23 January 2020

SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FORESTY PRODUCTS INTEREST GROUP

I hope all is well, and that your 2020 is off to a great start. Please find attached my Fourth Quarter 2019 Market Update.

Highlights of this quarter's update include: Sentiment underpinning housing remains strong, as do the level of starts over the past few months. Year over year gains in housing starts will be modest when the year's final month of activity is tallied, while construction expenditures are poised to show retreats from 2018 levels, for both new construction and remodeling. Lumber and OSB prices edged higher as plywood prices drifted lower during the quarter; regional log prices were mixed. The gap between northwest and southern sawmills narrowed to just $32/MBF, the smallest gap since late 2010. US Timberland sales were also modest in 2019, though some late December data has yet to be incorporated. After 2018's roller coaster ride in our industry, 2019 was comparatively subdued.

Also included in this quarter's Market Trends are a couple of recent articles summarizing NAHB and NAR research, focused on trends in homes sales and purchases. I found them both interesting and comprehensive, and in some instances, quite eye-opening. Like me, I trust you'll find them of helpful in developing your outlook as you consider what the coming decade holds in store.

Best wishes for a healthy and prosperous new year,

Will

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Market Trends

4th Quarter, 2019

Perspectives on the latest market trends and indices impacting the Timber and Wood Products sectors, compliments of WillSonn Advisory, LLC

Q4 2019 Highlights

Market Trends

- Builder sentiment hits a 20-year high while Value-Put-In-Place falls off (page 4)
- Affordability drifts higher as lower interest rates offset rising home prices (page 5)
- 4^{th} Quarter Housing Starts improve, eke out a 1% gain over 2018's pace (page 6)
- Year-over-Year Housing Inventory levels continue to decline (page 7)
- Lumber and OSB prices move up, Plywood drift lower in the 4^{th} Quarter (page 8)
- PNW and Southern Log Prices firm in the fourth quarter (page 9-10)
- Regional gross mill margins approach convergence, only $32/MBF apart in Q4 (page 11)
- US Timberland Sales total $1.4 B on 2.1 M acres through early December (page 12)

In Depth Coverage: In Case You Missed It

- NAHB's Review of the Past Decade in Home Building (page 14)
- Key findings in NAR's 2019 Profile of Home Buyers and Sellers (page 25)

About WillSonn Advisory, LLC

Section 1: Latest Trends

Builder Sentiment & Private Residential Expenditures

NAHB's **Homebuilder Market Index (HMI)** and **Remodeling Market Index (RMI)** are measures of home builder and remodeling contractor sentiment.

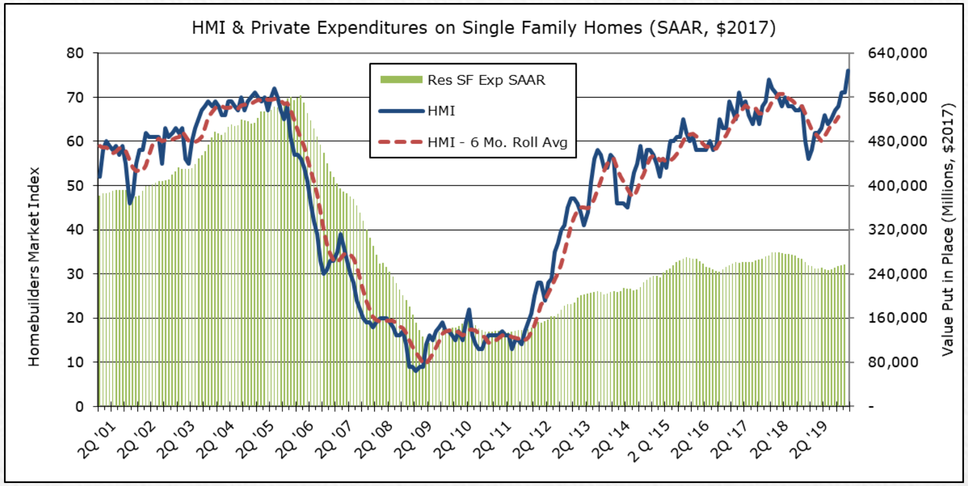
The HMI continued its recovery in the 4th quarter, posting a score of 76 in December after a 68 reading in September, a level not seen since late 1998. The 6-month rolling average climbed to 70 in December, up 4 points from last quarter and comparable to 2005 levels.

The RMI was flat at 55 in Q3 2019. As reported last year, NAR and NAHB surveys suggest that average home tenure has increased from ~6 years 10-40 years ago, to ~10 years in more recent years. Longer tenure draws more spending into remodeling.

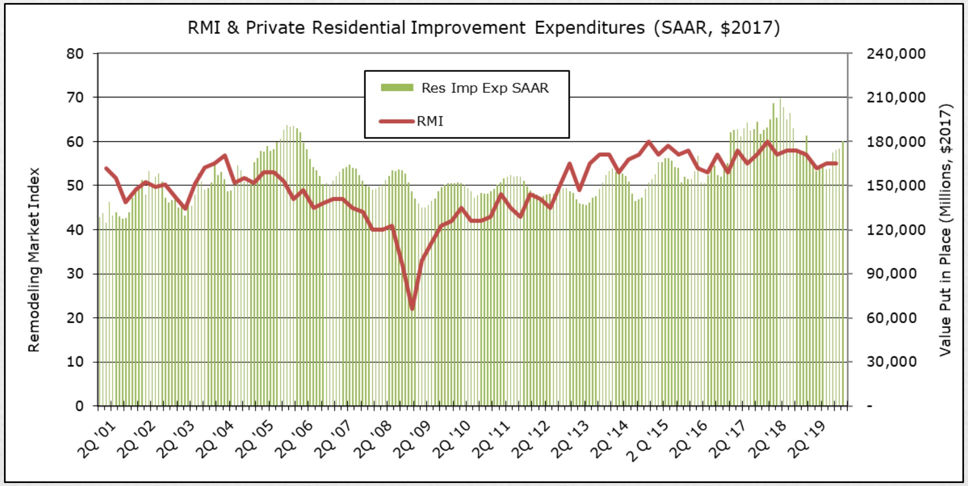
Private Expenditures on Single Family Housing (in constant 2017 dollars, SAAR) **through the first eleven months dropped -7.7% below the 2018 levels. Private Residential Improvement Expenditures dropped even further, -12.4% below 2018 levels.** Despite falling interest rates (see the bottom chart on the next page), the combination of declining home size, constrained developed lots, and scarce contractor availability have had a dampening effect on residential expenditures.

The monthly HMI and quarterly RMI are dispersion indices, measuring the proportion of respondents who have a positive versus negative view (neutral responses are ignored in the calculation). While ***a reading over 50 indicates a prevailing positive view of current and future conditions****, it says nothing about the proportion in the neutral camp.*

Seasonally Adjusted Annual Rate expenditure figures in both charts were deflated using the US Census Bureau's "Fixed" Construction Price Index which adjusts for both inflation and home size.



Data Sources: Census Bureau, NAHB, Dept. of Commerce Charts & Analysis: WillSonn Advisory



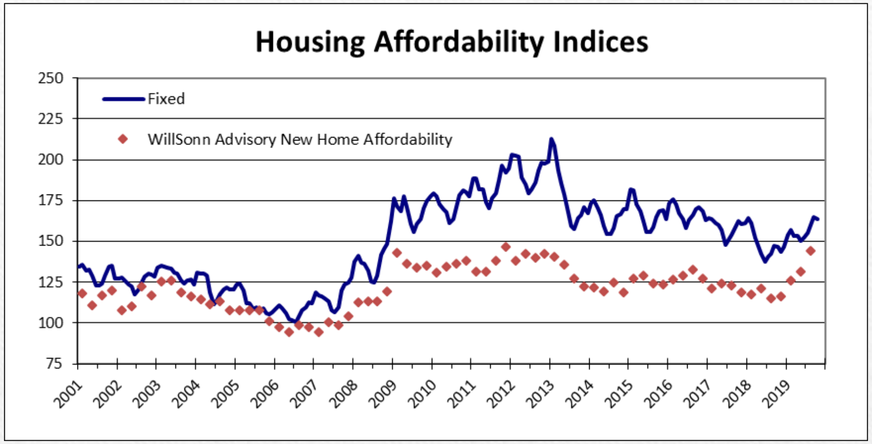
Affordability

The National Association of Realtors (**NAR**) **Housing Affordability Index** ("HAI", top chart) has been on an upward trend since June 2018, **registering 163 in October**, marking a pause in the pattern of declining affordability since 2012, peak-to-peak, and trough-to-trough.

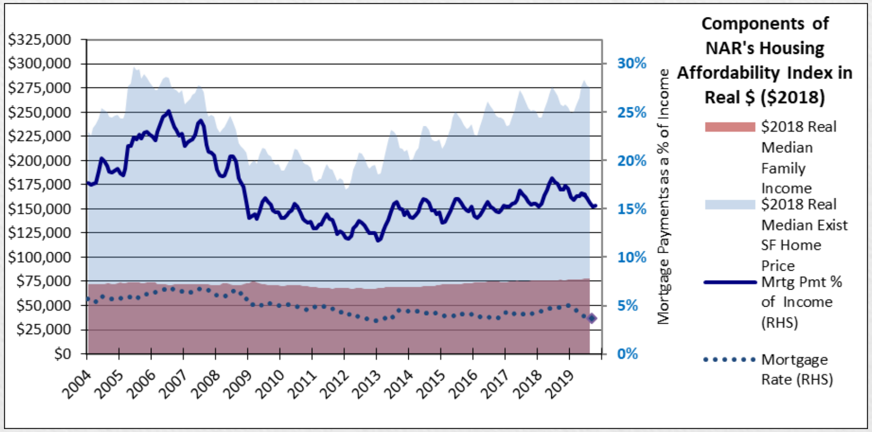
Also depicted in the top chart is my measure of new home affordability, one that incorporates the <u>transaction</u> price of <u>new</u> homes (rather than the listing price of existing homes, as used by NAR). Using NAR's family income and interest rates and Census Bureau median **<u>new</u>** home sale prices, I calculate a more modest **New Home Affordability Index of 144 in Q3 2019**. In 2017 and 2018, New Home Affordability drifted lower as mortgage rates increased. In the first half of 2019 as median new home size and prices declined and interest rates moderated, the Affordability of New Homes rose to its highest point since 2011.

The bottom chart displays the movement in the three components of the NAR Affordability Index – home prices, mortgage rates and family income – in Real dollar terms. In the first ten months of 2019 compared to 2018, home prices were up 4.7% and Median Family Income was up 3.0%, while Mortgage rates declined 13.1%. As a result, Mortgage Payments, as a percent of Income declined 2.8%, resulting in the higher HAI, up 5.9% from all of 2018.

In December, mortgage rates held steady at an average of 3.72% (see the purple diamond in the bottom chart), 73 bps below December 2018. Holding home price and income steady, **a 50 basis point decline in mortgage rates bumps the Affordability Index up about 10 points**.



Data Sources: NAR, Census Bureau,, Dept. of Commerce
Charts & Analysis: WillSonn Advisory



A reading of 100 means that a family with median income would need to spend fully 25% of its monthly income on a mortgage to purchase the median priced existing home. A reading of 140 means that 25% of the median family income is 1.4 times the mortgage payment for the median priced existing home.

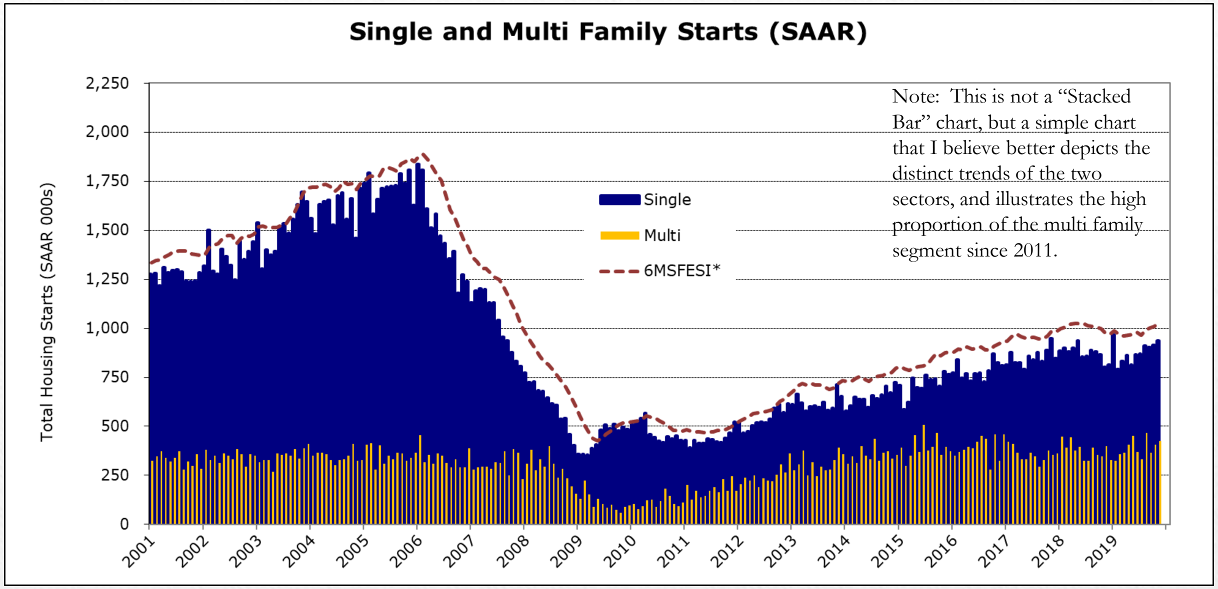
Housing Starts

Total Housing Starts registered 1.365 million units in November (SAAR), **9.3% above the 2018 pace of 1.250 million units**. This was the third out of the last four months over 1.3 million starts. In December, **Single Family Starts registered 938,000 units,** while Multi-Family Starts came in at 427,000 units.

Year-to-date (SAAR), Total Housing Starts have averaged 1.267 million units, a gain of 1.4% versus full year 2018. **Single Family Starts are up 0.7%, while Multi Family Starts are up 3.4%, compared to full-year 2018.**

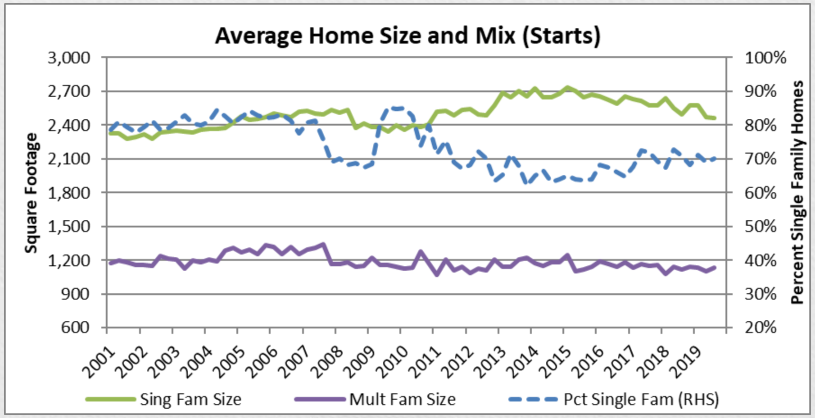
The WillSonn Advisory "6 Month Single Family Equivalent Start Index," recasts a multi-family unit into a single-family unit based on relative wood use, so a better measure of Housing Start demand for wood. After almost a year below 1 million, the six-month rolling average breached that level in September. November's **1,030,000 unit reading represents 55% of the 2006 peak of 1.9 million SFES's.**

Multi-family units use approximately 2/3 as much wood per square foot compared to a Single Family Unit, and since Multi-Family Units are about half the size of Single Family homes, I count them as a 1/3 single family equivalent.



*6MSFESI = 6 Month Single Family Equivalent Start Index
Data Source: U.S. Census Bureau

Charts & Analysis: WillSonn Advisory



The size of Single-Family Home Starts in Q3 2019 averaged 2,464 sq. ft., down 3.8% from 2018's average of 2,561 sq. ft. and is **the smallest since 2010**. The size of Multi-Family Units started in Q3 2019 averaged 1,133 sq. ft., up 1.1% from the 2018 average of 1,120. Single Family units made up 70% of Total Starts in Q3 2019, on par with 2018's 70% figure and 12 points below the pre-bust average of 82%.

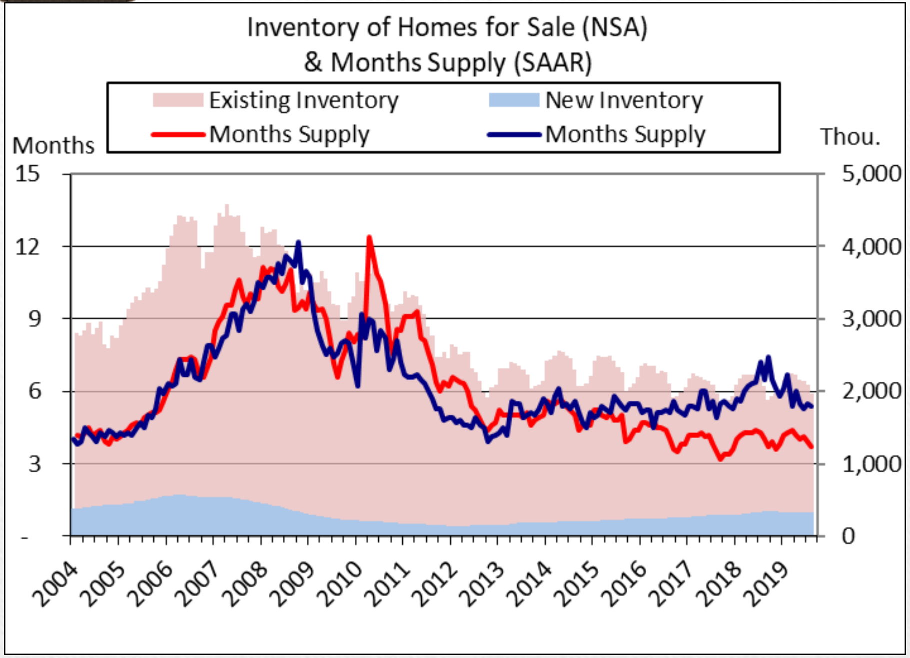
Home Sales Trends

The Inventory of Homes For Sale (Existing + New) totaled 1.967 million units in November, up 89,000 units from December 2018, and down 114,000 units from November 2018. Separately, Existing Home Inventories are down 100,000 units, while New Home inventories are down 14,000 units, compared to November 2018.

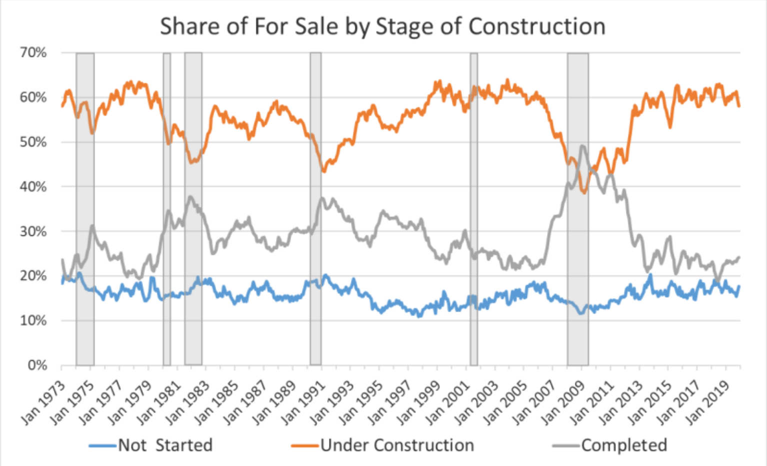
At their respective current pace of sales, there are 3.7 months of sales in Existing Home inventories, and 5.4 months of sales in New Home inventories. Relative to historical levels, Existing Home inventories are tight while New Home inventories are somewhat elevated.

Of the 327,000 New units for sale at the end of November, 24% are Completed, 58% are Under Construction, and 18% have Not Yet Started.

Note: "Existing Homes" include both Single Family and Multi-Family units. "New Homes" include only Single Family Homes.



Data Source: U.S. Census Bureau, NAR Charts & Analysis: WillSonn Advisory



In the chart to the left, I've plotted the share of homes for sale, by stage of construction going back to 1973. Also shown on the chart are the US recessions, in grey bars. What I notice in this chart is that since 1980, a US recession is proceeded by a buildup in the share of Completed Homes for Sale, when it hits or exceeds 30%. What I also see is that the longer the recession, the more pronounced the shift in share of Completed Homes. These patterns are mirrored by a decline in the share of Under Construction; the sale of homes mid-way through construction slowed so that builders got stuck with more completed homes on hand. Makes sense.

To be sure, I am not suggesting that the Share of Completed Homes for Sale should be used as a predictor of a recession in the US. All I am suggesting is that <u>viewing this one component of one industry, and based on historical patterns</u>, it doesn't raise a yellow flag that a recession is imminent in the near-term.

Wood Product Prices

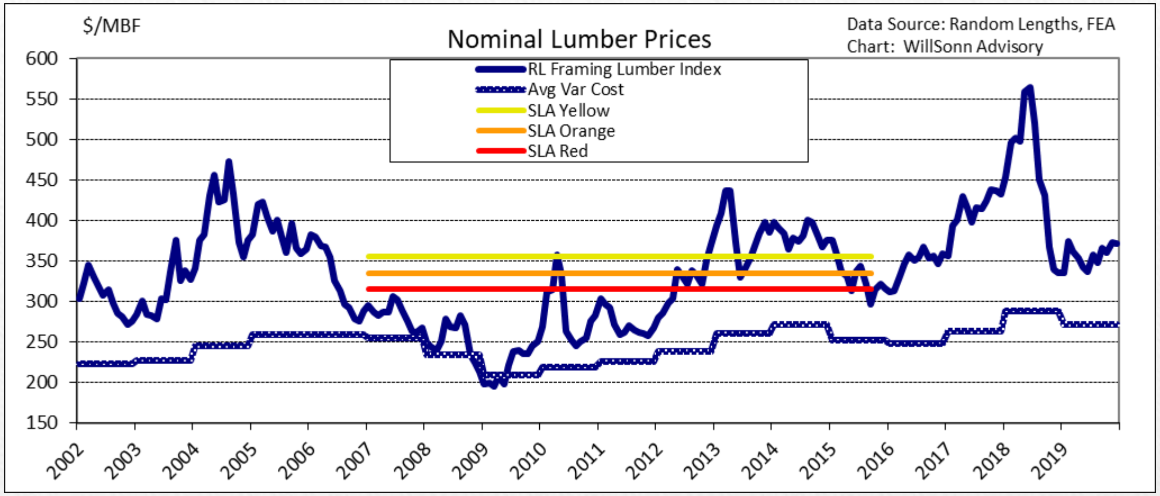
Through the first nine months of 2019, while Total Housing Starts were down -1.4% and Residential Improvement Spending was down -15.8%, U.S. lumber production was essentially flat, down an estimated -0.1%. Reduced US exports were more than offset by lower imports, which allowed lumber prices to stabilize, despite weaker demand.

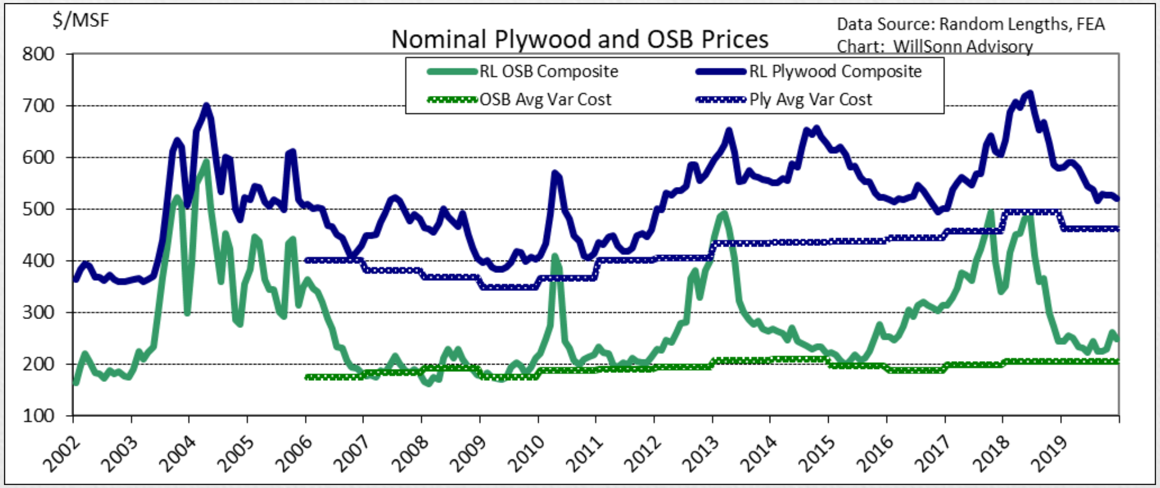
Lumber prices in Q4 2019 gained a modest 3% in the quarter, 20% below full year 2018 prices but 6% above Q4 2018 prices. Regionally in Q4 relative to Q3 2019, West Coast lumber mills saw a 5% gain in Dry Dimension and a -1% softening in Green DF prices, Inland mills saw prices slip 2%, while Southern sawmills saw prices recover 5%. Canadian components of the Random Lengths Framing Composite Index saw S-P-F prices gain 5% and 4% in the West and the East, respectively.

Plywood pricing drifted -1% in Q4 from Q3, to a level -21% below FY 2018 levels. Fourth quarter movements were uneven regionally, with the Southern Plywood prices up 1% and Western Plywood down -3% for the quarter.

OSB prices in Q4 ticked up 7% to build on last quarter's 1% gain but were -36% below FY 2018 prices. Still no fun there.

According to FEA, variable costs for Lumber are expected to edge 4% higher in 2020 (-6% in 2019). Plywood is also expected to see a 5% increase in variable costs in 2020 (-4% in 2019), while OSB variable costs are expected to increase 3% (flat in 2019).





PNW Log Prices

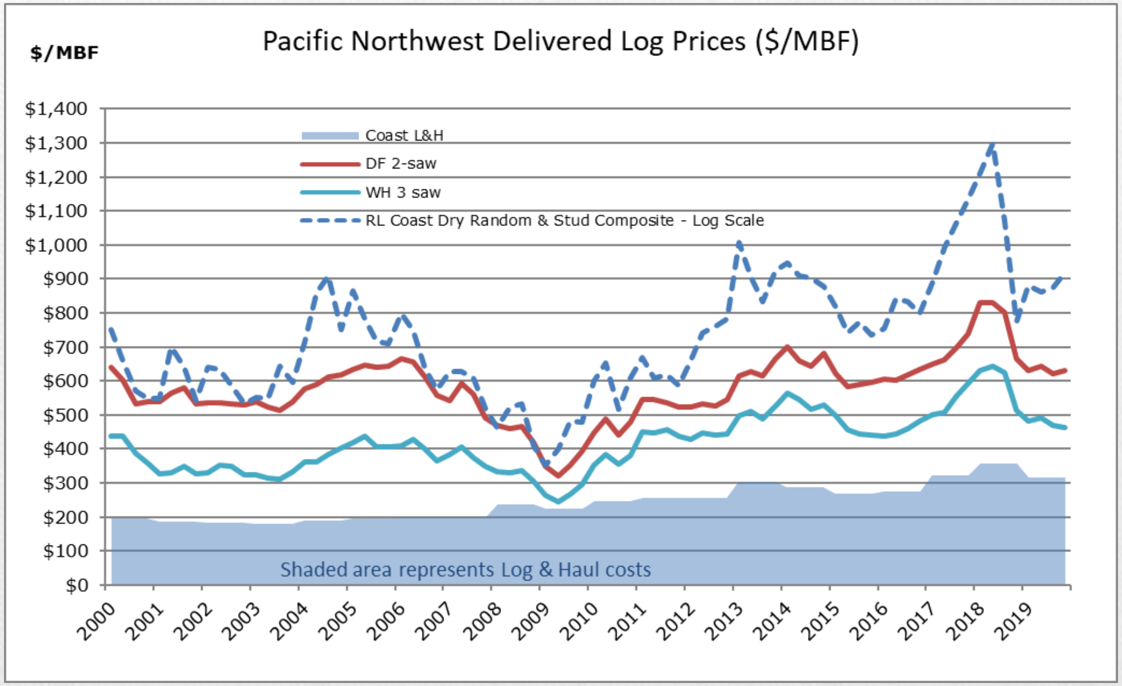
The run-up in Lumber prices in 2017 and early 2018 (caused largely by transportation constraints, not demand) was simply unsustainable, forcing builders to delay starts in H2 2018. Western lumber prices (with about a one-quarter lag) remain the primary driver in West Coast log pricing.

Fourth quarter log prices were 19%-23% below full-year 2018 prices, and were off 24%-28% from the peak in the second quarter of 2018 (compared to a 29% decline in lumber prices Q2 '18 to Q4 '19). During Q4, **Douglas-fir 2saw notched 2% higher while western hemlock 3saw log prices slipped 1%.** Over the past 10 years, log prices have gained, on average, ~$25/MBF in the first quarter.

For the year, DF 2saw averaged $632/MBF, $150 (19%) below 2018. WH 3saw averaged $476/MBF, $127 (21%) below 2018.

After adjustments for lumber recovery, the Random Lengths Coast Dry Random & Stud Composite price (on a log scale) gained another $46/MBF, bringing the YOY gain to $145/MBF since Q4 '18.

Log & Haul costs increased in 2018 as higher log prices allowed harvesting on more expensive ground. In 2019, as log prices moderated, Log and Haul costs retreated ~$40/MBF.



Data Source: Oregon DOF, WA DNR, Random Lengths, FEA, Log Lines
Charts & Analysis: WillSonn Advisory

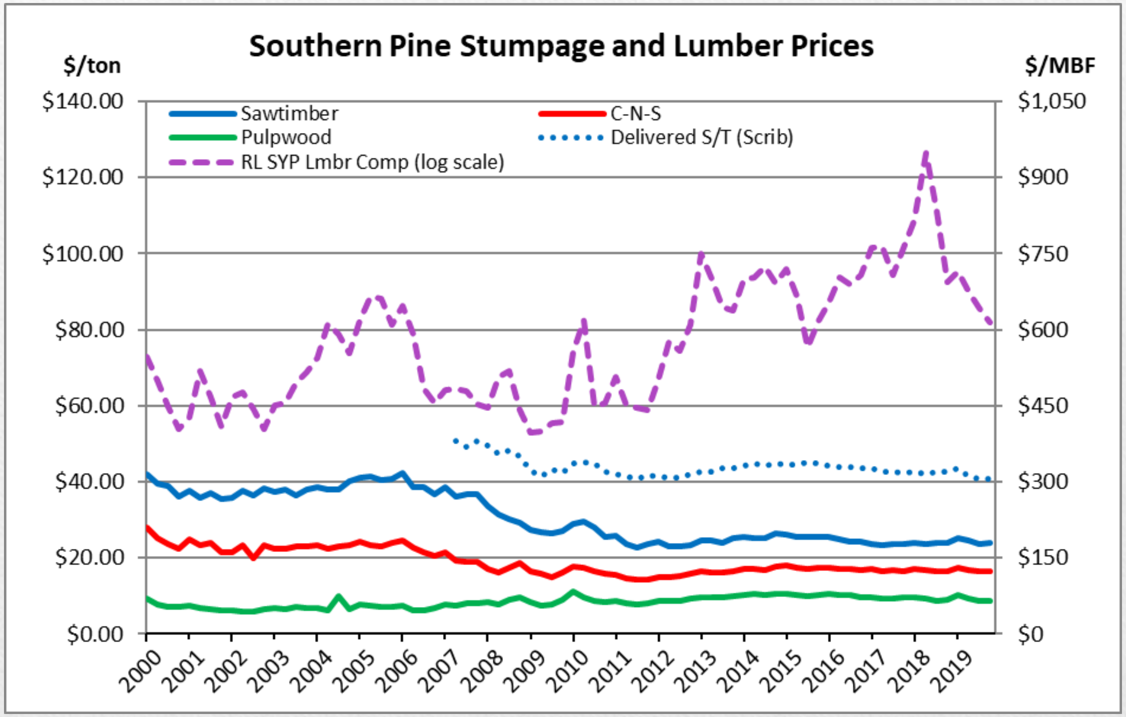
Fourth Quarter Southern Yellow Pine stumpage prices were mixed despite softer lumber prices. SYP Sawtimber prices gained $0.31/ton in the fourth quarter (+1%), following two quarters of declines. Chip-n-saw stumpage prices were down another $0.15/ton (-1%) and pine pulpwood was up $0.03/ton (0%) in the fourth quarter. For the year, PST gained 2% while CNS and PPW were flat. With wetter weather coming, I look for a modest uptick in prices in the coming quarter.

The Random Lengths SYP Lumber Composite, adjusted for lumber recovery, was down 4% in Q4 compared to Q3 '19, with full year 2019 prices 20% below 2018 prices

Sawtimber to Pulpwood price ratios remain tight, averaging 2.7:1 in the 2019, up modestly from the 2.5:1 ratio of the last few years, but well below the bellwether ratio of 4:1, a level not seen since mid-2008!

My view that SYP sawtimber prices will remain under pressure for an extended period has not changed. The combination of weak housing starts, smaller home size, increased plantation productivity, and incremental improvements in mill recoveries will work against significant gains in log prices. Recall that in the US South, more than 2 million acres a year were planted, on average, between 1982 and 2009, more than double the acres planted annually in the previous 28 years.

Southern Pine Log Prices



There remains a backlog of mature timber on the stump, thanks to the drop in housing starts as the afore mentioned increase in plantations matured. While new mills being built in the South will help reduce the backlog, I don't think it will be enough to push log prices back up, and the increased volume of mill residuals won't help pulpwood prices either.

Data Source: Timber Mart South, Random Lengths, FEA
Charts & Analysis: WillSonn Advisory

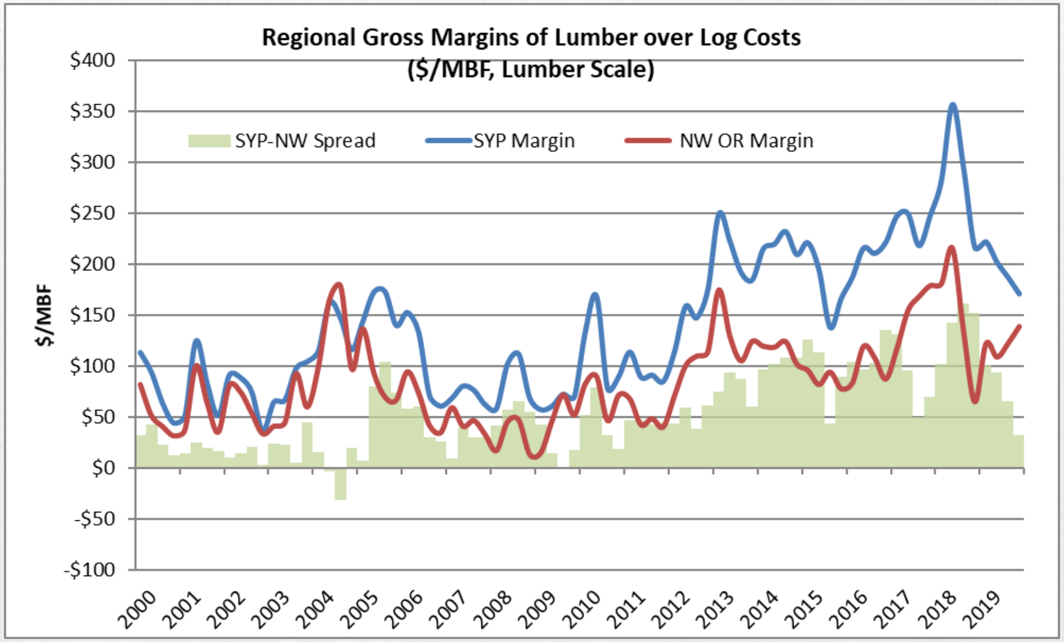
Sawmill Gross Margins (lumber price minus delivered raw material costs) in the Northwest and South were derived from the figures on the previous two pages. The difference between the two regions is the "spread."

Regional Gross Margins

The spread between Southern and PNW sawmills narrowed again in the fourth quarter to $32/MBF, down from an average spread in 2018 of $139/MBF. This is the narrowest gap since 2010. Gross margins moved in opposite directions this quarter, from $122/MBF to $139/MBF in the PNW, and from $187/MBF to $171/MBF in the South. Despite the setback, southern sawmills have enjoyed gross margins over $200/MBF in 20 of the last 28 quarters since 2013, while PNW mill gross margins hit that mark only once.

Since the beginning of 2012, log export markets and declining Interior BC lumber production pushed PNW log prices to historical highs. In the South, persistent excess inventories of mature sawtimber on the stump have kept downward pressure on log prices, even as lumber prices improved. The net result has been that the gap between the PNW's and South's gross margin has swelled to an average of $106/MBF over the last eight quarters, more than 3x the 2000-2013 average of $33/MBF.

Historically, Q3 and/or Q4 see the narrowest margin gap during the year. I expect the spread between the PNW and South to return to the ~$100/MBF level within the next couple quarters, barring an extraordinary event.



Assumptions: 67/33 weight of DF2saw and WH3saw in the PNW, and a 75/25 weight for S/T and CNS in the South (using 7.5 tons/MBF, along with FEA's estimates of Cut & Haul cost for S/T and CNS). All figures are lumber scale, and regional differences in lumber recovery factors are incorporated.

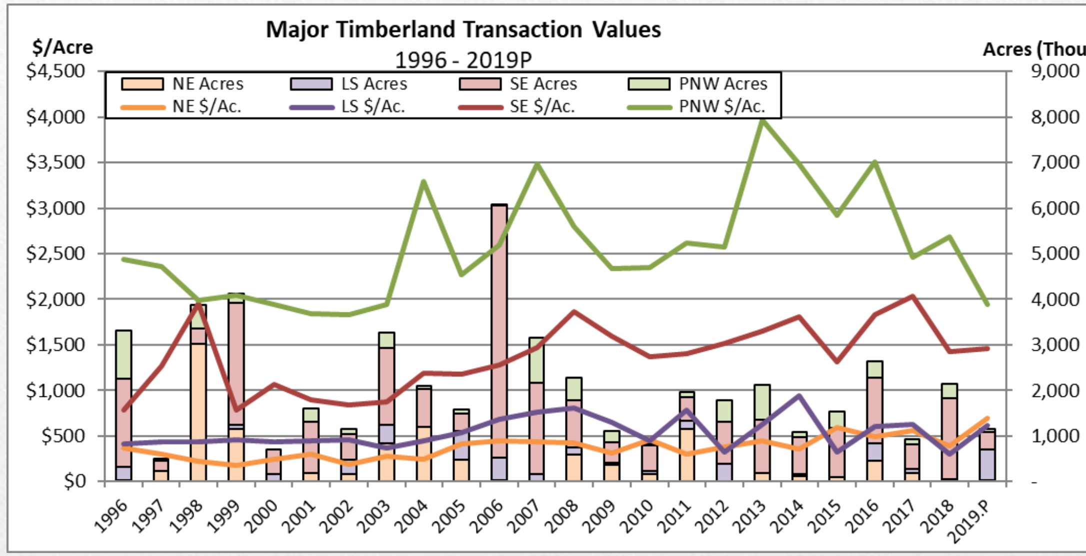
Data Sources: Timber-Mart South, Random Lengths, FEA, Oregon DOF, WA DNR
Chart & Analysis: WillSonn Advisory

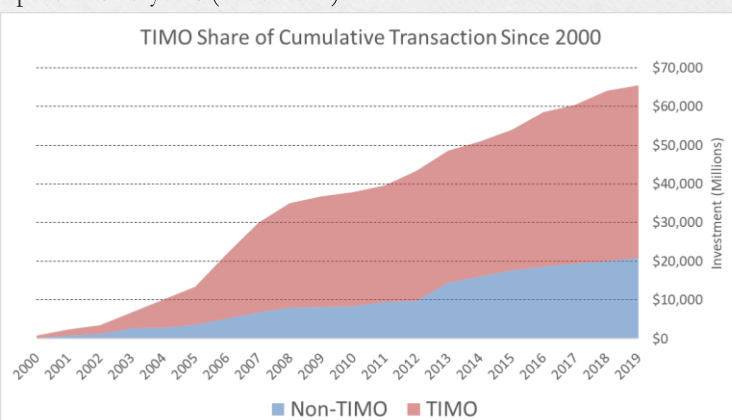
Closings and announced sales through early December in 2019 have totaled $1.42 billion on 2,077,000 acres, 33% of which is in the Lake States and 19% in the Southeast US, while 30% is in the Inland Northwest and 15% in Appalachia (not shown on the chart to the right). This tally includes 630,000 acres of former Plum Creek lands in Montana, which will close in H1 2020 for $245/Acre. PNW values ranged from $1,537/acre to $4,250/acre, and in the South, from $772/acre to $3,400/acre.

Regional timberland prices have generally moved sideways in 2019 and in general, are off highs from a few years ago. 2018, as you may recall, was burdened by some larger distressed or lower-site properties – the same held true in 2019. The Pacific Northwest stands out as trailing off significantly in 2019, explained by a dominant sale in the dryer southern Oregon subregion.

By investment sector, Timberland Investment Management Organizations ("TIMOs") have funded 73% of the acquisitions from 2016 to 2019, well above the 25% captured in the 2013-15 period. By comparison, TIMO buyers acquired 78% of US timberlands sold (by dollar) in the previous 13 years (2000-2012).

Regional Transaction Values





NE:Northeast LS:Lake States

SE:Southeast PNW:Pacific Northwest

Not Shown: Appalachia and Inland Northwest

Data Source: TMS, TMR, Press Releases Charts & Analysis: WillSonn Advisory

Section 2: In Case You Missed It

A Decade of Home Building: The Long Recovery of the 2010s

BY ROBERT DIETZ *ON* JANUARY 6, 2020 (NAHB Eye On Housing)

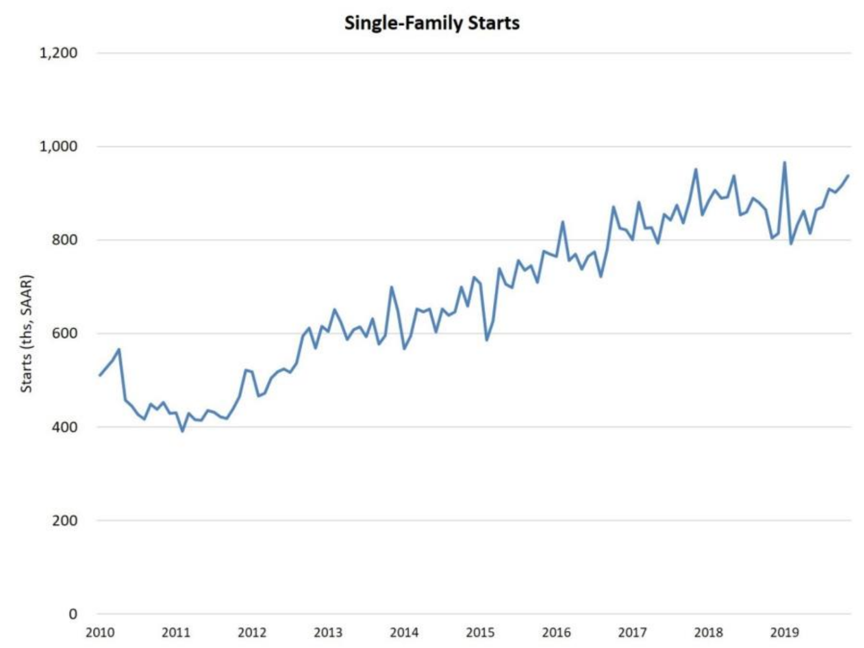
Home building in the 2010s was a story of the Long Recovery. After the Great Recession, the number of home builders declined significantly, and housing production was unable to meet buyer demand. This deficit of housing in the United States continues to exist because of persistent supply-side headwinds for builders, creating a critical housing affordability challenge for renters and homebuyers. Yet despite these challenges, residential construction is set to evolve and expand throughout the decade ahead.

Between 2010 and the end of 2019, there were 6.8 million single-family housing starts.

That total included:

- 1.53 million custom home building starts
- 827,000 townhouses starts (single-family attached)
- 300,000 single-family built-for-rent (SFBFR) starts

More than half (54%) of single-family starts occurred in the South region, and nearly a quarter (23%) were in the West. The Midwest and Northeast regions accounted for 15% and 8% of starts, respectively. Overall, single-family starts have grown modestly over the past decade. However, that expansion was curbed by occasional soft patches, the first occurring in mid-2010 with the cessation of the stimulus era homebuyer tax credit

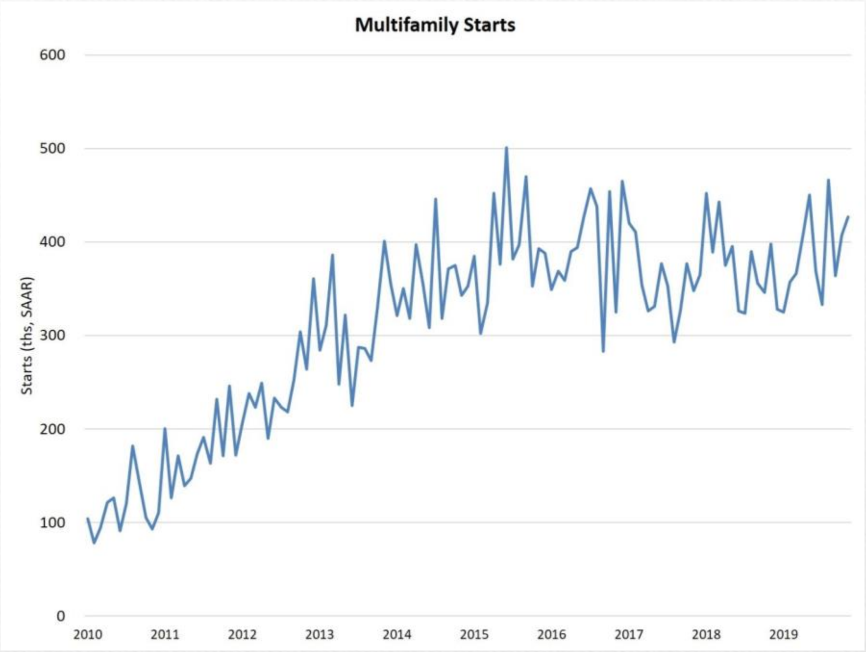


Multifamily starts during the 2010s totaled 3.1 million. Most (2.98 million) were built in properties of five or more units, while just 123,000 were in 2- to 4-unit buildings. Only 7% (229,000) were built-for-sale condos, compared to a historical average share of 20%. The overall multifamily building sector peaked in 2015 and then leveled off in succeeding years.

Remodeling activity expanded in the 2010s, though it slowed in recent months with the declines in existing home sales. Approximately 150 million home remodeling projects occurred during the decade. Total spending on improvements made by remodelers to existing, owner-occupied homes eclipsed $1.5 trillion.

The home building declines of the Great Recession had a large impact on the industry's labor force. The sector suffered a net loss of 1.5 million jobs between 2005 and 2010. After reaching a low point in 2011, employment in the industry has slowly increased with nearly 940,000 net jobs, further illustrating what the housing industry means to the U.S. economy.

In terms of overall economic impact, the home building component of Gross Domestic Product, residential fixed investment (RFI), totaled 3% of GDP over the last decade. This share accounted for approximately $5 trillion of economic activity from 2010 through the end of 2019.



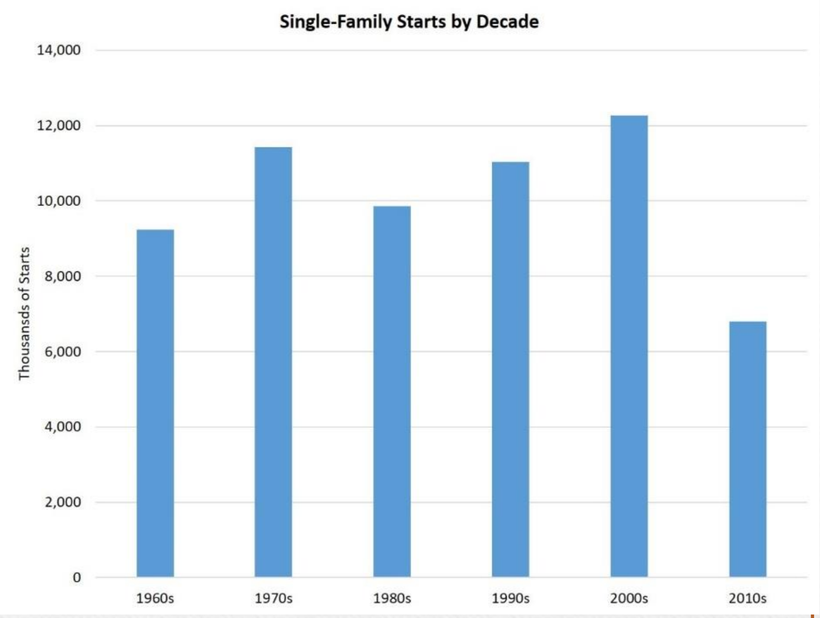
Despite these large economic impacts, the last ten years have seen significant amounts of underbuilding compared to prior decades. Consider the following decade-based totals for single-family home construction:

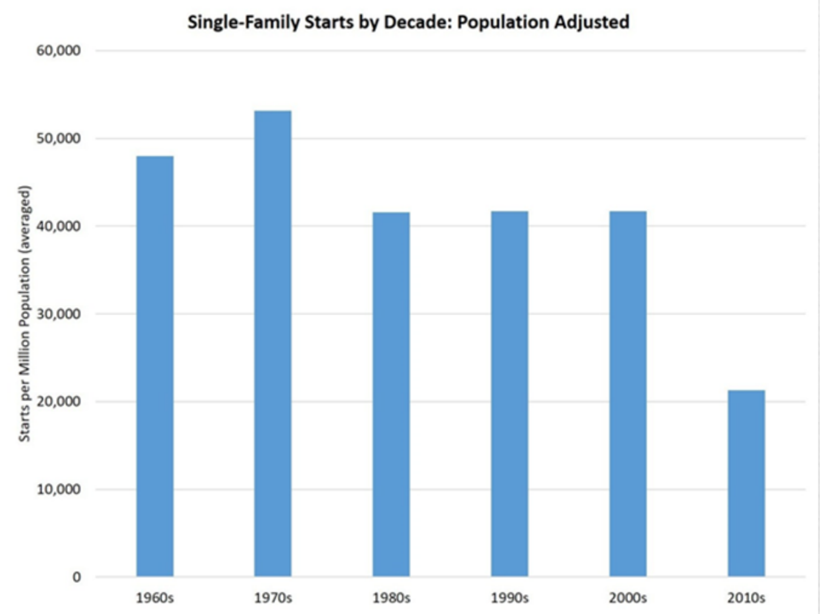
- 1960s: 9.3 million starts
- 1970s: 11.4 million starts
- 1980s: 9.9 million starts
- 1990s: 11.0 million starts
- 2000s: 12.3 million starts
- 2010s: 6.8 million starts

The reduced amount of single-family home construction over the last decade is even more striking when considering the U.S. population has continued to increase over time. For example, here are the production numbers as measured in terms of starts per million population (averaged over the decade).

- 1960s: 47,997 starts
- 1970s: 53,138 starts
- 1980s: 41,588 starts
- 1990s: 41,710 starts
- 2000s: 41,671 starts
- 2010s: 21,288 starts

After a downshift following the Baby Boomer induced single-family home construction wave of the 1970s, the population-adjusted pace of single-family construction was remarkably constant, despite year-to-year ebbs and flows. In fact, over the period of 1980 through the end of the 2000s, single-family construction averaged just higher than 41,000 starts per million of population.





The 2010s stand out as the exception to this general benchmark, with single-family construction operating near 50% of this pace following the demand-side and supply-side impacts of the Great Recession.

Why Were the 2010s Different?

It is tempting to attribute the relative construction weakness over the last decade to purely demand-side variables, namely the residual uncertainty caused by the Great Recession and a falloff in demand due to the smaller size of Generation X. Clearly, reduced demand compared to decades past had an important role in holding back home building, particularly in the first half of the decade, but this occurred during a period of time of rapid price growth. The low levels of production also occurred with falling vacancy rates, declining housing affordability, and rising building costs. These supply-side headwinds held back home construction in the 2010s and resulted in a net housing deficit for the U.S.

Consider population growth over the last decade. The U.S population expanded by more than 20 million during the 2010s. While this represents a slower rate of growth than that of the 2000s (with a gain of more than 24 million), this increase still marks a solid level of demand for new home construction with a gain of approximately 10 million households.

End of Homeownership Declines

Despite the country's ever-growing population, the momentum for housing demand was primarily within the rental market during the first half of the decade. The homeownership rate fell from 67.1% at the start of the decade to a post-recession low of 62.9% during the second quarter of 2016. As a result of this demand environment, multifamily construction was the first sector of the industry to recover to relatively normal conditions, which were achieved in construction terms by 2015.

During the second half of the decade, the homeownership rate rebounded to 64.8% by the third quarter of 2019. This is higher than many expected, as some analysts had forecasted the rate slipping below 60% due to national demographic changes and faltering demand for for-sale housing due to the Great Recession. However, consumer preference surveys from earlier in the decade showing homeownership remains a goal for most households suggested otherwise.

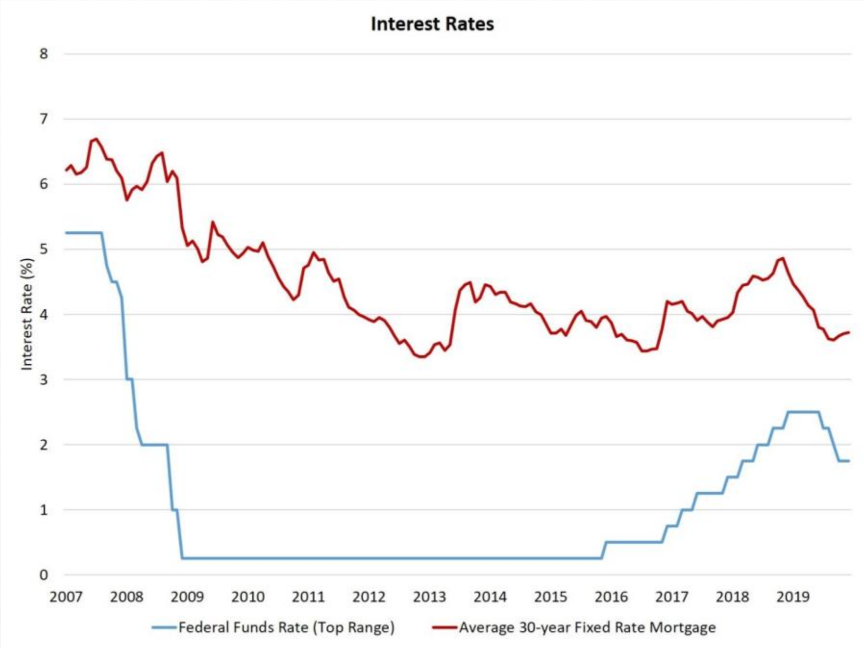
Interest Rates Impacts on Affordability

While the general preference for homeownership remains solid, the impact of housing cost is key. And the cost of buying a home depends on a number of factors, including interest rates. For much of the past decade, accommodative monetary policy supported low mortgage interest rates. For example, from late 2008 until late 2015, the Federal Reserve held the key federal funds rate near 0%. From 2012 until the passage of the tax reform law of 2017, mortgage rates remained near 4%.

A notable rise in rates, which caused a soft patch for housing, occurred with the "taper tantrum" of 2013, as rates increased due to the announcement by the Fed that it would reduce the scale of bond purchases as a part of ending Quantitative Easing. The negative bond market reaction was a sign that financial markets were sensitive to monetary policy changes, an outcome that would repeat again in 2018.

The other notable period of interest rate increases occurred with the election of President Trump at the end of 2016 and the expectation of pro-growth regulatory policy, combined with the enactment of the 2017 tax reform bill and decidedly hawkish projections and actions from the Federal Reserve. There were eight 25 basis point increases in the federal funds rate from the start of 2016 until the fall of 2018. A number of economic variables indicated that this rapid tightening in rates was a policy mistake, including a large decline in the NAHB/Wells Fargo HMI at the end of 2018, as well as the following stock market sell-off at the end of that year.

Fortunately, the Fed reversed course and cut rates three times in 2019, and signals strongly indicate the Fed is now on pause. This financial setting leaves rates averaging around 3.7% for the 30-year fixed rate mortgage. This is a considerably more favorable environment for housing with respect to rates compared to the end of 2018, when housing sales and construction softened. The Housing Affordability Crunch of 2018 has largely subsided as single-family construction rebounded in the second half of 2019.

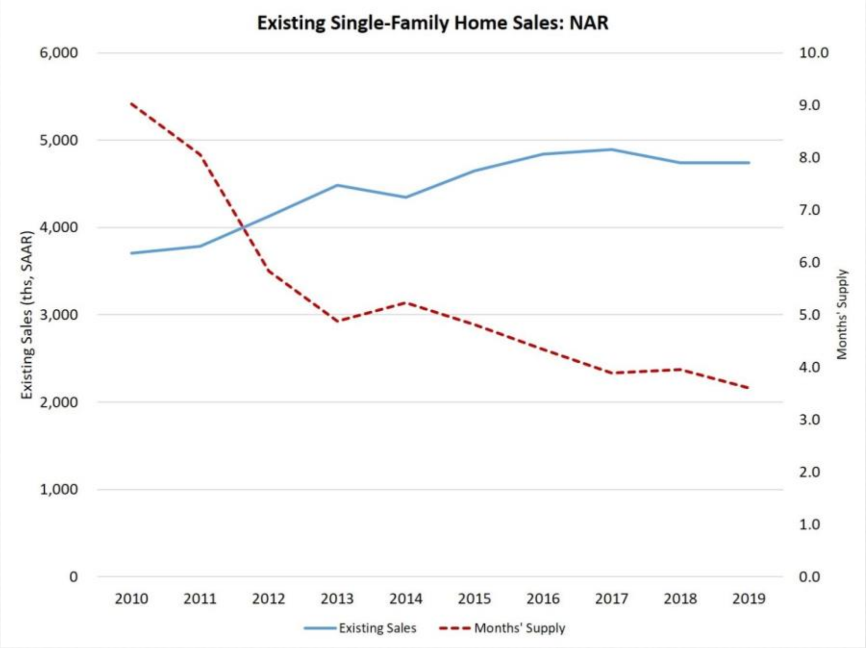


Years of population and household formation growth, combined with relatively reduced levels of home building, have left the market with a critical supply shortage. As estimated by the National Association of Realtors, existing home sales growth has lagged while inventory declined. In fact, as of November 2019, inventory has fallen to a 3.6-month supply, where a 6-month supply would represent a balanced market (although there are good arguments that the 6-month benchmark is somewhat too high in today's marketplace).

Builder Optimism

Low resale inventory and generally healthy economic conditions — including the longest economic expansion in American history — have lifted builder sentiment. At the start of the decade, builder confidence, as measured by the NAHB/Wells Fargo Housing Market Index (HMI), was just 15 on a 100-point scale (any score below 50 indicates the majority of builders are reporting poor market conditions). Confidence increased to 25 at the start of 2012, as the post-stimulus era recovery for home building began.

By June of 2013, the HMI finally exceeded a level of 50, the first time since the Great Recession. In 2014, the HMI briefly fell below 50, as a result of the taper tantrum and housing soft patch of 2013-2014. After that slight decline, the HMI trended higher due to lack of market supply and declining interest rates. The HMI reached a level of 72 at the start of 2018.

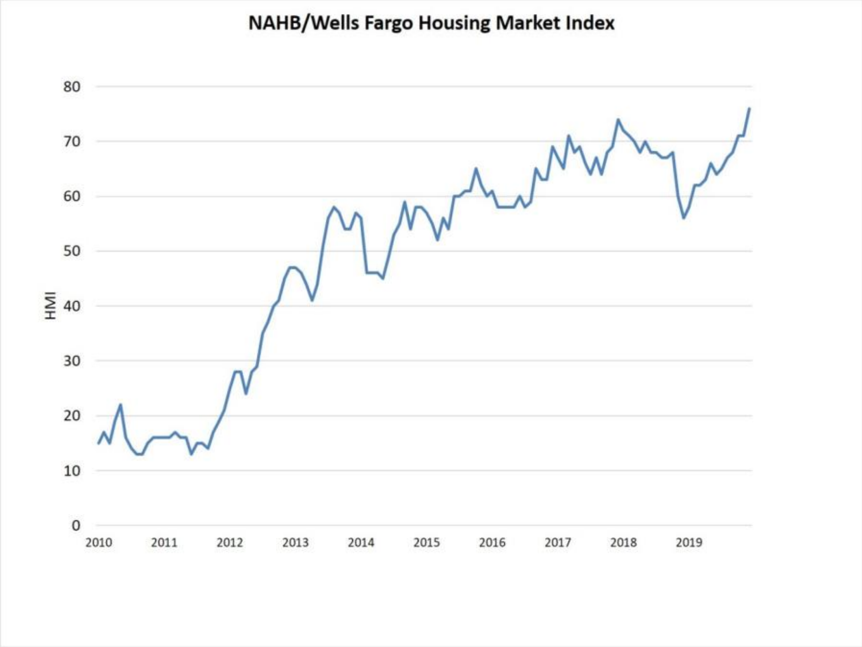


As noted earlier, a challenging period occurred in late 2018, prior to the stock market declines at the end of the year, as the HMI fell from 69 in October to 56 in December. This was a clear sign that the Federal Reserve policy of higher rates, and the corresponding rising risk of a recession, was a concern for the building industry. But over the course of 2019, the HMI increased on lower rates, reduced macro concerns, and positive labor market conditions. In December, the index reached a level of 76, the highest reading since the summer of 1999.

Matters of Supply and Demand

The paradox of declining inventory, rising home prices, and underperforming single-family construction has been the most important home building research focus of the last decade. Traditional demand-side housing analyses are insufficient to explain these market conditions. The lack of building is rooted in a set of supply-side headwinds that limit home construction in expanding markets.

Since 2015, NAHB's explanation and forecasts have referred to this complex set of limiting factors as the five Ls: lack of labor, lots/land, lumber/materials, lending for builders, and laws/regulatory burdens. No single factor alone can sufficiently explain the housing supply equation of the last decade. And to a certain degree, the challenges offered by this set of issues are rooted in consequences of the Great Recession on the structure, organization, and enforced policies on the housing industry in the 2010s.



Labor — Some details on each is useful for understanding the challenges of the 2010s. Residential construction faces a persistent labor shortage, which has resulted in higher costs and longer construction times. The effort to replace the 1.5 million workers lost during the Great Recession has been difficult. In fact, the skilled labor shortage has been cited as either the No. 1 or No. 2 business-related challenge for builders for the last five years of NAHB surveys.

As hiring has progressed and many organizations in the housing sector have enacted programs to recruit, train and sustain workers in the home building and remodeling sectors, the pace of those efforts has not kept up with demand. As of October 2019, there were more than 300,000 open positions in the construction sector. And for the last three years, the open jobs rate has been higher than the peak rate during the building boom of the last decade— a clear sign of the ongoing labor shortage in home building.

Land — Access to land and lots for building has also limited aggregate building volume since 2012. As of 2019, almost six out of ten home builders indicated that lot supplies were low or very low. Low lot supplies are due to a reduced number of land development companies, as well as tighter rules regarding zoning for housing and land development.

Lumber and materials — Lumber price volatility and access and cost of other building materials have also acted as a headwind for home construction. For example, in 2018 lumber prices expanded by 63% at their peak, adding thousands of dollars to the cost of a typical newly built home. While lumber prices were lower in 2019, other building material prices have increased.

Lending — Access to builder and developer financing is also a key ingredient for housing supply. Discussions of housing and lending are often exclusively focused on mortgage financing, but a buyer cannot buy a home before financing is ready for construction. Typically, small and regional builders rely on debt financing from banks. Such acquisition, development and construction (AD&C) lending has been tight in the 2010s. And loan data reveal the stock of such lending is off 61% since the start of 2008.

Laws and regulations — Finally, regulatory burdens have increased during the 2010s. NAHB analysis finds that 24% of the price of a typical newly-built single-family home is due to the broad set of regulatory burdens imposed by state, local and federal governments. Moreover, between 2011 and 2016, such costs increased by 29%, faster than inflation and economic growth. Such burdens are high for apartment construction as well, as a joint study by NAHB and National Multifamily Housing Council found that 32% of apartment costs are due to regulatory costs.

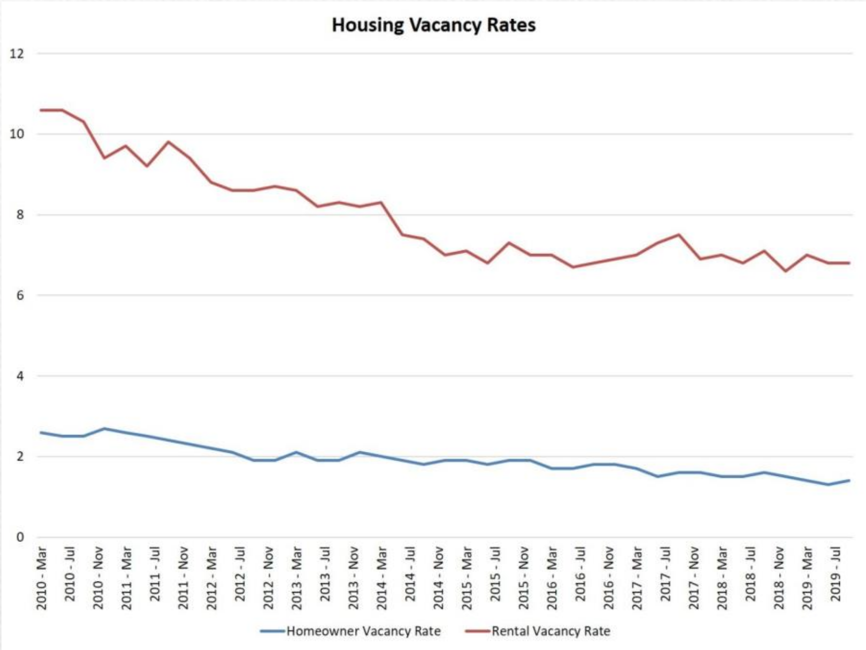
A Perfect Storm

The legacy of what Federal Reserve Chair Jerome Powell referred to as a "perfect storm" for home builders in terms of the supply-side headwinds and the impacts of the Great Recession itself have resulted in years of underbuilding, declines for vacancy rates, and increasing housing affordability burdens.

For example, the vacancy rate for for-sale housing at the start of 2010 was 2.6% per Census data, and ended the decade near 1.4%. The decline was even larger for rental properties, which started the decade with a 12.2% vacancy rate and ultimately declined to 6.8% by the end of 2019.

These declines point to the degree of underbuilding of housing for the U.S. in the 2010s. NAHB analysis found that the country is short one million total homes due to building conditions over the last decade. Other estimates are larger. For example, the midpoint of a Freddie Mac analysis suggests the U.S is short 2.5 million units.

Lack of supply has increased affordability challenges over the 2010s. According to the NAHB/Wells Fargo Housing Opportunity Index (HOI) approximately 79% of new and existing home sales were affordable for the typical family in 2012 (the start of the new HOI benchmarking). As of the third quarter 2019, that share had fallen to 64%. When interest rates were higher in late 2018, the HOI was near a decade low at 57%.



What's Missing?

Much attention has been given to the missing middle, a useful if somewhat incomplete concept. While the market could certainly use more townhouses and low-rise apartments, the overall housing market is starved for the homes that became the hardest to build in the 2010s due to supply-side headwinds: entry-level, single-family detached homes.

In 2010, 59% of new single-family homes were smaller than 2,400 square feet, per Census data. By 2018, that share declined to 51%. The numbers are more stark at smaller sizes. In 2010, 32% of new homes were smaller than 1,800 square feet. That share fell to just 23% by 2018, the latest year for which there is data.

Identifying Solutions to Improve Affordability

Part of the process of the Long Recovery is rebuilding the industry's infrastructure: its labor force and reliable sources of lending and building materials. Policy improvement is needed as well. For example, communities need to reduce the cost of construction by fighting impact fee increases and enabling building with density where the market demands it. Such actions will allow more construction of townhouses and smaller, single-family detached units. Condo multifamily construction remains too low, hampered by litigation concerns in some markets (a sixth "L," perhaps?).

And then there are operational solutions that could add housing supply. Perhaps modular and panelized construction will advance to reduce the cost of building. However, the share of single-family homes built with these methods declined from 2017 to 2018 to just 3%. In 1998, the share of this construction was higher than current rates, at 7% of single-family starts.

Single-family built-for-rent (SFBFR) construction seems set for volume growth given the challenges of some households who want a single-family structure but cannot afford to buy a home. However, SFBFR housing represents just 5% of single-family starts at the end of 2019 compared to just under a 3% historical share.

And as inner suburb home construction lags, per the NAHB Home Building Geography Index, the attractiveness of tear-down construction will increase. Current data suggest such construction makes up 8% of single-family building, as new housing replaces older stock in desirable commuting locations.

Looking Ahead

It is clear that the home building industry will evolve in the 2020s, and it will do so to enable additional volume growth. While it is likely unrealistic to believe that the production totals of the 2000s will be achieved during the 2020s, there is little doubt that the 2020s will experience more single-family construction than the 2010s as Gen X reaches its peak earning years and Millennials increasingly seek out single-family homes for purchase.

Despite an increasing amount of attention given to Millennials, in the coming years NAHB estimates that about half of newly-built homes will be built for members of the generally overlooked Gen X (the latchkey kids become turnkey construction buyers). And Gen Z will enter apartment markets in greater numbers as this younger generation produces new households.

Nonetheless, with the end of the 2010s, the economic output of this industry is significant. And the corresponding policy issues are critical, as housing continues to gain more attention in presidential debates. From supporting and expanding the LIHTC, to improving access to affordable rental housing, as well as improving land use and zoning decisions to increase housing supply, and offering additional workforce development resources, housing issues are at the forefront of community development. And comprehensive housing finance reform, including the future of Fannie Mae and Freddie Mac, will occur during the 2020s.

With 6.8 million single-family homes built, 3.1 million apartments developed, and an estimated 150 million remodeling projects completed over the past decade, the home building industry currently supports 2.9 million direct workers plus many more in downstream sectors like suppliers, realtors, lenders and home retailers. More will join them in the 2020s – an emerging Dynamic Decade for home building.

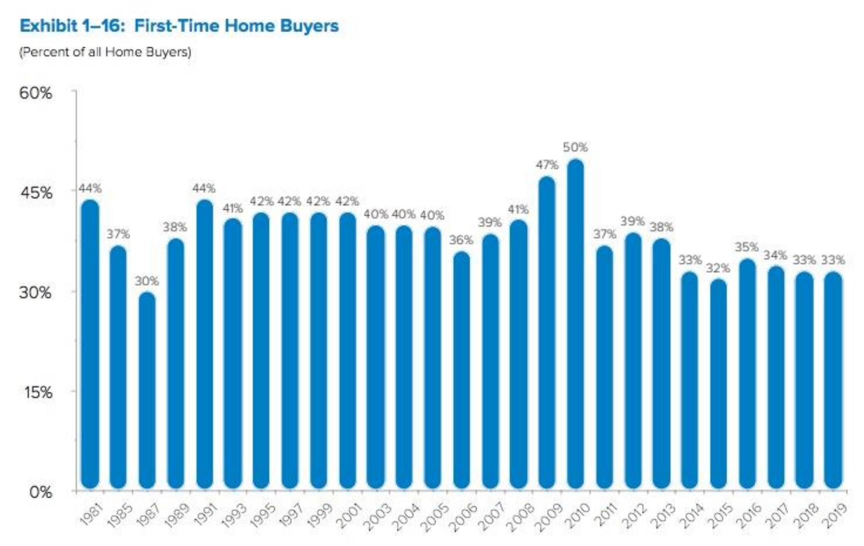
NAR Survey Shows Buyers are Increasingly Older, Less Married BY: JANN SWANSON *ON* Nov 8, 2019 (Mortgage News Daily)

The share of first-time buyers remains well below historic levels according to the National Association of Realtors'® (NAR's) 2019 Profile of Home Buyers and Sellers, and those who do buy frequently need financial assistance from their family. The annual report, derived from a 125-question survey that NAR mails to buyers who purchased a home between July 2018 and June 2019, will be unveiled Friday afternoon at NAR's annual convention.

First-time buyers account for one-third of sales, a share that hasn't changed much since the financial crisis. Historically those buyers have constituted about 40 percent of the market. Further, one third of first-time buyers use down payment help from family or friends.

"Prerecession, the number of first-time buyers was higher, in part, because buyers had more options," said NAR President John Smaby. "However, over the past few years, we have unfortunately experienced a scarcity in housing inventory, especially at the middle- and lower-end of the market.

There was a bit of regional variation in the first-time buyer share. The West was lowest at 30 percent while they accounted for 39 percent of sales in the Northeast.



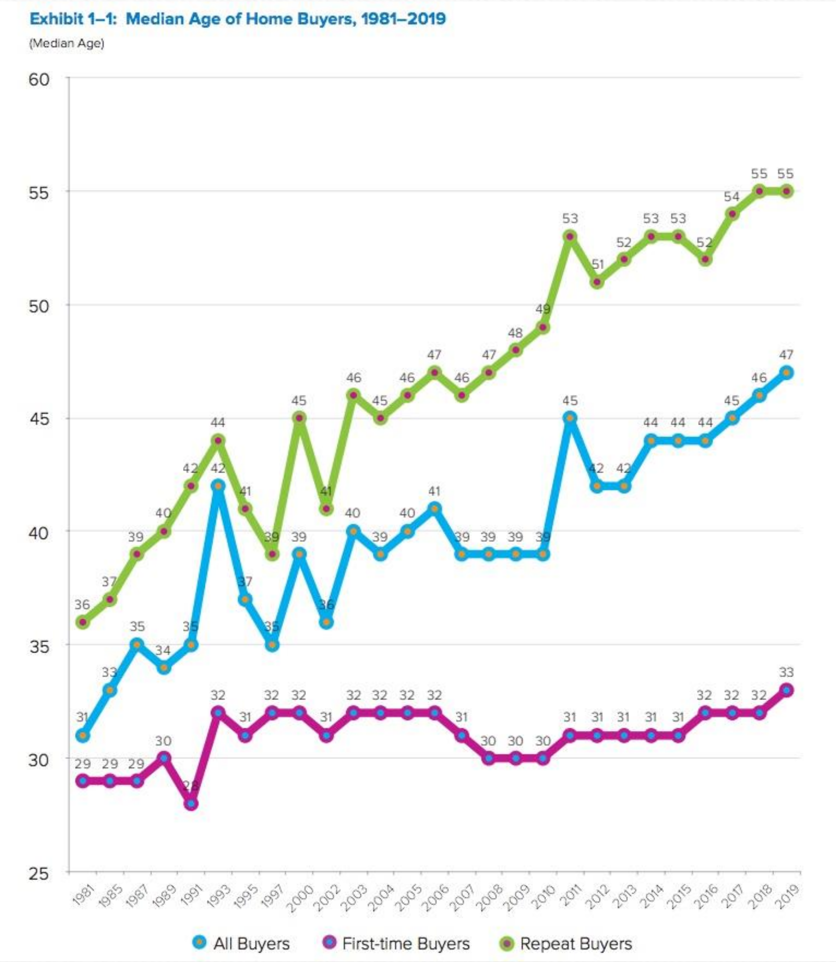
NAR chief economist Lawrence Yun notes that buyers report the most difficult step in the home buying process is just finding the right home to purchase, and what buyers want most from their real estate professional is to help them find that home. "Low inventory conditions hurt would-be first-time buyers most," said Yun. "Their homeownership dream and the opportunity to build wealth gets delayed until more inventory choices reach the market."

While the tight inventories and rapidly rising prices have made it a tough market for buyers, NAR says this has actually been advantageous to sellers in many parts of the country. Sellers got a median of 99 percent of their asking price this year and homes typically sold within three weeks. Fewer sellers were constrained from selling by negative equity, only 7 percent of sellers reported delaying their sale due to this factor, down 2 percentage points from last year. However, among owners who bought 11 to 15 years ago, a fifth report stalling their home sale because their home was worth less than their mortgage.

The NAR report found that the share of new homes purchased dropped to an all-time low of 13 percent, indicating a deficiency in the inventory of newly constructed properties.

Historically about 12 percent of first-time buyers report they moved into their first homes directly from living with friends or relatives . That percentage has nearly doubled; 23 percent of recent buyers followed that path. NAR says this is another example of homebuyers adjusting to the current housing market and shows they're finding ways to save for a down payment while saving on market value rent.

The average age of move-up buyers continues to grow, from the mid-30s in the 1980s to the mid-50s today. Yun says there is no statistic that has shown a more rapid and consistent increase than this one. It hit a record-high of 55 years old in both 2018 and 2019. Moreover, the median age for first-time buyers increased to 33 years old in 2019, the highest age recorded in the series' history.



However, the largest share of homebuyers, first-time and repeat, continues to be in the 25 to 34 age group. They accounted for a quarter of all sales. The share of senior-related housing purchases was 12 percent, down slightly from one year ago.

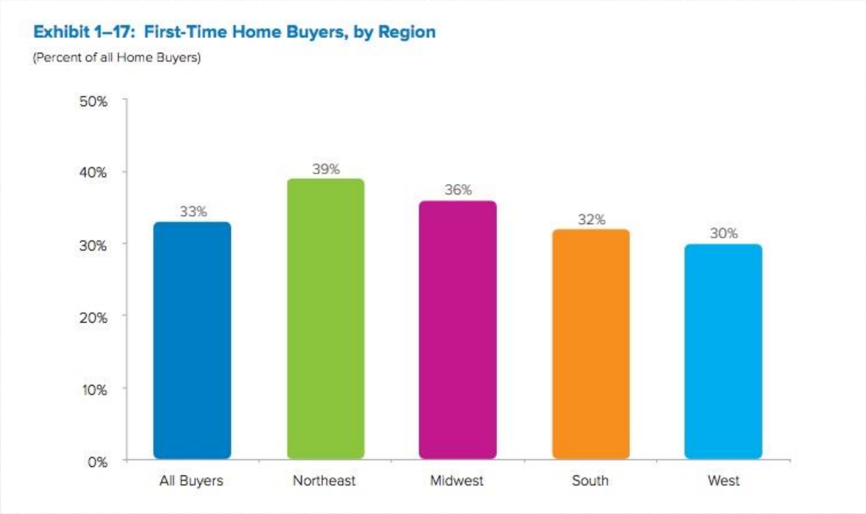
As prices crept higher, Yun says the demographics of home buyers shifted to accommodate changing market conditions. The survey revealed that 35 percent of all buyers had children under the age of 18 living at home, up 1 point from the 2018 survey but well below the 1985 survey high of 58 percent. Twelve percent of home buyers purchased a multi-generational home, which consists of a home with adult siblings, adult children over the age of 18 and parents or grandparents - or both - within the same household.

Respondents gave varying reasons for buying multi-generational homes, including 44 percent to make room for aging parents and 34 percent to accommodate adult children in the home. Another 29 percent referenced cost savings as their reasoning.

The share of married couples purchasing as first timers continues to decline, down from a historic high of 75 percent to 53 percent. The share that were unmarried couples rose to 17 percent. The share of married repeat buyers remained constant at 67 percent.

NAR found the homeowner who sold over the last year was typically 57 years old, with a median household income of $102,900. Home sellers said they ultimately sold their homes for a median of $60,000 more than the price they paid for it and typically lived in that home for 10 years. This is up from the historic tenure of six years.

For the first time in the survey's history the top reason for selling, cited by 16 percent of those surveyed, was a desire to move closer to family and friends. The second most frequent reason was the need for a larger house and the



third, at 11 percent, was job relocation. Only 8 percent sold their homes without the assistance of an agent. This is near the lowest share of "FSBOs" since the information was first tracked in 1981. Forty-eight percent of all sellers said they bought a home that was newer than their previous home, while 28 percent purchased a home the same age and 24 percent purchased one that was older. Forty-four percent of sellers said they "traded-up" to a more expensive house and 20 percent bought one that was less expensive. Those aged 18 to 34 purchased the most expensive trade-ups in 2019, recording an increase of $110,000. Conversely, sellers aged 65 and over typically bought a less expensive home.

NAR's 155-page report contains a lot of information on the process of buying and selling as well as the characteristics of the homes and their financing.

Section 3: About WillSonn Advisory, LLC

WillSonn Advisory

Critical Experience for Critical Endeavors

WillSonn Advisory brings senior management experience, across multiple sectors of the wood products industry, with expertise in leading an array of strategic initiatives

Sectors

- Timber, Manufacturing, Bioenergy
- Private Industry & Institutional Investment
- Corporate Lending
- Consulting
- Domestic and International

Experience

- Mergers, Acquisitions & Divestitures
- Timberland Operations
- Finance & Planning, Financial Reporting
- Loan Origination & Underwriting
- Operations Support

Expertise

- Strategic Planning
- Asset Valuations and Due Diligence
- Project Management
- Contract Negotiations
- Budgeting & Forecasting

WillSonn Advisory Services

- Timberland & Mill Valuations
- Acquisition "Post Mortem" Audits
- Conversion of Acquisition Pro Forma to Lender Financial Projections
- Acquisition and Operational Due Diligence
- Development of Company Enterprise Valuations
- Incorporating Economic Forecasts

Business Assessments & Due Diligence Services

- Acquisition and Divestiture Process Management
- Conduct Regional or Global Market Studies
- Plan and Oversee Inventory & GIS Projects and/or Audits
- Independent Review of Harvest Flow Projections and Processes
- Prepare Offering Memorandums and Prospectuses

Project Management Services

- Fiber/Log Supply Agreements
- Purchase & Sale Agreements
- Timber Deeds and Leases
- Conservation Easements & Carbon Projects
- Service and Offtake Agreements
- Joint Ventures & Partnerships
- Contract Negotiating Strategies

Contract Structuring and Negotiation Services

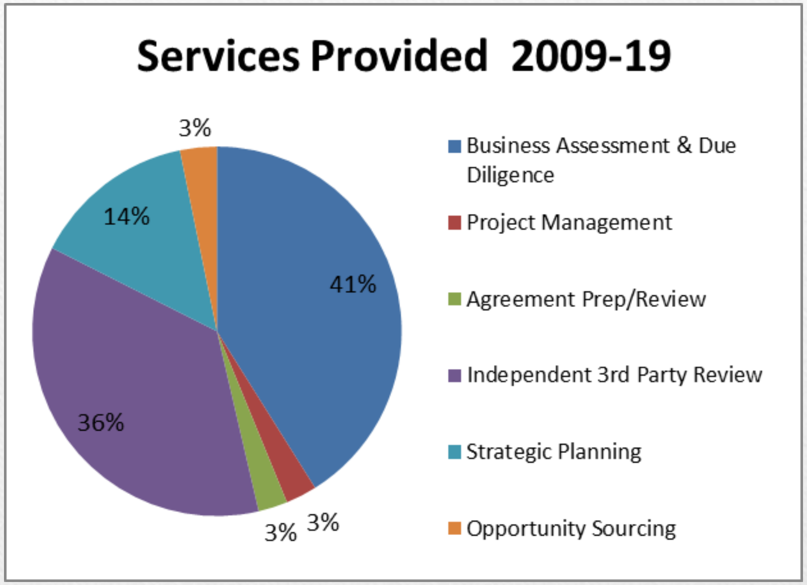
- Strategic Plan Process Design, Facilitation and Documentation
- Company Specific Price, Supply and/or Demand Forecast Development
- Contingency Plan Development and Monitoring
- Financial Planning and Capital Restructuring
- Work-out Strategy Development
- Capital Investment Assessments

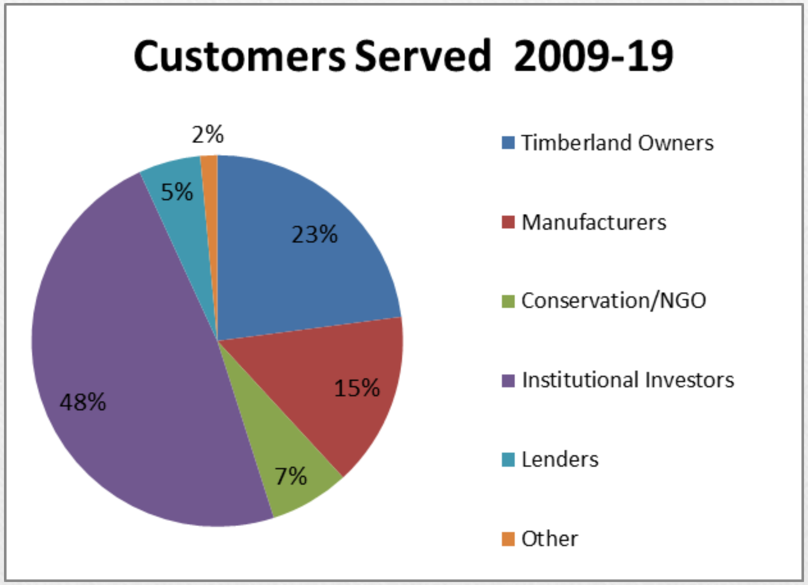
Strategic Planning & Business Restructuring Services

- Validate Acquisition Valuations & Due Diligence Procedures
- Evaluate Existing or Proposed Agreements or Easements
- Interpret Annual Management Plans & Appraisals
- Examine Proposed Transfers of Ownership
- Review Divestiture Timing & Strategies
- Track Investment Performance

Institutional Investor Services

Engagement Profile





Since early 2009, Will Sonnenfeld has been pleased to provide a broad range of consulting services to dozens of clients across the full spectrum of industry sectors.

I look forward to your comments and questions, and welcome the opportunity to serve your consulting needs.

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