

The L4L Economy

The title of our January 2018 U.S. Economic Outlook was *2018: Out of the Shadow of the Great Recession*. We began that article with the generalization from Carmen Reinhart and Ken Rogoff that it takes about 10 years for an economy to recover from a severe financial crisis. 2018 marked the 10 year anniversary of the Great Recession for the U.S. economy. Obviously, the generalization begs the question...*what's next?* Approaching the halfway point of 2019 we will hazard a guess. We will call this the L4L economy.

L4L is a tactic defined by former Federal Reserve chairman Ben Bernanke as a monetary policy tool. It stands for lower for longer. In his October 2017 paper titled *Monetary Policy in a New Era*, Bernanke discusses ways that the Federal Reserve may seek to influence the economy in this new post-crisis era. In Bernanke's framework, lower for longer means that the Federal Reserve may need to signal that it will keep interest rates lower for a longer period than the current conditions and other policy tools (such as Taylor rules) may indicate. By announcing that the Federal Reserve will keep rates lower for longer, businesses will feel emboldened to take on cheap debt in order to finance expansions, thus stimulating the economy.

We believe that the lower for longer concept also applies more broadly to the overall U.S. and global economies. L4L also describes overall economic growth, inflation and interest rates generally, beyond the specific application of monetary policy. In the L4L economy, real GDP growth rates are lower than what many people think is normal. Inflation is also lower than expected. Indeed central banks globally, including the Federal Reserve, are asking themselves how to conduct monetary policy in an era of persistently low inflation. Weaker growth, and demand for capital, plus weaker inflation, mean that interest rates are also going to be lower for longer than many of us feel is normal.

For example, normal real GDP growth in the 1950s and 1960s centered around 4 percent, sometimes higher and sometimes lower. During the 1980s and 1990s that central tendency dropped to about 3 percent. Lately, during the 2010s, normal real GDP growth looks closer to 2.5 percent. Potential GDP growth is a useful concept for analyzing the step down in GDP growth over recent decades. It is driven by productivity growth and by labor force growth. In an era of lower-than-expected productivity growth and lower-than-expected growth in the working age population, potential GDP will also be low.

Inflation has also stepped down. The Consumer Price Index increased at double digit annual rates in the 1970s, pushed hard by the energy price shocks caused by the OPEC oil embargoes. During the 1980s, 1990s and 2000s, the CPI tended to increase at around a 3 percent annual rate. In the 2010s, that number is closer to about 1.8 percent.

Interest rates have also trended down. We expect the 10-Year Treasury bond yield to fall back below 2 percent by early next year, well below the double digit peak of the early 1980s.

In the L4L economy, Federal Reserve monetary policy is more constrained by the zero lower bound for interest rates. Also, we believe that the economy is susceptible to mild recessions of the type that occurred in 2001. The buildup of downside risk factors that appears to coalesce at the end of this year and into early 2020 is a concern. With deft monetary and fiscal policy, we believe that a recession can be avoided, and that is our forecast. However, we believe that in the L4L economy, we are flying closer to the treetops, and the downdrafts matter.

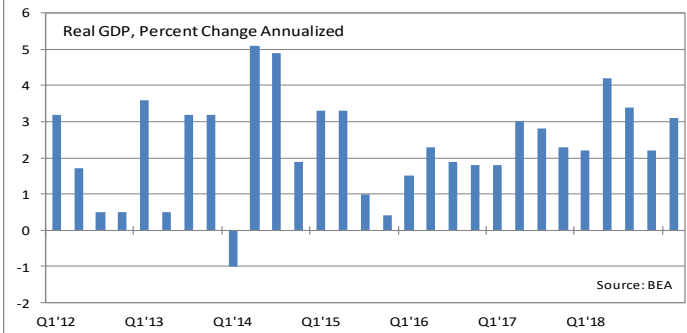
U.S. Economic Outlook, Summary

| <i>a = actual f = forecast</i> | 4Q'18a | 1Q'19a | 2Q'19f | 3Q'19f | 4Q'19f | 1Q'20f | 2Q'20f | 3Q'20f | 2018a | 2019f | 2020f |
|--|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| Real GDP (Percent Change Annualized) | 2.2 | 3.1 | 1.9 | 2.3 | 2.9 | 2.4 | 2.0 | 2.0 | 2.9 | 2.7 | 2.3 |
| CPI (Percent Change Year-over-Year) | 2.6 | 2.2 | 1.6 | 1.8 | 1.8 | 2.0 | 2.2 | 2.0 | 2.1 | 2.4 | 1.8 |
| Payroll Jobs (Average Monthly Diff., Ths.) | 216.4 | 205.7 | 157.1 | 215.4 | 152.9 | 129.0 | 284.4 | 120.5 | 221.0 | 182.8 | 162.7 |
| Unemployment Rate (Percent) | 3.8 | 3.9 | 3.7 | 3.6 | 3.6 | 3.6 | 3.4 | 3.5 | 3.9 | 3.7 | 3.5 |
| Federal Funds Rate (Effective) | 2.22 | 2.40 | 2.39 | 2.21 | 2.09 | 1.88 | 1.84 | 1.63 | 1.83 | 2.27 | 1.73 |
| 10-Yr. Treasury Rate | 3.03 | 2.65 | 2.34 | 1.98 | 1.93 | 1.81 | 1.87 | 1.74 | 2.91 | 2.23 | 1.79 |

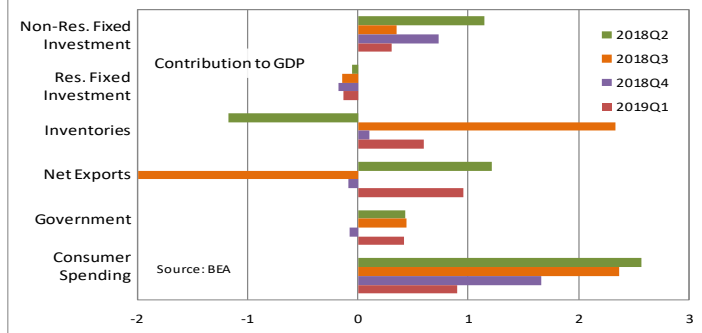
Risk of Recession Outlook

| Probability of Recession (in the next) | 6 months | 12 months | 24 months | 36 months |
|--|----------|-----------|-----------|-----------|
| May 2019 | 20% | 33% | 52% | 60% |

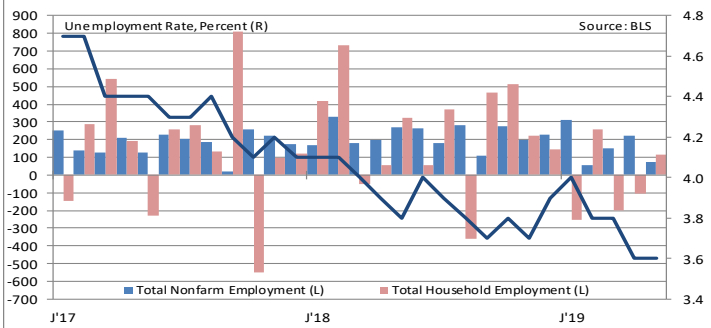
Q1 GDP Growth Revised Down to 3.1%



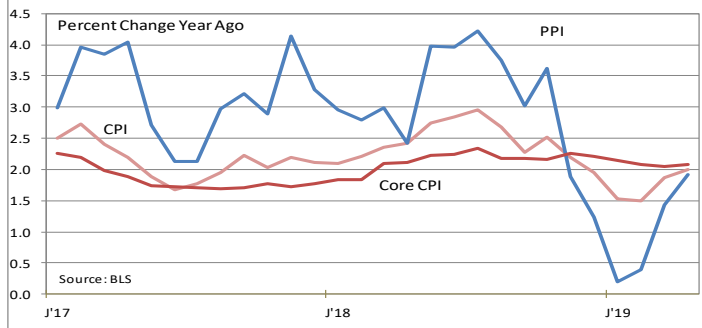
Trade and Inventories Boost Q1 GDP



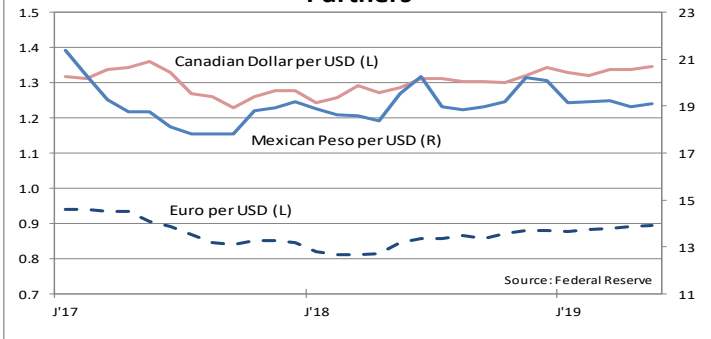
U.S. Added Only 75,000 Jobs in May



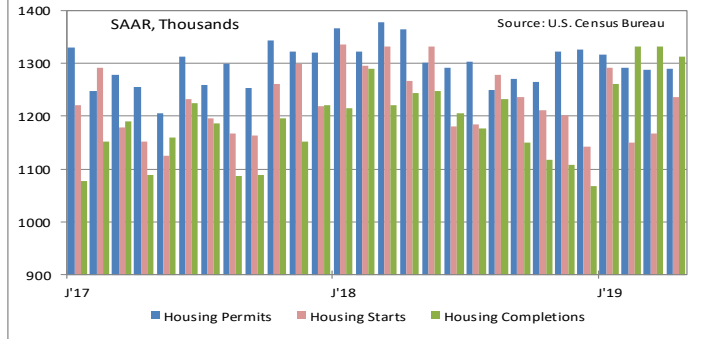
Inflation is Moderate



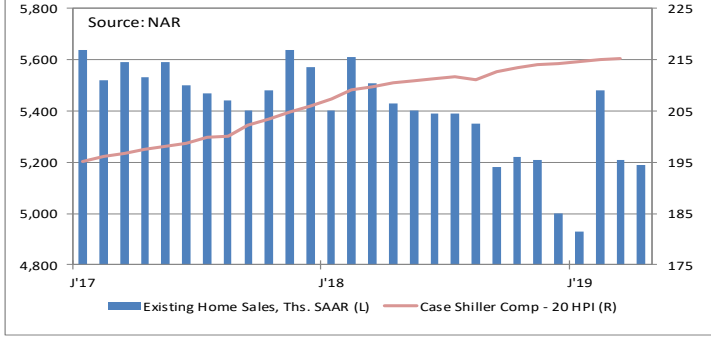
U.S. Dollar is Gaining Against Trading Partners



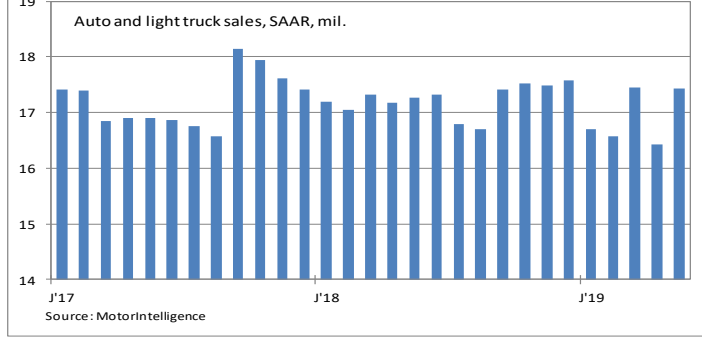
Housing Starts Still Range Bound



Lower Mortgage Rates Helped Home Sales this Spring



Auto Sales Also Range Bound



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| | 4Q'18a | 1Q'19a | 2Q'19f | 3Q'19f | 4Q'19f | 1Q'20f | 2Q'20f | 3Q'20f | 2018a | 2019f | 2020f |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Output | | | | | | | | | | | |
| Nominal GDP (Billions \$) | 20865 | 21049 | 21241 | 21459 | 21715 | 21947 | 22163 | 22382 | 20494 | 21366 | 22273 |
| Percent Change Annualized | 4.1 | 3.6 | 3.7 | 4.2 | 4.8 | 4.4 | 4.0 | 4.0 | 5.2 | 4.3 | 4.2 |
| Real GDP (Chained 2012 Billions \$) | 18765 | 18908 | 18996 | 19105 | 19240 | 19352 | 19447 | 19544 | 18566 | 19062 | 19495 |
| Percent Change Annualized | 2.2 | 3.1 | 1.9 | 2.3 | 2.9 | 2.4 | 2.0 | 2.0 | 2.9 | 2.7 | 2.3 |
| Pers. Consumption Expenditures | 13032 | 13075 | 13173 | 13248 | 13339 | 13408 | 13468 | 13538 | 12888 | 13209 | 13503 |
| Percent Change Annualized | 2.5 | 1.3 | 3.0 | 2.3 | 2.8 | 2.1 | 1.8 | 2.1 | 2.6 | 2.5 | 2.2 |
| Nonresidential Fixed Investment | 2763 | 2779 | 2817 | 2855 | 2892 | 2926 | 2956 | 2983 | 2714 | 2836 | 2968 |
| Percent Change Annualized | 5.4 | 2.3 | 5.6 | 5.5 | 5.3 | 4.9 | 4.1 | 3.7 | 6.9 | 4.5 | 4.7 |
| Residential Investment | 600 | 595 | 596 | 597 | 596 | 593 | 589 | 586 | 609 | 596 | 588 |
| Percent Change Annualized | -4.7 | -3.5 | 0.7 | 0.4 | -0.5 | -2.2 | -2.3 | -2.0 | -0.3 | -2.2 | -1.4 |
| Change in Private Inventories | 97 | 126 | 71 | 60 | 59 | 57 | 55 | 52 | 45 | 79 | 55 |
| Net Exports | -956 | -904 | -902 | -910 | -917 | -916 | -919 | -926 | -912 | -908 | -924 |
| Government Expenditures | 3189 | 3208 | 3212 | 3227 | 3243 | 3256 | 3269 | 3282 | 3176 | 3222 | 3276 |
| Percent Change Annualized | -0.4 | 2.5 | 0.5 | 1.8 | 2.0 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | 1.6 |
| Industrial Prod. Index (2007=100) | 110.3 | 109.8 | 109.5 | 109.1 | 108.8 | 108.5 | 108.0 | 107.7 | 108.6 | 109.3 | 107.9 |
| Percent Change Annualized | 3.9 | -1.9 | -1.0 | -1.5 | -1.1 | -1.3 | -1.5 | -1.1 | 3.9 | 0.7 | -1.3 |
| Capacity Utilization (Percent) | 79.4 | 78.6 | 78.3 | 77.9 | 77.6 | 77.1 | 76.6 | 76.1 | 78.7 | 78.1 | 76.3 |
| Prices | | | | | | | | | | | |
| CPI (1982-84=100) | 252.8 | 253.3 | 255.1 | 256.2 | 257.7 | 259.0 | 260.2 | 261.5 | 251.1 | 255.6 | 260.9 |
| Percent Change Annualized | 1.5 | 0.9 | 2.9 | 1.7 | 2.3 | 2.0 | 2.0 | 2.0 | 2.4 | 1.8 | 2.1 |
| PCE Price Index (2012=100) | 108.9 | 109.0 | 109.7 | 110.1 | 110.7 | 111.2 | 111.8 | 112.3 | 108.2 | 109.9 | 112.0 |
| Percent Change Annualized | 1.5 | 0.4 | 2.6 | 1.7 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 | 2.0 |
| GDP Price Index (2012=100) | 111.1 | 111.3 | 111.8 | 112.4 | 112.9 | 113.5 | 114.0 | 114.6 | 110.3 | 112.1 | 114.3 |
| Percent Change Annualized | 1.7 | 0.8 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.2 | 1.6 | 2.0 |
| PPI, Final Demand (Nov. 2009=100) | 117.4 | 117.4 | 118.3 | 118.9 | 119.5 | 120.1 | 120.7 | 121.3 | 116.3 | 118.5 | 121.0 |
| Percent Change Annualized | 3.0 | 0.0 | 3.0 | 2.0 | 2.1 | 2.0 | 2.0 | 2.1 | 2.3 | 2.5 | 2.1 |
| Crude Oil, WTI (\$/barrel) | 59.4 | 54.6 | 60.0 | 58.0 | 60.0 | 60.0 | 60.0 | 61.0 | 65.0 | 58.1 | 60.5 |
| Labor Markets | | | | | | | | | | | |
| Payroll Jobs (Average Monthly Diff., Ths.) | 216.4 | 205.7 | 157.1 | 215.4 | 152.9 | 129.0 | 284.4 | 120.5 | 221.0 | 182.8 | 162.7 |
| Unemployment Rate (Percent) | 3.8 | 3.9 | 3.7 | 3.6 | 3.6 | 3.6 | 3.4 | 3.5 | 3.9 | 3.7 | 3.5 |
| Average Weekly Hours | 34.5 | 34.5 | 34.4 | 34.4 | 34.4 | 34.3 | 34.3 | 34.3 | 34.5 | 34.4 | 34.3 |
| Population (Millions) | 328.3 | 328.9 | 329.5 | 330.1 | 330.7 | 331.3 | 331.9 | 332.5 | 327.5 | 329.8 | 332.2 |
| Percent Change Annualized | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 |
| Personal Income | | | | | | | | | | | |
| Average Hourly Earnings (\$) | 27.44 | 27.64 | 27.84 | 28.05 | 28.27 | 28.48 | 28.69 | 28.91 | 27.10 | 27.95 | 28.80 |
| Percent Change Annualized | 3.3 | 3.0 | 2.9 | 3.0 | 3.2 | 3.1 | 2.9 | 3.1 | 3.0 | 3.1 | 3.1 |
| Real Disp. Income (2012 Billions \$) | 14489 | 14569 | 14640 | 14776 | 14888 | 14986 | 15125 | 15226 | 14341 | 14718 | 15165 |
| Percent Change Annualized | 3.2 | 2.2 | 2.0 | 3.7 | 3.1 | 2.7 | 3.8 | 2.7 | 2.8 | 2.6 | 3.0 |
| Personal Saving Rate (Percent) | 6.5 | 6.7 | 6.4 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.7 | 6.5 | 6.5 |
| Housing | | | | | | | | | | | |
| Housing Starts (Ths., Ann. Rate) | 1185 | 1203 | 1233 | 1246 | 1247 | 1247 | 1247 | 1247 | 1250 | 1232 | 1247 |
| Exst. SF Home Sales (Ths., Ann Rate) | 4567 | 4647 | 4657 | 4667 | 4649 | 4643 | 4646 | 4636 | 4742 | 4655 | 4638 |
| New SF Home Sales (Ths., Ann Rate) | 579 | 679 | 665 | 671 | 672 | 672 | 672 | 672 | 615 | 672 | 672 |
| Case/Shiller HPI (Jan. 2000=100) | 205.8 | 207.4 | 209.1 | 211.2 | 213.5 | 215.8 | 218.1 | 220.3 | 202.7 | 210.3 | 219.2 |
| Year/Year Percent Change | 4.9 | 3.9 | 3.6 | 3.7 | 3.7 | 4.1 | 4.3 | 4.3 | 5.8 | 3.7 | 4.2 |
| Consumer | | | | | | | | | | | |
| Household Economic Stress Index | 1.1 | 1.6 | 1.9 | 1.7 | 1.8 | 1.8 | 1.2 | 1.2 | 0.5 | 1.8 | 1.3 |
| Auto Sales (Millions) | 17.5 | 16.9 | 16.9 | 16.7 | 16.6 | 16.3 | 16.2 | 15.9 | 17.2 | 16.8 | 16.0 |
| Interest Rates (Percent) | | | | | | | | | | | |
| Federal Funds Rate (Effective) | 2.22 | 2.40 | 2.39 | 2.21 | 2.09 | 1.88 | 1.84 | 1.63 | 1.83 | 2.27 | 1.73 |
| Prime Rate | 5.28 | 5.50 | 5.49 | 5.31 | 5.19 | 4.98 | 4.94 | 4.73 | 4.90 | 5.37 | 4.83 |
| 1-Month LIBOR | 2.35 | 2.50 | 2.45 | 2.25 | 2.13 | 1.92 | 1.88 | 1.67 | 2.02 | 2.33 | 1.77 |
| 3-Month LIBOR | 2.63 | 2.69 | 2.52 | 2.30 | 2.26 | 2.09 | 2.06 | 1.87 | 2.31 | 2.44 | 1.97 |
| 1-Yr. Treasury Rate | 2.67 | 2.54 | 2.26 | 1.99 | 2.06 | 1.97 | 2.00 | 1.83 | 2.33 | 2.21 | 1.90 |
| 5-Yr. Treasury Rate | 2.88 | 2.47 | 2.13 | 1.83 | 1.84 | 1.76 | 1.88 | 1.76 | 2.75 | 2.06 | 1.79 |
| 10-Yr. Treasury Rate | 3.03 | 2.65 | 2.34 | 1.98 | 1.93 | 1.81 | 1.87 | 1.74 | 2.91 | 2.23 | 1.79 |
| 30-Yr. Fixed Rate Mortgage | 4.78 | 4.37 | 4.01 | 3.73 | 3.74 | 3.58 | 3.57 | 3.39 | 4.54 | 3.96 | 3.48 |

a = actual f = forecast

June 10, 2019

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