ECONOMIC OUTLOOK A REGIONS September 2018

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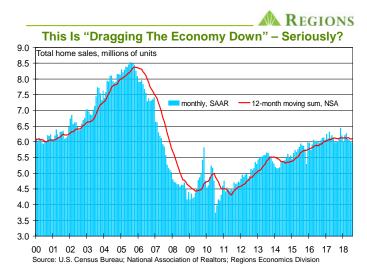
## *The Sky Isn't Falling, And Neither Is The Roof* . . .

Breathe. Chill. Or, to quote noted housing market analyst Aaron Rodgers (who we understand also dabbles in another field, though we don't know what that field is), R-E-L-A-X. That would be our advice to anyone fretting, stressing, or panicking over the untimely demise of the housing market. Though you'd never know it from what has become a mind-numbing stream of increasingly dire headlines that in many cases sit atop some questionable analysis, there isn't really a reason to do any of those things. Fret, stress, or panic, that is. There is, however, plenty of reason to look at the data on the housing market to try and better understand what is happening in the housing market, why it is happening, and what it means for the broader economy, and doing so in a calm and reasoned manner. Okay, at least to the extent that is possible.

That's right, calm and reasoned, just like this headline atop one of the recent "housing is done" stories: "Mortgage Rates Tumble As Housing Starts To Drag Down The Economy." Okay, fine, at present the housing market is nobody's idea of a finely tuned machine running at peak efficiency, but neither is it on the verge of tipping over and "dragging the economy down" with it. Really? And, yes, we are well aware of what happened last time around and how that ended. But, no, this isn't that. Not even close.

Home sales are front and center in the "housing is done" narrative. Indeed, in the wake of the reports on July sales of new and existing homes, one of the *calm*, *reasoned*, *and informed* (sarcasm font alert) headlines we came across told us "Home Sales Hit A Fresh Low In July As Housing Market Looks For Direction." The "story" here was that the combined total of new and existing home sales fell below six million units in July, reaching a two-year low. The "news" here is that six million units is, we are told, a "key psychological benchmark," which at least came as news to us. In all fairness, however, that we never knew this could just reflect us not having gotten the memo instead of this being an arbitrary benchmark of no actual significance. Though it does raise an interesting question – if a metric falls below a key psychological benchmark that you didn't actually know was a key psychological benchmark, do you still get depressed?

Either way, the "headline" sales numbers, i.e., home sales reported on a seasonally adjusted and annualized basis, do show total home sales fell below an annual rate of 6.0 million units in July. After all, the seasonally adjusted annualized basis on which the data on home sales and residential construction are reported is the perfect manner in which to view the data. Unless of course you actually want to understand what is going on in the housing market. Our regular readers know what's coming next – this is where we express our utter disdain for looking at the housing market data, and, really, just about any data we can think of, in this manner. So, sure, if you add up July new and existing home sales on the basis of the seasonally adjusted annualized data, total home sales came in at 5.967 million units, which is indeed the lowest total since August 2016. And, to add insult to injury, July marks the fourth consecutive monthly decline in combined new and existing home sales reported on this basis. Start there, add in flagging home buying sentiment as reported in monthly surveys of consumers, and mortgage interest rates that are around 70 basis points higher than they were a year ago, and you have a quick, convenient, and easy recipe for a "housing is done" story.



But, and you just knew one of those was coming, the not seasonally adjusted data tell a different story, as seen in the chart above. To be sure, on a not seasonally adjusted basis, both new and existing home sales fell in July, but this is typically the case in the month of July (for instance, since 1990 not seasonally adjusted new home sales have risen only 5 out of 29 times in the month of July). This is one of the inherent difficulties with the raw data, i.e., what are clear seasonal patterns in pretty much every data series make it hard to interpret the data on a month to month basis. Which is why they invented underlying trends, and we routinely point to the underlying trends in the not seasonally adjusted data as being the most reliable gauges of economic activity.

In the case of home sales and residential construction, we think the underlying trends are best captured by the running 12-month totals of not seasonally adjusted sales, starts, and permits. As of July, the running 12-month total of combined not seasonally adjusted new and existing home sales stood at 6.101 million units, up from 6.087 million units as of June but eerily in line with the average of 6.102 million units that has prevailed since January 2017 (as shown by the red line in the above chart). Admittedly, we're no experts at writing attention grabbing headlines, but even we get that a headline proclaiming "Home Sales Remain Range Bound For A 19<sup>th</sup> Consecutive Month" isn't likely to generate a lot of interest, or a lot of clicks as the case might be. Interesting or not, however, the story is what the story is, and the story with home sales is they have settled in at a decent level. Not spectacular, but even so it's a long way from there to "housing is done" let alone housing "dragging the economy down" with it.

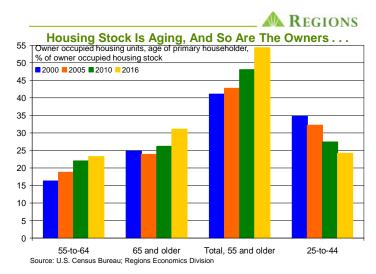
The relevant questions are why have home sales been so range bound for so long and, assuming no line stays straight forever, is there any upside potential for home sales over coming quarters. As to the first question, our view has from the start been that the explanation lies on the supply side, not the demand side, of the market and we have yet to see anything to cause us to change our view. To be sure, we do have concerns on the affordability front given the combination of robust house price appreciation over the past several quarters and the increase in mortgage interest rates over the past several months. That said, mortgage rates are far from being prohibitive for a large swath of prospective home buyers, particularly in comparison to historical averages. We'll also point out that the trend rate of home sales had leveled out well before mortgage rates began climbing higher, so while pinning the recent declines in "headline" home sales on higher mortgage rates seems plausible, the stable trend in home sales suggests higher mortgage rates haven't choked off demand to a material degree.

We've argued that a main impact of higher mortgage rates has been on the supply side of the market. Which may strike you as counterintuitive, but in the context of a roughly two-year period between mid-2014 and mid-2016 of mortgage interest rates below 4.0 percent our point is more clear. Any current home owner who either took out a new mortgage or refinanced an existing mortgage during that period is, with each successive uptick in mortgage interest rates, increasingly less inclined to trade out of that sub-4.0 percent mortgage rate and take on a higher rate, particularly in combination with the pace of house price appreciation seen over subsequent quarters. We've referred to such homeowners as being "locked in" by their low mortgage rate, and while we can't precisely quantify the magnitude, we do believe this has been a constraint on existing home sales.

We've frequently discussed other factors we see as having acted as drags on inventories of existing homes for sale, such as single family housing REITs, distress inventories having been pared down substantially, and homeowners being trapped by negative/limited equity positions, so we won't recover that ground here. One factor that we have not touched on before is that the stock of existing owner-occupied housing has become increasingly concentrated amongst older homeowners. To the extent older homeowners are staying put rather than downsizing and moving elsewhere, this is limiting the quantity of existing homes available for sale.

As of the Census Bureau's 2016 *American Community Survey* (the 2017 data are due for release later this month), 54.3 percent of the owner occupied housing stock were units with a primary householder aged 55 and over, a share that has risen steadily from 41.1 percent in 2000. Over the same period, owner occupied units with a primary householder between 25 and 44 years-old fell from 34.7 percent in 2000 to 24.2 percent in 2016. As a side point, this decline in the share of the owner occupied housing stock owned by those between 25 and 44 years-old reflects declines in both the 25-to-34 years-old and the 35-to-44 years-old age cohorts.

Prospective first-time home buyers are the group most likely impacted by the increased concentration of the owner occupied housing stock amongst the older age cohorts, as this concentration limits the move-up sales that historically have freed up homes for first-time buyers. There is little reason to think the patterns shown in the chart below will look any different when the 2017 data are available, nor do we think this pattern will reverse to any material degree any time soon. If we are correct on this point, that means the inventory of existing homes for sale is structurally lower, which suggests that in turn there will be fewer sales and more support for house price appreciation than would otherwise be the case.



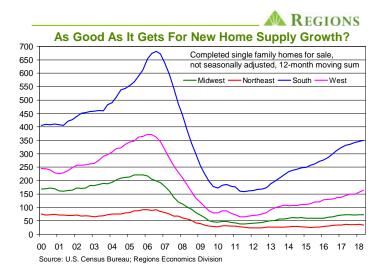
As for new home sales, the list of drags on the construction of new single family homes is by now a familiar one. First of all, with many mid-sized builders having exited the industry during the last downturn and not having returned, there are simply fewer builders than had been the case. As for the builders that remain, they have been faced with shortages of buildable lots, entitlement processes that in many markets are more costly and cumbersome than has been the case in the past, and shortages of qualified construction labor (which is by far a bigger issue in single family construction than in multi-family construction).

As such, single family permits, starts, and completions have been growing at a rate best described as steady but frustratingly slow. Of course, whether one opts to focus on "steadily rising" or on "frustratingly slow" colors their view of the housing market. Once again, the best way to see this is to look at the trends in the not seasonally adjusted data. For instance, the unadjusted data show that over the past 12 months there have been 884,800 single family homes started, the highest such total since April 2008. Over this same period there have been 822,900 single family homes completed, down slightly from the total as of June but nonetheless single family completions are at a level last seen in November 2008. There have been 855,300 single family permits issued over the past 12 months, the highest such total since March 2008. With this total still rising at a steady, but, sure, slow rate, it is hard to argue, or at least to do so in a plausible manner, that single family construction is on the verge of tipping over.

It is also important to distinguish between total single family construction and the construction of single family homes intended for sale. In any given time period, a sizeable share of single family

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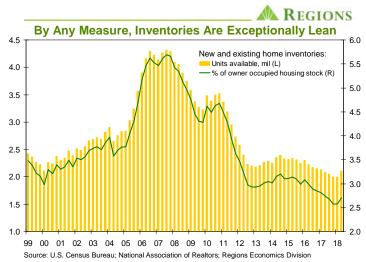
construction is either built for rent or owner built, with neither category included in single family units intended for sale. Over the past six years, single family units intended for sale have accounted for about 74 percent of total single family construction. This is a useful distinction to be aware of when assessing the potential for new single family home sales, and it could also be a more relevant distinction in the near term. For instance, there are signs in the monthly data that rebuilding of homes in Florida destroyed by Hurricane Irma is just gathering pace, and over coming months many homes in the West region that have been destroyed by the severe fires will have to be replaced. While each replacement unit will show up in the data on single family permits and starts, they will not be built for sale, so to the extent we do see single family construction in these regions pick up, it won't necessarily translate into larger inventories of new homes for sale.



The above chart shows the running 12-month total of completed single family homes intended for sale for each of the four broad Census regions. We see this is the most accurate proxy for growth in inventories of new single family homes for sale. As seen in the chart, the South and West regions account for the vast majority of growth in for-sale single family homes, which makes sense given that together these two regions account for over 80 percent of all new home sales. Much higher population and building densities in the Northeast region tend to hold down single family construction, while residential construction across much of the Midwest remains hamstrung by weak demographic trends. We think this regional breakdown is useful, as supply growth in the South and West is faster than growth in total supply for the U.S. as a whole. Which of course isn't to say supply growth is robust, or even adequate, in the South and West regions, but it is at least more supportive of sales than implied by growth in supply for the U.S. as a whole.

The same patterns are seen in the data on new single family home sales. The running 12-month total of new home sales (again, not seasonally adjusted) in the South and West regions has been increasing at the same steady pace seen in the completions data. On this basis, sales in the South and West regions are at a decade high, while sales in the Midwest are slowly grinding higher and sales in the Northeast are, well, are not doing much of anything. Still, in no region are there any signs that either new single family Page 3

construction or sales are on the verge of collapse, the recent spate of "housing is done" stories notwithstanding.



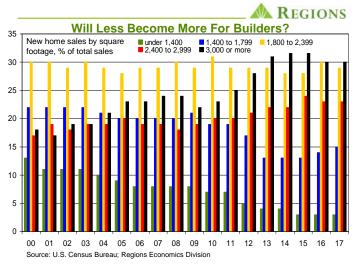
We use the above chart to summarize the inventory constraints weighing on home sales. The chart shows combined existing and new home inventories scaled to the size of the owner occupied housing stock. Though the history is limited, inventory as a share of the owner occupied housing stock hit an all-time low in Q4 2017 and Q1 2018 before increasing modestly in Q2 2018. In light of the above discussion of the slow but steady growth in the supply of new homes is much larger than the market for new homes. As such, what had been a prolonged downward drift in the number of existing homes listed for sale more than negated growth in the supply of new homes intended for sale, accounting for the steady decline in total inventories of homes for sale shown above. The increase in Q2 reflects a jump in existing home listings in June.

For those believing, as we do, that the demand side of the market remains healthy, the question is whether, or to what degree, the bump in inventories seen in Q2 can be sustained. Admittedly, with little insight as to why listings of existing homes for sale jumped in June, it's hard to assess what that might mean going forward. That said, we had been waiting, and waiting, for steady price appreciation to draw out more supply, and if listings continue to rise over coming months that could be one reason. Of course, the flip side of that is that if those looking to sell are also looking to buy, higher prices and interest rates could mean trading up is simply not feasible, so we're not sure how much potential there is on this front. The combination of rapid price appreciation and solid rent growth makes it unlikely single family REITs would become sellers, at least to any meaningful degree, any time soon. It remains to be seen whether greater numbers of older homeowners will look to sell their current homes and move, but even if this does happen the question becomes where do they go - do they simply become competition for smaller, lower priced homes, or do they move to retirement communities or similar developments, thus effectively increasing the net quantity of homes available for sale.

In short, while there is room for growth in inventories of existing homes for sale, that growth is likely to be gradual for some time to come. That is also likely to be the case with inventories of new homes for sale, as supply constraints on lots and labor don't tend

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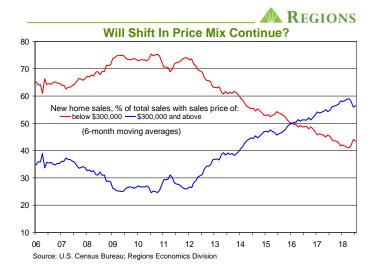
to ease quickly. That said, a recent shift on the part of some of the larger homebuilders towards building more entry and mid-level homes is one channel through which greater numbers of new homes might be built. And, even if this shift doesn't result in more homes being built, it is opening up the new homes market to a greater range of buyers than has been the case in recent years.



The past several years have seen new home sales increasingly concentrated amongst larger, higher priced homes. Note the pronounced shifts towards larger homes in 2012 and 2013 shown in the above chart. In context, this makes perfect sense – builders were simply unable to compete on price with the glut of foreclosed homes that were coming on the market, many of which were relatively "new" homes selling at steep discounts. At the same time, mortgage lending standards were far more stringent than was the case in the pre-recession years. That was less of an issue, if even an issue, for higher income buyers, and these factors help account for the shift seen in the above chart, and homebuilders have continued to ride the wave of high-end home sales.

We have noted that builders have, to a large extent, been making up in margin what they have given up in terms of volume. While mortgage lending standards have eased somewhat, data from Equifax and the Federal Reserve Bank of New York show mortgage originations remain highly concentrated amongst borrowers with credit scores of 760 or above. While this does not mean mortgage loans have gone only to higher income borrowers, the HMDA (or, Home Mortgage Disclosure Act) data show mortgage originations have become more skewed towards higher income borrowers.

We have highlighted this trend in our monthly write-ups of the new home sales data by focusing on the distribution of sales by price range. But, for some time we had wondered how much more high-end demand was out there for builders to tap, and we may be getting our answer. Over recent months, this pattern has been reversing, with homes priced below \$300,000 comprising an increasing share of total new home sales. Well, at least until July, when the share of higher-priced homes jumped, but this measure can shift sharply from one month to the next (which is why we show the six-month moving average in the following chart). Still, we think this shift will persist. To the extent new communities are comprised of smaller homes, that allows for a higher number of new homes to be built but, more significantly, even if the number of new homes built and sold is unaffected by a shift to smaller and less expensive homes, as we noted above, this still opens up the new homes market to a broader range of prospective buyers.



Sure, those in the "housing is done" camp will argue this shift is irrelevant, as demand is drying up, but we don't believe this is close to being the case. As they say in the sports world, that's why they play the games, and data over the next several months - but not in any single month, headline hysterics notwithstanding - will settle this and other housing market questions. One reason this matters is because new residential construction is a component of GDP; in both Q1 and Q2 of 2018, residential construction took onetenth of a point of off top-line real GDP growth and will also take away from top-line growth in Q3. Which, if nothing else, illustrates the distinction between housing being a drag on growth and housing dragging the economy down (once again, really?) - keep in mind real GDP growth topped 4.0 percent in Q2 and will come close to that mark in Q3. Existing home sales directly impact GDP through brokers' commissions on sales, so to the extent existing home sales are weak this will be a drag on top-line growth, though the magnitude of this effect is very small.

It should also be pointed out that the drag from housing is not entirely due to single family construction. While we could, and just might, fill an entire Outlook with a discussion of this segment of the housing market, for now we'll simply note that multi-family starts (again, we're talking about the trends in the not seasonally adjusted data) are slowing, though not nearly fast enough, thanks to what is the largest and most persistent backlog of units under construction since the mid-1970s. To the extent this continues, as we fully expect it will, that will to some extent neutralize what we think will be continued steady, but slow, growth in single family construction. As such, total residential construction will not look all that impressive, but those whose focus goes no further than the headline numbers will miss all of this. Of course, it won't matter all that much. We have no doubt that when home sales actually do decline to a meaningful degree, most likely in the context of a downturn in the broader economy, those who have been pushing the "housing is done" narrative will be falling over each other to claim they were the first to call the housing market downturn. Man, talk about a drag . . .

ECONOMIC OUTLOOK A REGIONS

Q1 '18 (a)	Q2 '18 (p)	Q3 '18 (f)	Q4 '18 (f)	Q1 '19 (f)	Q2 '19 (f)	Q3 '19 (f)	Q4 '19 (f)		2016 (a)	2017 (a)	2018 (f)	2019 (f)	2020 (f)
2.2	4.2	3.6	2.5	2.4	2.3	2.1	1.8	Real GDP <sup>1</sup>	1.6	2.2	2.9	2.6	1.5
0.5	3.8	3.1	2.9	2.5	2.3	2.3	2.2	Real Personal Consumption <sup>1</sup>	2.7	2.5	2.6	2.6	2.1
								Business Fixed Investment:					
10.8	7.1	5.7	5.0	4.6	4.1	3.8	3.2	Equipment, Software, & IP <sup>1</sup>	2.1	5.5	7.5	4.7	2.6
13.9	13.2	2.2	4.1	4.4	3.2	1.9	1.2	Structures <sup>1</sup>	-5.0	4.6	6.0	3.8	1.1
-3.4	-1.6	-2.7	1.9	2.5	5.5	2.2	1.2	Residential Fixed Investment <sup>1</sup>	6.5	3.3	0.2	1.9	1.3
1.5	2.4	1.6	1.6	1.4	1.3	1.2	0.2	Government Expenditures <sup>1</sup>	1.4	-0.1	1.4	1.4	-0.4
-902.4	-843.7	-897.4	-906.1	-921.9	-933.2	-945.3	-953.8	Net Exports <sup>2</sup>	-786.2	-858.7	-887.4	-938.6	-986.1
1.317	1.254	1.209	1.271	1.291	1.295	1.301	1.303	Housing Starts, millions of units <sup>3</sup>	1.177	1.208	1.263	1.298	1.316
17.1	17.2	16.7	16.8	16.6	16.6	16.5	16.5	Vehicle Sales, millions of units <sup>3</sup>	17.5	17.1	16.9	16.5	16.2
	3.9	2.0	3.8	3.7	3.7	2.6	2.6	Usersaleument Date 0/4	4.0	4.4	3.9	3.6	3.6
4.1		3.9				3.6	3.6	Unemployment Rate, % <sup>4</sup>	4.9				
1.5	1.6	1.6	1.6	1.5	1.3	1.2	1.1	Non-Farm Employment <sup>5</sup>	1.8	1.6	1.6	1.3	0.8
4.4	2.5	2.4	2.6	2.5	2.2	2.3	2.0	Real Disposable Personal Income <sup>1</sup>	1.7	2.6	2.9	2.4	1.9
2.0	2.5	2.5	2.4	2.6	2.4	2.6	2.5	GDP Price Index <sup>5</sup>	1.1	1.9	2.3	2.5	2.2
1.9	2.2	2.2	2.0	1.9	2.0	2.1	2.1	PCE Deflator <sup>5</sup>	1.1	1.8	2.0	2.0	2.2
2.3	2.6	2.6	2.2	1.9	2.0	2.0	2.0	Consumer Price Index <sup>5</sup>	1.3	2.1	2.4	2.0	1.9
1.7	1.9	2.0	2.0	2.0	2.0	2.1	2.1	Core PCE Deflator <sup>5</sup>	1.7	1.6	1.9	2.1	2.2
1.9	2.2	2.3	2.3	2.2	2.4	2.4	2.4	Core Consumer Price Index <sup>5</sup>	2.2	1.8	2.2	2.3	2.3
1.41	1.68	1.89	2.16	2.42	2.67	2.88	2.88	Fed Funds Target Rate Range Mid-Point, % <sup>4</sup>	0.39	0.97	1.78	2.71	2.88
2.76	2.92	2.90	3.00	3.05	3.15	3.35	3.45	10-Year Treasury Note Yield, % <sup>4</sup>	1.84	2.33	2.90	3.25	3.49
4.28	4.54	4.58	4.68	4.73	4.83	5.03	5.13	30-Year Fixed Mortgage, % <sup>4</sup>	3.65	3.99	4.52	4.93	5.17
-2.5	-2.2	-2.3	-2.4	-2.4	-2.5	-2.7	-2.8	Current Account, % of GDP	-2.3	-2.3	-2.4	-2.6	-2.9

a = actual; f = forecast; p = preliminary

1 - annualized percentage change Notes:

2 - chained 2012 \$ billions

3 - annualized rate

4 - quarterly average

5 - year-over-year percentage change