

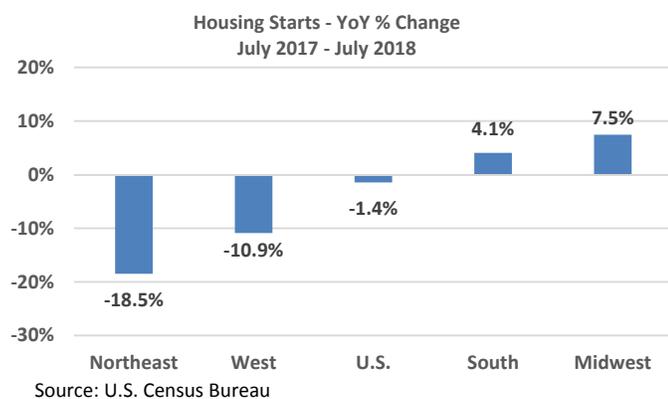
Date	Indicator	For	Estimate	Consensus*	Previous Period
27-Aug-2018	Chicago Fed Nat Activity Index	Jul	NA	0.45	0.43
27-Aug-2018	Dallas Fed Manufacturing Activity	Aug	27.5	30.0	32.3
28-Aug-2018	Advance Goods Trade Balance	Jul	-\$70.0b	-\$68.6b	-\$67.9b
28-Aug-2018	Wholesale Inventories MoM	Jul P	0.2%	NA	0.1%
28-Aug-2018	S&P CoreLogic CS 20-City MoM SA	Jun	0.1%	0.2%	0.2%
28-Aug-2018	Richmond Fed Manufacturing Index	Aug	17.0	18.0	20.0
28-Aug-2018	Conf. Board Consumer Confidence	Aug	126.5	126.5	127.4
29-Aug-2018	GDP Annualized QoQ	2Q S	4.2%	4.0%	4.1%
29-Aug-2018	GDP Price Index	2Q S	3.0%	3.0%	3.0%
29-Aug-2018	Pending Home Sales MoM	Jul	0.2%	0.5%	0.9%
30-Aug-2018	Initial Jobless Claims	25-Aug	214k	NA	210k
30-Aug-2018	Personal Income	Jul	0.3%	0.4%	0.4%
30-Aug-2018	Personal Spending	Jul	0.4%	0.4%	0.4%
30-Aug-2018	PCE Deflator MoM	Jul	0.1%	0.2%	0.1%
30-Aug-2018	PCE Core MoM	Jul	0.2%	0.2%	0.1%
31-Aug-2018	Chicago Purchasing Manager	Aug	62.0	63.0	65.5
31-Aug-2018	U. of Mich. Sentiment	Aug F	95.5	95.7	95.3

\*Consensus from Bloomberg

## Homebuilding – How Slow Can It Go?

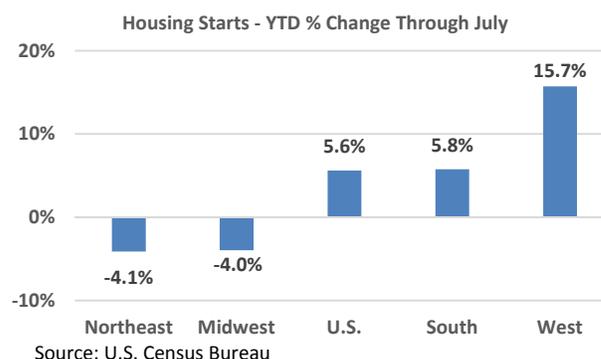
Much of the recently released U.S. housing market data has been on the weaker side. For example, housing starts declined 1.4% year-over-year in July, after a 5.5% drop in June. The drop was due to double-digit declines in the Northeast and the West, with starts increasing in the South and Midwest.

### Housing Start Declines Were Confined to Two Regions



Housing starts data, however, tends to be very volatile from month to month and can be impacted by things such as unusual weather events. Year-to-date starts through July – which can smooth out some of the volatility – are still up 5.6% compared to the same period last year, with strong gains of 15.7% in the West and 5.8% in the South. Based on these conflicting views of the same underlying data is the homebuilding slowdown expected to last, or will it prove to be transitory?

### Housing Starts Growth in 2018 Is Positive Through July



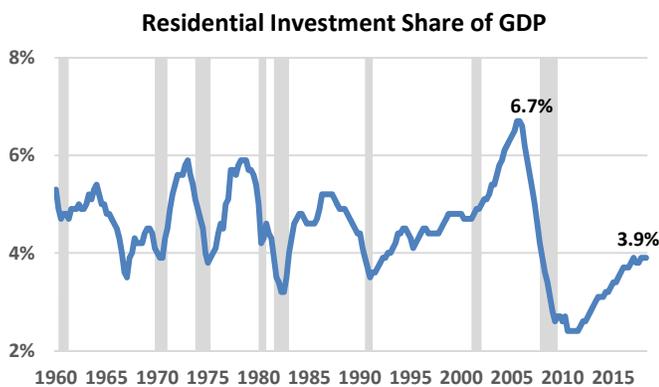
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### How Large a Share of the U.S. Economy Is Homebuilding?

While the housing market gets a lot of media attention – much of it because of the housing crash that precipitated the Great Recession – the component that feeds into the GDP calculation is a relatively small share of the overall U.S. economy.

After peaking at 6.7% of GDP in the third quarter of 2006, residential investment as a share of GDP declined for 14 successive quarters, reaching a nadir of 2.4% in the third quarter of 2010. After stagnating at 2.4% for the next year, residential investment began to slowly increase and reached 3.9% in the second quarter of this year. This is, however, still well below the long-run average of 4.5% from 1960 through mid-2018.

#### Residential Investment Did Not Rebound Sharply in Expansion



Source: U.S. Bureau of Economic Analysis

Weak residential investment growth supports the theory that home builders have been cautious since the housing downturn. This in turn has held back GDP growth since the recession ended and could be one reason why this expansion has been weak compared to prior expansions. It also suggests that home builders have scope to ramp up construction, given how supply constraints in some housing markets are driving home prices higher.

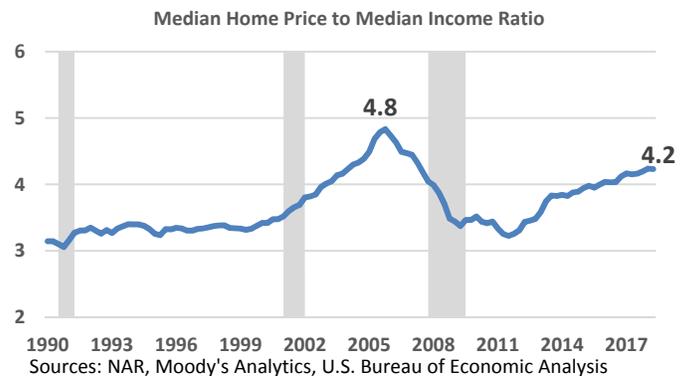
### Home Prices Continue To Rise

Despite the recent weakness in the housing data – from starts to sales – home prices continue to rise, largely due to low inventory. July was the first month in three years the number of existing homes available for sale did not

decrease on a year-over-year basis. Even so, median home prices managed to rise 4.5% from a year ago to \$269,600. Clearly, more homebuilding and inventory building will be necessary to further cool home price growth.

Existing home prices have increased year-over-year for 77 consecutive months now. Yet home prices relative to income are still well-below the levels seen prior to the last housing downturn. The price-to-income ratio peaked at 4.8 at the end of 2005, bottomed out at 3.2 in September of 2011, and then began to rise through 2016. The ratio, however, has been stable at 4.2 since the first quarter of 2017. It is near home price-to-income ratios seen back in 2004, well-before the last housing price bubble really took off.

#### Ratio of Home Prices to Income Has Stabilized



Sources: NAR, Moody's Analytics, U.S. Bureau of Economic Analysis

### The Outlook

Our forecast calls for a continued gradual slowdown in the housing market, which is typical for the late stage of an economic expansion. Housing starts are projected to grow 4.1% this year and then decelerate to 1.4% in 2019 and -1.6% in 2020. Home prices, based on the Case-Shiller 20 City Index, are forecast to rise 6.5% in 2018 and then slow to 4.3% in 2019 and 3.5% in 2020. In short, the slowdown in the housing market in this cycle is expected to be far more gradual and orderly compared to the housing crash in the last decade. As a result, the spillover to the broader U.S. economy – particularly the crucial wealth effect on consumer spending – will not be as severe, especially with national home prices expected to continue rising into 2020.

The discussions and information contained in this document are the opinions of the author should not be construed or used as a specific recommendation for the investment of assets, and is not intended as an offer, or a solicitation of an offer, to purchase or sell any security or financial instrument. Nor does the information constitute advice or an expression of the Bank's view as to whether a particular security or financial instrument is appropriate for you or meets your financial objectives. Economic and market observations and forecasts, such as those offered by Bank of the West Economics reflect subjective judgments and assumptions, and unexpected events may occur. There can be no assurance that developments will transpire as forecasted. Nothing in this document should be interpreted to state or imply that past results are an indication of future performance.

Major Economic Indicators

Economic Data	History						Forecast						Yr/Yr % chg or Annual Avg.			
	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
Real GDP*	1.8	3.0	2.8	2.3	2.2	4.1	3.0	2.7	2.2	2.1	2.0	2.0	1.5	2.2	2.8	2.5
Personal Consumption Expenditures*	1.8	2.9	2.2	3.9	0.5	4.0	3.0	2.4	2.1	2.0	2.0	2.0	2.7	2.5	2.6	2.4
Non-residential Fixed Investment*	9.6	7.3	3.4	4.8	11.5	7.3	4.9	5.6	5.0	5.0	4.3	4.1	-0.6	5.3	7.0	5.2
Private Housing Starts (000s units)	1,231	1,171	1,172	1,259	1,317	1,254	1,220	1,240	1,270	1,280	1,277	1,275	1,176	1,208	1,258	1,276
Vehicle Sales (mill. Units, annualized)	17.1	16.8	17.1	17.7	17.1	17.1	17.1	16.9	16.5	16.5	16.4	16.3	17.5	17.2	17.1	16.4
Industrial Production*	1.0	5.0	-1.5	7.7	2.5	6.0	3.0	2.6	2.2	2.0	1.7	1.5	-1.2	1.6	3.8	2.5
Nonfarm Payroll Employment (mil.)	145.9	146.3	146.9	147.4	148.1	148.7	149.3	149.8	150.3	150.7	151.1	151.5	144.3	146.6	149.0	150.9
Unemployment rate	4.7	4.3	4.3	4.1	4.1	3.9	3.8	3.6	3.7	3.8	3.9	4.0	4.9	4.4	3.9	3.9
Consumer Price Index* (percent)	3.0	0.1	2.1	3.3	3.5	1.7	2.2	2.1	2.0	2.0	2.1	2.1	1.3	2.1	2.5	2.1
"Core" CPI* (percent)	2.2	0.8	1.8	2.2	3.0	1.8	2.1	2.1	2.1	2.1	2.1	2.1	2.2	1.8	2.2	2.1
PPI (finished goods)* (percent)	5.7	1.0	1.6	5.7	3.6	2.6	2.5	2.0	1.8	1.8	1.7	1.7	-1.0	3.2	3.2	2.0
Trade Weighted Dollar (Fed BOG, major)	94.4	93.0	88.3	88.9	86.2	88.2	90.4	91.4	91.1	90.4	89.6	88.5	91.6	91.1	89.0	89.9
Crude Oil Prices -WTI (\$ per barrel)	52	48	48	55	63	68	68	65	63	61	61	59	43	51	66	61

\*Quarterly Data Percent Change At Annual Rate; Annual Data Year-on-Year % Chg, or Annual Average.

Financial Data	History						Forecast						Annual Average			
	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
S & P 500	2,326	2,398	2,467	2,603	2,733	2,703							2,093	2,449		
Dow Jones Industrial Average	20,406	20,994	21,891	23,689	25,127	24,556							17,916	21,745		
Federal Funds Rate (effective)	0.70	0.95	1.15	1.20	1.45	1.74	1.91	2.21	2.46	2.63	2.63	2.63	0.39	1.00	1.83	2.59
Treasury-3 Month Bills (yield)	0.61	0.91	1.05	1.23	1.58	1.87	2.06	2.31	2.56	2.73	2.68	2.68	0.32	0.95	1.96	2.66
Treasury-2 Year Notes (yield)	1.24	1.30	1.36	1.69	2.16	2.48	2.62	2.77	2.91	3.01	3.02	2.97	0.84	1.40	2.51	2.98
Treasury-5 Year Notes (yield)	1.95	1.81	1.81	2.07	2.53	2.77	2.79	2.91	3.05	3.15	3.16	3.11	1.34	1.91	2.75	3.12
Treasury-10 Year Notes (yield)	2.45	2.26	2.24	2.37	2.76	2.92	2.91	3.02	3.19	3.28	3.27	3.21	1.84	2.33	2.90	3.24
Treasury-30 Year Notes (yield)	3.05	2.90	2.82	2.82	3.03	3.09	3.03	3.11	3.26	3.35	3.34	3.28	2.60	2.90	3.07	3.31
Prime Rate	3.80	4.05	4.25	4.29	4.53	4.80	5.00	5.25	5.50	5.75	5.75	5.75	3.51	4.10	4.90	5.69
Libor 3-Mo. U.S. Dollar	1.07	1.21	1.31	1.46	1.93	2.34	2.35	2.50	2.70	2.85	2.80	2.80	0.74	1.26	2.28	2.79
Mortgage-30 Year (yield)	4.17	3.98	3.88	3.92	4.28	4.54	4.52	4.60	4.77	4.87	4.88	4.85	3.66	3.99	4.49	4.84
BAA Corporate (yield)	4.66	4.49	4.33	4.27	4.47	4.78	4.79	5.04	5.40	5.60	5.80	6.10	4.71	4.44	4.77	5.73

Source: Bank of the West Economics, Bloomberg, Federal Reserve