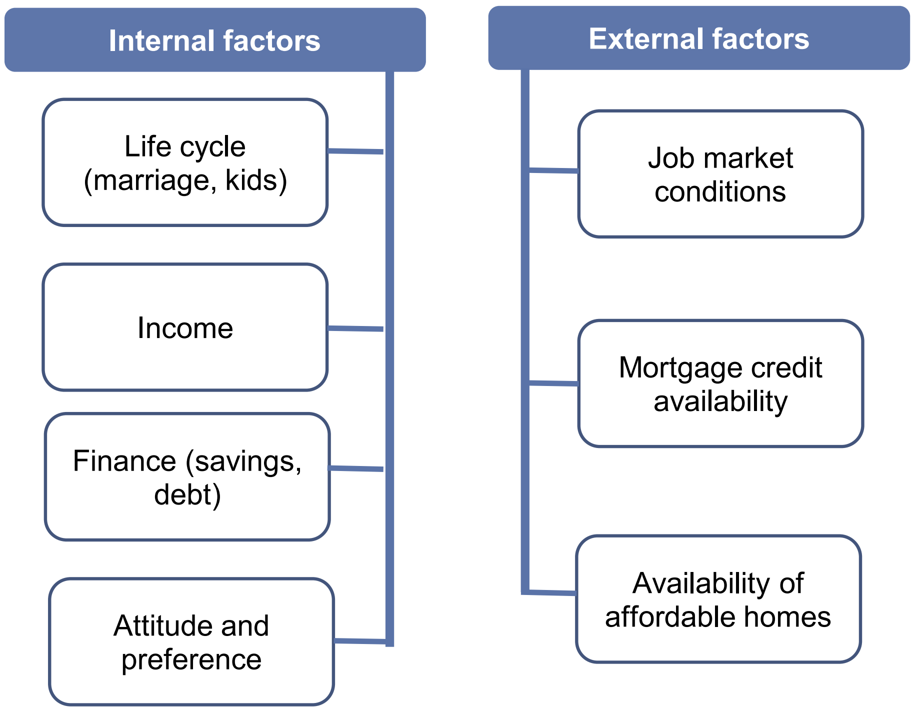
Source: Department of Education and Goldman Sachs Global Investment Research.

A framework to examine housing demand: both internal and external factors matter

A framework to understand the housing demand of the millennial generation:

- **Internal drivers** capture life cycle events, income, personal finance and attitude toward owning a home.
- **External drivers** capture the availability of jobs, mortgage credit, and affordable entry-level homes.
- Both sets of factors need to be examined closely to understand the millennials' future housing consumption.

Exhibit 9: Both internal and external factors drive millennial housing consumption
A list of internal and external factors driving housing consumption



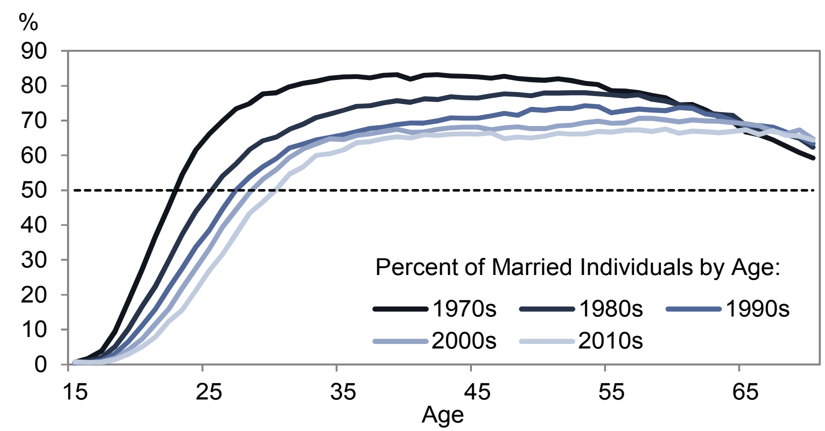
Source: Goldman Sachs Global Investment Research.

A delayed life cycle is pushing back household formation and homeownership…

Americans' life cycle has been changing:

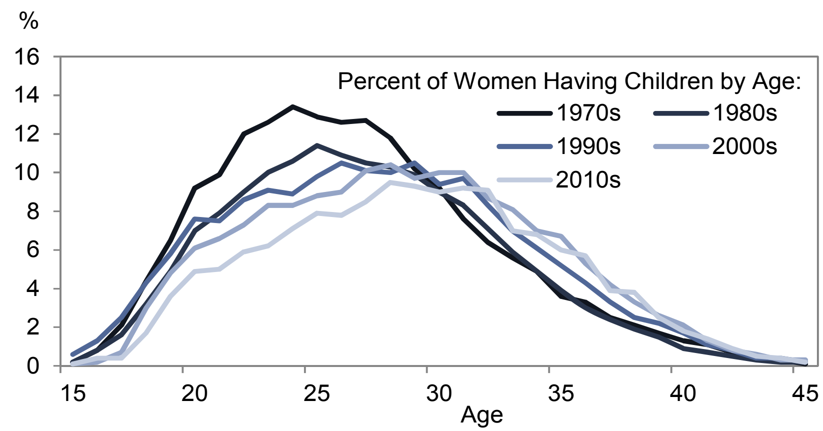
- Individuals are getting married later, having children later, living with their parents for longer, and buying homes at an older age. For example, the median marriage age has increased from 23 in the 1970s to 30 in the 2010s (Exhibits 10-13).
- The recent weakness in household formation results from both secular trends and the lingering effect of the recession. We believe the latter should fade over time. However, there could be changing preferences and increasing acceptance of living at home for longer.

Exhibit 10: Marriage age has been pushed back in the last few decades…
Median marriage age increased from 23 in 1970s to 30 in 2010s



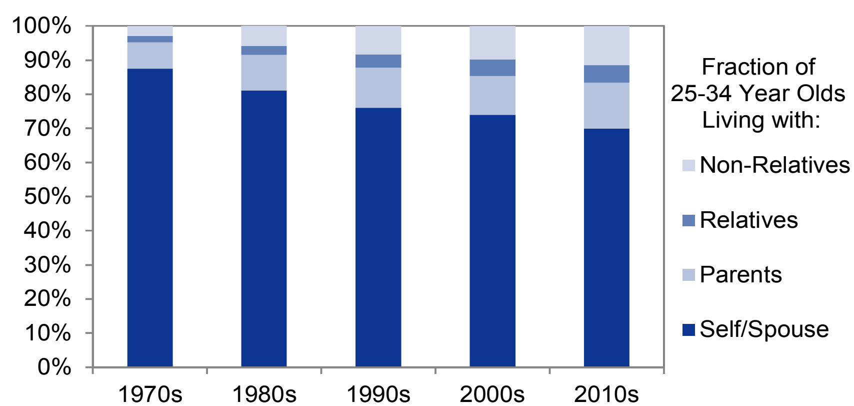
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 11: …and also child-bearing age
Peak child-bearing age increased from 24 in 1970s to 28 in 2010s



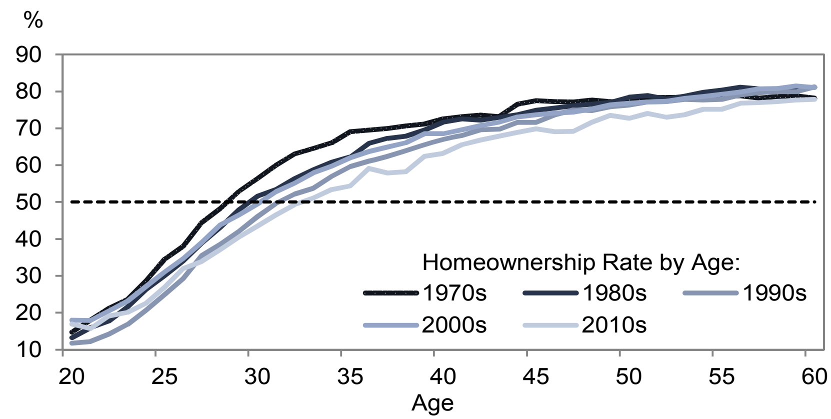
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 12: Long trend of delaying independent living
Fewer 25-34 year olds live independently over time



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 13: Homeownership is also delayed
Median age when buying first home increased from 29 in 1970s to 33 in 2010s



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

…but as time goes on life events should take place and household formation should increase

Evidence of delayed but not diminished life events:

- While we often field questions about millennials not wanting to get married or having children, survey data suggest the opposite. For example, according to a Gallup poll only 9% of adults aged 18-34 were never married and never want to get married (Exhibit 14). In addition, a Pew survey shows that only 5% of millennials don't want to get married and 7% don't want to have children (Exhibit 15).
- The share of 18-34 year olds living with their parents increased dramatically after 2006 (Exhibit 16). In order to better understand the driver behind this, we look at regional data to separate cyclical impact from structural changes. We compare North Dakota (where the economy remained strong) and California (where the downturn was particularly severe). The share of 18-34 year olds living with parents shot up in California but stayed little changed in North Dakota (Exhibit 17). The regional evidence suggests that cyclical weakness played an important role in the anemic pace of household formation over the past few years. As the economy recovers, more young individuals should live independently and household formation should normalize.

Exhibit 14: Most still want to get married…
Gallup poll June 2013

Age	Currently Married	Never married and want to get married	Never married and do not want to get married	Previously married/other
18 to 34	28%	56%	9%	7%
35 to 54	65%	12%	3%	20%
55+	64%	2%	4%	30%
White(non-Hispanic)	34%	53%	6%	7%
Nonwhite	20%	61%	12%	8%
Less than $30,000	19%	66%	8%	7%
$30,000-<$75,000	25%	59%	8%	7%
$75,000+	51%	38%	6%	5%
Not college grad	22%	59%	10%	9%
College grad or more	45%	47%	5%	3%

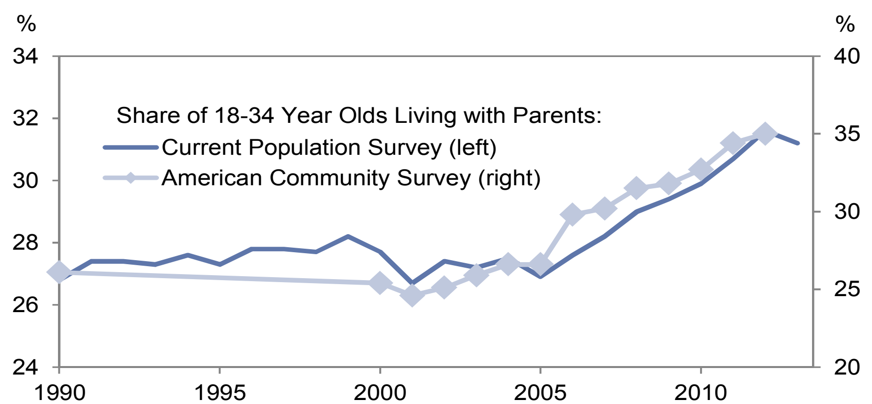
Source: Gallup.

Exhibit 15: …and have kids but view on family structure is changing
Pew poll March 2011

Millennials view on marriage/children	Want	Not Sure	Don't Want	
Do you want to get married?	70%	25%	5%	
Do you want to have children?	74%	19%	7%	
How different generations view marriage and family structure	**Millennial**	**Gen X**	**Boomer**	**65+**
Marriage is becoming obsolete	44	43	35	32
The growing variety in family arrangements is a good thing	46	37	28	24
Does a child need both a father and a mother to grow up happily	**Millennial**	**Gen X**	**Boomer**	**65+**
Agree	53	57	61	75
Disagree	44	40	34	21

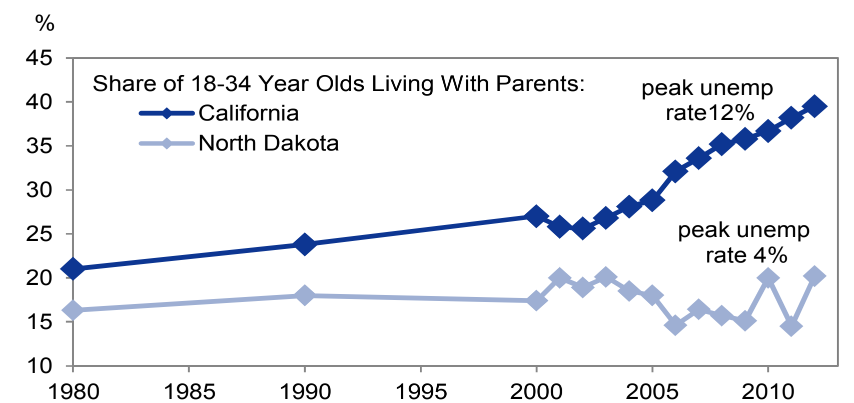
Source: Pew Research Center.

Exhibit 16: A rising share of young individuals living with parents…
Percent of 18-34 year olds living with parents



Source: IPUMS-CPS, IPUMS-USA and Goldman Sachs Global Investment Research.

Exhibit 17: …likely driven by cyclical weakness
Percent of 18-34 year olds living with parents by state



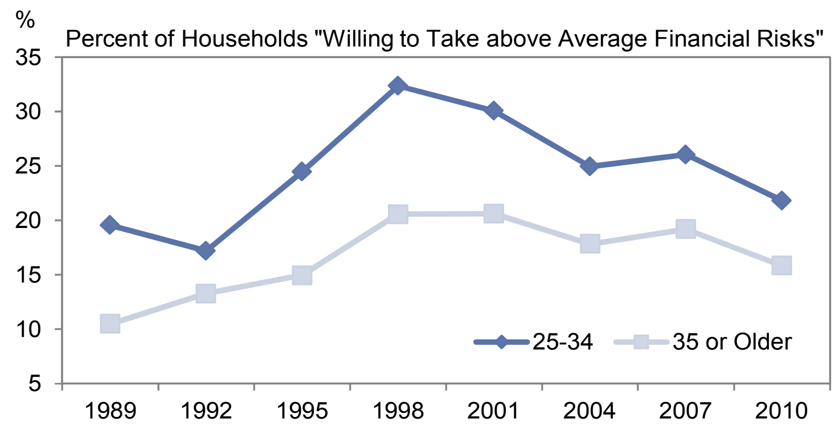
Source: IPUMS-USA and Goldman Sachs Global Investment Research.

They will move out but do they want to buy? Yes, but type/location of home may change

What has changed and what has not:

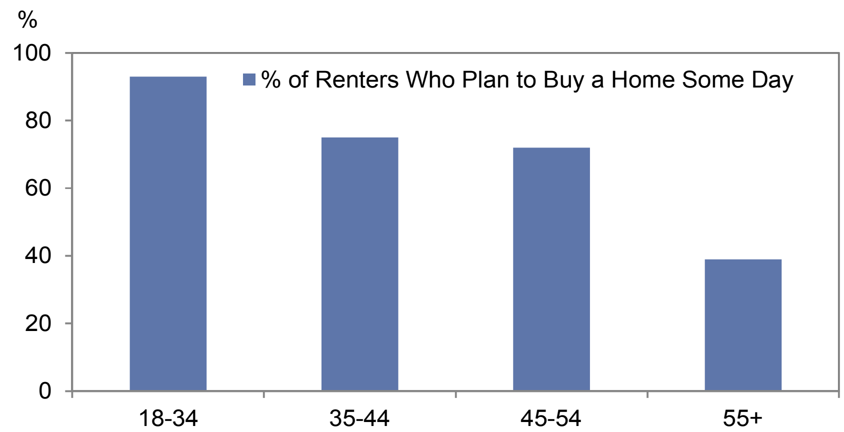
- Risk appetite declined post crisis, but young households have not turned disproportionally more risk-averse than older households (Exhibit 18).
- Millennials still want to buy as survey data show that 90% of young renters (aged 18-34) plan to own a home (Exhibit 19).
- But young homeowners are increasingly more likely to choose multi-family units than older homeowners (Exhibit 20). The move to exurbs may have stopped for young homeowners (Exhibit 21). Other data have shown that millennials are more likely to start a family in a city and then move out after.

Exhibit 18: Households are more conservative after the Great Recession
Percent reporting "willing to take above average financial risks"



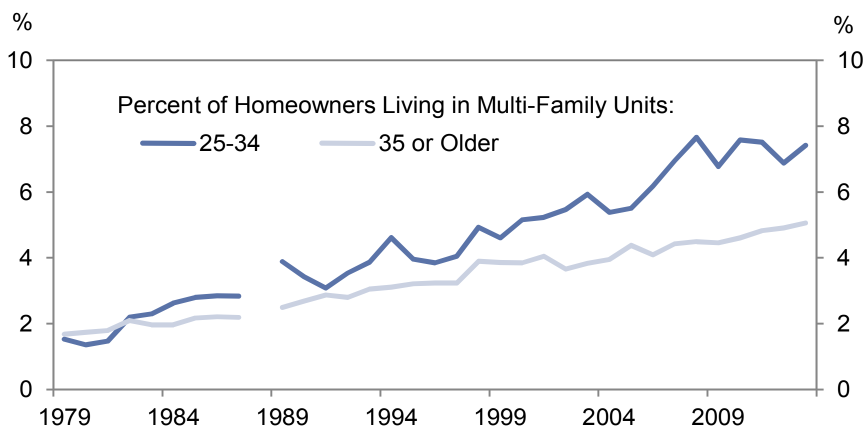
Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 19: But young renters still want to eventually own home
Percent of renters who plan to buy a home by age group



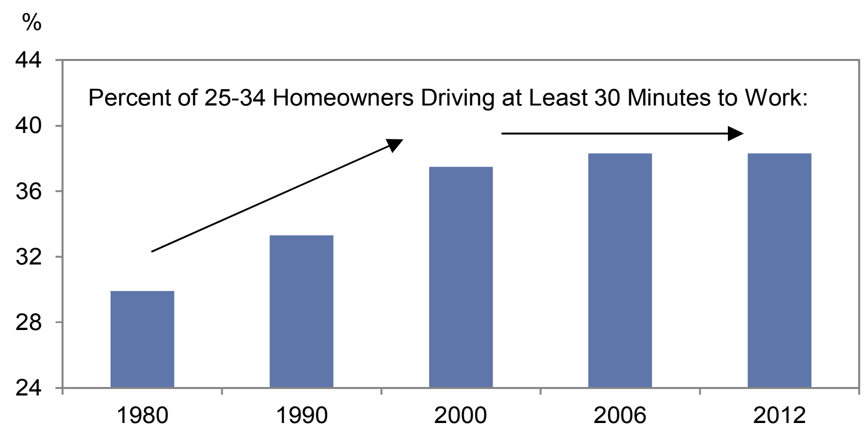
Source: Trulia.

Exhibit 20: A rising share of young owners live in multi-family homes
Percent of homeowners living in multi-family units



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 21: Young owners have stopped moving further away from work
Percent of homeowners driving at least 30 minutes to work



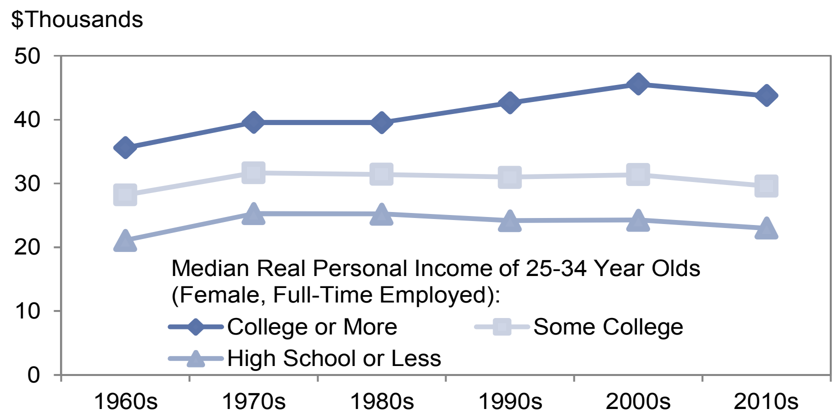
Source: IPUMS-USA and Goldman Sachs Global Investment Research.

Income growth could interfere with millennials' desire for homeownership

Diverging fortunes of college graduates and the less well educated:

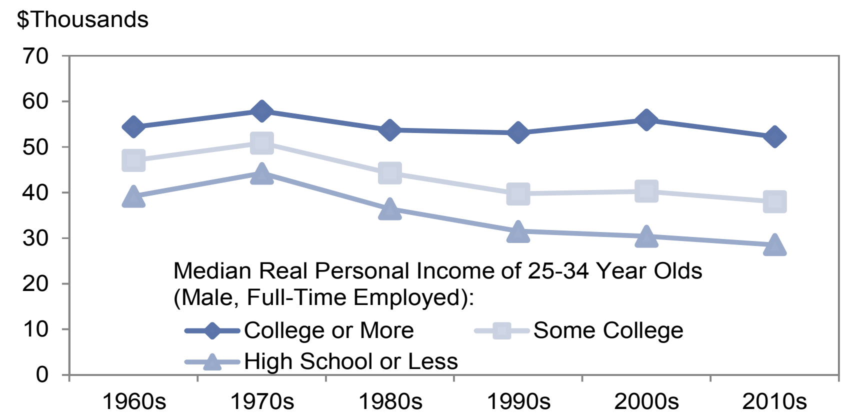
- We believe it is important to break out by gender when looking at income given somewhat different trends.
- For 25-34 year old female workers with full-time jobs, income has been trending up among college graduates but flat for the less well educated. For 25-34 year old male workers with full-time jobs, income has been flat among college graduates but falling for the less well educated (Exhibits 22-23).
- In addition to earning less income conditional on having full-time jobs, the less well educated also face more challenges in finding jobs in the first place (Exhibit 24). The downward trend in income is consistent with the downward trend in the homeownership rate for the less well educated (Exhibit 25).

Exhibit 22: Income of young female workers with college degrees is rising
Median real personal income by education attainment, female 25-34



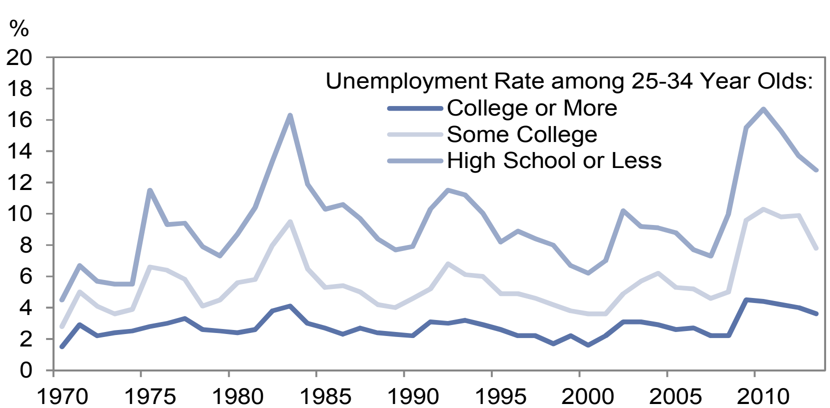
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 23: Income of young men without college degrees is falling
Median real personal income by education attainment, male 25-34



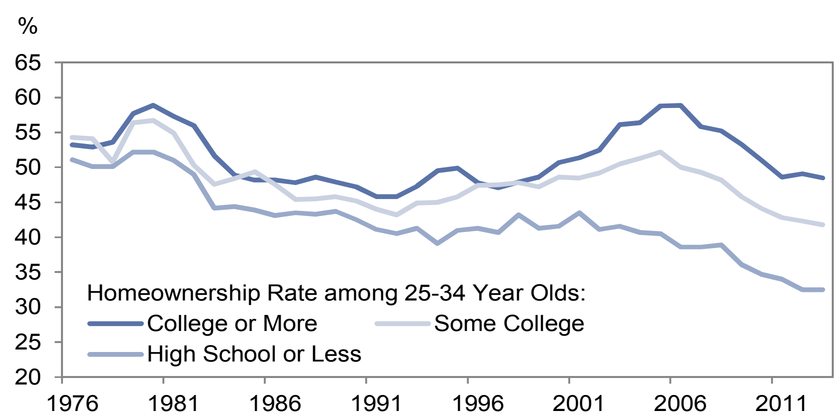
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 24: Unemployment rate is much higher for the less educated
Unemployment rate by education attainment, 25-34



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 25: A downward trend in homeownership rate for the less educated
Homeownership rate by education attainment, 25-34



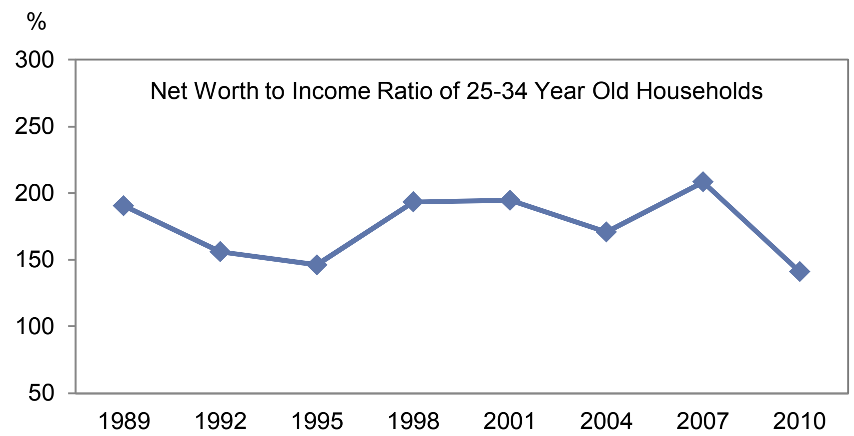
Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Young adults have seen the least improvement in net worth and were hurt most by housing

A snapshot of household finance:

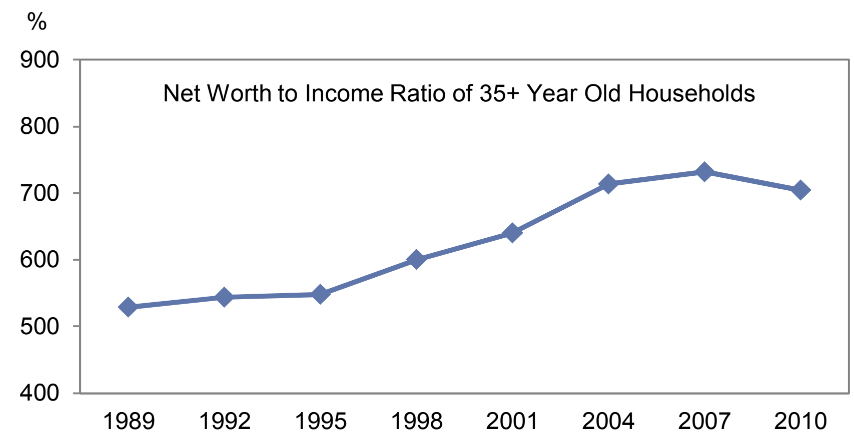
- Net worth of young households has stagnated over the past two decades while that of older households has been rising (Exhibits 26-27).
- Young homeowners experienced more erosion in home equity during the housing downturn than older homeowners (Exhibit 28).
- Growth in student loans explains almost all of the increases in non-mortgage debt of young households which we examine closely on the next page (Exhibit 29).

Exhibit 26: Net worth of young households shows little growth
Net worth to income ratio of households headed by 25-34 year olds



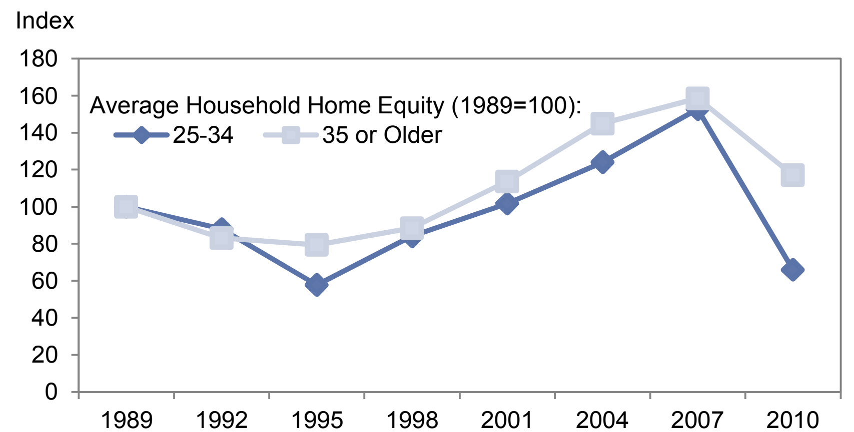
Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 27: Net worth of older households on an upward trend
Net worth to income ratio of households headed by 35+ year olds



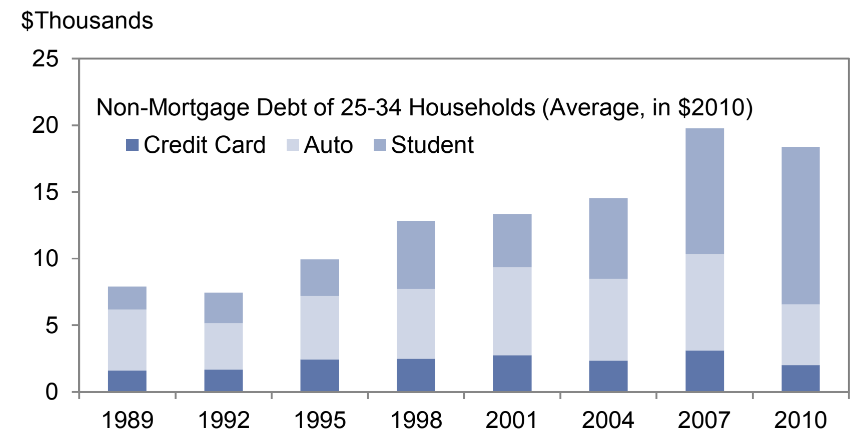
Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 28: Young households experienced a larger decline in home equity
Average home equity by age group



Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 29: Student loans account for all increases in non-mortgage debt
Non-mortgage debt of 25-34 year old households



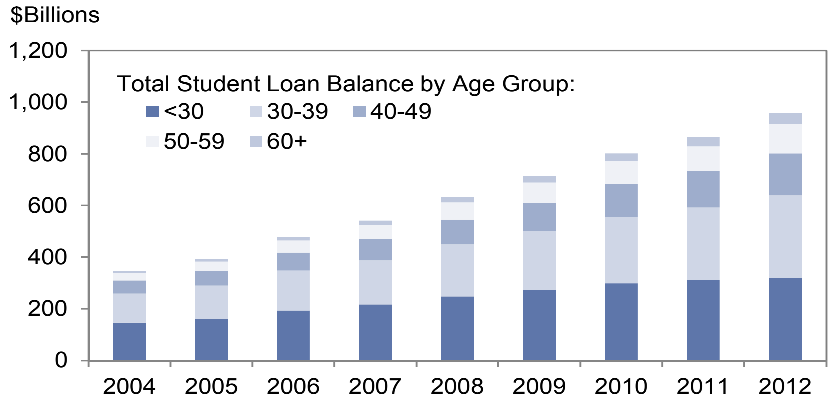
Source: SCF and Goldman Sachs Global Investment Research.

Student loan debt has become an increasingly important issue for millennials

Stories about student loans that you might not know:

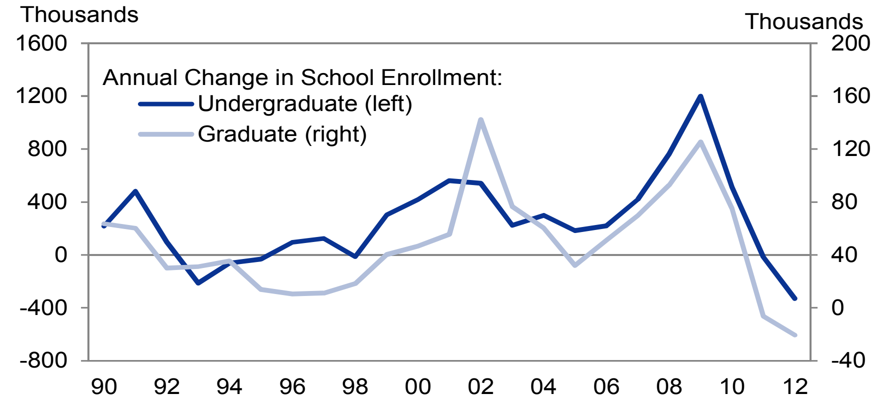
- Student loan balances are now over $1 trillion. Student loan balances have been growing faster among individuals over 30 years old, consistent with increases in graduate school enrollment (Exhibits 30-31).
- Debt-to-income ratio rose sharply over the past decade among those with student loans (Exhibit 32). The distribution of student loans is very skewed: 6.6% of 25-34 year old households carry more than $50,000 student loans, but collectively they account for 60% of the total balance (Exhibit 33).

Exhibit 30: Student loans grew rapidly over the past decade…
Total student loan balance by age group



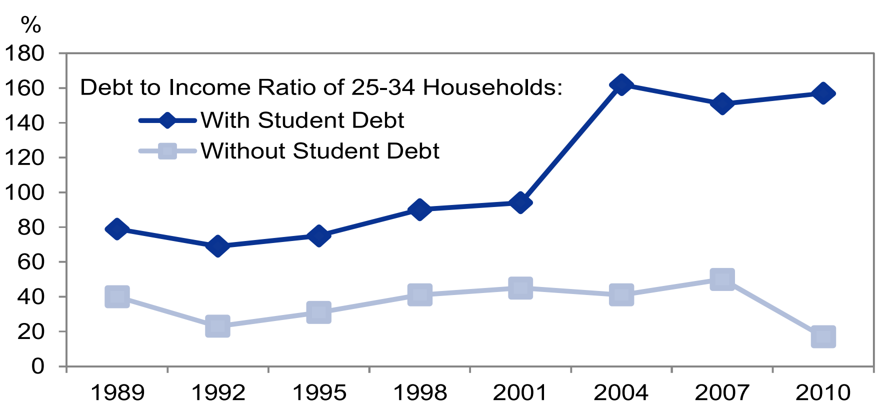
Source: FRBNY.

Exhibit 31: …consistent with enrollment increases
Annual change in school enrollment



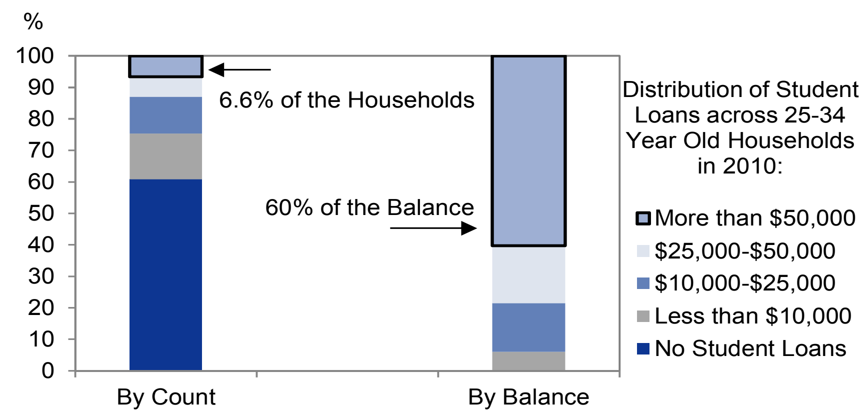
Source: Department of Education and Goldman Sachs Global Investment Research.

Exhibit 32: Debt to income ratio rose sharply among student loan borrowers
Median debt to income ratio of 25-34 year old households



Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 33: A small share of households carries a large share of balance
Distribution of student loans across households



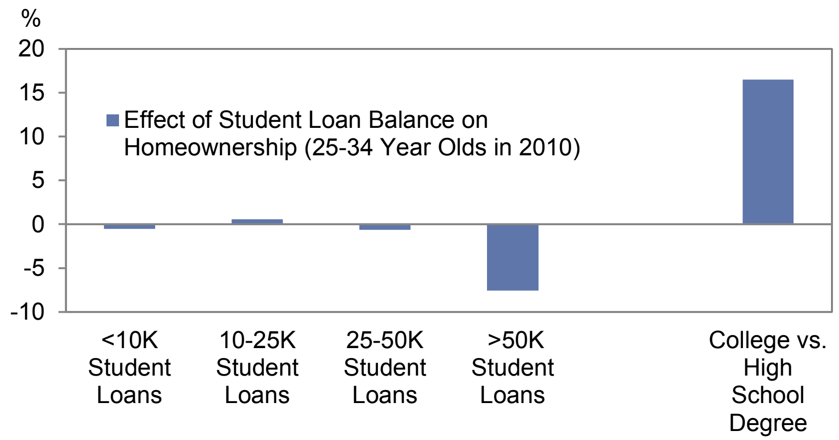
Source: SCF and Goldman Sachs Global Investment Research.

Having college and student debt does not necessarily hurt housing

Costs and benefits of borrowing money for college education in the housing market:

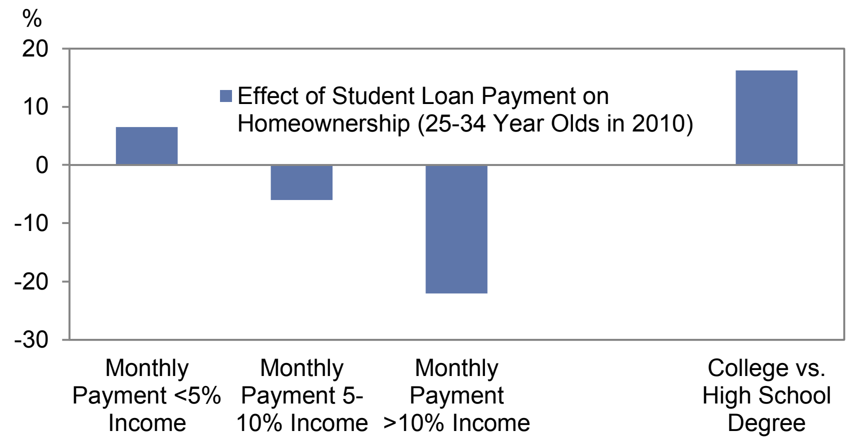
- Borrowing money for college education has both costs (e.g., a higher level of debt may disqualify a borrower for mortgage application) and benefits (e.g., college graduates earn higher income which boosts housing demand) when it comes to housing consumption. To quantify these effects, we use the 2010 Survey of Consumer Finance (SCF) household-level data to study the effect of student loan and college degree on the homeownership rate (Exhibits 34-35).
    - ➢ Having large amounts of student loans (>$50,000) or paying more than 5% of monthly income for student debt has a significantly negative impact on the probability of owning a home. However, small to moderate amounts of student loans do not appear to reduce the homeownership rate noticeably.
    - ➢ The negative impact from heavy student loan burdens is offset by the positive income effect of obtaining college degrees. It seems that borrowing money for college education is still worthwhile, assuming the debt burden is not overwhelming, the student completes college, and income is higher as a result of the college degree.

Exhibit 34: Having large student loans affects homeownership rate
Estimated effect of student loan balance on homeownership rate



Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 35: Large student loan payment also affects homeownership rate
Estimated effect of student loan payment on homeownership rate

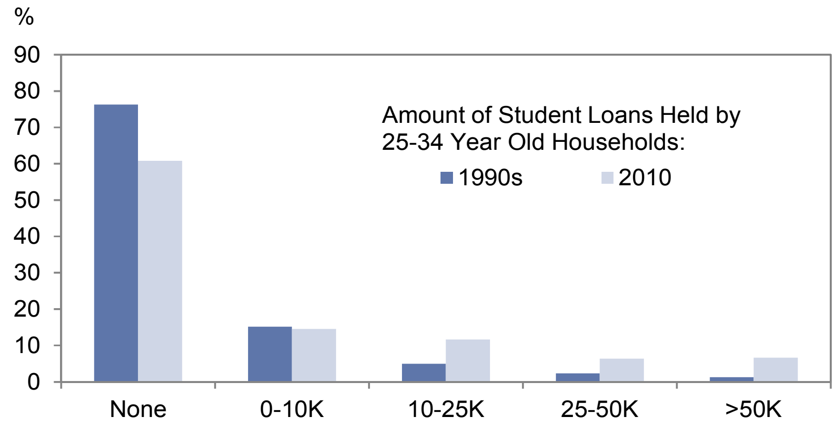


Source: SCF and Goldman Sachs Global Investment Research.

Having college and student debt does not necessarily hurt housing (cont'd)

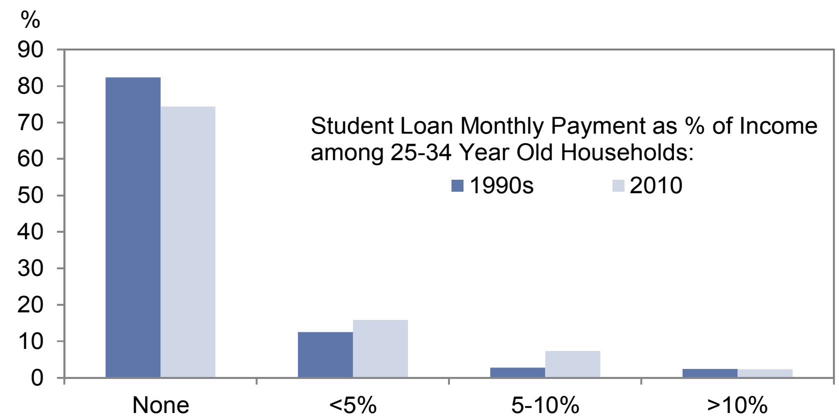
- An increasing number of borrowers carry large amounts of student loans (Exhibits 36 and 38). However, they are a relatively small share of all young households. The monthly payment to income ratio has stayed stable thanks to low interest rates and policies allowing payments to depend on the level of income (Exhibits 37 and 39). In aggregate, we do not see student debt threatening housing demand at the macro level yet.

Exhibit 36: A small share of households have large student loan balances
7% of 25-34 year old households have more than $50K student loans



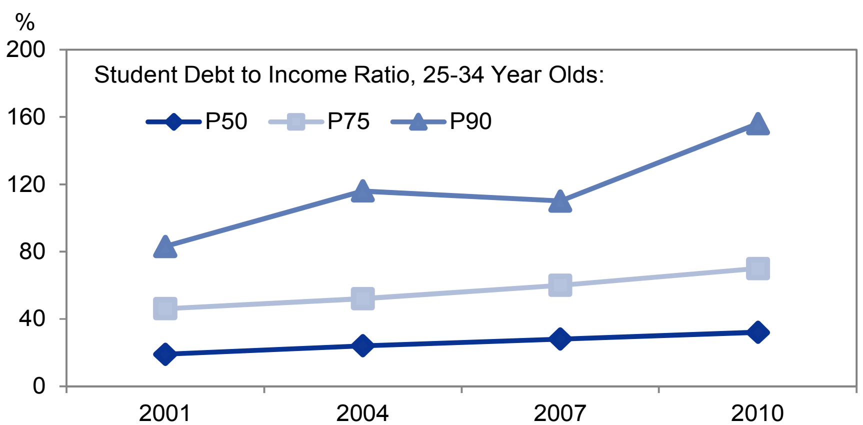
Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 37: Percentage with payments above 5% of income is also small
10% of 25-34 year old households pay above 5% of income for student loans



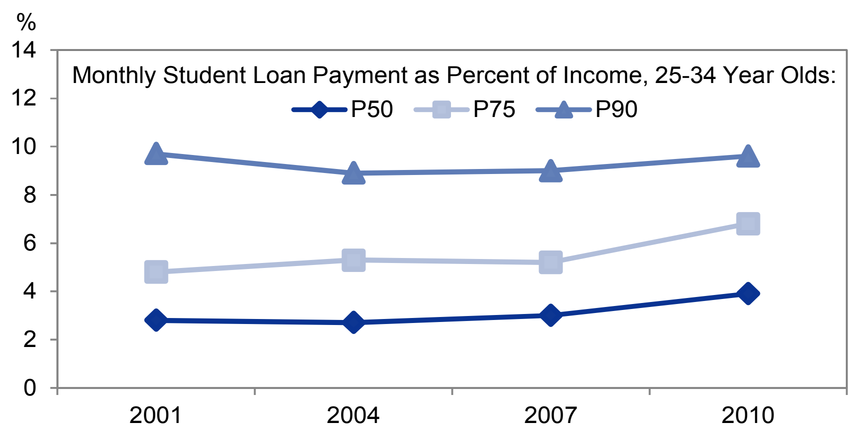
Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 38: Student debt-to-income ratio rose sharply at the tail
Distribution of student debt to income ratio, 25-34 households with student debt



Source: SCF and Goldman Sachs Global Investment Research.

Exhibit 39: Monthly payment has not increased much relative to income
Monthly payment as percent of income among 25-34 student loan borrowers



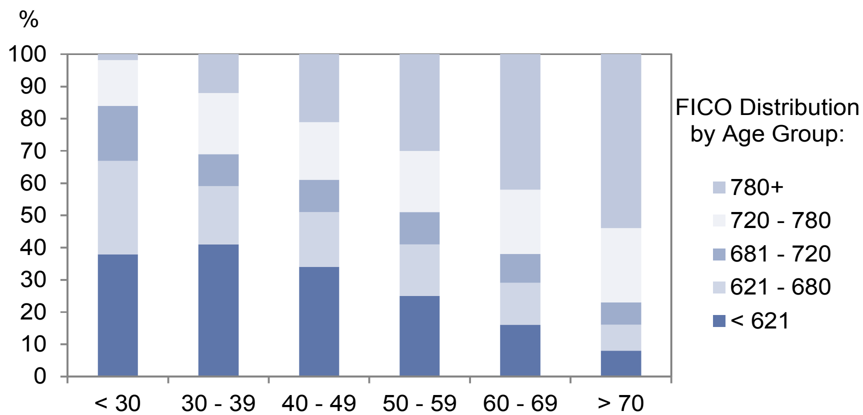
Source: SCF and Goldman Sachs Global Investment Research.

Credit availability remains tight, especially for young households

Limited credit supply hurts housing demand:

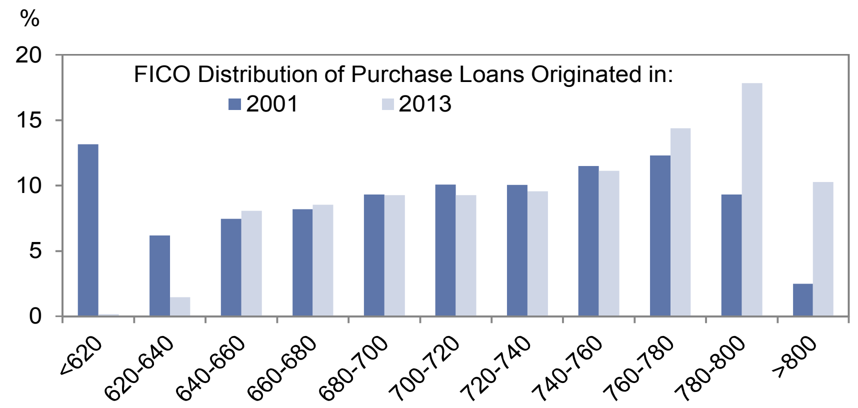
- Mortgage lending standards are the tightest for individuals with low credit scores; young individuals have lower credit scores than older individuals and face more challenges in the mortgage market. For example, nearly 70% of individuals under age 30 have FICOs less than 680 which is an area where borrowers face more difficulties in obtaining mortgages (Exhibits 40-41).
- Tight lending standards have discouraged borrowers with low credit score from applying for mortgages: the credit supply problem has slowly morphed into a housing demand problem (Exhibit 42). Over time we believe that credit standards will loosen but so far the process has been slow.

Exhibit 40: Young individuals tend to have low FICO scores
FICO distribution by age group



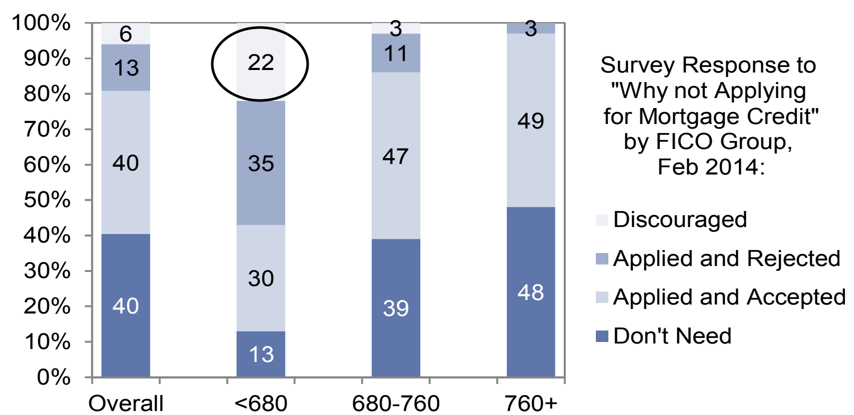
Source: FRBNY.

Exhibit 41: Low FICO consumers face challenges in obtaining mortgage credit
FICO distribution of purchase loans



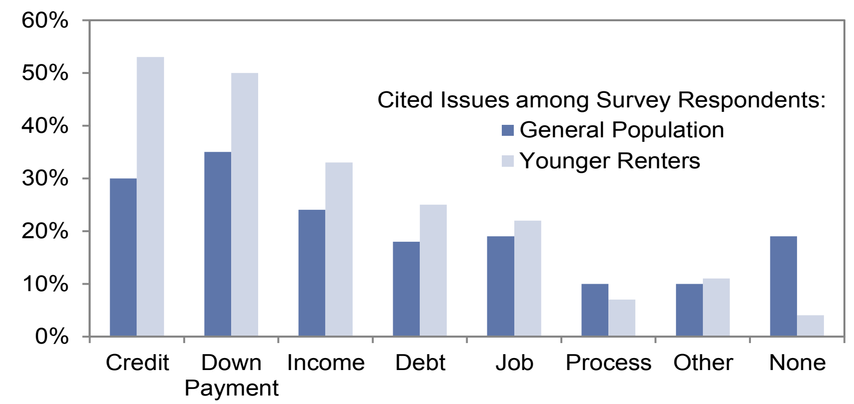
Source: Black Knight and Goldman Sachs Global Investment Research.

Exhibit 42: Many low FICO borrowers tend not to apply for mortgage
Reasons not to apply for mortgage by FICO group



Source: FRBNY.

Exhibit 43: Credit and down payment are biggest issues for young renters
Percent respondents citing different issues



Source: Fannie Mae.

Legal and regulatory uncertainties contribute to tight credit, but expect future easing

Why are mortgage lending standards so tight?

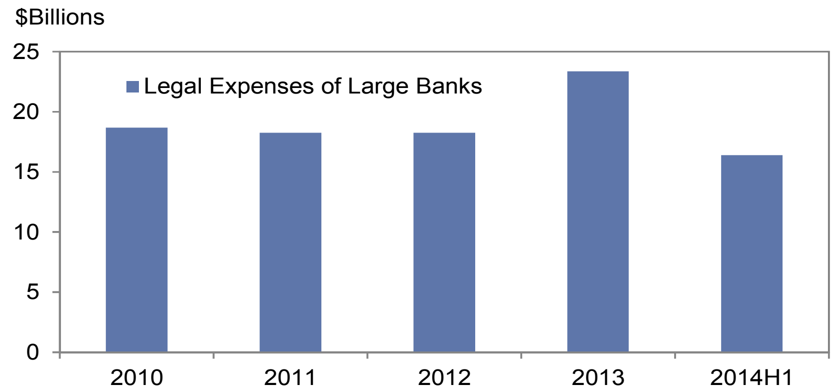
- After the housing crisis, a large number of new regulations and policies were imposed on the mortgage industry. Mortgage-related legal settlements are still ongoing for banks. Both factors may have contributed to banks' more conservative approach in mortgage lending (Exhibits 44-45).
- While other sectors have seen notable recovery in issuance of securitized products, private-label mortgage securitization remains dormant, suggesting that the problem may be mortgage-specific rather than investors staying away from securitized products in general (Exhibit 46).
- With the new leadership at the FHFA, we expect to see gradual easing in mortgage credit availability in coming years (Exhibit 47).

Exhibit 44: Mortgage industry faces many new regulations
Examples of new mortgage-related regulations and policies

Type	Example
General Banking Regulations	Basel 3 Capital Supplementary Leverage Ratio Liquidity Coverage Ratio
Mortgage-Specific Regulations	Qualified Mortgage/Ability to Repay Qualified Residential Mortgage Servicing (Servicing Practice, MSR Transfer) Disclosure Rules Capital Requirement on Mortgage Insurance Companies GSE Reform
Other Industry Issues	Reps and Warrants (GSEs, FHA Indemnification) Rating Agencies (Rating Standards)

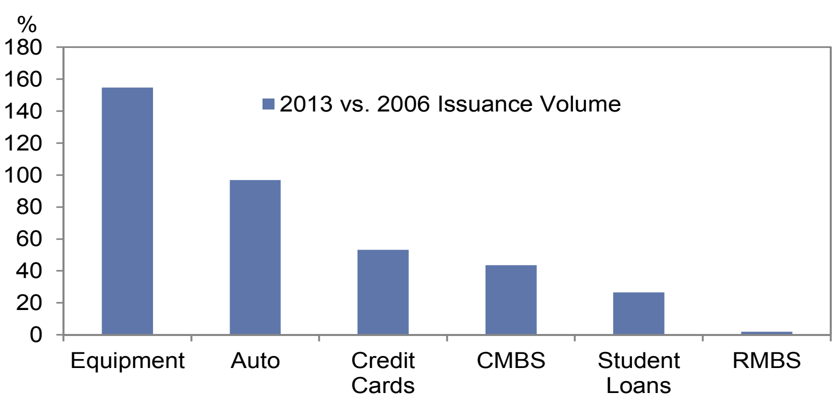
Source: Goldman Sachs Global Investment Research.

Exhibit 45: Legal settlements over legacy mortgages continue
Bank legal expenses, 2010-2014H1



Source: Company Data and Goldman Sachs Global Investment Research.

Exhibit 46: Private securitization of mortgages remains dormant
Structured finance issuance by sector, 2013 vs. 2006



Source: SIFMA and Goldman Sachs Global Investment Research.

Exhibit 47: New FHFA leadership focuses more on credit availability
FHFA policies under former and current leadership

	Former Leadership (DeMarco)	Current Leadership (Watt)
Score Card	Reduce (50%) Build (30%) Maintain (20%)	Maintain (40%) Reduce (30%) Build (30%)
G-Fee/Loan Limit	Raised G-Fee/LLPA Proposed Reducing Loan Limit	G-Fee/LLPA on Hold Loan Limit on Hold
Reducing Lender Reps and Warrants Risk	Some Action	Further Action

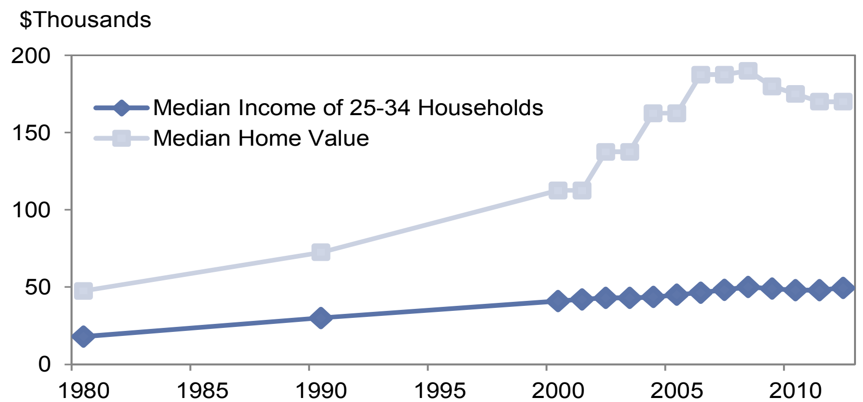
Source: FHFA and Goldman Sachs Global Investment Research.

Limited affordable supply may also be affecting millennial home purchases

The downside of further house price appreciation:

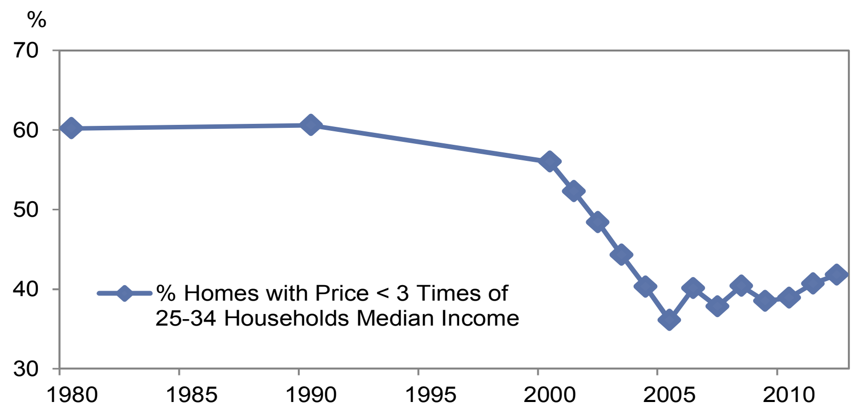
- While rising house prices allow underwater borrowers to move and boost consumption through the wealth effect, they also reduce housing affordability for first-time homebuyers. As seen in Exhibit 48, the median home value has grown well in excess of income growth, which impacts the number of affordable homes (Exhibit 49).
- We no longer believe that house prices are "cheap" and the GS Housing Affordability Index which measures affordability for the marginal borrower is near historical averages (Exhibits 50-51).

Exhibit 48: House price growth outpaced income growth of 25-34 year olds
Median house price and median income of the young



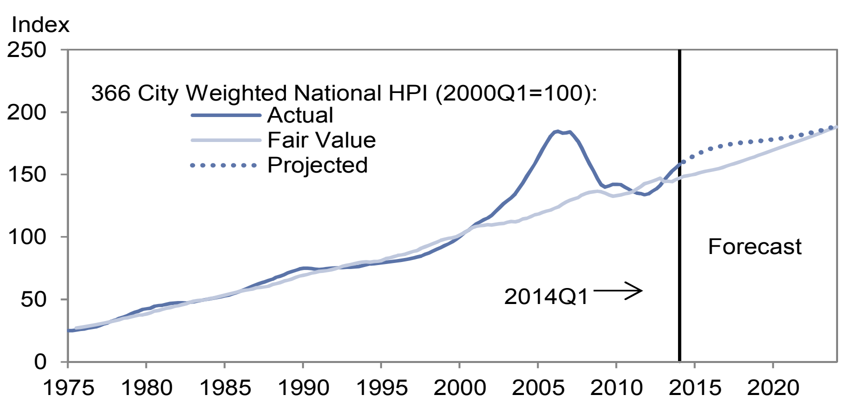
Source: IPUMS-USA and Goldman Sachs Global Investment Research.

Exhibit 49: Percent of low-price homes remains low
Percent of homes with prices below 300% of 25-34 household median income



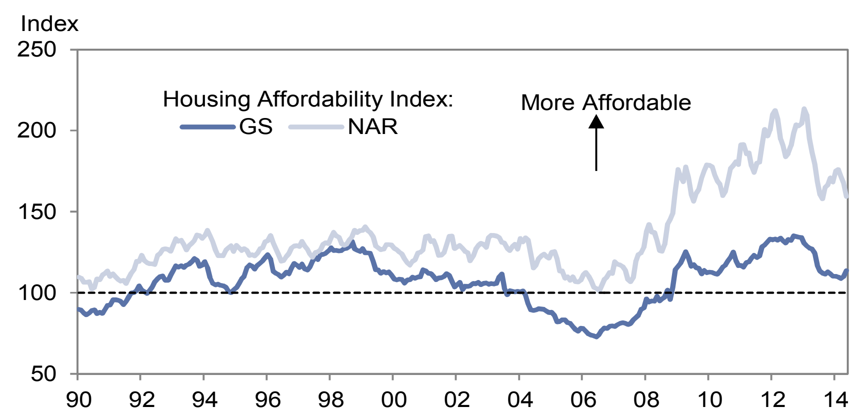
Source: IPUMS-USA and Goldman Sachs Global Investment Research.

Exhibit 50: House prices are no longer cheap
Estimated house price fair value and projected house price growth



Source: Fiserv and Goldman Sachs Global Investment Research.

Exhibit 51: Affordability is at historical average for marginal buyers
GS Housing Affordability Index



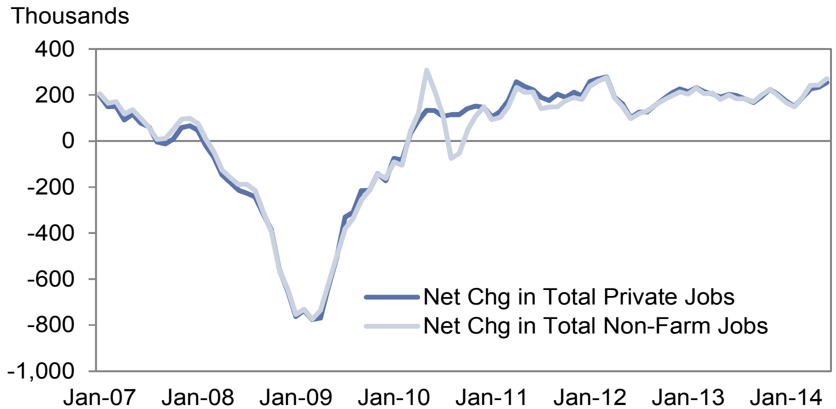
Source: NAR and Goldman Sachs Global Investment Research.

Improved economic activity, especially wage growth, should help drive housing demand

Good news from the labor market:

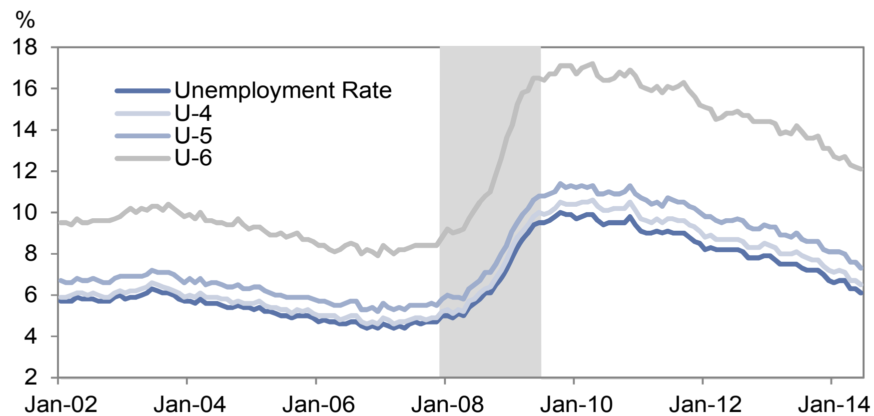
- Given our view that cyclical weakness plays an important role in depressing housing demand, the recent improvements in the labor market has been encouraging (Exhibits 52-53). In addition, while wage growth has been sluggish so far, there are signs that it is slowly picking up (Exhibit 54).
- We would also note that young individuals are more optimistic about their future income than older ones- a positive sign for their housing demand (Exhibit 55).

Exhibit 52: Payrolls have been increasing steadily
3-month moving average of non-farm payrolls



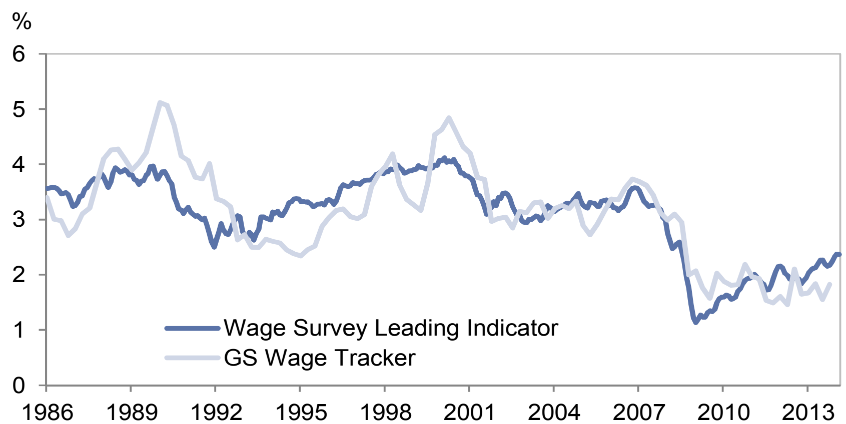
Source: BLS.

Exhibit 53: Various measures of unemployment rate have been falling
Measures of unemployment rate



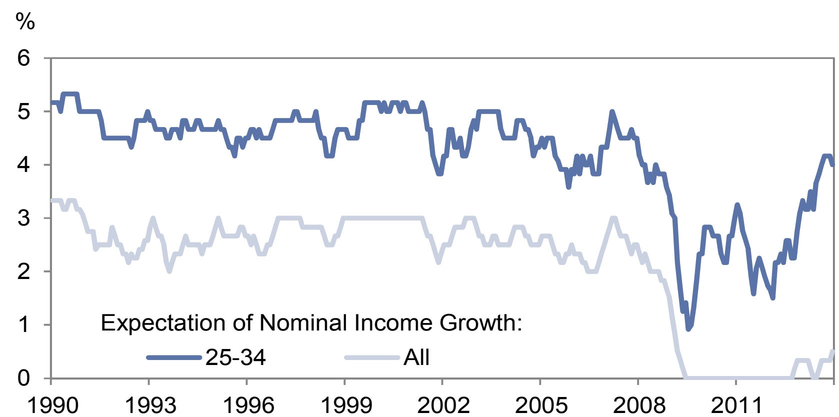
Source: BLS.

Exhibit 54: Wage growth still low but improving
GS Wage Tracker and Wage Survey Leading Indicator



Source: Goldman Sachs Global Investment Research.

Exhibit 55: Better recovery in income expectation among young adults
Expectation of nominal income growth next year



Source: University of Michigan and Goldman Sachs Global Investment Research.

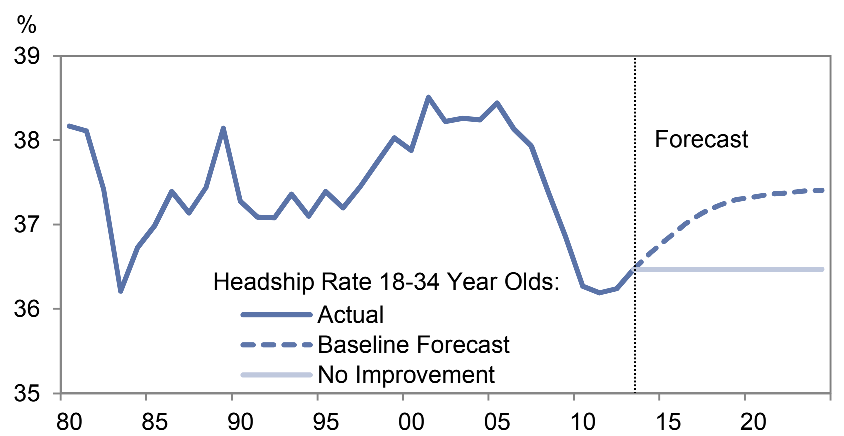
Scenario analysis suggests recovery continues even in "stress test" scenario

Going beyond the baseline scenario:

- To test the sensitivity of our outlook for housing activity with respect to the speed of recovery in young individuals' housing demand, we perform the following scenario analysis.

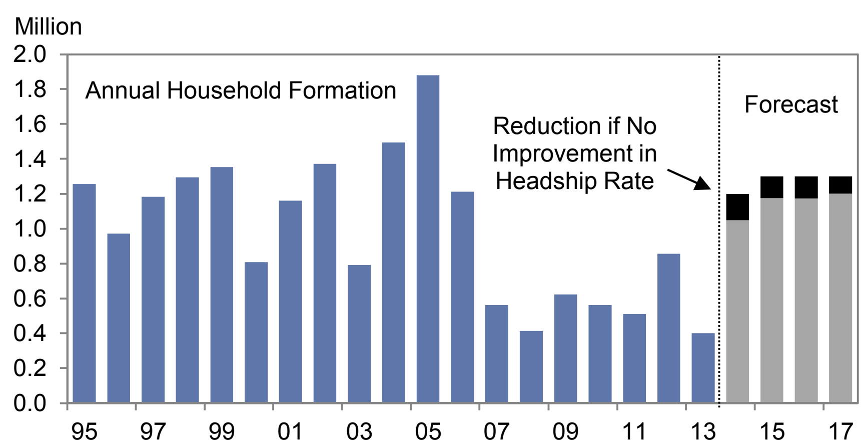
  - ➢ Under our baseline scenario, the 18-34 headship rate (which equals the number of households headed by 18-34 year olds divided by the 18-34 population) slowly increases as the unemployment rate falls and young individuals move out of their parents' houses. Alternatively, we test the scenario assuming no improvement in the 18-34 headship rate in coming years. Our household formation model, which looks at the four age groups separately (18-34, 35-49, 50-64 and 65+), suggests that household formation would be 200K lower in 2014 under this pessimistic scenario but still reach 1mn.

Exhibit 56: We expect gradual improvement in the 18-34 headship rate
Baseline and alternative scenarios for 18-34 headship rate



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 57: Formation falls from 1.2m to 1.0m if no increase in headship rate
Actual and projected household formation under the two scenarios

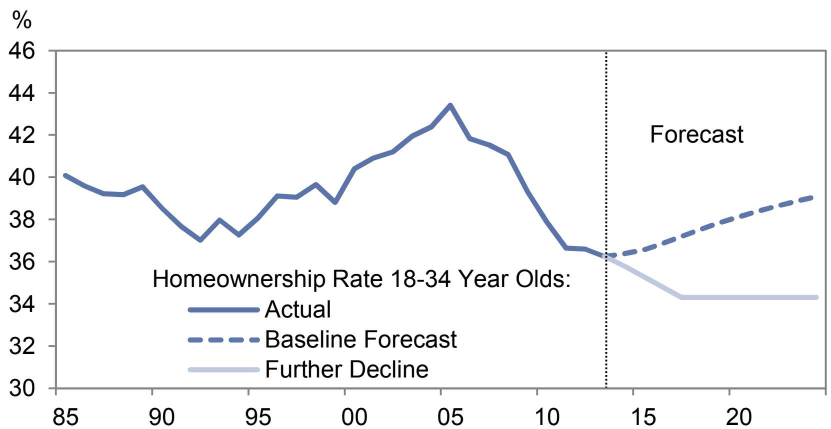


Source: Census Bureau and Goldman Sachs Global Investment Research.

Scenario analysis suggests recovery continues even in “stress test” scenario (cont’d)

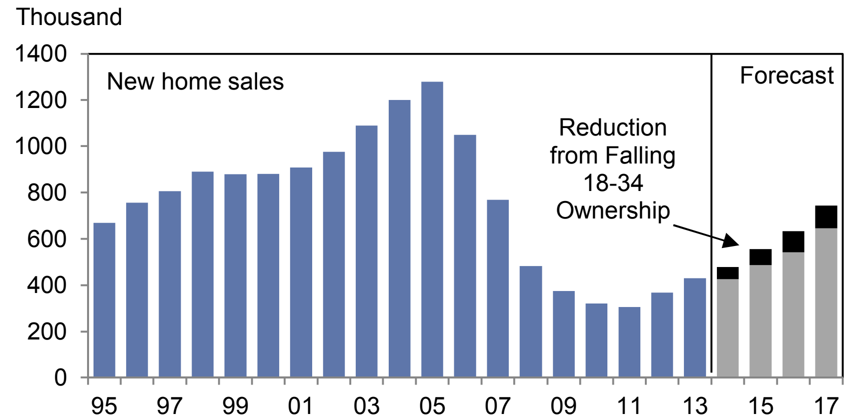
- The homeownership rate among the 18-34 year olds has declined to below its 1992 trough. Under our baseline scenario, this homeownership rate increases gradually on better labor market conditions and mortgage credit availability. Alternatively, we test the scenario assuming the 18-34 homeownership rate falls another two percentage points over the next four years and stay flat thereafter. We then estimate a model linking new home sales to the change in the number of homeowners in the country. Our model suggests that new home sales would be approximately 100K lower in 2017 under this pessimistic scenario. However, it would still reach 650K which is well above current readings in the low to mid 400s.
- Our scenario analysis suggests that the behavior of the 18-34 year olds over the next few years is likely to have a notable impact on housing activity. However, even with more pessimistic assumptions, we should still see recovery, albeit a slower one, in the housing market.
- **We believe what this shows is that the sheer size of the millennial generation should help overpower some of the restraints on housing demand**.

Exhibit 58: We expect slight increase in the 18-34 homeownership rate
Baseline and alternative scenarios for 18-34 homeownership rate



Source: IPUMS-CPS and Goldman Sachs Global Investment Research.

Exhibit 59: New home sales fall by 100K if homeownership falls further
Actual and projected new home sales under the two scenarios



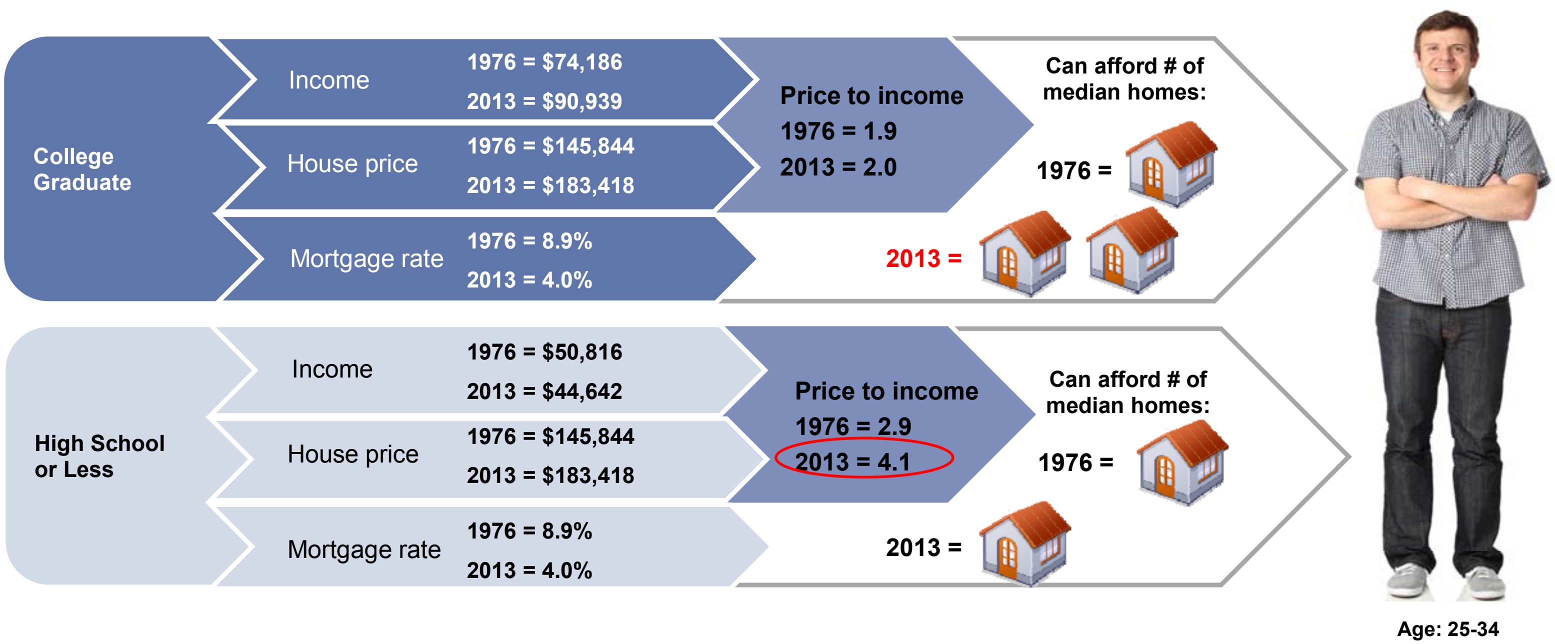
Source: Census Bureau and Goldman Sachs Global Investment Research.

Taking a hard look at what young adults can buy today

A concrete example of 25-34 year olds in 1976 vs. 2013:

- We focus on the high-income young renters (75th percentile) in both years since they are likely to be the marginal households considering buying a home.
- For college graduates, household income increased roughly in proportion to house price growth, resulting in the same house price to income ratio in 1976 and 2013. Taking into account much lower mortgage rates, college graduates are strictly better off in 2013 than in 1976: they can afford twice as much housing now vs. then.
- For the 25-34 year olds with high school degrees or less, the story is different. Their income declined while house prices rose, resulting in significantly increasing in the house price-to-income ratio. Declining interest rates offset the rising price-to-income ratio and they can afford the same amount of housing in 2013 as in 1976. However, if their income continues the long-run downward trend and interest rates increase going forward, the less well educated young renters may find the prospect of becoming a homeowner difficult.

Exhibit 60: Less well educated young individuals are likely to face the most difficulties in buying homes going forward
Income refers to the 75th percentile of renters in 1976 (the first year the data are available) and in 2013 (the last year the data are available). All dollar amounts are in 2010 real dollars.



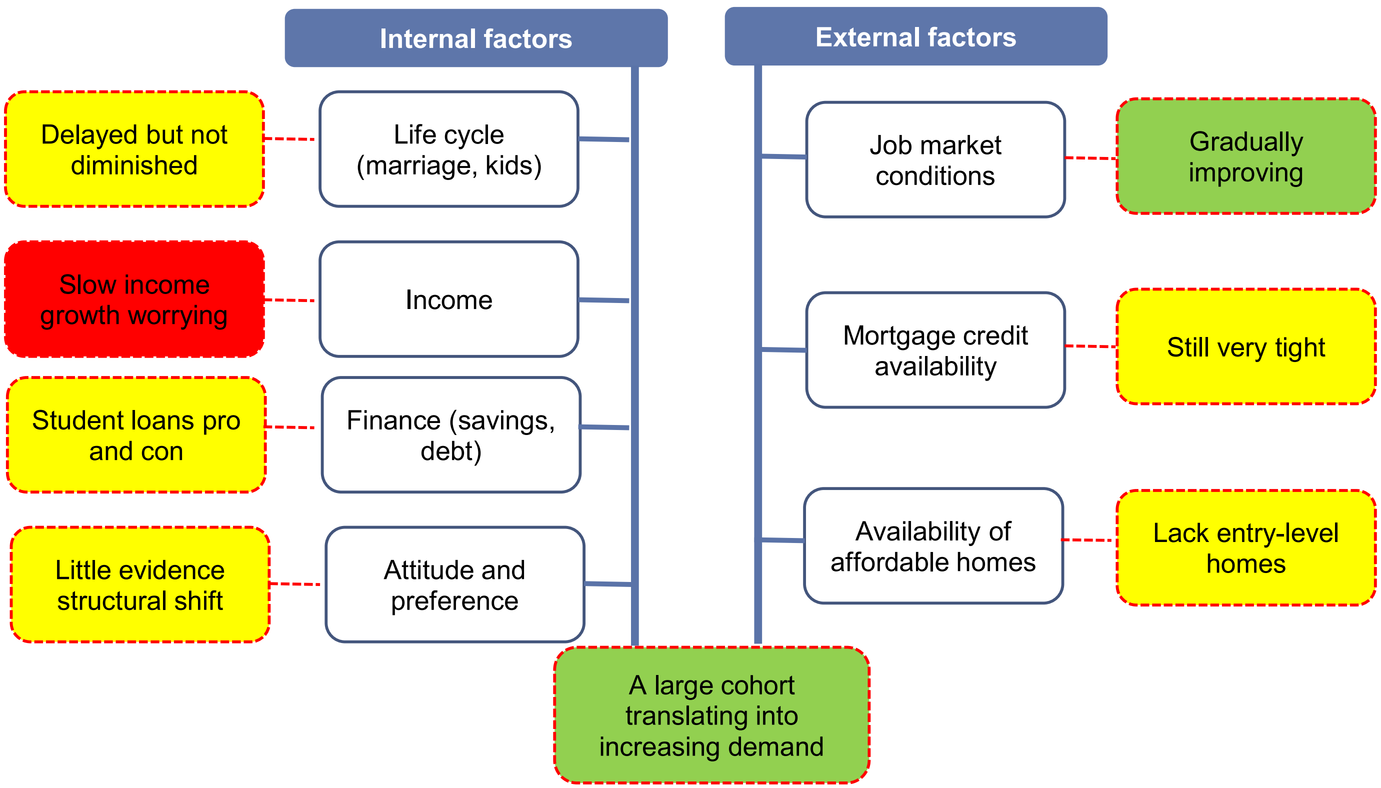
Source: www.istockphoto.com, IPUMS-CPS, NAR, Freddie Mac and Goldman Sachs Global Investment Research.

Where does it leave us? Expect growth in housing demand but restraints hold us back

Cautiously constructive:

- **Headwinds:**
  - ➢ First, young individuals with high school degrees or less, face declining household income. Given our view that lending standards are unlikely to return to the 2005-2007 levels and mortgage rates are more likely to rise than to fall, we think their homeownership demand may stay weak.
  - ➢ Second, lending standards are particularly tight for young households and affordable entry-level homes are lacking on the market.
- **Tailwinds:**
  - ➢ First, the large number of people moving from their early 20s to late 20s and early 30s imply increases in housing demand even without increases in the headship rate or the homeownership rate.
  - ➢ Second, continued labor market recovery should translate into higher income and better confidence, both of which help raise housing demand.

Exhibit 61: Income growth and credit availability are the most important headwinds and population growth and labor market recovery are the most important tailwinds
A summary of our analysis: red is a negative, yellow is a slight negative and green is a positive.



Source: Goldman Sachs Global Investment Research.

Disclosure Appendix

Reg AC

We, Eli Hackel, CFA and Hui Shan, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Investment Profile

The Goldman Sachs Investment Profile provides investment context for a security by comparing key attributes of that security to its peer group and market. The four key attributes depicted are: growth, returns, multiple and volatility. Growth, returns and multiple are indexed based on composites of several methodologies to determine the stocks percentile ranking within the region's coverage universe.

The precise calculation of each metric may vary depending on the fiscal year, industry and region but the standard approach is as follows:

Growth is a composite of next year's estimate over current year's estimate, e.g. EPS, EBITDA, Revenue. **Return** is a year one prospective aggregate of various return on capital measures, e.g. CROCI, ROACE, and ROE. **Multiple** is a composite of one-year forward valuation ratios, e.g. P/E, dividend yield, EV/FCF, EV/EBITDA, EV/DACF, Price/Book. **Volatility** is measured as trailing twelve-month volatility adjusted for dividends.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

GS SUSTAIN

GS SUSTAIN is a global investment strategy aimed at long-term, long-only performance with a low turnover of ideas. The GS SUSTAIN focus list includes leaders our analysis shows to be well positioned to deliver long term outperformance through sustained competitive advantage and superior returns on capital relative to their global industry peers. Leaders are identified based on quantifiable analysis of three aspects of corporate performance: cash return on cash invested, industry positioning and management quality (the effectiveness of companies' management of the environmental, social and governance issues facing their industry).

Disclosures

Coverage group(s) of stocks by primary analyst(s)

Eli Hackel, CFA: America-Building Products, America-Homebuilders.

America-Building Products: Armstrong World Industries, Inc., Fortune Brands Home & Security, Inc., Masco Corporation, Mohawk Industries, Inc., Owens Corning, Ply Gem Holdings, Inc., USG Corporation.

America-Homebuilders: Beazer Homes USA, Inc., D.R. Horton, Inc., Hovnanian Enterprises, Inc., KB Home, Lennar Corp., M.D.C. Holdings, Inc., Meritage Homes Corp., NVR, Inc., PulteGroup, Inc., Realogy Holdings Corp, Taylor Morrison Home Corp., The Ryland Group, Inc., Toll Brothers, Inc..

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	32%	54%	14%	42%	36%	30%

As of July 1, 2014, Goldman Sachs Global Investment Research had investment ratings on 3,697 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by NASD/NYSE rules. See 'Ratings, Coverage groups and views and related definitions' below.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs usually makes a market in fixed income securities of issuers discussed in this report and usually deals as a principal in these securities.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director, advisory board member or employee of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman, Sachs & Co. and therefore may not be subject to NASD Rule 2711/NYSE Rules 472 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Distribution of ratings: See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at http://www.gs.com/research/hedge.html.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of the Global Investment Research Division of Goldman Sachs Australia may attend site visits and other meetings hosted by the issuers the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. **Brazil:** Disclosure information in relation to CVM Instruction 483 is available at http://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 16 of CVM Instruction 483, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** Goldman Sachs Canada Inc. is an affiliate of The Goldman Sachs Group Inc. and therefore is included in the company specific disclosures relating to Goldman Sachs (as defined above). Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research report in Canada if and to the extent that Goldman Sachs Canada Inc. disseminates this research report to its clients. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited. **Japan:** See below. **Korea:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **New Zealand:** Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. **Singapore:** Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union: Disclosure information in relation to Article 4 (1) (d) and Article 6 (2) of the European Commission Directive 2003/126/EC is available at http://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan and Type II Financial Instruments Firms Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage groups and views and related definitions

Buy (B), Neutral (N), Sell (S) -Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's return potential relative to its coverage group as described below. Any stock not assigned as a Buy or a Sell on an Investment List is deemed Neutral. Each regional Investment Review Committee manages various regional Investment Lists to a global guideline of 25%-35% of stocks as Buy and 10%-15% of stocks as Sell; however, the distribution of Buys and Sells in any particular coverage group may vary as determined by the regional Investment Review Committee. Regional Conviction Buy and Sell lists represent investment recommendations focused on either the size of the potential return or the likelihood of the realization of the return.

Return potential represents the price differential between the current share price and the price target expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage groups and views: A list of all stocks in each coverage group is available by primary analyst, stock and coverage group at http://www.gs.com/research/hedge.html. The analyst assigns one of the following coverage views which represents the analyst's investment outlook on the coverage group relative to the group's historical fundamentals and/or valuation. **Attractive (A).** The investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation. **Neutral (N).** The investment outlook over the following 12 months is neutral relative to the coverage group's historical fundamentals and/or valuation. **Cautious (C).** The investment outlook over the following 12 months is unfavorable relative to the coverage group's historical fundamentals and/or valuation.

Not Rated (NR). The investment rating and target price have been removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or strategic transaction involving this company and in certain other circumstances. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining, or there are legal, regulatory or policy constraints around publishing, an investment rating or target. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not**

Covered (NC). Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA).** The information is not available for display or is not applicable. **Not Meaningful (NM).** The information is not meaningful and is therefore excluded.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; in Canada by either Goldman Sachs Canada Inc. or Goldman, Sachs & Co.; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman, Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman Sachs AG and Goldman Sachs International Zweigniederlassung Frankfurt, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also distribute research in Germany.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman, Sachs & Co., the United States broker dealer, is a member of SIPC (http://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and our proprietary trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, our proprietary trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage group as described herein.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents which are available from Goldman Sachs sales representatives or at http://www.theocc.com/about/publications/character-risks.jsp. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data available on a particular security, please contact your sales representative or go to http://360.gs.com.

Disclosure information is also available at http://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.