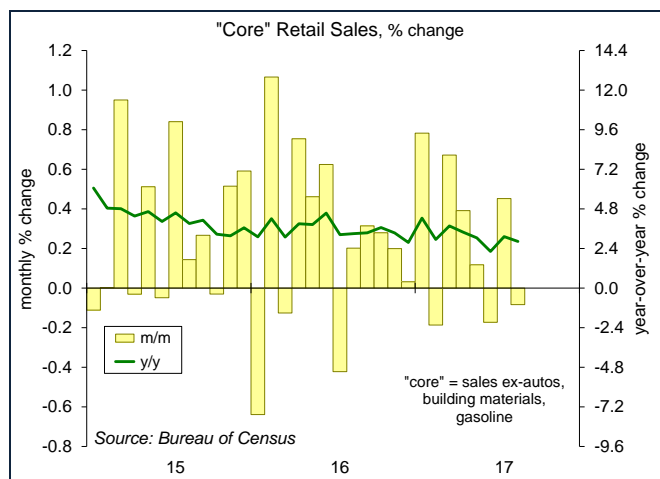


## Monthly Economic Outlook

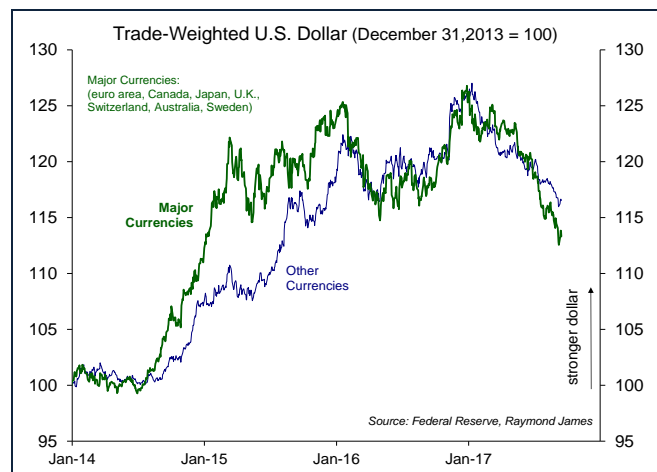
### Riding the Storm Out

- *The loss of life and property damage are tragic. The economic data for the next several weeks will be distorted. However, hurricanes Harvey and Irma are expected to have only a temporary impact on the overall economy.*
- *Prior to the hurricanes, the economic data were mixed, suggesting a lackluster-to-moderate pace of growth.*
- *Federal Reserve policymakers announced that balance sheet normalization will start in October, with the run-off set initially at a modest pace (\$10 billion per month), rising every three months to its full stride (\$50 billion per month) in October 2018. Fed officials continue to anticipate gradual increases in short-term interest rates over the next few years, with most (11 of 16 officials) expecting a December move.*

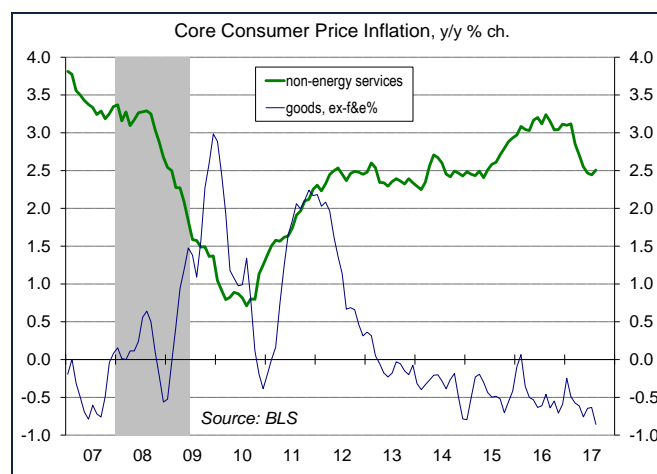
Real GDP rose at a 3.0% annual rate in the 2<sup>nd</sup> estimate for 2Q17 (vs. +1.2% in the first quarter), leaving a 2.1% pace for the first half of the year. Forecasts of 3Q17 GDP growth were declining ahead of the hurricanes and the storms are likely to shave a few tenths of percentage point from growth (although activity should bounce back in 4Q17). August retail sales fell short of expectations, with downward revisions to June and July. Back-to-school sales are seen as a harbinger of the more important holiday shopping season. Unit motor vehicle sales have been trending lower, with year-over-year declines reported for every month in 2017. That reflects 1) some tightening in credit for auto loans at the low end, and 2) the idea that the pace had exceeded a long-term sustainable rate (based on replacement needs). Motor vehicle production has also weakened, down 4.6% since the end of last year.



Despite the spotty consumer and manufacturing data for August, business sentiment remains elevated. The global economy continues to improve and the dollar has softened in the first eight months of the year, supporting U.S. exports.

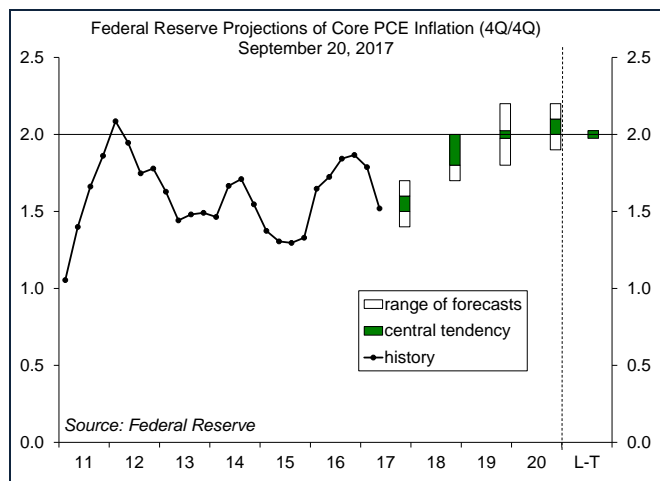


The exchange rate can be thought of as a price, dependent on supply and demand (trade and capital flows). This year's decline partly reflects an unwinding of expectations of fiscal stimulus (infrastructure spending, tax reform), which had lifted the dollar following the November election. In the short-term, exchange rates reflect monetary policy expectations. Market participants have anticipated that the U.S. Federal Reserve will be less aggressive in raising short-term interest rates in the months ahead. Expectations of tighter monetary policy abroad, even at the early stages, has contributed to the dollar's 2017 slide. The softer dollar makes U.S. goods and services cheaper on the world market, lifts foreign earnings of U.S. companies, and adds some inflationary pressure through imports.



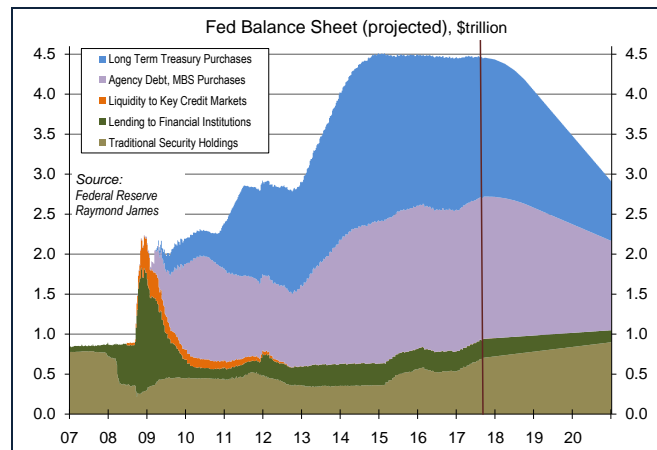
Import price data through August do not show a noticeable rise in prices of consumer goods and capital equipment. However, inflation in prices of supplies and materials has picked up and the producer price data showed an increase in pipeline pressures. Consumer price figures reflect a continued deflationary trend in goods and some moderation in services (including March's sharp drop in wireless telecom).

Fed policymakers believe that much of the lower trend in inflation in recent months can be attributed to transitory factors, but they are also aware that structural changes, such as the decline in union membership and the increased concentration of large firms, may make the translation from tighter job markets to higher wage inflation weaker than in the past. Nevertheless, they believe that the current stance of policy is accommodative and that job market conditions will continue to tighten, pushing inflation toward the 2% goal.



While there has been some tightening of credit at the low end in auto loans, consumer and business debt has expanded faster than the overall economy in the first half of the year – despite Fed rate hikes. That suggests that the Fed has more work to do in getting to neutral. The September dot plot (each dot represents a senior Fed officials' expectation of the appropriate yearend federal funds target rate) showed most (11 of 16) expecting another rate increase this year. For 2018 and 2019, the dots varied, suggesting uncertainty in how the economy will evolve. Policy will remain data-dependent.

No surprise, the Fed will begin balance sheet normalization in October. The Fed will continue to reinvest maturing Treasury and agency securities, but will allow a certain amount to run off the balance sheet each month. That run-off starts slow (\$10 billion per month), but ramps up every three months (by \$10 billion per month), hitting full stride (\$50 billion per month) in October 2018. That pace of run-off will continue until the balance sheet reaches an appropriate size.



The Fed does not intend to deviate from its balance sheet normalization plans, reducing market uncertainty (the Fed could stop normalization or even purchase more securities in a major crisis, but only after short-term interest rates were brought to zero). Balance sheet normalization is not “active” monetary policy. The federal funds target range will remain the primary policy tool. QE was seen as less effective as it went on. Conversely, the economic impact of the unwinding is expected to be modest in its initial stages. Over time, we may see 50-100 basis points added to the 10-year Treasury note yields, but there are other factors influencing yields (including the inflation outlook and bond yields abroad).

	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	2016	2017	2018
GDP (↓ contributions)	2.8	1.8	1.2	3.0	<b>2.1</b>	<b>2.2</b>	<b>1.9</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	1.5	<b>2.1</b>	<b>2.0</b>
consumer durables	0.7	0.7	0.0	0.7	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	0.4	<b>0.4</b>	<b>0.2</b>
nondurables & services	1.2	1.3	1.3	1.6	<b>1.0</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>	<b>1.1</b>	<b>1.1</b>	1.5	<b>1.4</b>	<b>1.2</b>
bus. fixed investment	0.4	0.0	0.9	0.9	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	-0.1	<b>0.5</b>	<b>0.4</b>
residential investment	-0.2	0.3	0.4	-0.3	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	0.2	<b>0.1</b>	<b>0.1</b>
Priv Dom Final Purchases	2.6	2.7	3.1	3.4	<b>1.9</b>	<b>2.4</b>	<b>2.1</b>	<b>2.0</b>	<b>2.0</b>	<b>1.9</b>	2.3	<b>2.8</b>	<b>2.2</b>
government	0.1	0.0	-0.1	-0.1	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	0.1	<b>0.0</b>	<b>0.1</b>
exports	0.7	-0.5	0.9	0.5	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	0.0	<b>0.4</b>	<b>0.4</b>
imports	-0.4	-1.1	-0.6	-0.2	<b>-0.4</b>	<b>-0.5</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-0.4</b>	-0.2	<b>-0.5</b>	<b>-0.4</b>
Final Sales	2.6	0.7	2.7	3.0	<b>1.7</b>	<b>2.0</b>	<b>2.0</b>	<b>1.8</b>	<b>1.8</b>	<b>1.7</b>	1.9	<b>2.2</b>	<b>1.9</b>
ch. in bus. inventories	0.2	1.1	-1.5	0.0	<b>0.4</b>	<b>0.2</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	-0.4	<b>-0.1</b>	<b>0.1</b>
Unemployment, %	4.9	4.7	4.7	4.4	<b>4.3</b>	<b>4.2</b>	<b>4.2</b>	<b>4.2</b>	<b>4.3</b>	<b>4.3</b>	4.9	<b>4.4</b>	<b>4.2</b>
NF Payrolls, monthly, th.	239	148	166	194	<b>160</b>	<b>150</b>	<b>140</b>	<b>135</b>	<b>130</b>	<b>125</b>	187	<b>168</b>	<b>133</b>
Cons. Price Index (q/q)	1.8	3.0	3.1	-0.3	<b>2.0</b>	<b>2.1</b>	<b>1.7</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	1.3	<b>2.0</b>	<b>1.8</b>
excl. food & energy	2.1	2.0	2.5	0.6	<b>1.7</b>	<b>1.9</b>	<b>1.9</b>	<b>1.9</b>	<b>1.9</b>	<b>2.0</b>	2.2	<b>1.8</b>	<b>1.8</b>
PCE Price Index (q/q)	1.7	2.0	2.2	0.3	<b>1.7</b>	<b>2.0</b>	<b>1.8</b>	<b>1.9</b>	<b>1.9</b>	<b>1.9</b>	1.1	<b>1.7</b>	<b>1.8</b>
excl. food & energy	2.0	1.3	1.8	0.9	<b>1.5</b>	<b>1.7</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	1.7	<b>1.5</b>	<b>1.7</b>
Fed Funds Rate, %	0.40	0.45	0.70	0.94	<b>1.16</b>	<b>1.21</b>	<b>1.41</b>	<b>1.44</b>	<b>1.66</b>	<b>1.71</b>	0.39	<b>1.01</b>	<b>1.56</b>
3-month T-Bill, (bond-eq.)	0.3	0.4	0.6	0.9	<b>1.0</b>	<b>1.2</b>	<b>1.4</b>	<b>1.4</b>	<b>1.6</b>	<b>1.7</b>	0.3	<b>1.0</b>	<b>1.6</b>
2-year Treasury Note	0.7	1.0	1.2	1.3	<b>1.5</b>	<b>1.6</b>	<b>1.7</b>	<b>1.9</b>	<b>2.0</b>	<b>2.1</b>	0.8	<b>1.5</b>	<b>2.1</b>
10-year Treasury Note	1.6	2.1	2.5	2.3	<b>2.2</b>	<b>2.4</b>	<b>2.7</b>	<b>2.8</b>	<b>2.9</b>	<b>3.0</b>	1.8	<b>2.4</b>	<b>3.0</b>