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- Very strong to strong synchronized global growth but with known risks on the horizon that could shorten this cyclical upturn
- The CBO estimated all-in $1.9 billion deficit spending over the next 10 years will have most impact during the short term with diminishing effects over time. This is also echoed by IMF as so expressed in its spring World Economic Outlook.
- Although market volatility, as represented by VIX, has came back with a vengeance, statistically speaking, the VIX is simply back to "normal. We are just less used to this after a calm (lifeless) 2017.
- The FOMC's March meeting demonstrated their increasing confidence in the economy and expectation that their 2% inflation objective will soon be met. The FOMC and everyone else are well aware that the return of inflation this year is partially due to the base effect. All this means that the FOMC normalization of interest rates and balance sheet will continue as planned. The question is about what the neutral interest rate (R*) will be. The FOMC has often applied the word "symmetry" when speaking about their rate actions. Depending on the causation and the rate of change of inflation after the 2% objective (not a ceiling) has been reached, the FOMC may let the economy run hot for a bit before raising interest rates more aggressively.
- For now, the rate increases remain rate normalization, but beginning in late 2018 to early 2019, we suggest that the Neutral Rate (0% real rate) would be reached and true rate increases will begin. This will be occurring at a time that ECH and BOJ may be taking baby steps to normalize their monetary policies and globally witness a slow and clear drain to macro liquidity.
- Q1 will likely be a disappointing quarter for GDP, and as such, we expect 2018 will likely grow at or below 3% real. This would suggest a 50bp bump to the U.S. economy due to the massive fiscal injection.
- Although Europe has surprised everyone on the upside with strong forward sentiment in late 2017, we are witnessing signs of growth rate slowing. 2018 is likely to remain robust, but for 2019-forward much of the world will again slow. Long term challenges remain unsolved or unsolvable; demographics and AI/machine are the obvious factors.
- Trade blowup along with geopolitical risks add uncertainty. The consensus is that there will be no meaningful trade war that would erupt between U.S. and China or the rest of the world. I was in the audience of a speech by Max Baucus last evening, ex Montana senator and ambassador to China until January 2017. He clearly stated that China does not want a trade war, but, when pushed, China is ready to deliver a meaningful response.
- Economic regime changes can be very subtle and not readily pulpable. Mike Tyson once famously said: ""Everybody has a plan until they get punched in the mouth."

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Global Economy — Regime change is expected

The world's central bankers, policy makers and members of the IMF met in Washington for its 73rd Spring semi-annual meeting. Against the positive backdrop of synchronized world growth that began in mid-2016 and continues robustly in 2018 at the expected rate of 3.9%, there are signs of concerns.

		Projections		Difference from October 2017 WEO	
	2017	2018	2019	2018	2019
World Output	3.8	3.9	3.9	0.2	0.2
Advanced Economies	2.3	2.5	2.2	0.5	0.4
U.S.	2.3	2.9	2.7	0.6	0.8
European Union	2.7	2.5	2.1	0.4	0.3
Euro Area	2.3	2.4	2.0	0.5	0.3
Germany	2.5	2.5	2.0	0.7	0.5
France	1.8	2.1	2.0	0.3	0.1
Italy	1.5	1.5	1.1	0.4	0.2
Spain	3.1	2.8	2.2	0.3	0.2
Japan	1.7	1.2	0.9	0.5	0.1
U.K.	1.8	1.6	1.5	0.1	-0.1
Canada	3.0	2.1	2.0	0.0	0.3
Emerging Markets & Developing Economies	4.8	4.9	5.1	0.0	0.1
Commonwealth of Independent States	2.1	2.2	2.1	0.1	0.0
Emerging and Developing Asia	6.5	6.5	6.6	0.0	0.1
China	6.9	6.6	6.4	0.1	0.1
India	6.7	7.4	7.8	0.0	0.0
ASEAN-5	5.3	5.3	5.4	0.1	0.1
Emerging and Developing Europe	5.8	4.3	3.7	0.8	0.4
Latin America and the Caribbean	1.3	2.0	2.8	0.1	0.4
Brazil	1.0	2.3	2.5	0.8	0.5
Mexico	2.0	2.3	3.0	0.4	0.7
Middle East, North Africa, Afghanistan, and Pakistan	2.6	3.4	3.7	-0.1	0.2
Sub-Saharan Africa	2.8	3.4	3.7	-0.1	0.2

The world grew at the rate of 3.8% in 2017 which was the fastest rate since 2011. The second half of 2017 witnessed global growth at a 4% pace. IMF projects a further growth rate increase in 2018 to 3.9% and expects the same speed in 2019. The contributors to 2018 and 2019 are quite different. The above table from the World Economic Outlook[1] (WEO), published on April 27th, shows that half of the advanced economies are accelerating or holding the same in 2018 (blue and green) and the others are downshifting (even though still growing at a decent rate). Economic output gaps in most of these economies have either closed or have been exceeded. For 2019, all advanced economies are projected to slow. The U.S. is projected to be below 2.5% and China down to 6.4% from last year's 6.9%. The contributors are expected to be emerging markets and developing economies with India leading the way. The biggest

[1] http://www.imf.org/en/publications/weo

factor in prolonging global growth appears to be the result of the sizable U.S. fiscal expansion.

However, in the near term, U.S. fiscal condition could tighten faster if market participants adjust to a more hawkish Federal Reserve normalization policy as a result of stronger than expected core and wage inflation and economic activities. Furthermore,the WEO pointed out that "very expansionary fiscal policy in the United States, at a time when the current account deficit is already larger than justified by fundamentals, combined with persistent excess current account surpluses in other countries, is projected to widen global imbalances. Anxiety about technological change and globalization is on the rise and, when combined with wider trade imbalances, could foster a shift toward inward-looking policies, disrupting trade and investment. Recent import restrictions announced by the United States, announced retaliatory actions by China, and potential retaliation by other countries raise concerns in this regard and threaten to damage global and domestic activity and sentiment."

In summary, IMF views the downside and upside risks to be roughly balanced in the near-term (next few quarters), but risks are expected to lean more towards the downside thereafter. Downside factors are:

1. sharp tightening of financial conditions (monetary policy normalization for major central banks),
2. waning popular support for global economic integration,
3. growing trade tensions and risks of a shift toward protectionist policies, and
4. geopolitical strains.

Global economy is expected to slow beyond 2019 when the impact from U.S. tax reform momentum wanes beginning in 2020 and China continues its transition away from an export driven to a consumer (or domestic) focused economy along with reining in credit and fiscal spending. Also, the significant support of central banks from the U.S. to ECB and BOJ will gradually be removed, realizing tightening financial conditions.

"The early February 2018 market turbulence and the equity market correction in March following the US tariff announcement on steel and aluminum and a range of Chinese products, as well as the announcement by China of retaliatory tariffs on imports from the US, serve as a cautionary reminder that asset prices can correct rapidly and trigger potentially disruptive portfolio adjustments. Although volatility is slightly higher than the pre-February episode lows, and term premiums are not as tightly compressed as they were in the fall, global financial conditions remain highly supportive. A more severe version of the early February episode—financial conditions tighten suddenly, triggered, for instance, by a faster pickup in inflation in the United States—remains a possibility. Depending on the magnitude of the repricing and the extent to which volatility is affected, this could temper the pickup in global demand. In this context, a worsening of trade tensions and the imposition of broader barriers to cross-border trade would not only take a direct toll on economic activity but would also weaken confidence, with further adverse repercussions."

Market Volatility Returns with a Vengeance

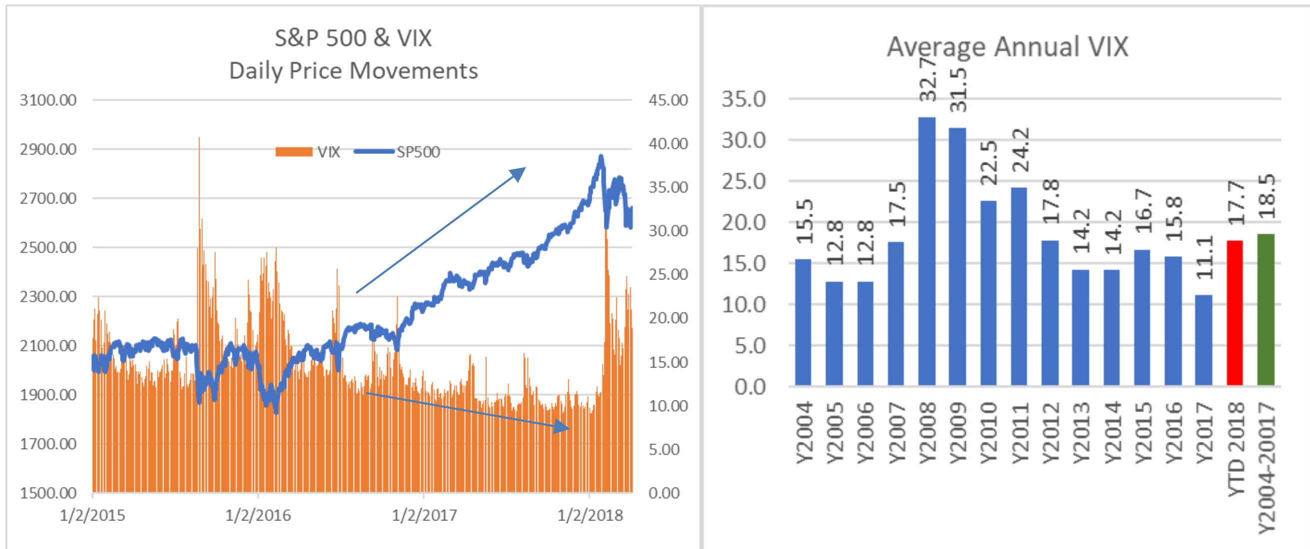
The S&P 500 delivered a positive total return each month in 2017. Going back 90-years in equity market history, this has never happened[2]. According to CNBC, the "Best January since 1997 bodes well for the rest of the year... at least statistically"[3]. The S&P 500 Index rose 5.62% in January, marking its best January performance since 1997. Since 1928, 71.9% of the time when there is a positive month in January, the market ends positively at the end of the year. The following chart shows that relationship since 1980:

Year	S&P 500 January % Gain	Year End Return (%)
1980	6.7	25.8
1983	3.3	17.3
1985	7.4	26.3
1986	0.2	14.6
1987	13.2	2.0
1988	4.0	12.4
1989	7.1	27.3
1991	4.2	26.3
1993	0.7	7.1
1994	3.3	-1.5
1995	2.4	34.1
1996	3.3	20.3
1997	6.1	31.0
1998	1.0	26.7
1999	4.1	19.5
2001	3.5	-13.0
2004	1.7	9.0
2006	2.5	13.6
2007	1.4	3.5
2011	2.3	0.0
2012	4.4	13.4
2013	5.0	29.6
2017	1.8	19.4
2018	5.62	?

Year to date, the stock market has produced nothing but volatility. As of 3-31-2018, the S&P has given up all of its January gains and is recording a minus return of 0.76%. As of the end of January, the VIX (often referred to the "fear index") was close to its all-time low and thus ranked in its first percentile range. During the past 10-years, 99.4% of the time the VIX has registered a higher value than 2018. It is not surprising to learn that there were more investors shorting (betting the volatility will remain low or go lower) the VIX and at the same time pumping more money into the equity markets.

[2] https://seekingalpha.com/article/4134832-stock-market-1st-90-years

[3] https://www.cnbc.com/2018/02/01/best-january-since-1997-bodes-well-for-the-rest-of-the-year.html



This strategy of betting equities will continue to move higher at a steady historically low volatility level turned out to be wrong. The first week in February witnessed the return of volatility, and since then, the VIX[4] has maintained a higher (returning to normal) level. There was a distinctive divergence in 2017. As the stock market moved steadfastly higher (as represented here by the S&P 500 in the upper left graph), the market volatility or VIX gradually moved lower. The upper right graph summarizes the average annual VIX value. The average VIX value from 2004 through 2017 is 18.5 while 2017 was 11.1. So far during the first 66 days of trading sessions, the average VIX is at 17.7 which is a huge increase since last year but not too far from the 13 year average (source: CBOE).

2017 was an unusual year with the market discounting much of the noise and being supported by global accommodative monetary policies. The synchronized global economic recovery and expansion added to a renewed sense of optimism and positive consumer and corporate sentiment about their futures. The procyclical tax reform (sugar high or fuel on the fire) in the U.S. left economists scratching their heads, even though, in the short run, it is welcomed by investors as it is natural to assume that whenever the next recession will be, it has been pushed down the road. (Consensus is 2020.)

The New FOMC

The March FOMC meeting was the first chaired by Jerome Powell, and from what we have seen, he appears to be a continuation of Janet Yellen's gradual and moderate approach to normalizing interest rates and the balance sheet on a data dependent manner. We suspect, however, that going forward, the Powell FOMC will likely be "more" rules based in an effort to be more transparent (I don't dare say predictable) regarding monetary policy actions. Moreover, there is a likelihood that each FOMC would be followed by a press conference (making every meeting a live meeting for monetary action).

[4] http://www.cboe.com/products/vix-index-volatility/vix-options-and-futures/vix-index/vix-historical-data

A. Press Release[5]
Jerome Powell presided over the March FOMC meeting as the chair for the first time. A comparison of the press releases[6] between the January meeting (with Chair Yellen) and the March meeting shows that the FOMC remains positive about the labor economy (strengthening, more job gains, and low unemployment rate) with economic activity rising at a moderate rate with consumer and business spending moderating a bit. Inflation (as measured by core PCE) remains below the Fed target of 2% but is expected to move upward in 2018. Overall, economic outlook has strengthened and should continue in the medium term.

B. FOMC Minutes[7]
The FOMC members noted the following:

- There are 4 strong economic fundamentals:
    - high levels of consumer and business sentiment
    - supportive financial conditions
    - improved economic conditions abroad
    - recent changes in fiscal policy
- Data on spending and the labor market over the past few quarters was noted as being consistent with continued above trend growth and a further strengthening in labor markets.
- Expecting further gradual increases in the federal funds rate, economic activity would expand at a solid rate during the remainder of this year and a moderate pace in the medium term.
- They expect labor market conditions would remain strong.
- Optimism found among the business contacts in many districts and is consistent with a firming in business expenditures.
- Do not see the steel and aluminum tariffs, by themselves, as likely having a significant effect on the national economic outlook.
- The prospect of retaliatory trade actions by other countries, as well as other issues and uncertainties associated with trade policies, are strongly viewed as downside risks for the U.S. economy.
- Tax changes enacted late last year and the recent federal budget agreement, taken together, are expected to provide a significant boost to output over the next few years.
- The magnitude and timing of the economic effects of the fiscal policy changes are uncertain, partly because there have been few historical examples of expansionary fiscal policy being implemented when the economy was operating at a high level of resource utilization.
- Uncertainty about (a) whether all elements of the tax cuts would be made permanent, (b) the implications of higher budget deficits for fiscal sustainability, and (c) real interest rates represent sources of downside risk to the economic outlook.

[5] https://www.federalreserve.gov/monetarypolicy/files/monetary20180321a1.pdf
[6] https://chaoco.com/fomc-march-2018-press-release-changes/
[7] https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20180321.pdf

- The labor force participation rate had been higher recently than expected, helping to keep the unemployment rate flat over the past few months despite strong payroll gains.
- Employers facing labor shortages were changing job requirements so that they matched more closely the skills of available workers, increasing training, or offering more flexible work arrangements, rather than increasing wages boradly.
- There are concerns related to a lengthy period in which the economy operates beyond potential and financial conditions remain highly accommodative which could, over time, pose risks to financial stability.
- Some suggested that a modest inflation overshoot might help push up longer-term inflation expectations and anchor them at a level consistent with the Committee's 2% inflation objective.
- The stronger outlook for economic activity, along with increased confidence that inflation will return to the 2% objective in coming months and then stabilize around that level[8], implied that the appropriate path for the federal funds rate over the next few years would likely be slightly steeper than had previously been expected.
- Suggestions were made that, at some point, monetary policy eventually would likely gradually move from an accommodative stance to being a neutral or restraining factor for economic activity.

C. Chair Powell Press Conference

- In making policy decisions over the next few years, the FOMC will continue to: (1) aim for 2% inflation, (2) sustain economic expansion and (3) support a strong labor market
- Further gradual increases in the federal funds rate will best promote the three goals.
- The balancing act is (1) raising rates too slowly would raise the risk that the tightening would be abrupt later and could jeopardize the economic expansion and (2) avoiding inflation running persistently below the 2% objective which would leave FOMC with less scope to counter an economic slowdown in the future.
- Balance sheet normalization is proceeding smoothly, and the primary means of adjusting the stance of monetary policy is changing the target range for the federal funds rate.

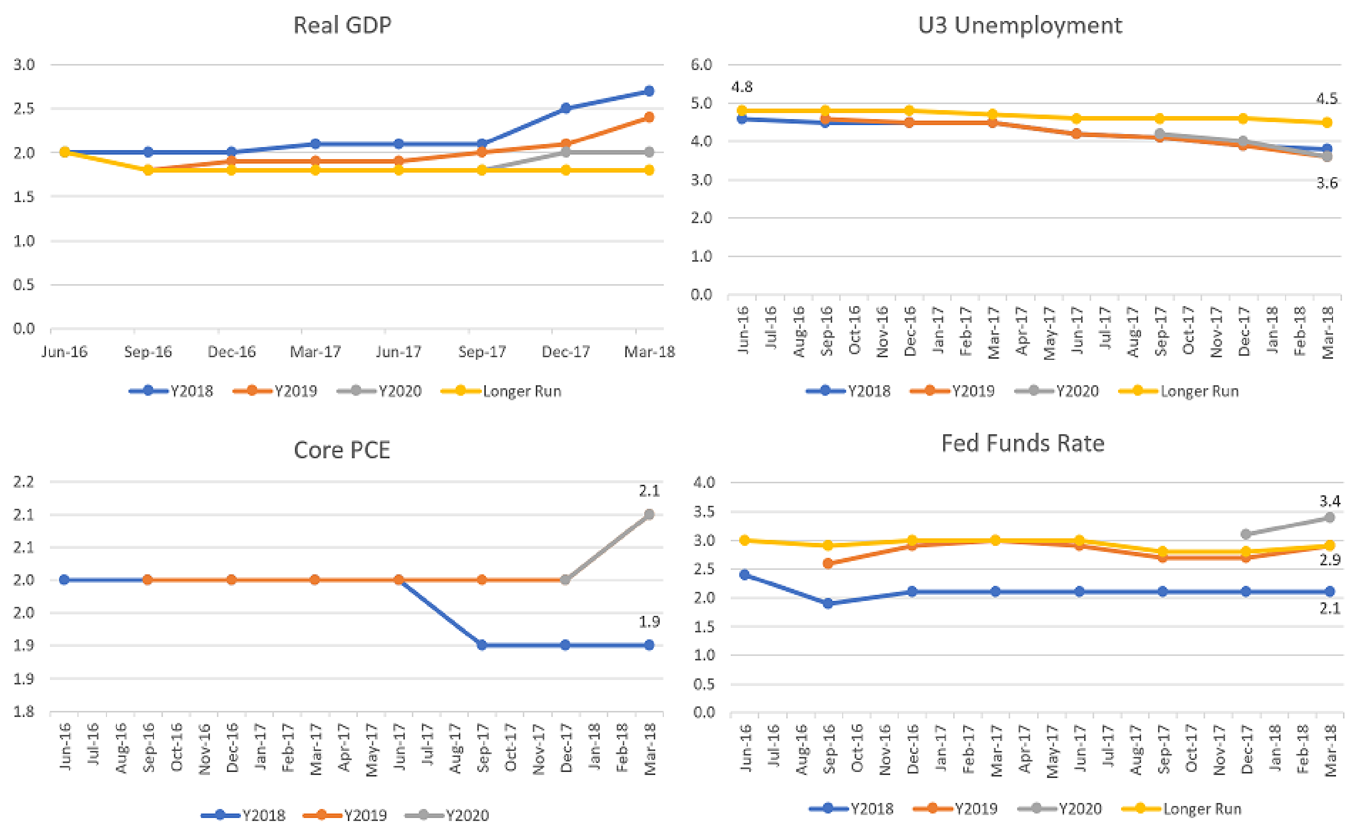
D. What are the Dots telling us?

Four times per year, the FOMC publishes the Summary of Economic Projections (SEP) which gathers individual assessments of projected appropriate monetary policy by Federal Reserve Board members and Federal Reserve Bank presidents. The assessments are not to be deemed as a forecast of the FOMC as a whole. As such, the median, the central tendency and the entire range of members' assessment for real GDP, U3 unemployment rate, PCE and Core PCE which lead to their personal forecasts for the path of the Federal Funds Rate are individual estimates. The 12 Federal Reserve Bank presidents express the financial conditions of their own region which may or may not be representative of the country as a whole. Case in point, Mickey Levy, chief economist at Berenberg Capital Markets, presented his research

[8] This expectation partly reflected the arithmetic effect of the soft readings on inflation in early 2017 dropping out of the calculation; it was noted that the increase in the inflation rate arising from this source was widely expected and, by itself, would not justify a change in the projected path for the federal funds rate.

at the March 2018 Shadow Open Market Committee meeting[9] on the inaccuracies of the SEP since 2009. In his paper, he stated that "[f]rom 2010 to 2016, the Fed nearly persistently overestimated economic growth and underestimated declines in the unemployment rate. In 2017, the direction of the Fed's real GDP forecasting errors reversed, as the Fed underestimated growth by a wide margin, and seems on track to do the same in 2018."

From the March Press Release and Minutes to the Press conference and Chair Powell's speech at the Chicago Economics Club, the tone was more positive about the economy and the labor market and confident about meeting the 2% inflation objective. Two to three more rate hikes are expected this year. Today, the Fed Funds rate is at 1.5% with the March "median" projected rate at 2.1% and a "central tendency range" of 2.1% to 2.4% for 2018. With 2 more rate hikes, the rates would be at 2% and with 3 hikes would be at 2.25%. Further, the "median" projection for core PCE is at 1.9% and the "central tendency range" is 1.7% to 1.9% by the end of 2018. If the neutral (real) rate is at 0%, then there are two more hikes this year. The following tracks the Economic Projections since June 2016 through March 2018:



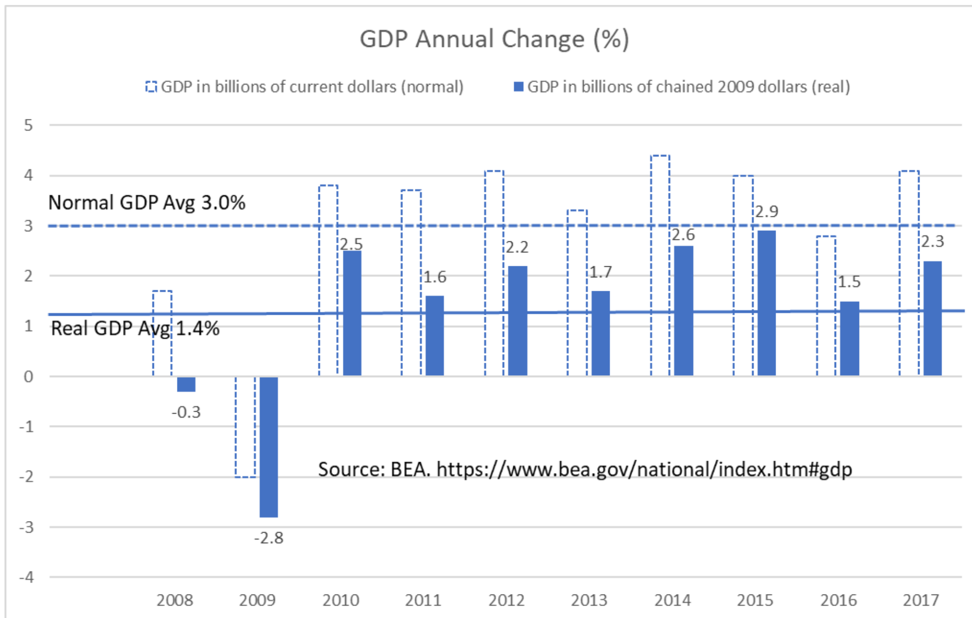
The chart below, also known as the dot plot, summarizes the range of FOMC member projections for rates presented in March 2018 meeting as compared to the December 2017 meeting. This clearly shows that the dots are moving to a higher rate regime in 2019 and 2020 even though the "longer run" rate projection remains relatively stable.

[9] http://shadowfed.org/wp-content/uploads/2018/03/LevySOMC-March2018.pdf

Fed Fund Target level (Percent)

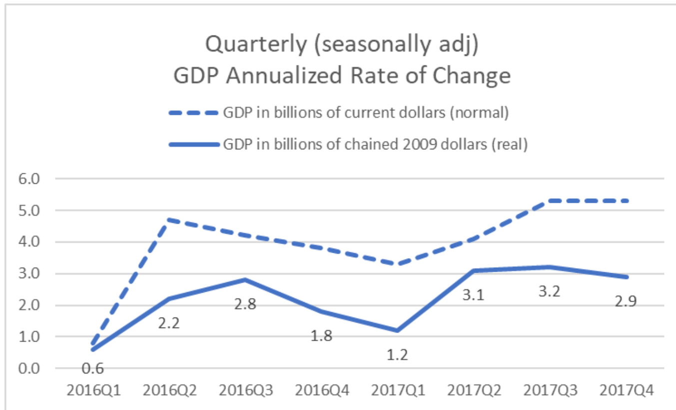
Rates	Y2018 Dec-17	Y2018 Mar-18	Y2019 Dec-17	Y2019 Mar-18	Y2020 Dec-17	Y2020 Mar-18	Longer run Dec-17	Longer run Mar-18
1.000								
1.125	1		1					
1.250								
1.375	1		1		1			
1.500								
1.625	1	2		1		1		
1.750								
1.875	3							
2.000								
2.125	6	6		1				
2.250							1	1
2.375	3	6	2		1			
2.500							2	1
2.625	1	1	4	1	2	2		1
2.750			1	1			6	4
2.875			3	5	1			
3.000					3		6	5
3.125			1	2	5	1		
3.250						1		1
3.375			2	3		5		
3.500					1	1		1
3.625			1			2		
3.750								
3.875				1				
4.000								
4.125					2	1		

More Fuel on the Economic Fire

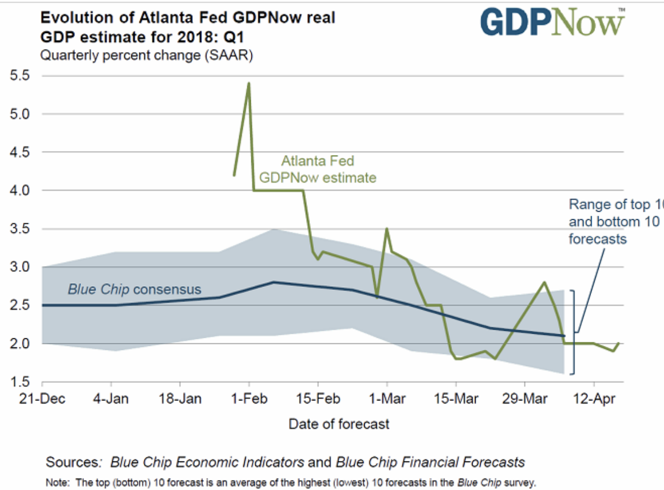


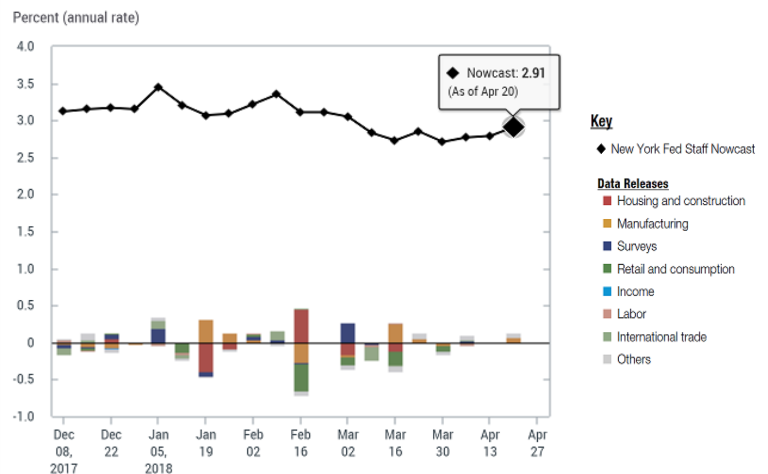
In year 2017, normal GDP grew at a 4.1% rate and the real (inflation-adjusted based on chained 2009 dollars) rate of 2.3%. Since 2008, the 10-year GDP growth rate has averaged 3% normal and 1.4% real. Comparatively, during the second half of the 20th Century (i.e. from 1950 through 1999), the normal GDP grew at an average rate of 7.4% and a real rate of 3.7%. Since 2000, the 18-year averaged a 4% normal and 2% real GDP, a 23% increase!

We do not believe that, in the medium term, even with the significant pro-cyclical fiscal policies that went into effect since January this year, the U.S. economy will get back to the 20th Century 3.7% average annual GDP rate. It is even questionable if 2018 will end with a 3% real GDP growth rate, which would be 70bp above 2017. According to BEA, "*the acceleration in real GDP from 2016 to 2017 reflected upturns in nonresidential fixed investment and in exports and a smaller decrease in private inventory investment. These movements were partly offset by decelerations in residential fixed investment and in state and local government spending. Imports, which are a subtraction in the calculation of GDP, accelerated.*"



On a quarterly basis, the U.S. economy has recovered from the low of the 2006 Q1 even though the economy has shown some signs of moderating the growth rate after the 3% plus rate achieved in 2017 Q2 and Q3 (adjusting from the low Q1 activities). The following two graphs show the latest estimates (in real time) of Q1 2018 GDP by the Atlanta Fed (GDPNow) and the New York Fed (Nowcast).





As of April 17, 2018, the Atlanta Fed GDPNow stands at 2.0%, and as of April 20th, the New York Fed Nowcast stands at 2.91% for 2018 Q1. Both forecasts have been trending lower over time, and the consensus view is that the first quarter is likely to disappoint.

A Sugar High Fiscal Policy

The Congressional Budget Office (CBO) issued its Budget and Economic Outlook: 2018 to 2028[10] (the "CBO Report") which attempts of to offer a "non-partisan" view of the effect of the Tax Cut & Jobs Act of 2017 ("2017 Tax Act").

[10] https://www.cbo.gov/publication/53651

Three major pieces of legislation enacted in the past few months significantly changed fiscal policy:

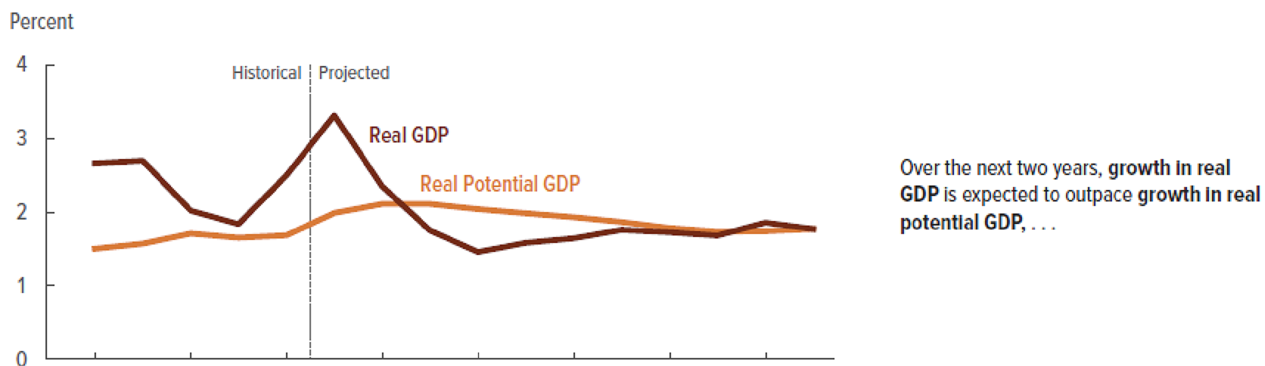
(1) The 2017 Tax Act substantially altered the taxation of personal and business income.
(2) The Bipartisan Budget Act of 2018 (P.L. 115-123) increased the caps on discretionary funding in 2018 and 2019 and provided substantial funding for emergency disaster assistance.
(3) The Consolidated Appropriations Act of 2018 (P.L. 115-141) provided appropriations for 2018.

CBO estimates that the new tax law will have appreciable effects on the U.S. economy. The lower marginal income tax rates that will be in place for much of the projection period will encourage workers to work more hours and businesses to increase investment in productive capital, thereby raising employment, income, and potential output. In addition, the increase in after-tax income will boost spending in the near term, boosting actual output relative to potential output. The following table and graph from the CBO Report show the projected impact and the differences between real potential and real GDP (i.e. the real GDP Gap).

Economic Effects of the 2017 Tax Act

Average Output %	Y2018	Y2019	Y2020	Y2021	Y2022	Y2023	Y2024	Y2025	Y2026	Y2027	Y2028
Real GDP	0.3	0.6	0.8	0.9	1.0	0.9	0.9	0.9	**0.6**	0.6	0.5
Real potential GDP	**0.2**	**0.4**	**0.6**	**0.8**	**0.9**	0.9	0.9	0.9	0.7	0.6	0.5
Nominal GDP	0.4	0.8	0.9	1.1	1.2	1.2	1.2	1.1	0.9	0.8	0.8

Growth of Real GDP and Real Potential GDP and the Size of the Output Gap



Potential GDP, a theoretical concept, is the value of real GDP when all the economy's factors of production are fully employed. It is estimated by constructing measures of the trend in actual GDP that smooth out business cycle fluctuations. Potential GDP is important because monetary policymakers use the difference between actual and potential GDP—the output gap—to determine whether the economy needs monetary stimulus.

The following table offers projected growth of GDP and its components by the CBO report.

	Y2014[a]	Y2015[b]	Y2016[b]	Y2017[c]	Y2018[d]	Y2019[d]	Y2020[d]	Annual Average 2021-2022	Annual Average 2023-2028[d]
Real GDP	2.4	2.5	1.6	2.6	3.3	2.4	1.8	1.5	1.7
Consumer Spending	2.9	3.2	2.7	2.8	2.5	2.7	2.0	2.0	2.0
Business Investment	4.5	5.2	-1.6	3.9	8.5	2.5	0.8	0.8	2.6
Business Fixed Investment	5.5	3.9	0.7	6.3	5.9	3.1	1.6	0.9	2.5
Residential Investment	3.5	10.2	5.5	2.6	5.0	4.9	4.8	3.0	-0.2
Purchases by Gov't	-0.9	1.4	0.8	0.7	3.6	1.1	0.4	0.0	0.5
Federal	-2.5	-0.1	0.0	1.0	6.9	0.9	-0.5	-1.4	0.3
State & Local	0.2	2.3	1.2	0.5	1.6	1.3	1.0	0.8	0.6
Export	4.3	0.4	-0.3	5.0	2.9	2.9	2.6	2.5	2.7
Import	4.4	5.0	1.3	4.7	4.4	3.6	2.1	2.4	2.4
Net Export (Change $)					63.1	-41.5	-3.6	-13.7	-10.0

Source: CBO The Budget and Economic Outlook: 2018 to 2028

[A] BEA 2016 Q4 3rd estimate. https://www.bea.gov/newsreleases/national/gdp/2017/pdf/gdp4q16_3rd.pdf

[B] BEA 2017 Q4 3rd estimate https://www.bea.gov/newsreleases/national/gdp/2018/pdf/gdp4q17_3rd.pdf

[C] CBO Report 2018 April

[D] CBO Report 2018 April projection

The impact of the fiscal policy is significant in 2018 and is expected to taper off as early as 2019. In fact, the average in 2021-2022 is projected to be at an anemic annual rate of 1.5%. Most of the 2018 growth is expected to come from business and federal government spending. If we subtract the anticipated "economic effect" from the CBO projected GDP annually, the U.S. economy would be anemic.

Economic Effects of the 2017 Tax Act

Average Output %	Y2018	Y2019	Y2020	Y2021	Y2022	Y2023	Y2024	Y2025	Y2026	Y2027	Y2028
Projected Real GDP	3.3	2.4	1.8	1.5	1.5	1.7	1.7	1.7	1.7	1.7	1.7
Tax Act 20017 Economic Effect	0.3	0.6	0.8	0.9	1.0	0.9	0.9	0.9	0.6	0.6	0.5
Economy without Tax Reform	3.0	1.8	1.0	0.6	0.5	0.8	0.8	0.8	1.1	1.1	1.2

The following compares the projected real GDP from a variety of sources for 2018-2019:

	FOMC 03-17	FOMC 03-18	CBO 04-18	Conference Board 04-18	IMF 01-18	OECD 03-18
Y2018	2.1	2.7	3.3	2.8	2.9	2.9
Y2019	1.9	2.3	2.4	3.0	2.7	2.8

From these varied sources, CBO's estimate for 2018 is head and shoulders above all others. If the first quarter real GDP is closer to GDPNow projection of 2%, each of the remaining three quarters must be no less than 3.75%. We are not at all confident that 2018 will realize a 3.3% year, even though there is little doubt that the 2017 Tax Act is a boost to the economy in the short term.

Trickling Down Effect

According to the CBO projections, the Tax Act initially boosts real GDP and eliminates the output gap, because the act increases overall demand for goods and services (by raising households' and businesses' after-tax income). The heightened economic activity subsequently generates more demand for labor and, consequently, higher wages. In response, the labor force

participation rate rises, as do the number of hours worked, and the unemployment rate goes down.

The corporate income tax distorts domestic economic incentives, affecting the decisions made by corporations and investors. In addition, variation among the corporate tax systems of different countries distorts decisions about where to locate international investment. The installation of a single corporate tax to 21% lowers, on average, the tax rate paid by businesses subject to the corporate income tax. The change also contributes to the reduction of the effective marginal tax rate on capital income. According to the CBO Report, this reduces the distortions in several important ways.

1. It reduces the pretax return required to induce businesses to invest. That reduces the user's cost of capital and should therefore increase investment;
2. It makes debt financing less advantageous in relation to equity financing—because businesses may deduct the interest on debt from their taxable income, and the value of that deduction becomes smaller when tax rates are lower;
3. The reduction in corporate income taxes increases U.S. and foreign investors' incentives to invest and to locate activities in the United States rather than abroad; and
4. It reduces the incentive to shift income from the United States to lower-tax countries.

The Tax Act also imposes a onetime tax on those undistributed foreign earnings, with a 15.5% rate for cash assets and 8% rate for noncash assets. Corporations must pay the tax regardless of whether they repatriate the earnings to the U.S. and have the option of spreading the payment of the tax over 8 years. The tax should have only a limited effect on the decisions that corporations make because it applies only to their existing stock of foreign earnings.

For individual tax payers, the 2017 Tax Act retains the seven-rate structure but reduces most of the rates. The act also expands the width of the brackets, increasing the number of taxpayer's subject to lower rates. The lower tax rates are projected to increase the supply of labor. Because they will increase after-tax returns on investment, they are also anticipated to boost investment by pass-through businesses, which are taxed through the individual income tax.

A Head Scratcher - $1.9 Trillion in Cost

Most economists are puzzled by the significant fiscal stimulus being added at the tail end of an extended economic cycle. With unemployment at 4.1% and pointing lower and an accommodative monetary policy, the massive deficit fueled fiscal stimulus is not well timed. In fact, it robs the U.S. of the capacity to stimulate the economy when we have our next economic downturn, and this is especially troublesome at a time when monetary policy room is also limited. CBO anticipates the budget deficit for FY2018 to total $804 billion. That amount is $242 billion larger than the $563 billion deficit that CBO projected in June 2017. CBO now projects that the cumulative deficit for the 2018–2027 period would be about $1.6 trillion larger than shown in its June projections—$ 11.7 trillion rather than $10.1 trillion. All

told, in CBO's new projections, revenues over that period are about 2% less and outlays are about 1 percent more than projected last June.

Changes in CBO's Baseline Projections of the Deficit Since June 2017

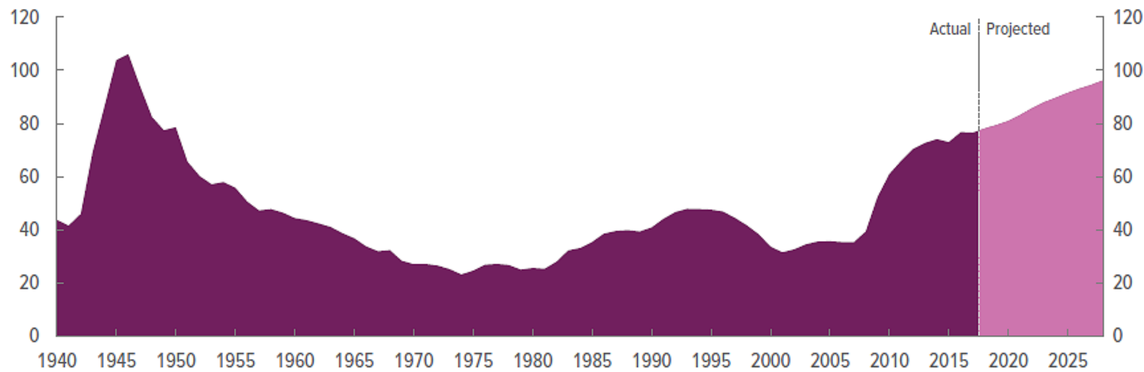
Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018–2022	Total 2018–2027
Deficit in CBO's June 2017 Baseline	-563	-689	-775	-879	-1,027	-1,057	-1,083	-1,225	-1,352	-1,463	-3,933	-10,112
Legislative Changes												
Changes in Revenues												
Individual income taxes	-65	-162	-169	-166	-159	-148	-150	-151	-41	43	-722	-1,169
Corporate income taxes	-94	-96	-80	-57	-32	-7	10	14	-9	-58	-359	-409
Payroll taxes	*	*	*	1	3	6	8	7	6	6	3	36
Other	-3	-27	-16	-17	-15	-14	-15	-16	-16	-9	-78	-148
Total Change in Revenues	-163	-285	-265	-239	-203	-163	-148	-146	-60	-18	-1,156	-1,690

CBO projects that the federal debt is 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. Moreover, if lawmakers changed current law to maintain certain current policies (e.g. preventing a significant increase in individual income taxes in 2026 and drops in funding for defense and nondefense discretionary programs in 2020) the result would be even larger increases in debt.

Federal Debt Held by the Public

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

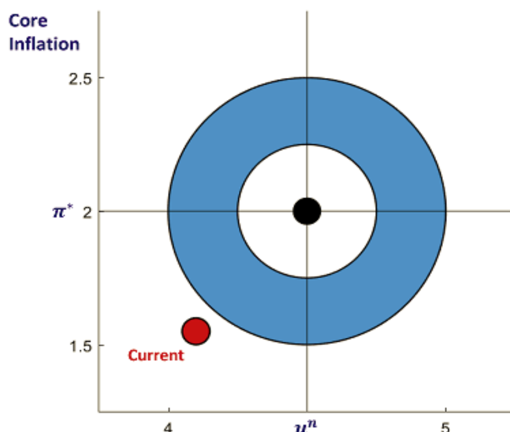
In CBO's projections, budget deficits continue increasing after 2018, rising from 4.2%of GDP this year to 5.1% in 2022 (adjusted to exclude the shifts in timing). That percentage has been exceeded in only five years since 1946; four of those years followed the deep 2007—2009 recession. Deficits remain at 5.1% between 2022 and 2025 before dipping at the end of the period, primarily because some tax provisions are scheduled to expire under current law, boosting revenues. Over the 2021—2028 period, projected deficits average 4.9% of GDP; the only time since World War II when the average deficit has been so large over so many years was after the 2007—2009 recession.

Such high and rising debt would have serious negative consequences for the budget and the nation:

- Federal spending on interest payments on that debt would increase substantially, especially because interest rates are projected to rise over the next few years.
- Because federal borrowing reduces total savings in the economy over time, the nation's capital stock would ultimately be smaller and productivity and total wages would be lower.
- Lawmakers would have less flexibility to use tax and spending policies to respond to unexpected challenges.
- The likelihood of a fiscal crisis in the United States would increase. There would be a greater risk that investors would become unwilling to finance the government's borrowing unless they were compensated with very high interest rates; if that happened, interest rates on federal debt would rise suddenly and sharply.

According to the CBO Report, "[t]o construct its baseline budget projections, CBO incorporated the effects of the tax act, considering economic feedback—that is, the ways in which the act is likely to affect the economy and in turn affect the budget. Doing so raised the 11-year projection of the cumulative primary deficit (that is, the deficit excluding the costs of servicing the debt) by $1.3 trillion and raised projected debt-service costs by roughly $600 billion. The act therefore increases the total projected deficit over the 2018—2028 period by about $1.9 trillion. Before taking economic feedback into account, CBO estimated that the tax act would increase the primary deficit by $1.8 trillion and debt-service costs by roughly $450 billion. The feedback is estimated to lower the cumulative primary deficit by about $550 billion, mostly because the act is projected to increase taxable income and thus push tax revenues up. And that feedback raises projected debt-service costs, because even though the reduction in primary deficits means that less borrowing is necessary, the act is expected to result in higher interest rates on debt, which are projected to more than offset the effects on debt-service costs of the smaller debt. On net, economic feedback from the act raises debt-service costs in CBO's projections by about $100 billion."

Inflation



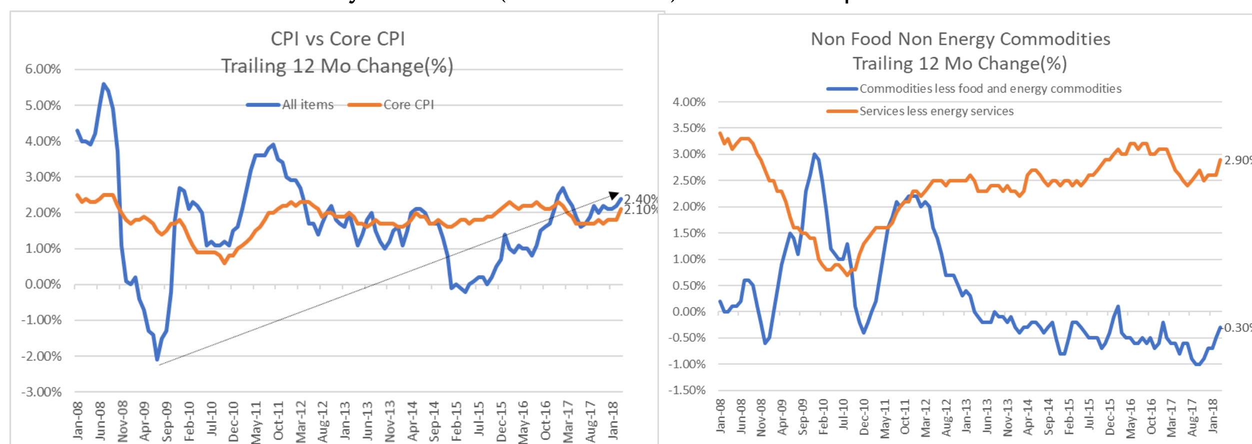
The Federal Reserve has taken credit that their unconventional monetary policies (zero bound interest rates, large scale asset purchases and forward guidance) have returned the economy to a level of "maximum sustainable employment" even though they have fallen short of realizing the price stability mandate. According to the Federal Reserve Bank of Chicago in the left graph, they are approaching the Bullseye.

The FOMC has set a 2% inflation objective (as measured by core PCE), and inflation has underrun this target throughout most of the post-financial crisis

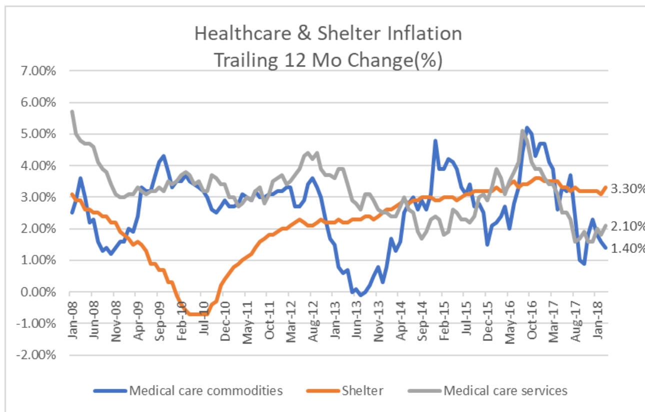
period. The FOMC's 2% inflation target is a symmetric one. This means that the concern is about inflation running either persistently above or persistently below 2%. However, it is important to understand that 2% is not the ceiling where the FOMC intends to keep inflation below this rate. What this means is that, since inflation has run lower to much lower than the 2% for many years, the FOMC is likely to allow inflation to move moderately above the 2% for some time before taking significant rate hikes. Raising rates too much too slow may push inflation below to significantly below the 2% target and possibly slow the economy. At the end, it is about calibrating the R* - the inflation-adjusted short-term interest rate expected to prevail when the economy is operating at its full potential[11]. This means that the FOMC intends to normalize its rates to a level that would maintain price stability in the medium term. This should not be confused with the Terminal Rate.

Historically, R* was set at approximately 1% above the inflation rate. The March FOMC Economic Projections shows the median federal funds rate is expected to be at 2.1% this year and, at the same time, the median core PCE is projected to be at 1.9%. This means the neutral rate is 0% after adjusting for inflation. In the "longer run", the federal funds rate is projected to be at 2.9% while the core PCE is expected to remain at 2%. This suggests the R* is to again return to approximately 1% above the inflation rate which is consistent with the average historical Terminal Rate. It is important to not confuse the basic framework from economic reality. Even though the FOMC controls the short end of the yield curve, if the economy does not maintain cruising speed at historical average, there is less chance that the Terminal Rate will be sustained in the "longer run".

The following table on the left provides a summary of the March 2018 CPI and core CPI data. Inflation is slowly moving towards the 2% target. The following right table shows that non-food and non-energy commodities (i.e. goods) continue to have a drag on inflation but non-food and non-commodity services (i.e. services) have been positive above 2% for some time.

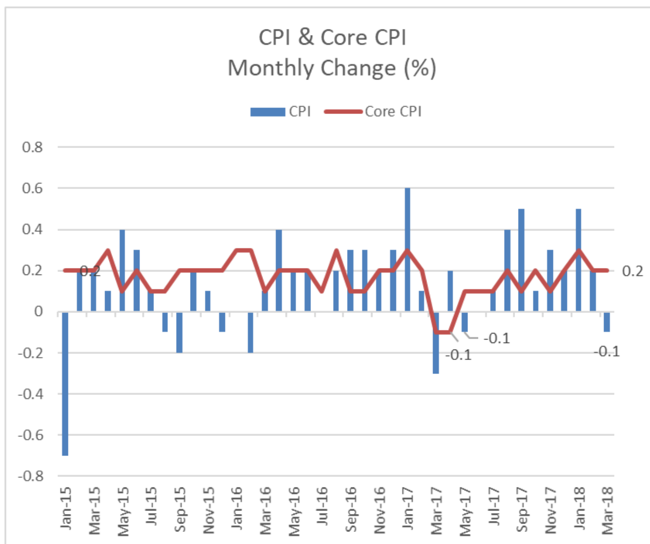


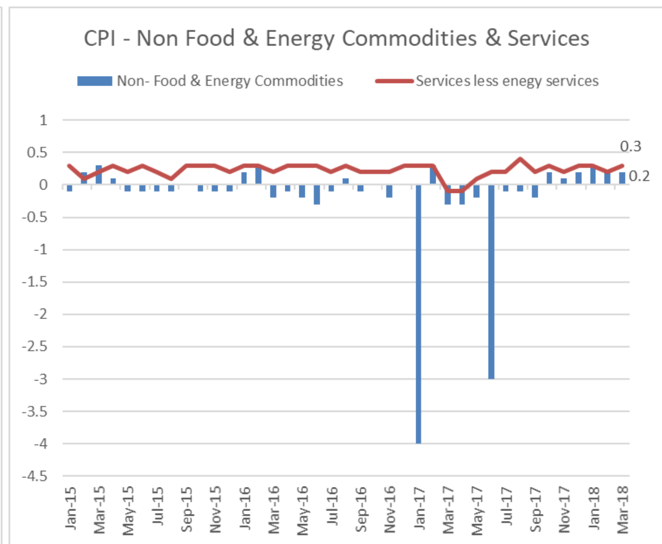
[11] https://www.frbsf.org/economic-research/publications/economic-letter/2017/february/three-questions-on-r-star-natural-rate-of-interest/



The left graph shows the trailing 12-month inflation rates for healthcare commodities (goods), health care services (services) and shelter (ownership and owner equivalent rent). Healthcare and shelter costs are large components that drive the core inflation basket. With an aging population, healthcare costs (both goods and services) are expected to continue to put pressure on inflation. It is clear that healthcare prices on a whole have come down since late 2016 and medical care services inflation is again rising. The inflation rate for housing has been above the 2% target since early 2012. However, with mortgage interest rates rising and a scarce supply of affordable housing (recovering market since financial crisis and stagnant wage growth), affordability may become more of an issue going forward.

According to BLS' March 2018 CPI Summary, "*the all items index rose 2.4 percent for the 12 months ending March, the largest 12-month increase since the period ending March 2017 and higher than the 1.6-percent average annual rate over the past 10 years. The index for all items*





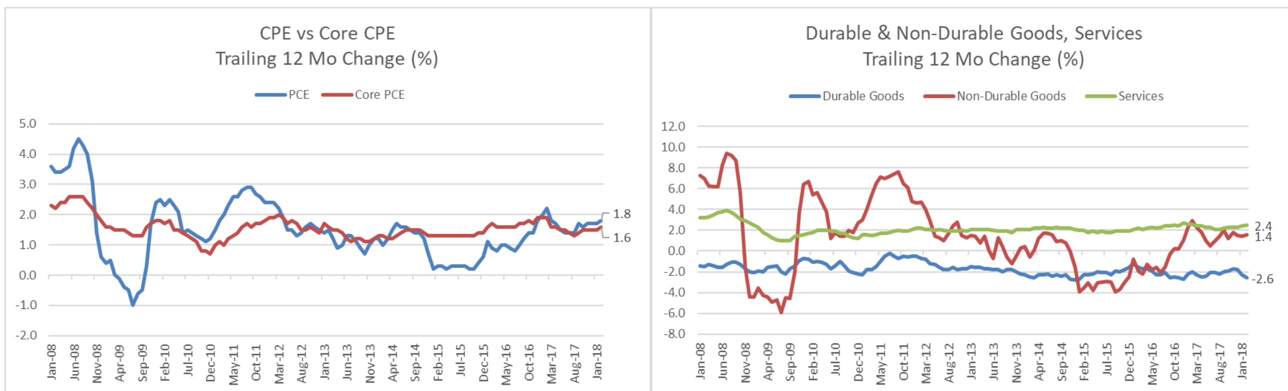
less food and energy rose 2.1 percent, its largest 12-month increase since the period ending February 2017. The energy index increased 7.0 percent over the past 12 months, and the food index advanced 1.3 percent."

On a monthly basis, the core and headline CPI have both been positive since the low in the first half of 2017. The upper right graph shows that, after years of goods contributing negatively to inflation, the non-energy and food commodity prices have turned positive since October 2017 while the service component remains positive. The inflation trend is moving

gradually upward. This is also influenced by the "base effect". The following table shows the negative price changes between March and July 2017. As each month rolls off on the back end, a small change in prices would exaggerate the inflation reading forward.

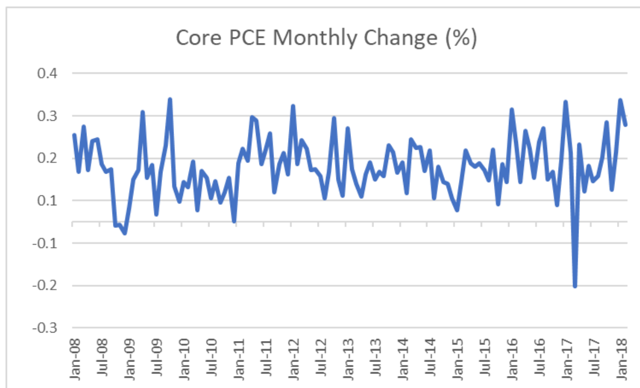
	Seasonally adjusted changes from preceding month							Un-adjusted 12-mos. ended Sep. 2017
	Mar. 2017	Apr. 2017	May 2017	June 2017	July 2017	Aug. 2017	Sep. 2017	
All items	-.3	.2	-.1	.0	.1	.4	.5	2.2
Food	.3	.2	.2	.0	.2	.1	.1	1.2
Food at home	.5	.2	.1	-.1	.2	-.2	.0	.4
Food away from home [1]	.2	.2	.2	.0	.2	.3	.3	2.4
Energy	-3.2	1.1	-2.7	-1.6	-.1	2.8	6.1	10.1
Energy commodities	-6.0	1.3	-6.2	-2.7	.0	6.1	12.6	18.9
Gasoline (all types)	-6.2	1.2	-6.4	-2.8	.0	6.3	13.1	19.3
Fuel oil [1]	-.8	-.3	-2.8	-3.7	-2.0	2.9	8.2	15.6
Energy services	-.3	.9	.7	-.5	-.2	-.1	-.2	2.2
Electricity	-.1	.6	.3	-.6	.4	.0	.0	1.7
Utility (piped) gas service	-.8	2.2	1.9	-.2	-2.3	-.5	-.8	3.8
All items less food and energy	-.1	.1	.1	.1	.1	.2	.1	1.7
Commodities less food and energy commodities	-.3	-.2	-.3	-.1	-.1	-.1	-.2	-1.0
New vehicles	-.3	-.2	-.2	-.3	-.5	.0	-.4	-1.0
Used cars and trucks	-.9	-.5	-.2	-.7	-.5	-.2	-.2	-3.7
Apparel	-.7	-.3	-.8	-.1	.3	.1	-.1	-.2
Medical care commodities	.2	-.8	.4	.7	1.0	-.1	-.8	1.0
Services less energy services	-.1	.1	.2	.2	.2	.4	.2	2.6
Shelter	.1	.3	.2	.2	.1	.5	.3	3.2
Transportation services	.4	-.2	.3	.2	.2	.4	.3	3.9
Medical care services	.1	.0	-.1	.3	.3	.2	.1	1.7

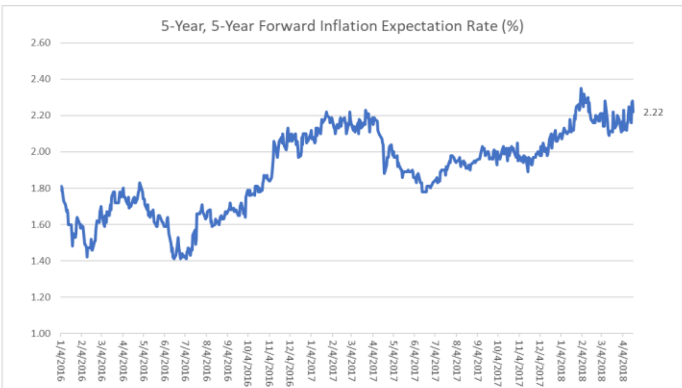
[1] Not seasonally adjusted.



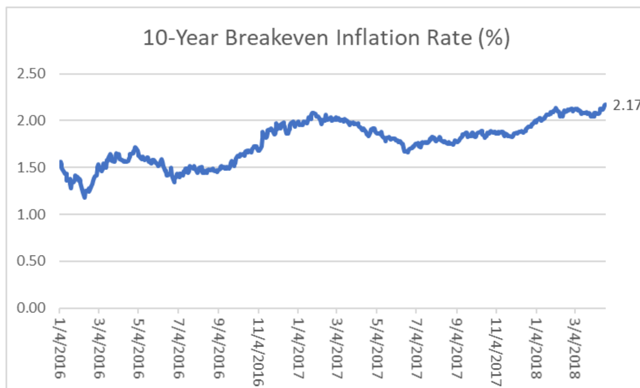
The above left charts shows the annual % change of Personal Consumption Expenditure (PCE) and Core PCE, as of Feb 2018. This shows that inflation, excluding volatile food and energy prices, remains below the FOMC's 2% objective.

The above right chart shows the goods and services components of the PCE change since 2008. The durable goods segment has consistently been subtracting from the PCE. This reflects the deflationary effect on prices in durable goods. In the case of non-durable goods (i.e. soft goods that have a short life cycle such as food, paper products, light bulbs, etc.), the more volatile component has been a positive contributor to inflation since early 2016. The services sector of the economy has been very stable throughout the same period averaging at or above 2%. This leads to the suggestion that the low inflation environment has been more related to goods than services.

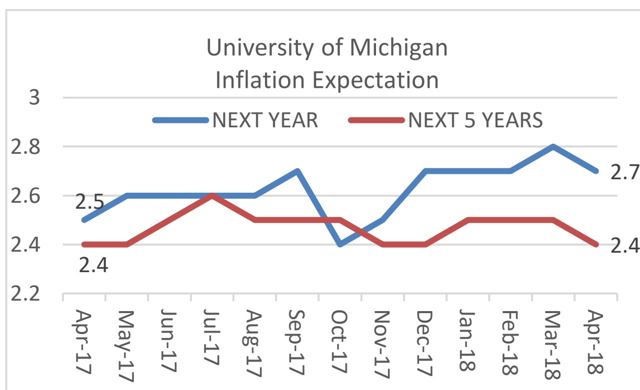




The above left chart shows the rate of change on a monthly basis since 2008. Until we have sustained productivity lead wage inflation where workers are spending on goods, inflation will likely remain muted from a historical perspective. The left and right graphs above offer a market participant view/assessment of inflation expectation.



The upper left graph represents a measure of expected inflation derived from 10-Year Treasury Constant Maturity Securities and 10-Year Treasury Inflation-Indexed Constant Maturity Securities. Currently, the market is expecting an inflation rate of 2.17% 10-years into the future. The upper right graph represents a measure of expected inflation over the five-year period that begins five years from today. The market expects inflation to be at 2.22%.



Inflation expectation has the biggest impact on inflation. The market-based inflation rate of 2.17% to 2.22% in the long run should be confirmed by survey-based inflation expectations. The left graph is the University of Michigan's monthly inflation expectation survey[12] results for the next 12 months and the next 5-years. The 12-month expectation has risen a bit since the survey was conducted in April 2017, but for the longer term 5-year period the consumer inflation expectation remains unchanged at 2.4%. This seems to suggest that consumers are expecting a slight elevation in inflation in the near term but does not translate into longer term increased inflation expectations.

We believe that, in the cyclical time frame, we are entering a more inflationary regime and, statistically, core inflation will move pass the 2% FOMC target within the next 12 months. Depending on myriad trade and geopolitical factors and the path of monetary policies for

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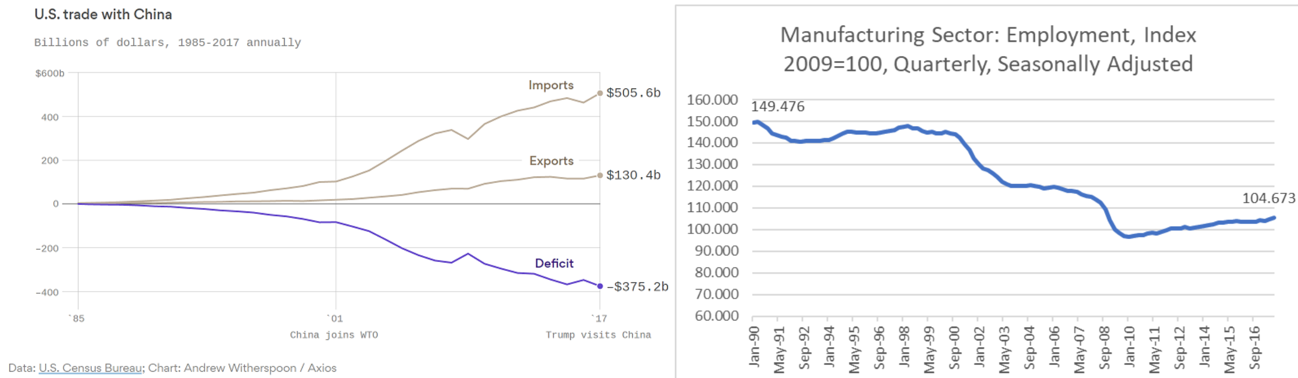
[12] http://www.sca.isr.umich.edu/tables.html

global central banks, inflation could go even higher, although this is not the consensus view. FOMC's latest dot plot suggests that, by the end of 2019, the Federal Funds rate would be around 3%. This means between now and then there are 6 more 25bp rate hikes. This suggests that the FOMC is not expected to let inflation run "hot" as "symmetry" would otherwise suggest.

Trade War or Just Bluster

Since China joined the World Trade Organization (WTO), it became the factory floor to the world and began two decades of seemingly unstoppable economic growth[13]. According to the World Bank, from 1990 to last year, 800 million Chinese were lifted out of poverty[14].



Using Census Bureau data, the above left chart shows the rise of China as well as the escalating trade deficit between the U.S. and China. The above right chart shows the dwindling manufacturing employment in the U.S. since 1990. We have lost 45 million jobs during that time. At the current growth rate differential between China and the U.S., Bloomberg projects that China's GDP will surpass U.S. in 2032[15]. In the politically divided, populism filled 2016 election, Donald Trump made unfair trade practices and anti-globalism as major parts of his platform, pointing specifically at China and multilateral trade agreements. President Trump intends to live up to his election rhetoric and has made numerous remarks, threats and proposals to impose tariffs on selective imports (such as aluminum and steel and $50 billion on Chinese goods) as well as renegotiation of trade agreements (e.g. NAFTA). In the case of China, there are also the issues of forced technology transfer and outright intellectual property threat (in the hundreds of billions annually). In response to the U.S. threats, China is threatening to slap on $3 billion in tariffs on U.S. goods. The consensus or base case currently is that this will not escalate into a global trade war. However, there are many unknowns and internal and geopolitical factors that are not controllable. If a trade war breaks out, it would dampen global economic activities that would spill over into more nationalism and populism. In the near term, this would lead to tumbling global markets and rising prices/inflation. Although President Trump may be well meaning to make "America Great Again", American trading partners may also want to make their respective countries great again as well. If competitive rhetoric escalates and tit-for-tat trade sanctions multiply,

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[13] https://fas.org/sgp/crs/row/RL33534.pdf

[14] http://www.business-standard.com/article/international/china-lifting-800-million-people-out-of-poverty-is-historic-world-bank-117101300027_1.html

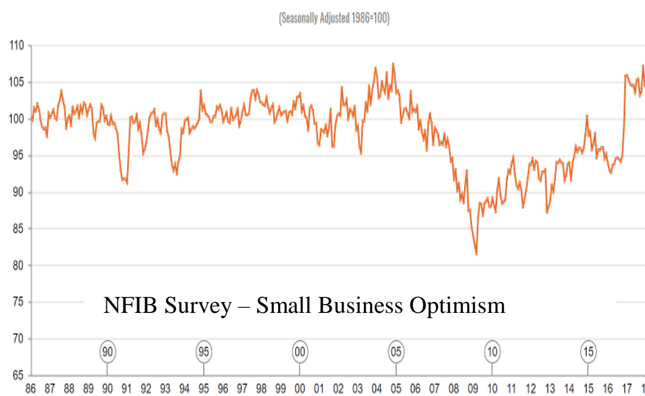
[15] https://www.bloomberg.com/graphics/2016-us-vs-china-economy/

the negative effect could cancel even the short-term benefits that would materialize from the massive fiscal policy.

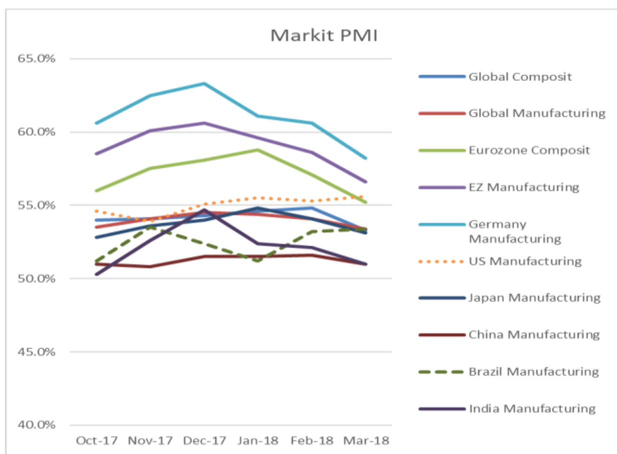
Finally, trade deficit is not necessary bad, and it is not simply a resultant of more import than export or a sign of unfair trade practices. The dollars we pay for imports can be used by the importers to buy our exports or to invest in our real or paper assets. We are a net importer of capital and thus run a trade deficit. Another reason for a trade deficit is that the deficit country is growing faster than the surplus trading partner. The economic strength attracts investment dollars, which, along with higher wages, allows the deficit country to buy even more from exporters. As President Trump uses trade deficit as emblematic to America's weakness, his fiscal policy that puts more money in the pockets of citizens (albeit through mortgaging the future) will lead to more consumption, which exacerbates the trade deficit.

The Beginning of the End

The small business optimism index reached its 16th consecutive month in the top 5% of 45 years of survey readings, according to the NFIB Small Business Economic Trends survey[16].



Index Component	Seasonally Adjusted Level	Change from Last Month
Plans to Increase Employment	20%	2
Plans to Make Capital Outlays	26%	-3
Plans to Increase Inventories	1%	-3
Expect Economy to Improve	32%	-11
Expect Real Sales Higher	20%	-8
Current Inventory	-6%	-3
Current Job Openings	35%	1
Expected Credit Conditions	-6%	-3
Now a Good Time to Expand	28%	-4
Earnings Trends	-4%	-1
Total Change		-33



The most recent Markit PMI indexes continue to show economic expansion and strength, but the rate of change is coming down from last year's high. The only two countries that show growth escalation are the U.S. and Brazil. As pointed out in the IMF WEO, 2018 and possibly 2019 will continue to show solid growth that began in mid-2016. But a confluence of expected events will put "sand in the gears", and the growth rate is expected to drop in 2020 and beyond. This is consistent with the FOMC dot plots.

Every business cycle comes to an end. Otherwise it would not be called a cycle. With the pro-cyclical fiscal policy, we are hopeful that corporate America will use this opportunity to spend more to invest (capital expenditure), improve labor productivity, and increase wages

[16] https://www.nfib.com/assets/SBET-March-2018-2.pdf

and less so in financial engineering (such as buy back stocks and pay out ever greater dividends).

During the next 12 to 18 months, we should expect to see the gradual regime change as we witness the slow but definite disappearance of labor slack (however defined), wage growth to accelerate, the FOMC to move from normalization to rate increase, and possibly the beginning of an inverse yield curve that signals the likely countdown to the end of the second longest economic expansion in U.S. history. This year of trickle down tax cuts reminds me of, when we were young, we looked forward to the "fall back" of an hour during autumns so that we could "party" for one more hour. Under this environment, our base case favors U.S. and EM equities, shortening duration/maturities in investment grade bonds, seeking position higher up on the capital structure (not favoring high yield credit), selective EM local bonds, staying investment policy neutral and when appropriate, opportunistically allocating to less liquid, private market investments.

While we can, enjoy the last dance as central banks continue to gradually drain liquidity and monetary support globally and put us on our way back to the future.

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

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