April 10, 2019

- The stock market is back after a serious drop in the fourth quarter of 2018. The tightening financial conditions and the threat of more interest rate hikes along with BREXIT, trade disputes and other macroeconomic uncertainties have all contributes to the risk-off environment.
- The U.S. treasury yield curve has inverted and that has traditionally been a precursor to an economic recession to follow in 12 to 18 months. It has typically been regretful for those who suggested "this time is different" in economic prognostication. But the yield curve has been heavily manipulated by the Federal Reserve since the Great Recession, and ECB, BOJ and BOE have all taken unconventional and extraordinary monetary actions to influence their yield curves since the Global Financial Crisis. The question we should ask is if the long end of the yield curve now is lower than it otherwise should or could be and is now less responsive (limiting within a small range).
- We do believe that no economy can expand forever and this one will too end with a recession. We are not sure if the current inversion is a false signal (happened in the past). The strength in the U.S. labor market, the improvement in hourly worker (especially service sector) wages, and the absence of traditional consumer financial over-leveraging are all factors that support a continuing economic expansion. As an inside-the-beltway creature, we also believe that politicians will do whatever it takes to get reelected, and what it takes is to maintain a positive economy with promises of money and benefits to all. This is not a prescription for recession. We suspect a back-to-back quarterly economic downturn to come at the earliest in 2021 with a new administration or a Trump second term.
- Global growth has slowed. In fact, Europe has been slowing since 2018 and continues. The IMF just released its April forecast that the world is expected to grow at a 3.3% rate down from 3.9% projection made last year and 3.5% rate just in January this year. Most of the slowdown will be felt the first two quarters (we are in the thick of it now) with improvement in the second half. The global policy response to the tightening financial conditions experienced last year and the end of the super impact felt from the front-loaded U.S. tax cut take time to work through every economy. We expect a 2.3% real GDP for this year.

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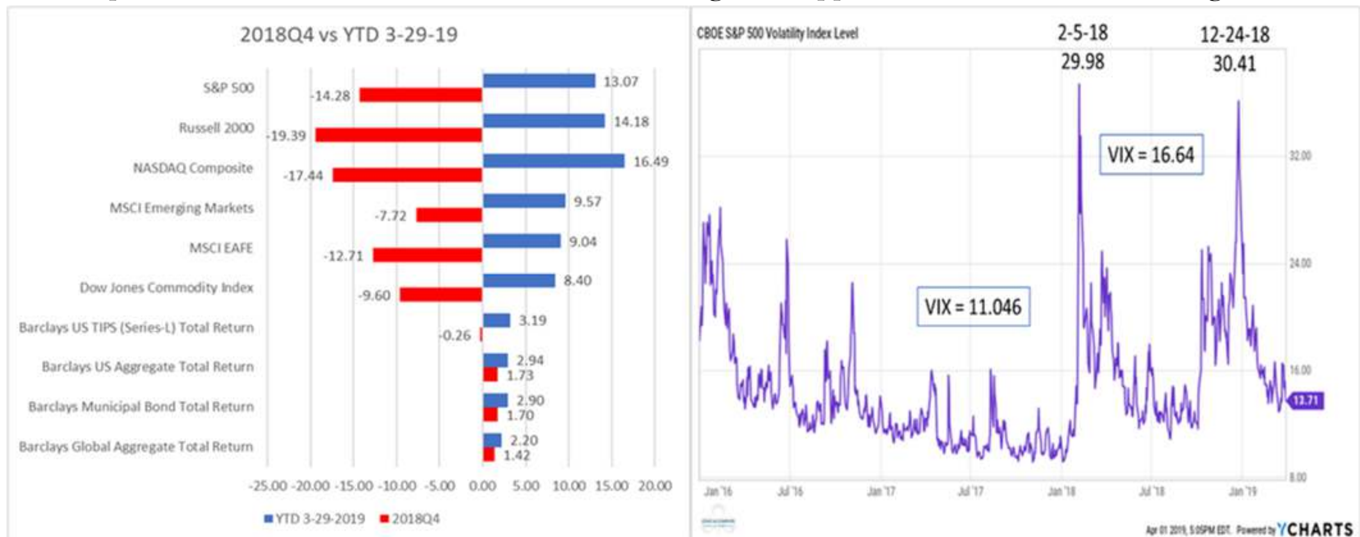
## 2019 - Feeling a bit better (less worse)

The last quarter has been a complete sea change from the fourth quarter 2018 for the stock markets. Although the markets have not fully recovered, the performance, since the beginning of this year, has been impressive. The market fear index – VIX –has again dropped to below historical average level.




The poor market performance during the fourth quarter 2018 has often been attributed to five known factors:

1) FOMC's path for rate and balance sheet normalization
2) Partial U.S. government shutdown – longest in history
3) Signs of a synchronized global economic slowdown
4) U.S.-China trade dispute – deal or no deal
5) BREXIT uncertainty – hard or soft

Since then, the government shutdown ended after 35-days and the Federal Reserve signaled patience (pause) and a dovish tone to future policy normalization. As indicated in the upper left chart, the market reacted very positively since the last quarter. However, the global economy continues to show signs of slowing; the U.S.-China trade dispute (and NAFTA or USMCA) lingers without a final agreement; and the hard or soft BREXIT remains unknowable. These and other macro risks will continue to add uncertainty to the market.

### From 3-Hikes (Dec 2018) for this Year to "Patient" – A Significant Signal

On January 3, 2019, Chair Powell was joined by ex-Chairs Janet Yellen and Ben Bernanke and spoke with New York Times' Neil Irwin at the annual American Economic Association meeting[1]. Six minutes and 34 seconds into the discussion, Chair Powell stated that the FOMC would be patient. *"There is no pre-set path for policy. In particular with the muted inflation readings that we have seen coming in, we will be **patient** as we watch and see how the economy evolves. But we are always prepared to shift the stance of policy and to shift it significantly if necessary in order to promote our statutory goals of maximum employment and stable prices."*

[1] https://www.c-span.org/video/?456650-1/federal-reserve-chairs-monetary-policy-economy

The first FOMC regular meeting ending on January 30, 2019. The meeting's press release[2] stated: "*Today, the FOMC decided that the cumulative effects of those developments over the last several months warrant a **patient**, wait-and-see approach regarding future policy changes.*" In the FOMC January meeting minutes, there were 8 references to "patient".

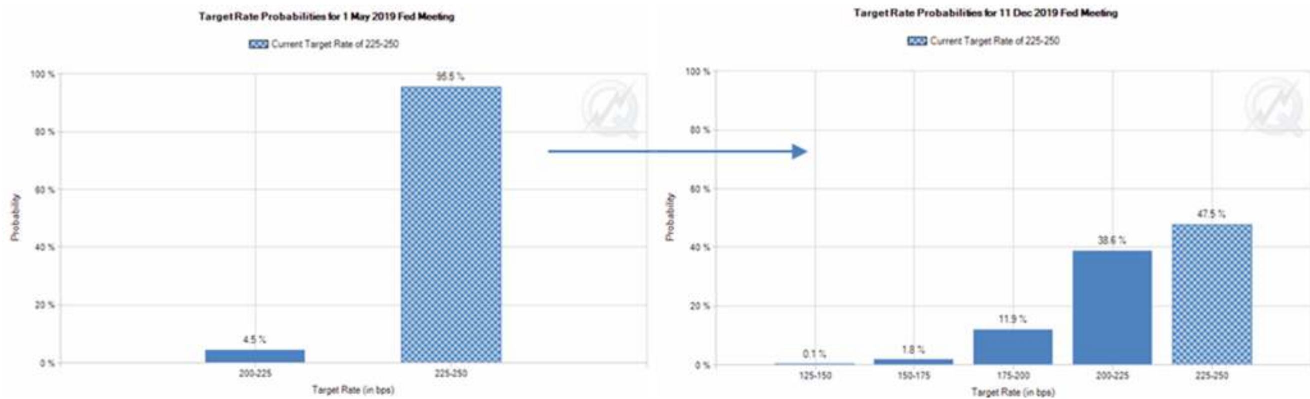
On February 26, 2019, in Chair Powell's prepared remarks[3] for his Semiannual Monetary Policy Report to the Congress, he reiterated the FOMC's dovish stance going forward: "*In January, with inflation pressures muted, the FOMC determined that the cumulative effects of these developments, along with ongoing government policy uncertainty, warranted taking a **patient** approach with regard to future policy changes.*" And in the Monetary Policy Report submitted, it stated:

1) "*the FOMC indicated at its January meeting that it will be **patient** as it determines what future adjustments to the federal funds rate may be appropriate to support the Committee's congressionally mandated objectives of maximum employment and price stability.*" (page 7)
2) "*in light of global economic and financial developments and muted inflation pressures, the Committee noted that it will be **patient** as it determines what future adjustments to the target range for the federal funds rate may be appropriate to support these outcomes.*" (page 9)
3) "*Looking ahead, the FOMC will be **patient** as it determines what future adjustments to the target range for the federal funds rate may be appropriate.*" (page 39)

During the March 20th press conference after its second FOMC regular meeting this year, Chair Powell stated that he and his colleagues "will be ***patient*** in assessing what, if any, changes in the stance of policy may be needed." His prepared remarks went on to say that "*The federal funds rate is now in the broad range of estimates of neutral--the rate that tends neither to stimulate nor to restrain the economy. As I noted, my colleagues and I think that this setting is well-suited to the current outlook and believe that we should be **patient** in assessing the need for any change in the stance of policy. **Patient means that we see no need to rush to judgment.** It may be some time before the outlook for jobs and inflation calls clearly for a change in policy.*"

All these references to patience are FOMC's new Forward Guidance to the market regarding its now more dovish policy stance. In his response to MarketWatch's Greg Robb's question, Chair Powell stated that inflation remains below its target and that "*gives us the ability to be patient and not move until we see that our target goals are being achieved.*"

[2] https://www.federalreserve.gov/newsevents/pressreleases/monetary20190130a.htm
[3] https://www.federalreserve.gov/newsevents/testimony/powell20190226a.htm




It is safe to say that there is a long "pause" in the expected Fed normalization process, but the market is now beginning to price in an interest rate cut this year. This is quite a reversal. According to the CME Fed Watch Tool[4], there is now almost a 40% chance that the market expects the FOMC to drop rates by 25bp in December's meeting from a current 4.5% probability of a rate cut in the May meeting.

This Tool is based on CME Group's list of 30-Day Federal Funds Futures, prices of which incorporate market expectations of average daily Federal Funds Effective Rates during futures contract months.

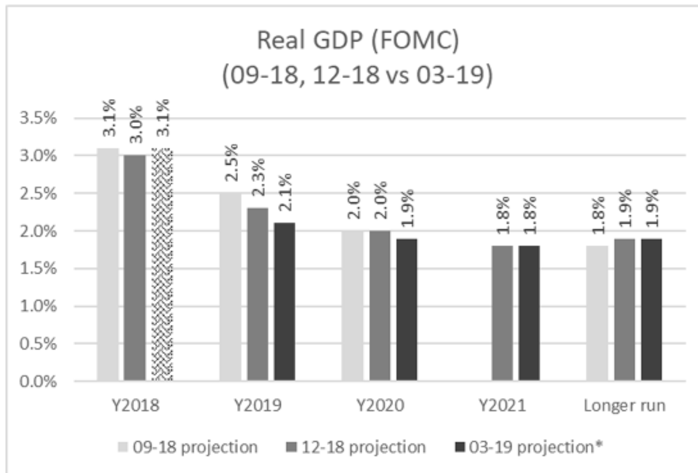
| 4/3/2018 | Future FOMC Meeting Dates | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Rates | 12/19/2018 | 1/30/2019 | 3/20/2019 | 5/1/2019 | 6/19/2019 | 7/31/2019 | 9/18/2019 | 10/30/2019 | 12/11/2019 | 1/29/2020 |
| 125-150 | | | | | | | | | | |
| 150-175 | 2.70% | 2.61% | 1.80% | 1.66% | | | | | | 1.02% |
| 175-200 | 22.87% | 21.59% | 15.79% | 14.59% | 8.99% | 8.99% | 7.87% | 7.87% | 6.41% | 7.34% |
| 200-225 | 44.62% | 43.22% | 36.52% | 34.85% | 26.07% | 26.07% | 23.71% | 23.71% | 20.43% | 21.11% |
| 225-250 | 25.92% | 27.12% | 32.11% | 32.46% | 33.50% | 33.50% | 32.47% | 32.47% | 30.66% | 30.30% |
| 250-275 | 3.64% | 5.07% | 11.91% | 13.52% | 21.73% | 21.73% | 23.36% | 23.36% | 25.24% | 24.38% |
| 275-300 | | | 1.82% | 2.64% | 7.36% | 7.36% | 9.35% | 9.35% | 12.24% | 11.67% |
| 300-325 | | | | | 1.29% | 1.29% | 2.13% | 2.13% | 3.62% | 3.43% |
| 4/3/2019 | Future FOMC Meeting Dates | | | | | | | | | |
| Rates | | | | 5/1/2019 | 6/19/2019 | 7/31/2019 | 9/18/2019 | 10/30/2019 | 12/11/2019 | 1/29/2020 |
| 125-150 | | | | | | | | | 0.10% | 0.30% |
| 150-175 | | | | | | | 0.30% | 0.60% | 1.90% | 2.90% |
| 175-200 | | | | | 0.50% | 1.20% | 5.10% | 6.90% | 12.50% | 15.20% |
| 200-225 | | | | 3.50% | 17.50% | 20.10% | 32.30% | 34.20% | 39.20% | 39.90% |
| 225-250 | | | | 96.50% | 82.00% | 78.60% | 62.30% | 58.30% | 46.30% | 41.60% |
| 250-275 | | | | | | | | | | |

The above table shows the time lapses of Fed Funds rate ranges for each meeting from April 3, 2018, projections to April 3, 2019, projections. Notice that the March 2019 projections have only lower rate preference whereas the March 2018 projections have a higher rate bias with greater distribution range.

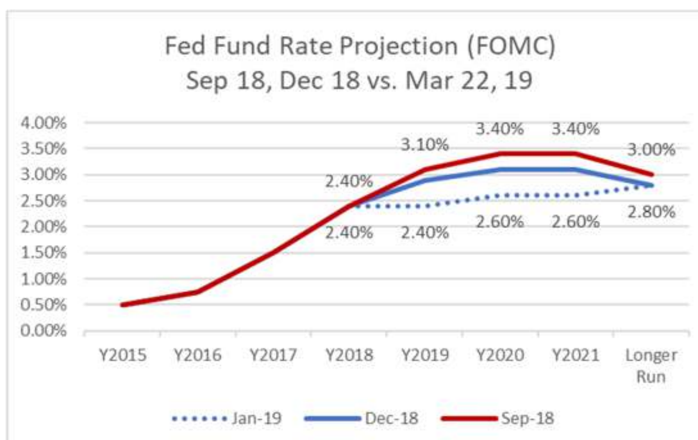
[4] https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html

## Reading the Tealeaf - Dots, Dots always the Dots!

Four times a year just prior to an FOMC meeting, the members of the FOMC report their forward-looking projections regarding economic growth (GDP), labor market (U3 unemployment), core inflation rate (CPE) and interest rate. These projections cover the current year and up to three additional years. Projections are also made for the "long run" values of the variables—the values to which the variables would be expected to converge over time assuming no new shocks to the economy. Importantly, projections are conditioned on each participant's individual view of what would be "appropriate" monetary policy, defined as the policy that the individual believes would be most likely to help achieve the Fed's dual mandates of price stability and maximum employment.



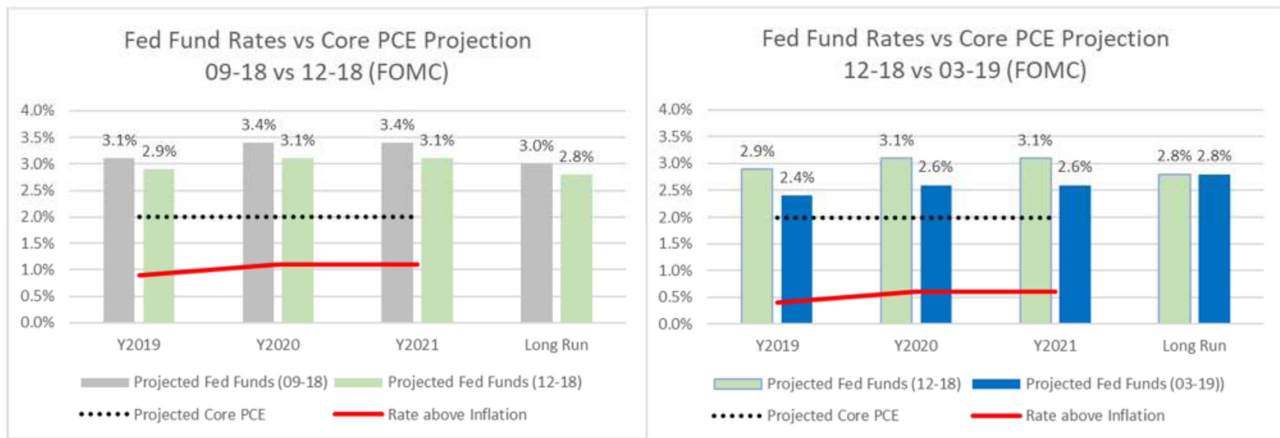

| Median Projections | Y2019 | Y2020 | Y2021 | Longer run |
|---|---|---|---|---|
| Unemployment rate | 3.7 | 3.8 | 3.9 | 4.3 |
| Dec projection | 3.5 | 3.6 | 3.8 | 4.4 |
| PCE inflation | 1.8 | 2.0 | 2.0 | 2.0 |
| Dec projection | 1.9 | 2.1 | 2.1 | 2.0 |
| Core PCE inflation | 2.0 | 2.0 | 2.0 | |
| Dec projection | 2.0 | 2.0 | 2.0 | |




According to the March meeting release, the median (middle projection when the projections are arranged from lowest to highest) real GDP has fallen further from 2.3% to 2.1% for 2019 and 2.0% to 1.9% for 2020. For comparison purposes, real GDP for 2018 was 3.1%. From 2021 forward, there are no changes. In the case of unemployment, the projections for all three base years have increased slightly, suggesting that the current unemployment rate is above the sustainable neutral rate. In the case of inflation, the headline CPE is projected to be moderately lower by 1 percentage point during each base year as compared to the prior projection in December 2018. However, the long run projection remains anchored at 2% for both nominal and real PCE inflation measure.

With a slowing economic projection along with a slight decrease in inflation, the median Fed Fund rate projection has been ratcheted down since the previous (Sep 2018 and Dec 2018) two economic projections. The long-run rate (or r*) now is solidly at 2.8%, but the path over the next few years is basically flat (2.4% to 2.6%.) Previous projections for 2019, it was 3.1% down to 2.9% and now, the March 2019 projection is at 2.4%. For projection GDP for 2020, it came down from 3.4% to 3.1% to 2.6%.

Historically, the neutral rate of interest (the theoretical Federal Funds rate at which the stance of Federal Reserve monetary policy is neither accommodative nor restrictive) has been approximately 1% above the inflation rate, and now, it is much lower.




The left graph shows the Sep 2018 and Dec 2018 projections for core inflation rate was at 2%. The projected interest rate above inflation is shown to be around 1% each year from 2019 through 2021. Fast forward three months (right graph), the inflation rate projection remains anchored at 2% while the projection for Fed Funds rate are now below to near 0.5% for the same three years.

| | Central tendency | | | |
|---|---|---|---|---|
| Median Projections | 2019 | 2020 | 2021 | Longer run |
| Federal funds rate | 2.6 - 3.1 | 2.9 - 3.4 | 2.6 - 3.1 | 2.5 - 3.0 |
| Dec projection | 2.6 - 3.2 | 2.9 - 3.5 | 2.6 - 3.2 | 2.5 - 3.1 |

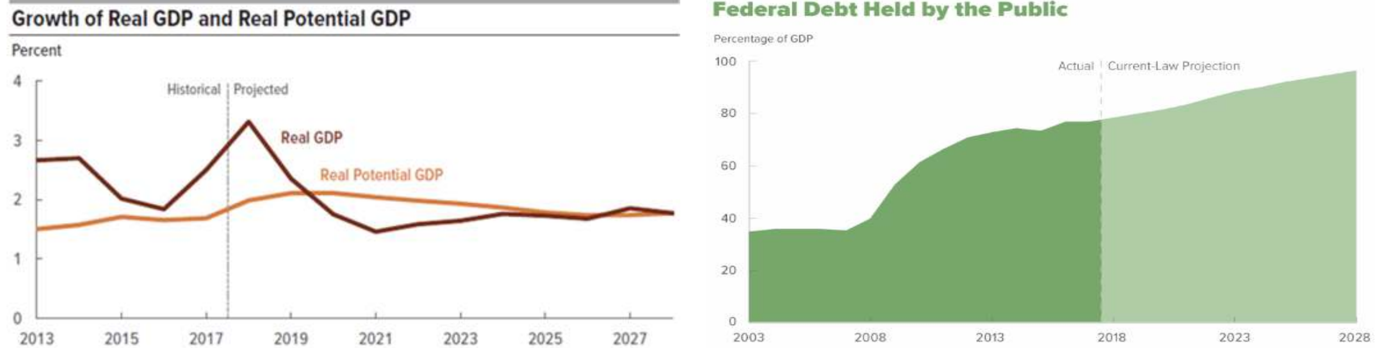
Taking all the dots together, the median members of the FOMC are saying that the economy is off its 2018 high and trending lower and, since inflation is at or close to the 2% anchor while the best unemployment rate is behind us, monetary policy ought to be less restrictive. The New Normal economy should justify a New Neutral interest rate. However, when comparing the central tendency for December 2018 and March 2019 Fed Funds projections, it appears that not everyone on the Committee has the same view as the median projection. These projections suggest that there is still a slight hiking bias of one to two 25bp rate increases in the next 12- to 18-months. We believe the market has not priced in this likelihood.

Chair Powell has made it clear that there is no certainty where the stars (GDP neutral rate G*, inflation neutral rate $\pi^*$, neutral unemployment rate u* and neutral interest rate r*) should be and, in fact, how the prior stars can help to inform us where the future stars should be. As such, we are kind of feeling our way across a dark room. This also means that the old and thought-to-be reliable economic formulas and rules are no longer certain or even useful. In making policy going forward, even more emphasis will be placed on incoming data by the FOMC.

## Economic Growth – back to New Normal

The shot in the arm known as the Tax Cuts and Jobs Act of 2017 gave us and the rest of the world an unprecedented pro-cycle fiscal stimulus last year. It is a front-loaded, trickle down tax cut package that included significant benefits to U.S. corporations. According to the April 9, 2018, Budget and Economic

Outlook: 2018 to 2028[5] prepared by the Congressional Budget Office (CBO), the projected impact of the 2017 Tax Act on the economy, in GDP terms, over 10-years is as follows:




In CBO's projections, real GDP and real potential GDP growth average 1.9% over the 2018-2028 period, even though real GDP grows more rapidly at first. Further, according to the report, "federal debt is projected to be on a steadily rising trajectory throughout the coming decade. Debt held by the public, which has doubled in the past 10 years as a percentage of gross domestic product (GDP), approaches 100 percent of GDP by 2028 in CBO's projections. That amount is far greater than the debt in any year since just after World War II." We have brought forward the future growth to the present through public indebtedness which we have to service in the future when the growth would be muted. There is less and less fiscal space to maneuver in the future as more resources are allocated to pay interest on debt, and don't forget the need to fund the spiking social costs yet to come.

The Atlanta Fed GDPNow[6] is a model-based[7] projection estimate of the real time economy. As of April 2, 2019, the model projects the real GDP is growing at an annualized rate of 2.1%, as compared to the average Blue Chip economist consensus at 1.3%.

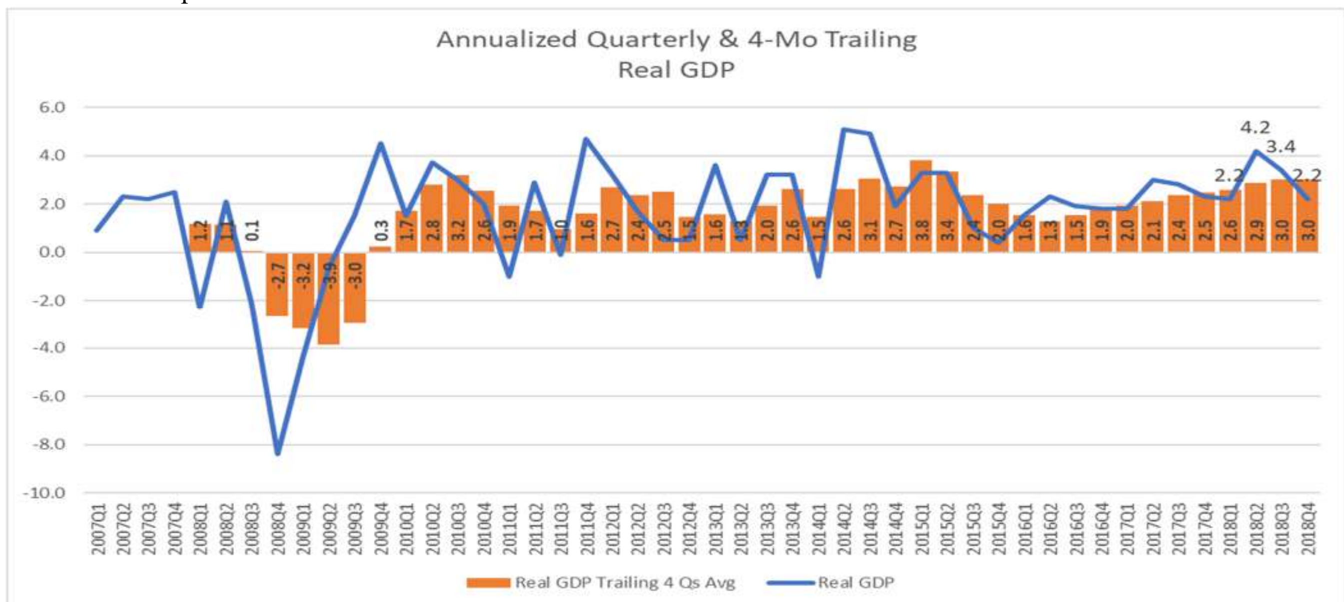
5 https://www.cbo.gov/publication/53651
6 https://www.frbatlanta.org/cqer/research/gdpnow.aspx
7 https://www.frbatlanta.org/research/publications/wp/2014/07.aspx

The New York Federal Reserve Nowcast[8], its version of real time, data-based assessments of U.S. GDP, is projecting 1.4% on April 4 for the first quarter and 1.95% annualized rate for the second quarter.

The International Monetary Fund revised on January 20th the worldwide growth rate from 3.6% to 3.5% for 2019 and 3.6% for 2020. These are 0.2 and 0.1 percentage points below its last forecasts in October — making it the second downturn revision in three months. In her speech to the U.S. Chamber of Commerce on April 2, 2019, IMF Managing Director, Christine Lagarde, said that "two years ago, 75 percent of the global economy experienced an upswing. For this year, we expect 70 percent of the global economy to experience a slowdown in growth." This is quite a turn. For the U.S., the IMF projects in its Spring 2019 meeting a 2.3% growth rate for 2019 and 1.9% for 2020. We expect this to be revised downward. On March 6, 2019, the OECD[9] updated its tri-annual global economic outlook (left table) and now expects a revised downward annual real GDP growth rate of 2.6% from its November 2018 projection of 2.7% for 2019 and a slight uptick from 2.1% to 2.2% for 2020.

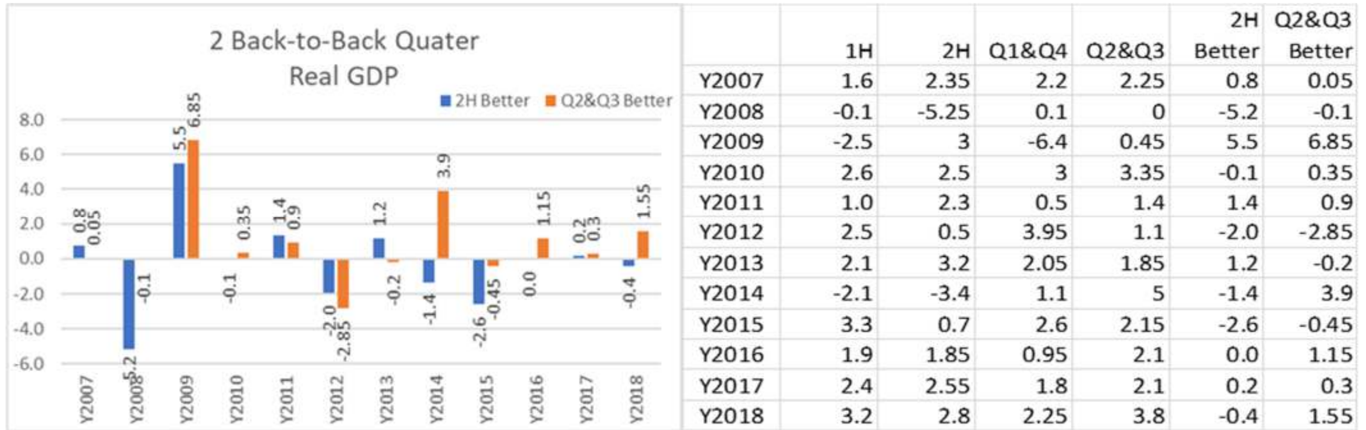
| | Nov-17 | Mar-18 | Sep-18 | Nov-18 | Mar-19 |
|---|---|---|---|---|---|
| Y2016 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| Y2017 | 2.2% | 2.3% | 2.2% | 2.2% | 2.2% |
| Y2018 | 2.5% | 2.9% | 2.9% | 2.9% | 2.9% |
| Y2019 | 2.1% | 2.8% | 2.7% | 2.7% | 2.6% |
| Y2020 | | | | 2.1% | 2.2% |

In its March (3rd and final estimate) release, U.S. real GDP increased 2.2% in 2018Q4, according to the Bureau of Economic Analysis (BEA). The growth rate was revised down 0.4% from the "initial" estimate released in February. The release also affirmed the 3.4% annualized quarterly growth rate for the third quarter.




[8] https://www.newyorkfed.org/research/policy/nowcast/methodology.html
[9] http://www.oecd.org/eco/outlook/economic-outlook/

The annualized 2018 real GDP is at 3%, as compared to 2.5% in 2017. 3% is certainly above trend growth under a New Normal economy (post Financial Crisis, demographics and digitization-technology change), but the rate of change from quarter-to-quarter is down. We ended the fourth quarter as we have started, at 2.2%. Since 2007Q1 through 2018Q3, the average quarterly real annualized GDP has been 1.6% (47 quarters). If the first 10 quarters are removed, which would include the run-up to and the period including the Great Recession, and we begin the calculation at 2009Q3 (i.e. 37 quarters) through 2018Q3, the average quarterly real annualized GDP would be 2.3%. As of the 4th quarter, the U.S. is back to average trend growth under the New Normal environment.



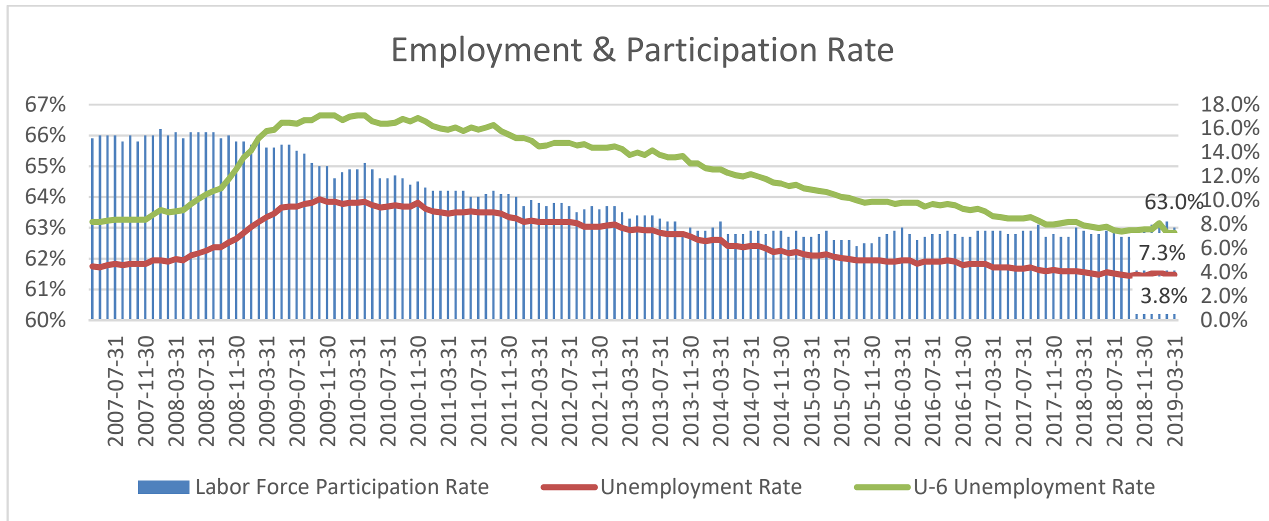

| | 1H | 2H | Q1&Q4 | Q2&Q3 | 2H Better | Q2&Q3 Better |
|---|---|---|---|---|---|---|
| Y2007 | 1.6 | 2.35 | 2.2 | 2.25 | 0.8 | 0.05 |
| Y2008 | -0.1 | -5.25 | 0.1 | 0 | -5.2 | -0.1 |
| Y2009 | -2.5 | 3 | -6.4 | 0.45 | 5.5 | 6.85 |
| Y2010 | 2.6 | 2.5 | 3 | 3.35 | -0.1 | 0.35 |
| Y2011 | 1.0 | 2.3 | 0.5 | 1.4 | 1.4 | 0.9 |
| Y2012 | 2.5 | 0.5 | 3.95 | 1.1 | -2.0 | -2.85 |
| Y2013 | 2.1 | 3.2 | 2.05 | 1.85 | 1.2 | -0.2 |
| Y2014 | -2.1 | -3.4 | 1.1 | 5 | -1.4 | 3.9 |
| Y2015 | 3.3 | 0.7 | 2.6 | 2.15 | -2.6 | -0.45 |
| Y2016 | 1.9 | 1.85 | 0.95 | 2.1 | 0.0 | 1.15 |
| Y2017 | 2.4 | 2.55 | 1.8 | 2.1 | 0.2 | 0.3 |
| Y2018 | 3.2 | 2.8 | 2.25 | 3.8 | -0.4 | 1.55 |

What should we expect for 2019 if the U.S. is back to average trend growth? We examined the quarterly real GDP data since 2007Q1 and lumped two quarters together to see if there is a trend. Many have observed that first quarters since the Great Recession have been challenging and second halves of the year tend to be better. According to our calculation, out of the 12 quarters, 5 did better in the second half of the year (Q2+Q3) than the first half (Q1+Q2) of the year as compared to 6 times the reverse was true. (One quarter they were the same.) We further examined the data by linking Q4 of the prior year with Q1 of the following year as compared to the middle two quarters (Q2+Q3). What we observed is that, 8 times out of 12 (67% of the time), the middle two quarters had greater GDP than the combination of prior year Q4 and current year Q1. Obviously, this is insufficient historical data during a New Normal environment to make any overarching statements. However, perhaps it is reasonable to suggest that Q2 and Q3 this year would likely be better than Q1, as we expect a below trend growth for 2019Q1.

| Annalized Quarterly | | | Projected Annual | |
|---|---|---|---|---|
| GDPNow | Bluechip | Nowcast | IMF (Apr) | OECD (Mar) |
| 2.1% | 1.3% | 1.4% | 2.5% | 2.6% |

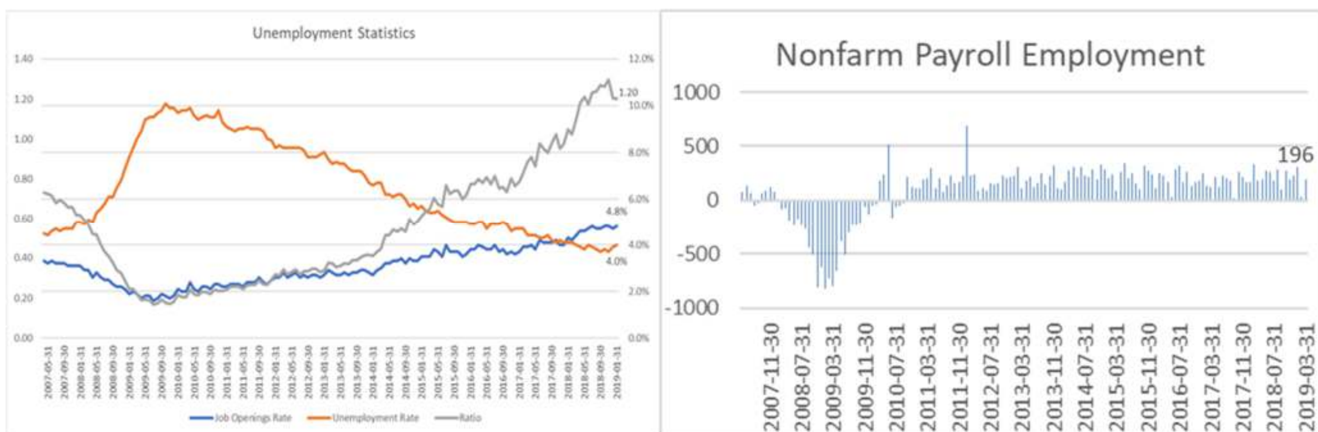
This table summarizes some of the projections for 2019 real GDP. The bottom line is that we see a continuing economic expansion in the U.S. for 2019 with a real GDP between 2.2 and 2.3.

## Employment – Still the bright spot



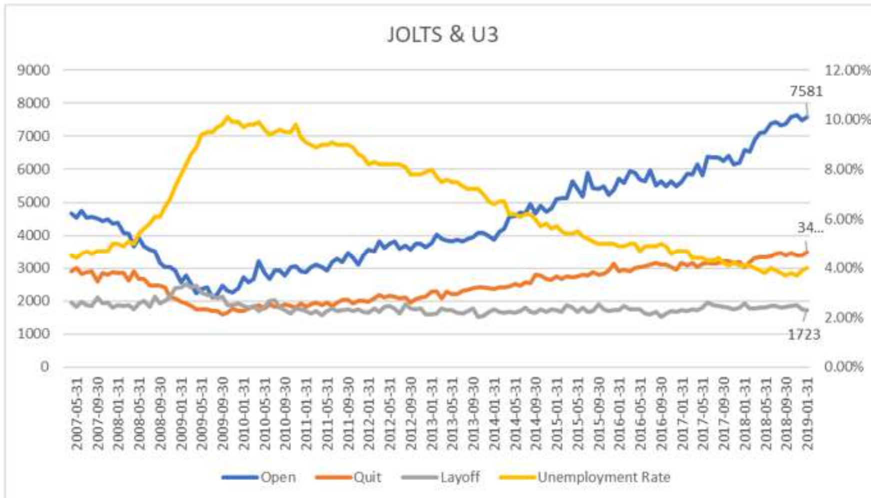

| | Labor Force Participation Rate | U-3 Unemployment Rate | U-6 Unemployment Rate |
|---|---|---|---|
| 2019-03-31 | 63.0% | 3.8% | 7.3% |
| 2019-02-28 | 63.2% | 3.8% | 7.3% |
| 2019-01-31 | 63.2% | 4.0% | 8.1% |
| 2018-12-31 | 63.1% | 3.9% | 7.6% |

Over the past quarter, the U3 headline unemployment rate has remained at cyclical lows while the broader measure U6 rate continued to grind lower as more people found full-time employment. The fact that the participation rate remains steady at or around 63% means that the reduction may have stabilized where the losses in participation from retiring Baby Boomers are being counterbalanced by younger workers entering the labor force.



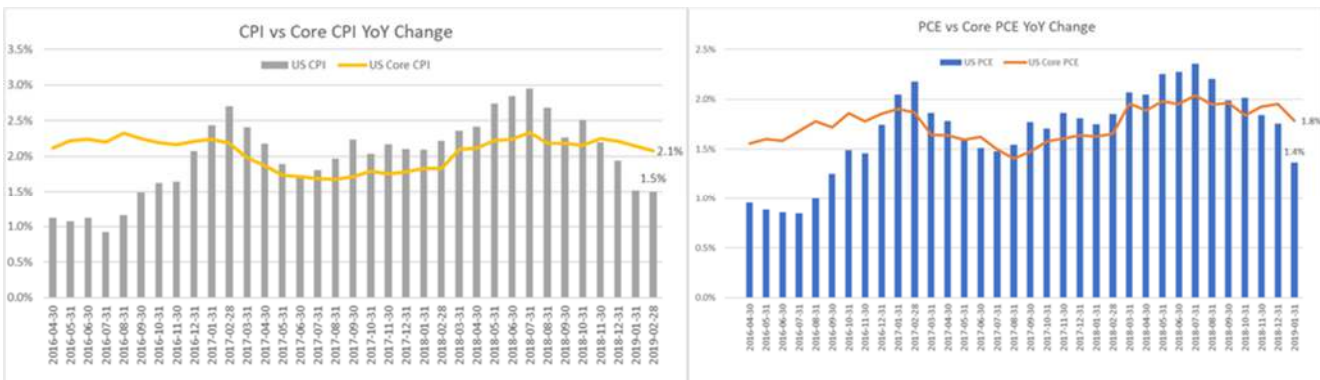

Job opening and unemployment is at a ratio of 1.2. This means that, on average, there are 1.2 jobs for every unemployed person. This remains encouraging. Further, new non-farm jobs continue to be created. For the first three months, the average new jobs filled was 180,000; the average over the past 12-months was 211,400; and for 2018, the average was 223,000 new jobs filled per month. This is quite remarkable as the U.S. is entering the longest economic expansion in history. At this late stage

of the cycle, it is often expected to see a drop-off in new job creation and wage inflation. Neither of these are evident. This suggests that there is a new neutral unemployment rate or $\pi^*$ and it is lower than what it was thought to be in the past. Further, it also suggests that there is still some more labor slack (and Baby Boomers are either not leaving as fast as anticipated or they are reentering the workforce) in the economy since wage inflation remains in check.




According to the JOLTS report (Job Opening and Labor Turnover) for January[10], there are 7.6 million job openings. This is the continuation of an accelerated upward trend that started in the end of September 2017. The fact that the quit rate continues to move higher is also a great sign. This means that workers are willing to quit to look for a new job since there are more job openings. This is a measure of confidence. The layoff rate remains constant as well. These are all supportive signs to the labor economy. The question is when will labor become too tight and cause wages to rise and lead to higher inflation.

## Inflation – the Missing Ingredient for More Rate Hikes

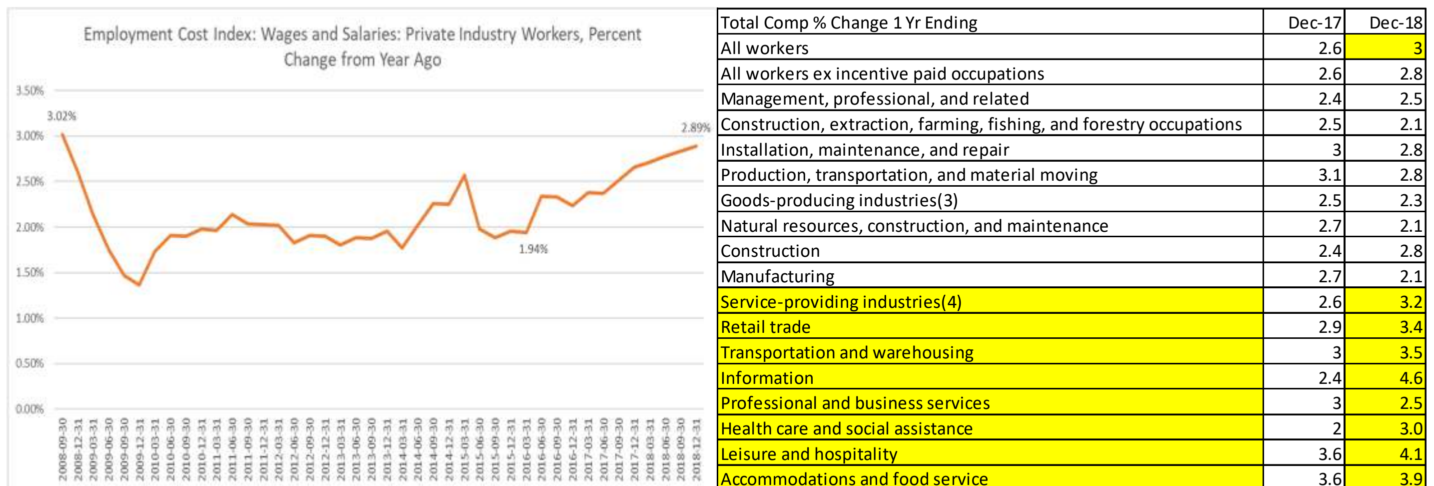



The latest CPI reading is 1.5% with core CPI at 2.1%. The preferred FOMC inflation gauge is the PCE, and it comes in at 1.4% while core PCE is at 1.8%. Since March 2008 (132 months), the average CPI is 1.7% while the core CPI average is 1.8%. In the case of PCE from Feb 2008 through Jan 2019, the average is 1.5% while the average core PCE is 1.6% for the 11-year period.

[10] https://www.bls.gov/news.release/pdf/jolts.pdf

It is important to note that the Federal Reserve is quite concerned that the 2% inflation objective is not sustained even 10-years after the Great Recession. The 2% target is NOT a ceiling but an anchor for inflation expectation. This anchoring, in their opinion, helps to meet their mandate of price stability over the long run. However, the 2% is an average, and it is understood that there are times inflation over – and undershoots this target. However, inflation has consistently been at or below the 2% target for years. The real concern is the market pivoting towards disinflation or deflation when the next economic slowdown comes and the FOMC has little room for rate cuts to jumpstart the economy. On February 22, 2019, Richard Clarida, Vice Chair of the Board of Governors, at the U.S. Monetary Policy Forum[11], stated that a review of the current Federal Reserve's monetary policy framework and an assessment of whether, and in what possible ways, the Federal Reserve can refine its strategy, tools, and communication practices to achieve and maintain these goals consistently and robustly is currently being undertaken[12].

In addition to the lowering of interest rates, forward guidance (using words to manage market expectation regarding their monetary policies), large scale asset purchases (quantitative easing), and inflation targeting (increasing the anchor rate from 2% to 3% for example or price level targeting), the FOMC may initiate yield curve targeting (similar to what Japan's Central Bank has done at 0% for its 10-year bonds). We will learn about the FOMC's review a year from now.




| Total Comp % Change 1 Yr Ending | Dec-17 | Dec-18 |
|---|---|---|
| All workers | 2.6 | 3 |
| All workers ex incentive paid occupations | 2.6 | 2.8 |
| Management, professional, and related | 2.4 | 2.5 |
| Construction, extraction, farming, fishing, and forestry occupations | 2.5 | 2.1 |
| Installation, maintenance, and repair | 3 | 2.8 |
| Production, transportation, and material moving | 3.1 | 2.8 |
| Goods-producing industries(3) | 2.5 | 2.3 |
| Natural resources, construction, and maintenance | 2.7 | 2.1 |
| Construction | 2.4 | 2.8 |
| Manufacturing | 2.7 | 2.1 |
| Service-providing industries(4) | 2.6 | 3.2 |
| Retail trade | 2.9 | 3.4 |
| Transportation and warehousing | 3 | 3.5 |
| Information | 2.4 | 4.6 |
| Professional and business services | 3 | 2.5 |
| Health care and social assistance | 2 | 3.0 |
| Leisure and hospitality | 3.6 | 4.1 |
| Accommodations and food service | 3.6 | 3.9 |

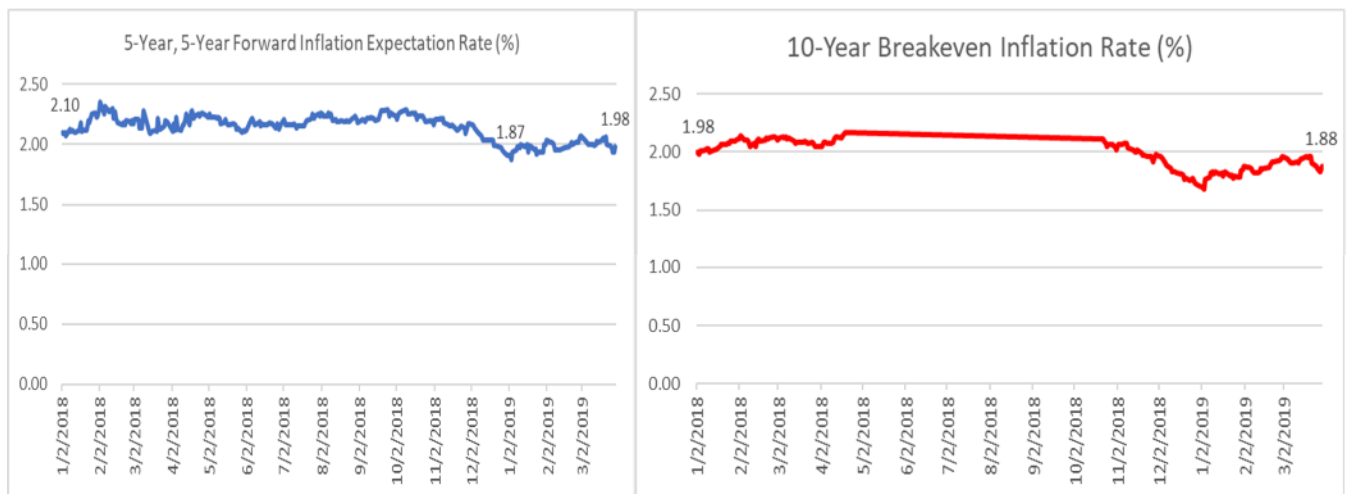
According to BLS, compensation costs for civilian workers increased 2.9% for the 12-month period ending in December 2018 compared to 2.7% in December 2017[13]. Wages and salaries increased 3.1% and benefit costs increased 2.8% for the 12-month period ending in December 2018. These are encouraging signs, and it is hopeful that the compensation component will continue to rise. The upper right table lists a few of the job categories, and the "service" jobs (which tend to be the lower paying jobs) are experiencing a higher wage growth. This will eventually place upward price pressure on the economy and move inflation higher (hopefully before the next economic downturn arrives).

[11] https://www.federalreserve.gov/newsevents/speech/clarida20190222a.htm
[12] https://chaoco.com/the-fomc-is-reviewing-its-toolbox-of-policy-goodies/
[13] https://www.bls.gov/news.release/eci.t05.htm

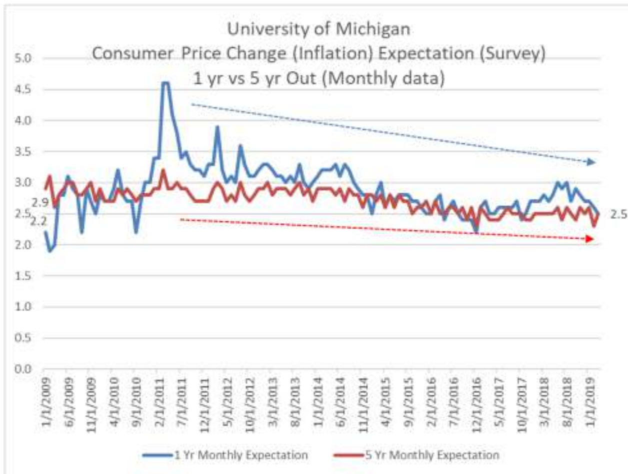
According to the Bureau of Labor Statistics[14], during the one-year change (from March 2018 through March 2019), we continued to see gains (2%) in the "management, professional and related occupation" sector while "service occupation" retreated a bit. For the 9-year period from 12-2009 through 12-2019, the biggest employment gain has also been in the "management, professional and related occupations" with "production, transportation and material moving occupations" showing a strong return as well. These two categories are deemed to be higher to high income jobs.

| Age 16 and over Employed Population (Thousands) | 12-09 to 03-19 Change | 12-09 to 03-19 Change (%) | 03-18 to 03-19 Change | 03-18 to 03-19 Change (%) |
|---|---|---|---|---|
| Total | 16,564 | 11.8% | 1,564 | 1.0% |
| Management, professional, and related occupations | 12,080 | 23.10% | 1,232 | 2.0% |
| Service occupations | 1,753 | 7.10% | -213 | -0.8% |
| Sales and office occupations | -737 | -2.20% | 154 | 0.5% |
| Natural resources, construction, and maintenance occupations | 737 | 5.50% | 200 | 1.4% |
| Production, transportation, and material moving occupations | 2,730 | 17.10% | 191 | 1.0% |

The 5year, 5-year Forward Inflation Expectation (5-5 FIE) and the 10-year Breakeven Inflation Rate (10 YBE) are both investor- or market-based expectations on inflation. 5-5 FIE measures what the market expects inflation would be in 5 years from now for the following 5-years. This is now at 1.98% (just below the 2% FOMC anchor). The 10 YBE is what the market expects to be compensated for holding an inflation linked bond today with a 10-year maturity. This is now at 1.88%.

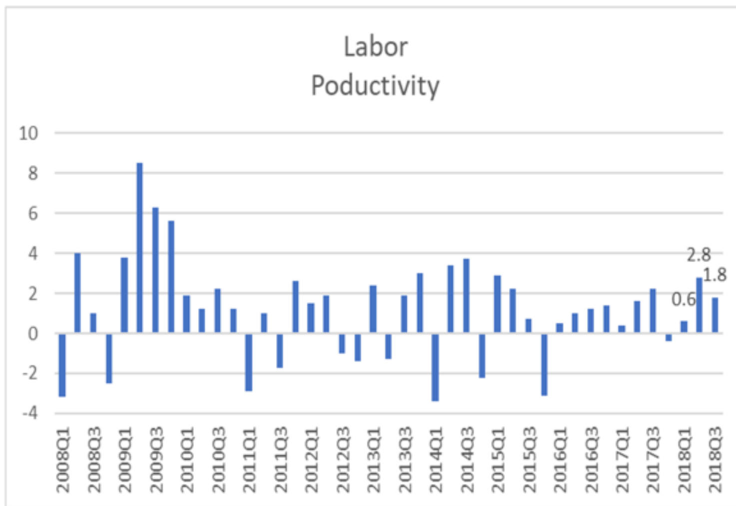


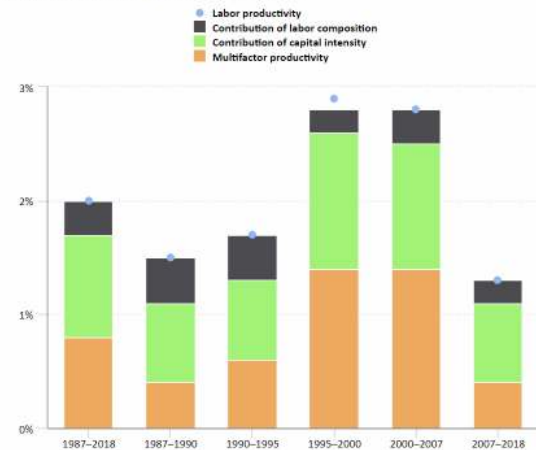

[14] https://www.bls.gov/cps/cps_aa2009.htm




The combination of both of these market sentiments suggests that a participant expects inflation to be at or just below 2% over the next 10-years. The left chart shows the University of Michigan consumer survey. The blue is what consumers expect the price changes would be in 1-year time and the red is in 5 years' time. Currently, consumers expect the price to increase under both scenarios at 2.5%. This is comparable to the consumer price index (not the core CPI). The UMich chart shows a gradual but definitive downward trend in inflation expectation since 2011.

One other indicator regarding wage increases is productivity. Wages tend to increase as labor becomes more productive which is generally defined as an increase in output for every unit of input. As labor continues to tighten (as we continue to wait), the theory is that capital expenditure will increase to help employees be more productive. This allows employers to get "more" production out of existing workers rather than seeking out more workers. Based on BLS data, the last 10-years' productivity rate has not caught up to the past. Output per hours has marginally improved over time, and the most recent data is not showing any breakouts from the recent past.



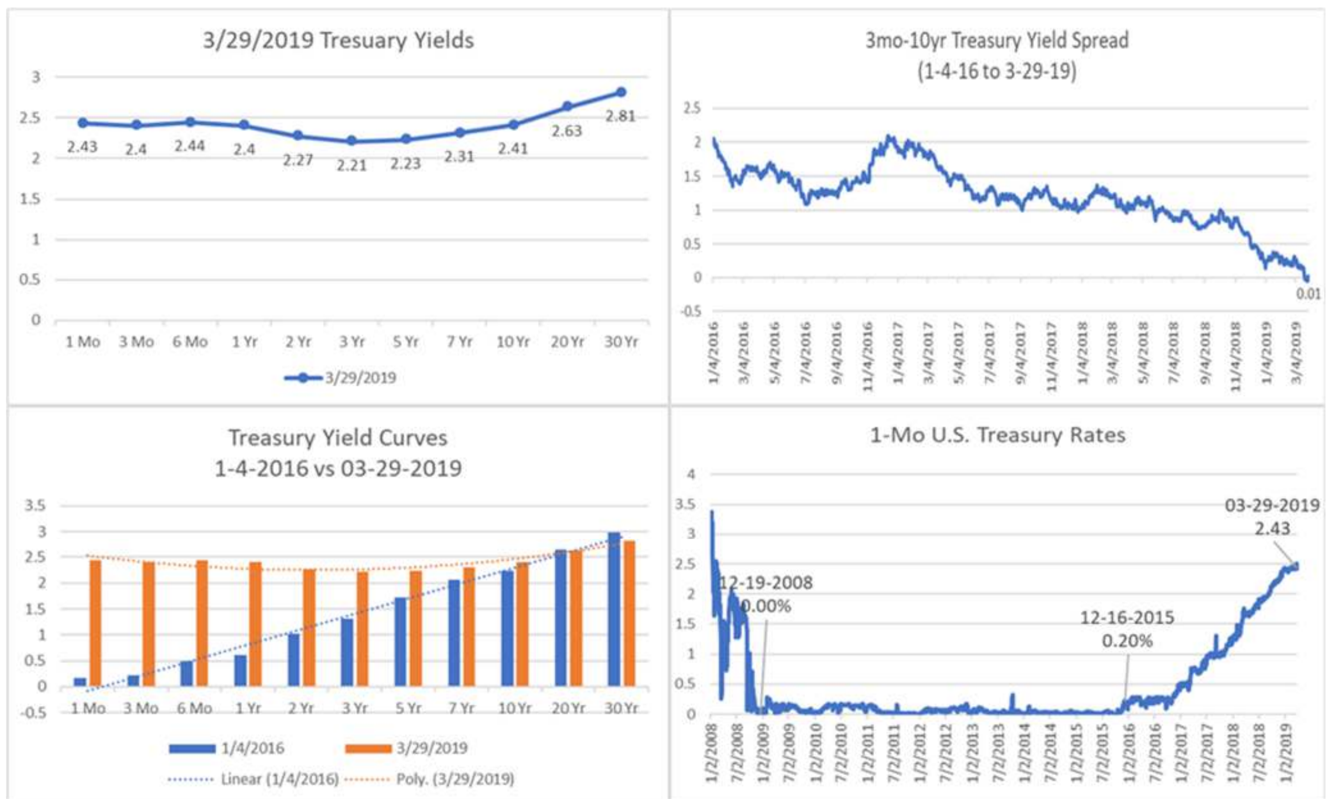

We are still waiting for the economic expansion to truly benefit a broader population. For inflation to grind higher, we need to continue seeing higher wages for the "service occupation" which tends to consist of lower paid jobs. For lower income households, increases in wages are translated directly to increases in consumer spending.

## Yield Curve Inversion – Signaling an Economic Recession?

Every U.S. recession since the 1960s has been preceded a year or so by an inversion of the U.S. Treasury yield curve. This is when long-term rates fall below those of shorter-dated bonds. It is not a guarantee, but it is still not a good idea to suggest that "this time is different". After all, we are entering the longest economic cycle in U.S. history.

| Spread | Inversion Date |
|---|---|
| 2Yr vs 5Yr | 12/4/2018 |
| 3mo vs 5Yr | 3/7/2019 |
| 3mo vs 7Yr | 3/20/2019 |
| 3mo vs 10Yr | 3/22/2019 |

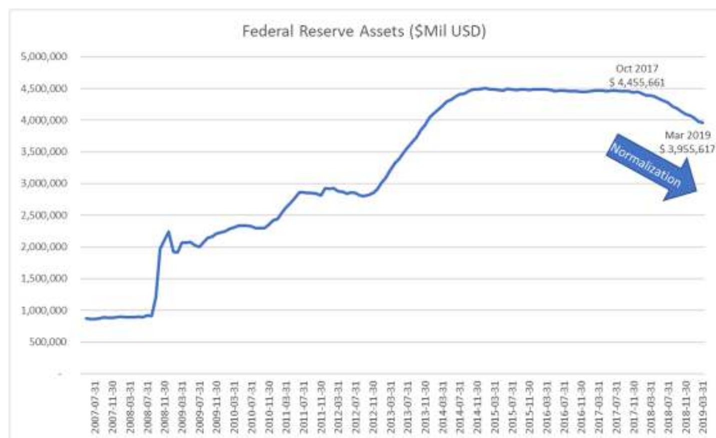
On March 22nd, the Treasury yield curve inverted for the first time since 2007 (precursor to the last recession). As a prognosticator, one should say that a recession is not far away; sooner or later the economy will end in recession (technically means a back-to-back quarterly economic contraction as so declared by the National Bureau of Economic Research[15]). In fact, on December 4, 2018, signs of inversion were showing in the 2-year and 5-year treasury yield spread. It was -1bp and has since remained in negative territory. The table above left shows the dates various parts of the U.S. Treasury yield curve inverted.



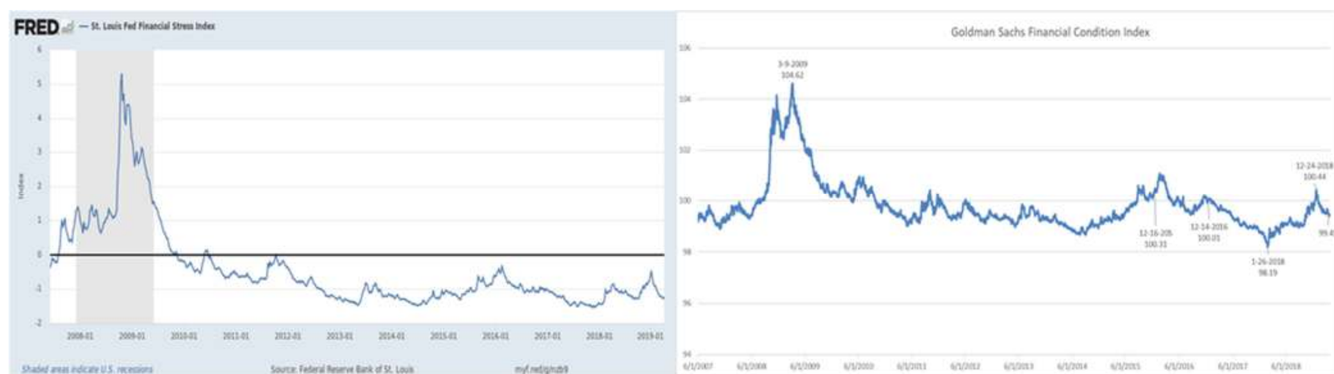

At the end of March, the 6-month to 10-year portion of the U.S. treasury yield curve was inverted (upper left graph). The three-month T-Bill and 10-year bond fluctuated between flat to slightly inverted (upper right graph). Since the rate normalization in 12-2015 through last year, the positive slope of the yield curve has given way to an inverted curve currently (see lower left graph) showing little to no movement in the long end of the curve. It is clear that the normalization process, as

[15] https://www.nber.org/cycles.html

evidenced by the 1-month T-Bill rate moving from 0% in December 2008 to 2.43%, has pushed the short end of the yield curve up significantly. (See lower right graph on prior page.) The question is will the next move in the yield curve be higher long rates or lower short rates to return to a positive yield curve once more.




In October 2017, the FOMC began balance sheet normalization. At the time, the balance sheet was at $4.461trillion. At the end of March this year, the balance sheet was at $3.955 trillion. This is a reduction of $506 billion. At the conclusion of the March 2019 FOMC meeting, the FOMC issued a statement[16] regarding its normalization intentions. The updated approach is slowing the normalization process. It intends to (1) reduce the cap on monthly redemptions from the current level of $30 billion to $15 billion beginning in May 2019, (2) initially reinvest principal payments from agency debt and agency MBS below the $20 billion maximum in treasury securities across a range of maturities; and (3) conclude the reduction of the FOMC's aggregate securities holdings at the end of September and wait. It is clear that the rate and balance sheet normalization processes will both be taking a breather.



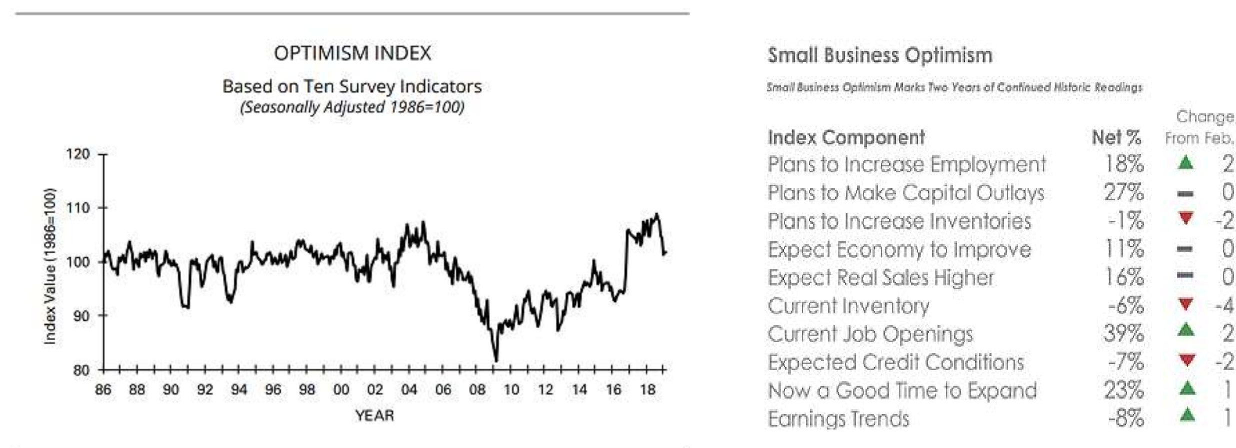

The financial stress index that is compiled by St. Louis Federal Reserve measures the degree of financial stress in the markets and is constructed from 18 weekly data series: seven interest rate series, six yield spreads and five other indicators. Each of these variables captures some aspect of financial stress. From this standpoint, the market remains below zero, a point where stress begins to show in the system.

The Goldman Sachs Financial Condition Index, on the other hand, is the weighted average of treasury (risk free) rates, the exchange rate, equity valuations, and credit spreads with weights that correspond to the direct impact of each variable on GDP. In this case, the Index spiked towards the end of last year

[16] https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm

as conditions tightened (not since March 9, 2016). The tightening of financial conditions contributed to the stock market volatility (egged on by year-end liquidity challenges). The FOMC responded by signaling patience. Hiking short term rates is a contributor to tightening financial condition. The 4-interest rate hikes in 2018 (see upper right graph on previous page) contributed to the overall tightening in financial condition all year.

Historically, when the Federal Reserve wants to cool economic growth or to slow inflation, it raises short-term interest rates. This tightens financial conditions and makes borrowing more expensive. Thus, spending declines in the interest-sensitive portion of the economy. One explanation for the current yield curve inversion is Federal Reserve manipulation of the yield curve since the Great Recession. Bringing short term rates to near zero and growing its balance sheet four-fold have significantly distorted the natural position of the yield curve. As the economy recovered since 2009, the Federal Reserve began to normalize (returning to "normal") both interest rates and balance sheet. However, the normalization processes are not symmetrical and the position of "normal" or "neutral" is highly uncertain and likely not the same as where this entire experiment started from. Adding to the complexity is the aftermath of the Global Financial Crisis lead by toxic mortgage bonds which ultimately exposed the weak link that tied European Banks to their sovereigns. Today, there remains a big appetite for safe assets (pushing yields down), and U.S., as compared to the negative interest yielding government bonds in Europe and Japan, is favored. Demographic shift of an aging Baby Boomer generation is also favoring safe assets which places more demand on long term bonds to support a stream of income in retirement. This supply-demand dynamic is depressing the yield on the longer end of the yield curve. As such, the "message" sent by the yield curve, in this case an inversion, may also be distorted somewhat and is less predictive regarding the timing of the next recession.




Small Business Optimism

*Small Business Optimism Marks Two Years of Continued Historic Readings*

| Index Component | Net % | Change From Feb. |
|---|---|---|
| Plans to Increase Employment | 18% | ▲ 2 |
| Plans to Make Capital Outlays | 27% | ▬ 0 |
| Plans to Increase Inventories | -1% | ▼ -2 |
| Expect Economy to Improve | 11% | ▬ 0 |
| Expect Real Sales Higher | 16% | ▬ 0 |
| Current Inventory | -6% | ▼ -4 |
| Current Job Openings | 39% | ▲ 2 |
| Expected Credit Conditions | -7% | ▼ -2 |
| Now a Good Time to Expand | 23% | ▲ 1 |
| Earnings Trends | -8% | ▲ 1 |

The Small Business Optimism Index[17], although it is off its high, improved slightly, increasing 0.1 to a reading of 101.8, according to the March 2019 NFIB Small Business Economic Trend survey report. Business sentiment remains positive.

[17] https://www.nfib.com/assets/SBET-Mar-2019.pdf

Consumer confidence rebounded in March to 98.4 from last month's 93.8, slightly above the average of 97.2 recorded in the past 26 months. The March gain in the Sentiment Index was entirely due to households with incomes in the bottom two-thirds of the income distribution posting a gain of +7.1 Index-points, while households with incomes in the top third fell by 1.1 Index-points. Middle and lower income households more frequently reported income gains than last month, although income gains were still widespread among upper income households.

Another encouraging sign is the ISM Report on Business[18]. The following table summarizes the various surveys conducted in March. It supports a growing manufacturing economy at an accelerating pace overall.

| Index | Series Index Mar | Series Index Feb | Percentage Point Change | Direction | Rate of Change | Trend* (Months) |
|---|---|---|---|---|---|---|
| PMI® | 55.3 | 54.2 | +1.1 | Growing | Faster | 31 |
| New Orders | 57.4 | 55.5 | +1.9 | Growing | Faster | 39 |
| Production | 55.8 | 54.8 | +1.0 | Growing | Faster | 31 |
| Employment | 57.5 | 52.3 | +5.2 | Growing | Faster | 30 |
| Supplier Deliveries | 54.2 | 54.9 | -0.7 | Slowing | Slower | 37 |
| Inventories | 51.8 | 53.4 | -1.6 | Growing | Slower | 15 |
| Customers' Inventories | 42.7 | 39.0 | +3.7 | Too Low | Slower | 30 |
| Prices | 54.3 | 49.4 | +4.9 | Increasing | From Decreasing | 1 |
| Backlog of Orders | 50.4 | 52.3 | -1.9 | Growing | Slower | 3 |
| New Export Orders | 51.7 | 52.8 | -1.1 | Growing | Slower | 37 |
| Imports | 51.1 | 55.3 | -4.2 | Growing | Slower | 26 |
| OVERALL ECONOMY | | | | Growing | Faster | 119 |
| Manufacturing Sector | | | | Growing | Faster | 31 |

[18] https://www.instituteforsupplymanagement.org/ISMReport/MfgROB.cfm?SSO=1

## Conclusion

The IMF April's World Economic Outlook is projecting a growth rate of the world at 3.3%. This is a dramatic revision from a year ago projection for 2018 and 2019 at a rate of 3.9%. This was after reaching a peak of 4% growth in 2017 (synchronized global growth). Many reasons were cited for the downturn last year: the escalation of U.S.–China trade tensions, macroeconomic stress in Argentina and Turkey, disruptions to the auto sector in Germany, tighter credit policies in China, and financial tightening alongside the normalization of monetary policy in the larger advanced economies. The first half of 2019 is expected to remain weak with a modest advancement in the second half of the year.

With little evidence of rising inflation, major economies have initiated significant policy accommodation to combat tightening financial conditions. The Federal Reserve signaled patience, and the ECB, BOJ and BOE have also announced a more dovish stance. China has initiated new fiscal and monetary stimulus to counter the negative effects of trade tariffs with more stimulus to come. Further, the outlook for some kind of a U.S.–China trade deal has improved. In the meantime, emerging markets have experienced a resumption in portfolio flows, a decline in sovereign borrowing costs, and a strengthening of their currencies relative to the dollar. Although the securities market has responded positively and quickly, industrial production and investment remain weak for most global economies, and global trade has yet to recover. They are, however, expected to improve in the second half of 2019.

We do not see a recession in the next 18 months. It feels like we are slowing more than we are since we are coming down from the sugar high of tax cut stimulus last year. Nonetheless, the strength of the U.S. labor market and thus the consumer (70% of the GDP) continues to support the U.S. economic expansion, albeit at New Normal level. As echoed in the IMF report, growth in advanced economies will continue to slow gradually as the impact of U.S. fiscal stimulus fades and growth tends toward the modest potential for the group, given aging trends and low productivity growth. If wages continue to move upward for the hourly and non-supervisory workers as well as those in the service economy, we may start to see a slight upward movement in inflation, just at the time the Federal Reserve is reviewing its tools to sustain its 2% inflation anchor. Future rate hikes cannot be totally discounted.

The equity market has rebounded globally. However, the path forward is filled with global macroeconomic potholes, and policy and political uncertainties, so we should expect a return of volatility. For now, let's enjoy this moment of post sugar high peace and tranquility.

Sincerely yours,
**CHAO & COMPANY, LTD.**
Philip Chao
Principal & CIO

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