CHAO & COMPANY
FIDUCIA PERPETUA

January 5, 2019

- Market volatility is back and is uncomfortable after a serene 2017. Most portfolios have experienced a negative return as almost all financial assets have delivered a loss for the year.
- We went from a brief moment of synchronized growth globally in 2017 where the future economic activities were bright to witnessing a global slowdown beginning in 2018. US is an exception due to the pro-cyclical fiscal policy that listed the economy at a 4.2% second quarter real GDP growth rate. Even with the $2 trillion debt financed growth, the optimum growth in the current economic cycle is behind us. We are expecting to begin to resynchronize with the rest of the world in decelerating growth.
- After 9 years of Quantitative Easing and Zero Interest Rate Policy, the Federal Reserve has been on a path of controlled Quantitative Tightening and Interest Rate Normalization. The European Central Bank is conducting its own Quantitative Tightening and many other central banks are conducting Rate Normalization. All this points to an important regime change from "whatever it takes" unconditional support through massive liquidity injections to draining liquidity as the safety net is gradually removed from the financial system.
- Decelerating economic growth here and globally means market participants are reassessing future corporate earnings, free cash flow, debt coverage capacity, profit margin, etc. To complicate this is the self-imposed trade disputes by the Trump Administration with all the major trading partners, especially China. Even though a trade dispute through the imposition of tariffs may not meaningfully dent our economy, the secondary factors globally could affect the psyche of corporations and how they invest and make long-term decisions. One thing everyone agrees on is disdain for uncertainty since a company cannot plan meaningfully in the middle of a storm.
- As a part of its Rate Normalization process, the FOMC hiked rates 4-times in 2018 and ended the year at 2.25% to 2.50% range. The Committee has also lowered its rate hike estimates from three to two in 2019. If this is realized, the Fed Funds rate would be in the 2.75% to 3.00% range. This, we believe, would be deemed the neutral rate or r* for this cycle - the real short-term yield would be 1% above the 2% inflation objective.
- The fundamentals of the U.S. economy remains sound right now. We do not expect a recession in 2019, and we expect the stock market to deliver a positive return and at the normal historical average level of volatility. China and US will reach a face-saving deal for both sides, but the relationship will continue to be challenged. Beware of the spillover from a possible hard BREXIT and other populism driven political risks.

8460 Tyco Road, Suite E, Vienna, Virginia 22182
T: 703.847.4380 F: 703.847.4384
pchao@chaoco.com
www.ChaoCo.com

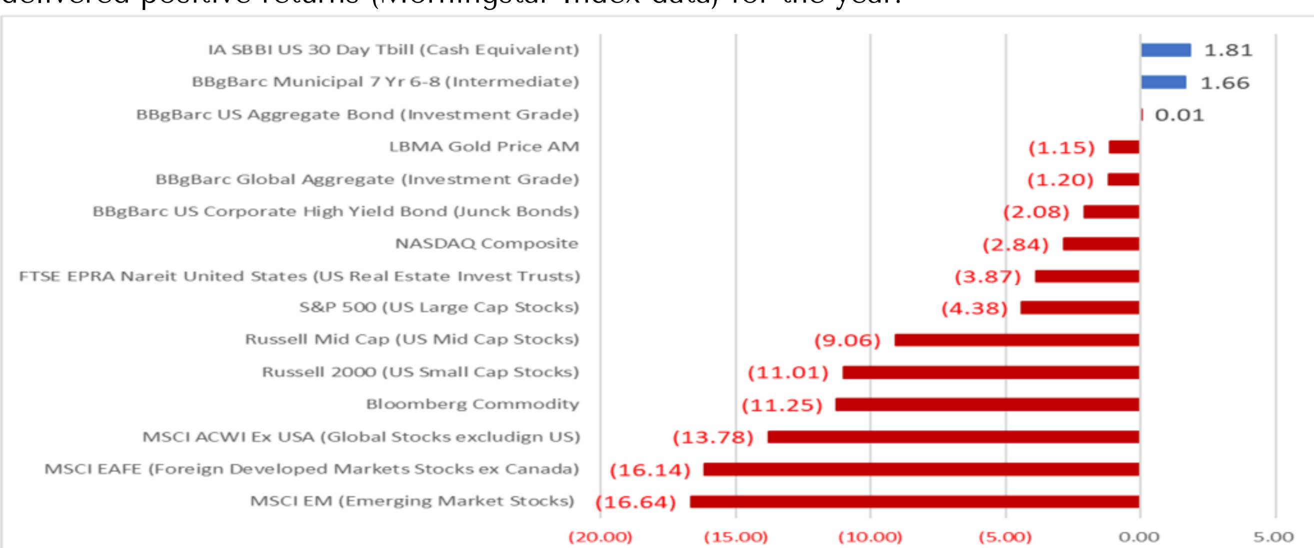
Happy New Year — Leaving 2018 Behind? Not So Fast!

2018 has been a rollercoaster ride for the financial markets globally. The CBOE S&P 500 Volatility Index (the VIX, often referred to as the fear index) has been awakened and returned to a more "normal" self. From 1990 through 2017, the VIX average was below 19.5. Even including the most volatile periods during the Global Financial Crisis, about 40% of the time, the VIX registered above the average level. In 2017, the VIX was below to well below the average value throughout the year, and 2017 is registered as the calmest year for the S&P 500 while delivering a 21.83% total return.

CBOE S&P 500 Volatility Index (VIX)	Trading Days	Average	19.5 & Above By Days & %		Days Below 19.5
Y1990-2017	7052	19.4	2817	39.95%	4235
Y2014	252	14.2	12	4.76%	240
Y2015	252	16.7	49	19.44%	203
Y2016	252	15.8	44	17.46%	208
Y2017	251	11.1	0	0.00%	251
Y2018	250	16.6	67	26.80%	183
Y2018Q4	62	21	42	67.74%	20

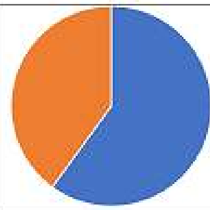
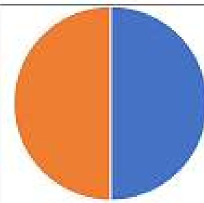
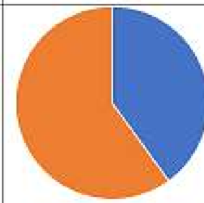
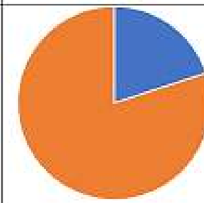
2018 tells a completely different story. Although only 27% of the trading days witnessed the VIX registering at or above the 19.5 level, the S&P 500 lost more than 5% in value for the year. Also, during the 4th quarter, the VIX was above the average value 68% of the time. After an unprecedented calm year, 2018 was that much more difficult to endure even though, for the year, the VIX was below the average since 1990.

Diversified portfolios, not "putting all your eggs in one basket", have not helped performance either. Cash, municipal bonds and core (investment grade) bonds are the three assets that delivered positive returns (Morningstar Index data) for the year.



Investing in typical balance portfolios consisting of US stocks (S&P 500 in orange) and US investment grade bonds (Barclays Aggregate in blue) along a risk continuum would have all sustained a loss in 2018 as stocks delivered their worst performance since 2008.

Increasing Equity (Risk)

Allocation	80-20	40-60	50-50	60-40	80-20
Barclays Agg + S&P 500 (2018 12 25)					
Q4TR	-1.38%	-4.48%	-0.04%	-7.59%	-10.69%
Y2018	-0.87%	-1.75%	-2.19%	-2.62%	-3.50%

	Q1	Q2	Q3	Q4
Barclays US Agg TR	-1.46%	-0.16%	0.02%	1.73%
S&P 500 TR	-0.76%	3.43%	7.71%	-14.30%

Many factors contributed to market volatility resulting in a negative return year, but two factors stand out (and remain.) The first is the reversal of monetary policies by the Federal Reserve. 2018 marked the decennial since the end of the financial crisis driven Great Recession in the US. Until 2015, we had a massive expansion of the Federal Reserve balance sheet. This Quantitative Easing ("QE") monetary policy, using large scale asset purchase programs, pulled down long-term interest rates by buying long-term US treasury and mortgage-backed securities. This created a sustained low borrowing cost for consumers and business. At the same time, the FOMC dropped the Fed Fund rates to near 0% to make savings uncomfortable. The unconventional and extraordinary monetary policy actions effectively rewarded borrowers (borrow more and affordably) at the expense of savers (earning negative real return). In effect, the Federal Reserve placed a giant safety net underneath the US economy to promote risk taking (leverage), spending and economic activities. December 2015 witnessed the first FOMC rate increase ("Rate Normalization"), and the fourth quarter 2017 witnessed the first controlled approach to unwinding its balance sheet by allowing treasury securities and mortgage-backed securities run off (i.e. not reinvest), i.e. beginning of Quantitative Tightening ("QT")[1].

This is not simply a US story. Many central banks around the world have also been normalizing rates and entering QT. As the Euro Area economy recovers, the European Central Bank (ECB), in January 2018, started to reduce the pace at which it purchases public and private sector assets each month. The ECB would increase the overall supply of such bonds in the market, thereby putting pressure on long-term bond yields and general long-term interest rates. ECB

[1] https://www.stlouisfed.org/open-vault/2018/july/how-fed-reducing-balance-sheet

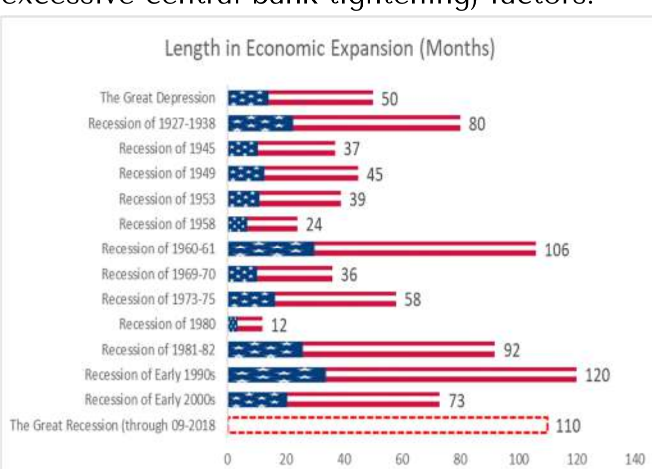
has since announced that the asset purchase program (APP) will end in December 2018. The ECB is expected to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest rates. Although the statement on its December 13, 2018, press release seems dovish, it is no question that the ECB is exerting QT.

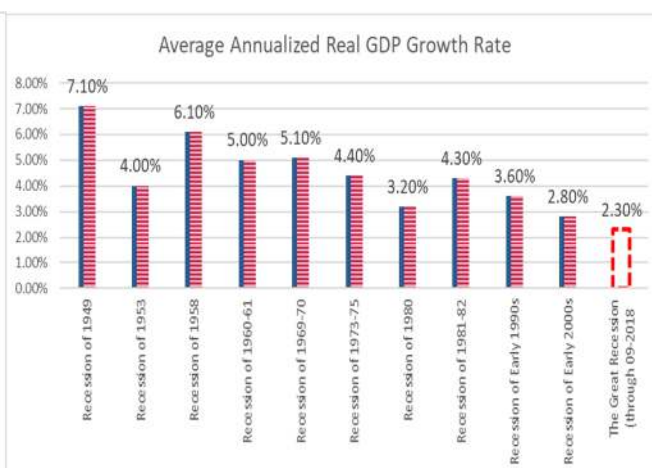
country/region	current rate	direction	previous rate	change
United States	2.500 %	↑	2.250 %	12/19/2018
Australia	1.500 %	↓	1.750 %	8/2/2016
Chile	2.750 %	↑	2.500 %	10/18/2018
South Korea	1.750 %	↑	1.500 %	11/30/2018
Brazil	6.500 %	↓	6.750 %	3/22/2018
Great Britain	0.750 %	↑	0.500 %	8/2/2018
Canada	1.750 %	↑	1.500 %	10/24/2018
China	4.350 %	↓	4.600 %	10/23/2015
Czech Republic	1.750 %	↑	1.500 %	11/2/2018
Denmark	0.050 %	↓	0.200 %	1/19/2015
Europe	0.000 %	↓	0.050 %	3/10/2016
Hungary	0.900 %	↓	1.050 %	5/24/2016
India	6.500 %	↑	6.250 %	8/1/2018
Indonesia	6.500 %	↓	6.750 %	6/16/2016
Israel	0.250 %	↑	0.100 %	11/26/2018
Japan	-0.100 %	↓	0.000 %	2/1/2016
Mexico	8.250 %	↑	8.000 %	12/20/2018
New Zealand	1.750 %	↓	2.000 %	11/10/2016
Norway	0.750 %	↑	0.500 %	9/20/2018
Poland	1.500 %	↓	2.000 %	3/4/2015
Russia	7.750 %	↑	7.500 %	12/14/2018
Saudi Arabia	3.000 %	↑	2.750 %	12/20/2018
South Africa	6.750 %	↑	6.500 %	11/22/2018
Sweden	-0.250 %	↑	-0.500 %	12/20/2018
Switzerland	-0.750 %	↓	-0.500 %	1/15/2015
Turkey	24.000 %	↑	17.750 %	9/13/2018

Japan has always been the poster child for unconventional monetary policy through their use of yield curve control (YCC) and quantitative and qualitative easing in multi-decade efforts to stoke inflation and encourage spending. In 2016, Bank of Japan went one step further by imposing a negative interest rate (i.e. charging banks to park some of their overnight cash) to encourage lending. Although there are no significant changes to its policy, the BOJ in its July statement said that it "may increase or decrease its stock buying depending on market conditions in its July and December meetings allowing itself room to 'tapper'".

Of the 26 major central banks, 16 took rate actions this year. 15 of which hiked rates and further contributed to tightening financial conditions globally.

The second factor is the inevitable question regarding the strength and duration of the US economic recovery. June 2009 marked the beginning of the second longest economic recovery in US history since the Great Depression. Economic cycles do not "die" of old age; rather, an economic expansion turns south due to exogenous (e.g. oil shock) or endogenous (e.g. excessive central bank tightening) factors.





The current economic recovery, as compared to the last 10 expansions, has been weaker or shallower (the V, L or U shape recovery discussion in 2009-2010). As illustrated in the Carmen Reinhart and Kenneth Rogoff co-authored book, "This Time Is Different", economic recovery from a severe financial crisis tends to be drawn-out and less vigorous. Today, the unemployment rate is the lowest since the 1950s; the economy continues to create over 150,000 new jobs per month; the JOLTS quit rate is rising; income of the lowest 2/5th of the labor force is rising; personal consumption is healthy and supportive; consumer sentiment is high to very high; inflation is in check and close to the 2% FOMC target; household savings is above average; and oil prices/gasoline prices have sank (producing a tax cut effect). These are not signs of an economy ready to fall into a recession for a GDP that is 70% attributable to consumption. However, the rapid and significant expansion of corporate debt and certain types of consumer debt (high risk car loans and student debt) are causing concerns. Also, the brief global growth synchronization in 2017 has given way to decoupling where the US has remained the single major economy experiencing a positive rate (change) of growth while China and Europe are witnessing a systematic slowdown. However, once the fiscal shot in the arm wears off next year, we will also see our economy slowing and returning to its natural rate of growth and re-synchronize with the rest of the world downward.

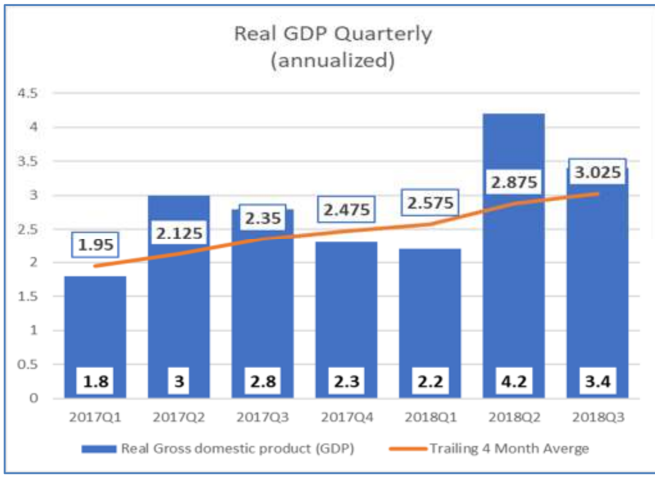
Adding to this are the geopolitical risks bubbling under the surface as the US retreats from being engaged and serving as the global police and unquestioned leader. The uncertainties created by a revival of populism, nationalism and tribalism can be increasingly hard to contain. These sentiments have been bolstered by (1) the ravages of the Global Financial Crisis, (2) the natural political responses to local grievances through the expression of trade disputes (tariffs, sanctions, supply chain disruptions, etc.) and (3) xenophobia (Brexit, "Build that Wall", etc.) to fit a world view of scarcity rather than abundance and of fear rather than cooperation. These factors weigh on investors pricing the future of corporate earnings and growth. These uncertainties filtered ultimately into corporate actions for taking risk and making investments and political actions that will ultimately lead to lower standard of living and income.

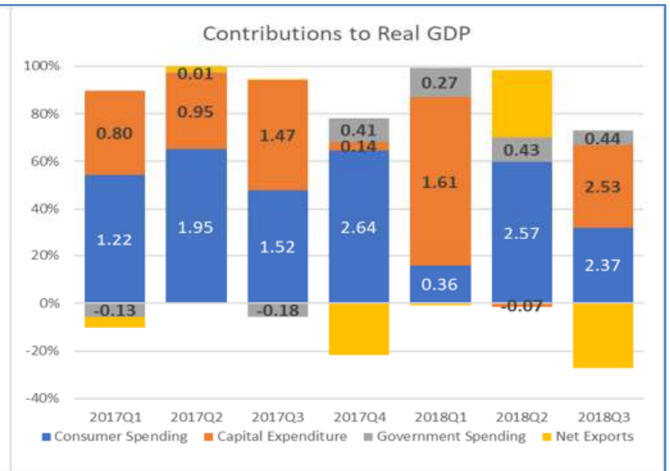
The likely outcome distribution around these two factors — interest rate (Rate Normalization and QT) policy and economic growth — continues to generate uncertainty for market participants. Adding to this is the rapid actions from algorithmic trading. Basically, humans establish a set of rules - algorithms - to generate automatic buy or sell instructions. This could add significantly to market volatility. With the systematic removal of accommodative monetary policy and the diminishing impact from a turbocharged, pro cyclical fiscal injection, investors are attempting to reprice the future, and the market volatility is more like 2015 than 2017.

The American Economy — Past the Cyclical Prime

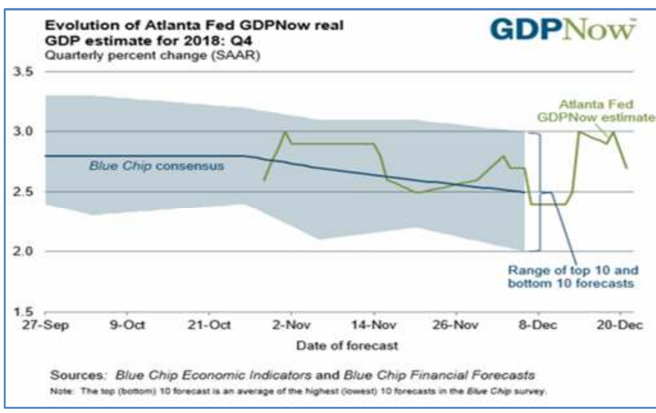
The US real gross domestic product (GDP) expanded at an annual rate of 3.4% (or nominal annualized rate at 4.9%) in the third quarter of 2018, according to the final estimate released by the Bureau of Economic Analysis[2] (BEA). This is a 0.1% revision down from the second estimate.

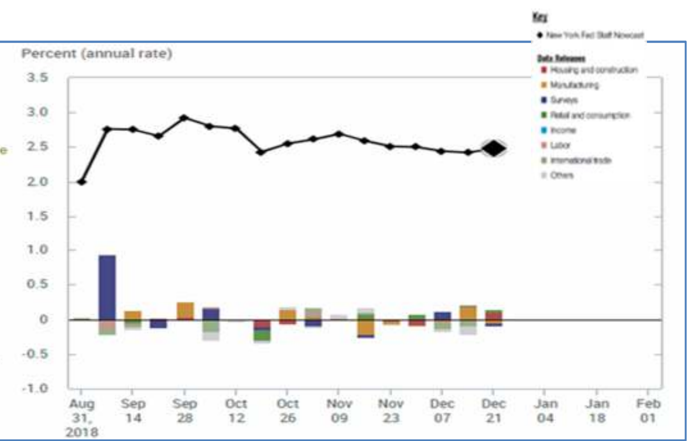
[2] https://www.bea.gov/data/gdp/gross-domestic-product





On a trailing basis, the US economy is growing at a 3% annualized rate. In the third quarter, consumer spending remained steady and capital spending was an equal contributor. The third quarter GDP would have been higher if not for the almost 2% detraction from net exports. As of December 21, 2018, the Atlanta Federal Reserve's GDPNow projects the fourth quarter GDP to be at 2.7% while the New York Federal Reserve's Nowcast projects 2.48%. If the real GDP turns out to be at 3%, the economy would have been growing at the rate of 3.2% for 2018.





The following table plots the real GDP per year since 2000. 2018 will mark the highpoint for the US economy since 2005.

The boost in GDP since the first quarter this year is substantially due to the pro-cyclical tax reform enacted in January. We expect benefits from the almost $2 trillion of front-loaded tax benefits to continue to be evident in this quarter and the first two quarters of 2019, albeit diminishing. The economy will likely settle back into the natural rate of growth beginning in the second half of next year. Assuming there will be no significant fiscal stimulus (e.g. a major infrastructure bill, another tax cut, etc.) coming out of the divided government, the strongest growth is clearly behind us in this long economic cycle.

In October this year, the semiannual World Economic Outlook published by the IMF revised down the world output for 2018 from 3.9% for both 2018 and 2019 to 3.7%. In the case of the US, the growth rate is projected at 2.9% for 2018 and 2.5% for 2019, a 0.2% downward revision.

In mid-November, the OECD published its latest growth projections for the world[3]. The US is projected to finish this year at 2.9% and trend down to 2.7% and 2.1% for 2019 and 2020 respectively. With China also slowing, the growth rate globally is also revised down for 2019.

Real GDP growth revised down

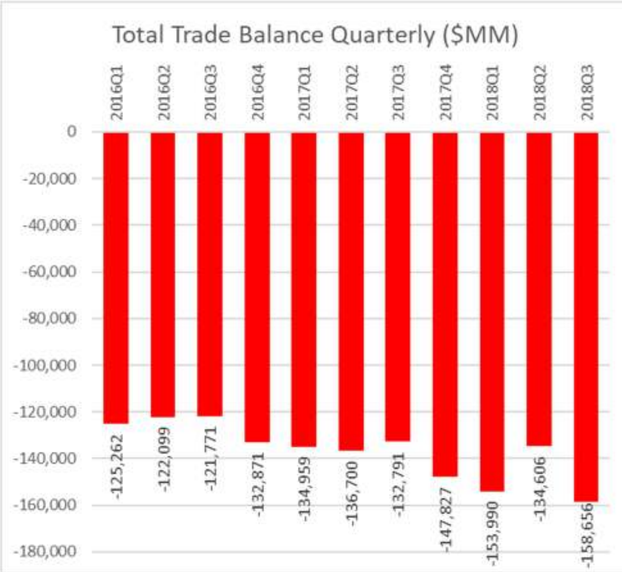
Year-on-year, %. Arrows for 2018 and 2019 indicate the direction of revisions since September 2018.

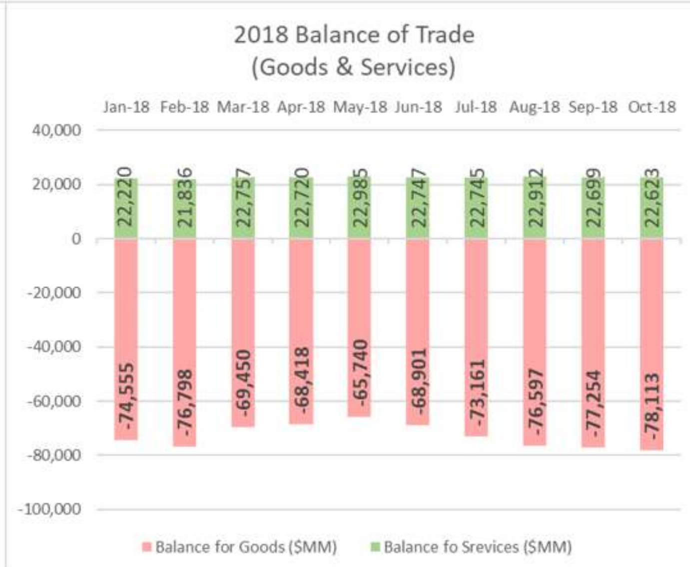
	2018	2019	2020*		2018	2019	2020*
World	3.7	3.5	3.5				
G-20	3.8	3.7	3.7				
Australia	3.1	2.9	2.6	Argentina	-2.8	-1.9	2.3
Canada	2.1	2.2	1.9	Brazil	1.2	2.1	2.4
Euro area	1.9	1.8	1.6	China	6.6	6.3	6.0
Germany	1.6	1.6	1.4	India[1]	7.5	7.3	7.4
France	1.6	1.6	1.5	Indonesia	5.2	5.2	5.1
Italy	1.0	0.9	0.9	Mexico	2.2	2.5	2.8
Japan	0.9	1.0	0.7	Russia	1.6	1.5	1.8
Korea	2.7	2.8	2.9	Saudi Arabia	1.7	2.6	2.5
United Kingdom	1.3	1.4	1.1	South Africa	0.7	1.7	1.8
United States	2.9	2.7	2.1	Turkey	3.3	-0.4	2.7

The Secretary General of OECD, Angel Gurría, in his opening remarks on November 12, 2018, stated that "[t]oday's Economic Outlook points to a global economy that is losing steam, with the pace of global expansion easing from 3.7% this year to 3.5% in both 2019 and 2020. And one major reason for this is a breakdown in co-operation. The imposition of new tariffs and uncertainty about further restrictive trade actions are contributing to a marked slowdown in trade growth, dampening global investment and threatening jobs and living standards. The international rules-based system that has governed trade since the end of the Second World War has been undermined."

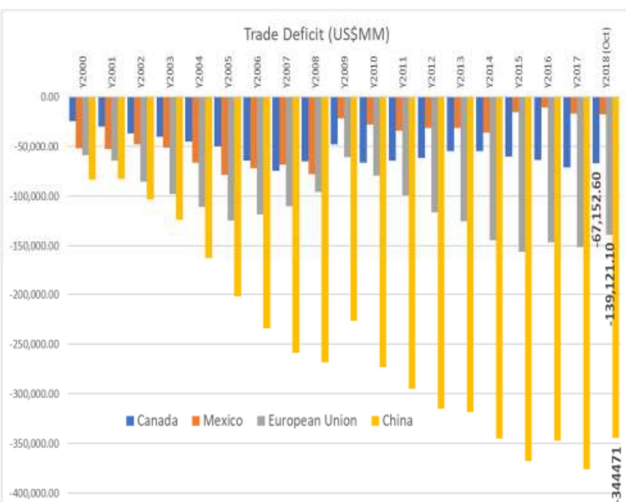
[3] http://www.oecd.org/economy/global-growth-is-slowing-amid-rising-trade-and-financial-risks.htm

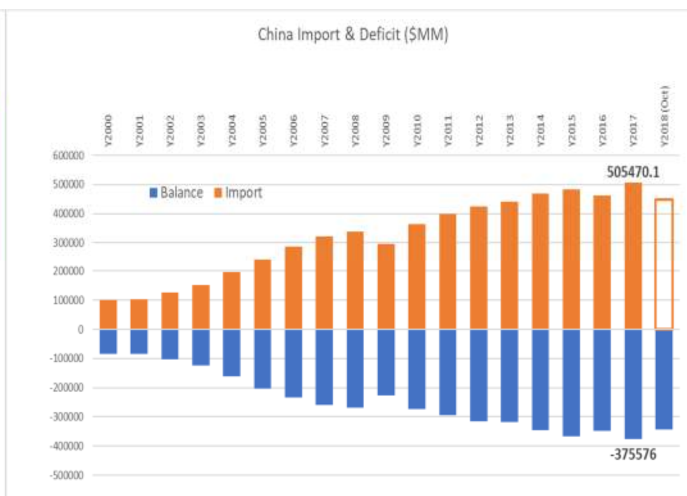
Trade — The Volatile Variable





In spite of, and perhaps as a result of, the trade disputes and the challenges to the post WWII international economic integration, economic development, global trade institutions and multilateral trade agreements, we have witness an increasing trade deficit. This is partially due to a strong dollar (making foreign goods less expensive), improving employment and wages (consumers have more capacity and willingness to spend), and front running the worsening trade tariffs (importing goods prior to tariff application or increase). China is expected to reach





total imports of $550 billion this year with a deficit of over $410 billion. (Last year, the trade deficit with China was $376 billion.) This worsening trade deficit is also aggravated by the 2018 Tax Cuts and Jobs Act where US households have income to spend. The third quarter GDP would have been stronger if not for the drag caused by the excess trade imbalance. Perhaps with a weaker US dollar and less front-loading of China goods in 2019, the trade deficit will shrink and lead to a smaller drag on the GDP. Although the trade with China is the focus, "free" trade with our neighbors and with the EU remains unresolved or finalized.

The Central Economic Working Conference (CEWC) concluded in Beijing recently. The press release suggests the Chinese government put building an advanced manufacturing sector and promoting the domestic market as the top policy priorities in 2019. There are some signs of further easing of monetary and fiscal policies, but the tone on the property market and local government financing remains hawkish. We think that, compared with the past years, the government is more willing to tolerate slower growth in 2019. We see risks to our 2019 GDP forecast of 6.3% on the downside.

In the past two years, CEWC emphasized supply side reforms as the top priority. This year the top priorities were given to building an advanced manufacturing sector and promoting domestic markets. This shift of focus is likely driven by the trade war. China will likely aim to become more self-reliant on key technologies. On the domestic market, the government plans to promote: (1) service sector including education, childcare, elderly care, healthcare, culture, and tourism; (2) commercial application of 5G; (3) AI, industry of internet, IoT (Internet-of-Things); and (4) investment in inter-city transportation, logistics and urban infrastructure.

There is no discussion in the press release on the growth target for 2019. The convention is that the growth target is set at CEWC but announced only at the National People's Congress on March 5 in the following year. China's GDP growth has slowed to 6.5% in Q3 this year and is widely expected to slow further in Q4 2018 and first half 2019. We expect the government to guide down growth to below 6.5% and to aim at 6.0%-6.5% as a range for the growth target in 2019.

China's pivot away from export dependency (Factory Floor to the World) to a more balanced economy, one with consumption and services, is not new. Under this model, it is understood and expected to see a gradual slowing of its GDP. Further, as the second largest economy in the world, it is unrealistic to expect it to grow at a 6 to 8% level. (US is growing at least on a 3% level forward.) During the last couple of years, China was also taking steps to open up its financial system, beef up its social safety net and positively deal with leverage in the economy. Controlling and navigating a transitory slowdown to a stable and sustainable growth rate is difficult by any means, but it is further complicated by the US trade dispute efforts. One thing is very clear, the Communist Party will take every measure to minimize undue hardship to its citizens and to guard against widespread discontentment against the one-party system. Being a pragmatic culture, China will do the minimum necessary to appease the Trump Administration. (A much harder effort would be needed if America is joined by its traditional trading allies in demanding changes in China's trade and IP practices.) Internally, further easing of monetary and fiscal policies would be obvious to cushion a sudden slowdown (partially due to trade) and to sustain domestic growth. Our base case is a concession by China to the U.S. will give President Trump face-saving, bragging rights. We believe there is an upside bias to investing in China and related EM and developing economies. However, the relationship between China and the US has changed, and it will not be business as usual. The US's actions may result in pushing China to be more independent and to look domestically or regionally for growth and support.

On October 1st, the leaders of US, Mexico and Canada reached a consensus, after more than a year of talks, to amend the North American Free Trade Agreement (NAFTA) and rename it as the United States-Mexico-Canada Agreement, or USMCA[4]. All three countries must still ratify USMCA. Under the new agreement, the main changes to NAFTA are primarily benefiting the US with other countries having gained very little advantage:

1. Cars or trucks must have 75%, instead of the current 62.5%, of their components manufactured in the three countries to qualify for zero tariffs. This will increase the cost of vehicles made in Mexico.
2. 40% to 45% of automobile content to be made by workers paid at least $16/hour by 2023. This provision specifically targets Mexico to bring wages more comparable to US and Canadian standards. This intends to minimize the labor cost advantage to move auto manufacturing to Mexico by our auto companies.
3. Mexico agrees to pass laws giving workers the right to real union representation, to extend labor protections to migrant workers (from other countries), and to protect women from discrimination.
4. Canada opens up its milk market. US will export dairy, poultry, and eggs to Canada, and in exchange, the US will provide new access to Canada for dairy, peanuts, processed peanut products, and a limited amount of sugar and sugar containing products. Canada will provide new tariff rate quotas exclusively for the United States.
5. Countries agreed to extend the terms of copyright from 50 years beyond the life of the author to 70 years. They also agree to extend the period that a drug can be protected from generic competition from 8 years to 10 years.
6. The Agreement updated protection and enforcement of IP rights.

A side letter agreement was also reached with the US that allows Canada and Mexico to continue sending about the same amount of vehicles and parts across the border free of tariffs, regardless of any future applicable tariffs on autos or parts. However, the 25% tariff on Canadian steel remains in place.

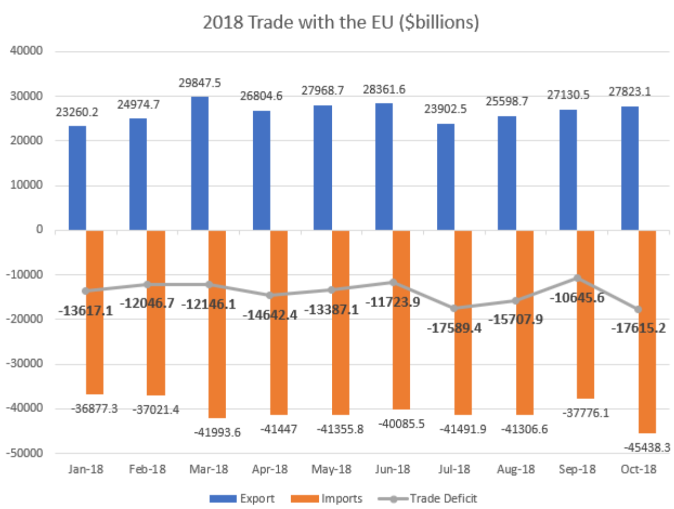
Although on November 30th at the G-20 summit in Argentina, President Trump, Canadian Prime Minister Justin Trudeau and Mexican President Enrique Peña Nieto signed the agreement, the new USMCA deal has to be ratified by the legislatures of the three countries; the signed deal remains not a done deal. This is a risk to more uncertainties to come with a newly elected Congress here and a new government in Mexico.

On July 25th, President Trump and European Commission President Jean Claude Juncker, averted (or perhaps delayed) the US tariffs on autos and auto parts in exchange for increasing exports of US soybeans and building terminals to import US liquefied natural gas[5]. The EU basically offered what it was already intending to do. The Trump Administration is continuing

[4] https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between

[5] https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-launches-new-reciprocal-trade-relationship-european-union/

to push for negotiations on the Transatlantic Trade and Investment Partnership (T-TIP) agreement[6] which began under the Obama Administration in 2013.

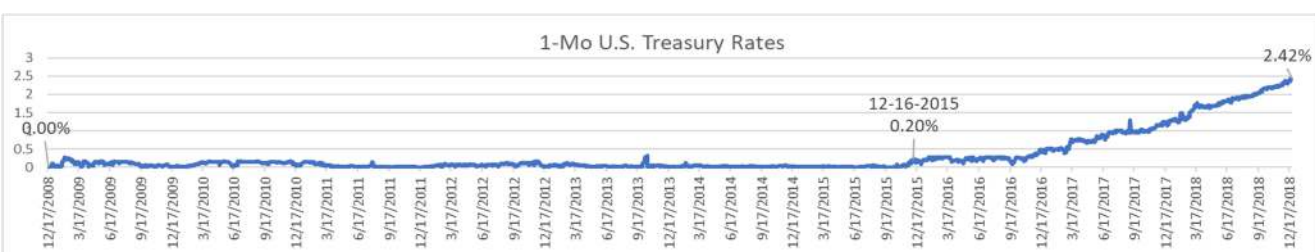


According to the Census Department[7], the 2018 monthly trade showed a deficit with the EU. US goods and services traded with the EU totaled nearly $1.2 trillion in 2017: $527 billion in exports and $627 billion in imports. The US goods and services trade deficit with the EU was $100 billion in 2017. According to the Trade Representative Office on October 16, the Administration is gearing up to continue negotiation with the EU. In their July 25 joint statement[8], the negotiation objectives are broad and both sides will rely on the newly formed Executive Working Group: "to work together toward zero tariffs, zero non-tariff barriers, and zero subsidies on non-auto industrial goods." Although the news media and the public face of the Administration are focused on the new public enemy, China, the negotiation with EU and the possible fallout have moved somewhat into the background. However, this is very much a part of the economic uncertainty related to trade stability. The base case, however, is a rocky road to a deal in 2019 as Europe begins to show definitive signs of slowing and can ill afford being tough with the Americans, especially when it has BREXIT and Italian debt to deal with too.

Trade disputes, imposition of mutual tariffs or even trade wars between countries in and of itself are not significant enough to affect the US since we are a relatively closed economy, but the secondary effects on business and consumer confidence and sentiments and their impacts on investment, employment, and wages are impossible to gauge. Therefore, we may lose before we win under the rightfully or wrongfully self-imposed trade fights.

The Ever-Changing Curve

The US treasury yield curve is a line that connects the interest rates of US treasury bills, notes and bonds based on their maturity dates. This forms the reference rates or "risk free" rates (by

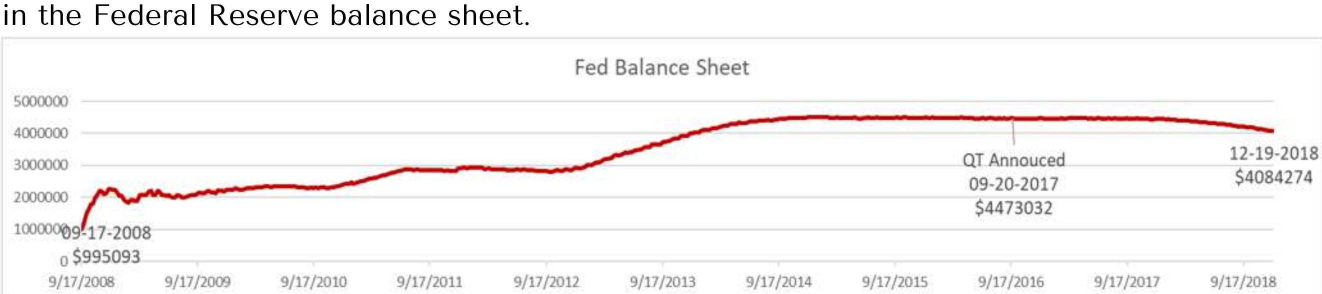


[6] https://ustr.gov/trade-agreements/free-trade-agreements/transatlantic-trade-and-investment-partnership-t-tip/t-tip
[7] https://www.census.gov/foreign-trade/balance/c0003.html
[8] http://europa.eu/rapid/press-release_STATEMENT-18-4687_en.htm

definition, there is no default risk to US treasury issued obligations) by which investors may price other bonds and obligations. The Federal Reserve reacted to the Financial Crisis by reducing interest rates to near 0% in their December 17, 2008, meeting and began the zero-interest rate policy (ZIRP) environment. According to CNBC[9], "[m]arkets surged even higher when the Fed first embarked on its zero-bound policy on Dec. 16, 2008, in response to the financial crisis. That day, the S&P 500 spiked 5 percent and the Dow jumped 4.2 percent." It was not until December 16, 2015, that the FOMC increased the Federal Funds Rate by 25bp from the range 0% - 0.25% to the range 0.25% - 0.5%.

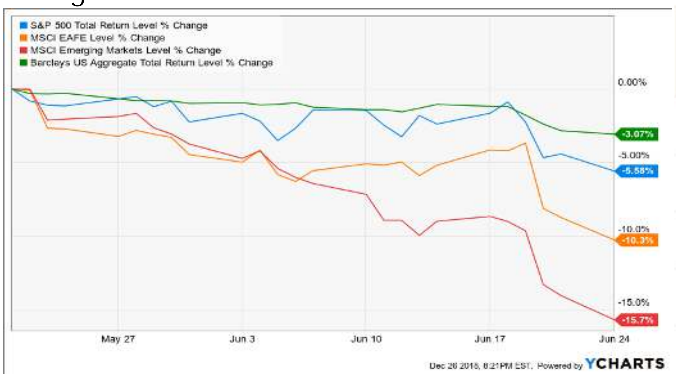
The December 16, 2015, FOMC meeting Press Release, stated that "there has been considerable improvement in labor market condition that year, and it is reasonably confident that inflation will rise, over the medium term, to its 2% target range objective. Given the economic outlook and recognizing the time it takes for policy actions to affect future economic outcomes, the Committee decided to raise the target range." According to the same CNBC report, "On Dec. 16, 2015, when the Fed boosted rates by 0.2%, the S&P 500 rose 1.45%, while the Dow Jones industrial average climbed 1.28%. The enthusiasm was short-lived, however, and the S&P sank more than 11% by mid-February."

With an ever improving economic and labor environment, the FOMC continues to look to "normalize" interest rates from ZIRP to the neutral rate (i.e. r*) gradually, as extraordinary measures are no longer needed for (in fact they can become harmful to) the economy. Since the first-rate normalization in 2015, the FOMC has raised interest rates 8 more time (Dec 2016, 3 times in 2017 and 4 times in 2018). During the height of the Financial Crisis, the Federal Reserve also commenced its large asset purchase program by buying government securities (treasuries and mortgage backed securities, etc.) from the market in order to lower long-term interest rates and increase the money supply. This ushered in the unconventional monetary policy frequently referred to as Quantitative Easing or "QE". We witnessed a 4-fold increase in the Federal Reserve balance sheet.



[9] https://www.cnbc.com/2016/12/14/heres-what-the-market-did-the-last-two-times-the-fed-raised-rates.html

On May 21, 2013, in then Chairman Ben Bernanke's testimony before Congress, he suggested that the FOMC may taper, or reduce, the size of its bond-buying program. This comment caught the market by surprise, and it remained volatile for several months. Finally, during the September 20, 2017, meeting, the FOMC agreed to begin the much anticipated tapering or Quantitative Tightening ("QT") of the Federal Reserve's balance sheet. The schedule of monthly reduction caps is herebelow[10]. Since then, the QT process has gone on quietly in the background.



	TREASURY SECURITIES	AGENCY SECURITIES*
Oct – Dec 2017	$6 billion	$4 billion
Jan – Mar 2018	$12 billion	$8 billion
Apr – Jun 2018	$18 billion	$12 billion
Jul – Sep 2018	$24 billion	$16 billion
From Oct 2018**	$30 billion	$20 billion

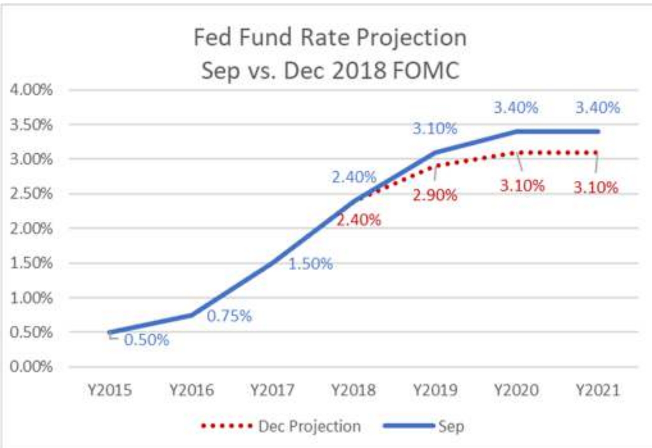
The FOMC members have stated on a number of occasions that the balance sheet is not considered a primary tool in making monetary policy. The FOMC will continue to rely on interest rates as its preferred tool along with forward guidance. However, it is not easily discernable as to the full impact QT has on interest rates and ultimately the financial condition.

The bottom line to all this is that the market has gotten used to ZIRP and QE, and the fact that the FOMC is conducting Rate Normalization and QT upsets the apple cart. The immediate manifestation of displeasure is a market selloff. It is no different this time.

The FOMC Press Release[11] for its December meeting stated that further gradual increases in the target range for the federal funds rate will be consistent with its dual mandates. Going forward, the FOMC will not be on a set path for rate hikes (typical, rule-based methodology of old) and continue to assess realized and expected economic conditions (data dependency of new). This assessment will consider a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. In Chairman Powell's prepared remarks[12] for the press conference, he reiterated the strength of the economy, the vibrancy of labor and job market, rising income, and the inflation rate being close to its target of 2% as all roughly in line with The FOMC's expectations. However, there is evidence that may signal some softening as compared to previous periods and that 2019 may be less "kind" to the FOMC forecasts as in 2018. In response, rate hikes for 2019 are reduced from three (75bp) to two (50bp) hikes.

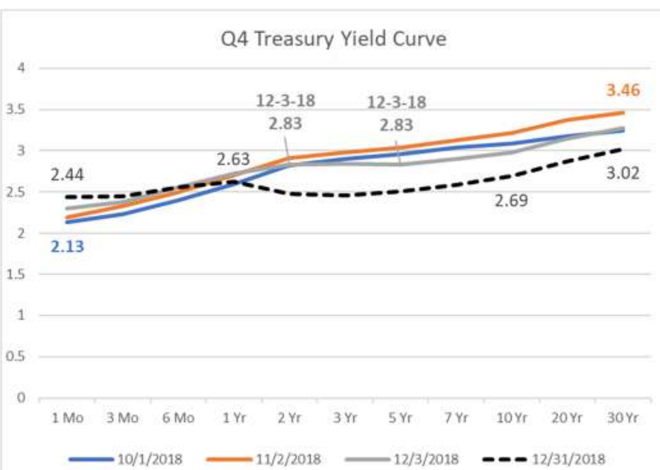
[10] https://www.newyorkfed.org/markets/opolicy/operating_policy_170920
[11] https://www.federalreserve.gov/monetarypolicy/files/monetary20181219a1.pdf
[12] https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20181219.pdf

The Summary of Economic Projections (SEP) released for this final meeting represents a compilation of the individual projections of all FOMC participants. The median of these projections is often used to illustrate the broad middle of views of the FOMC. Each participant's projection represents appropriate policy under their own baseline outlook, but the median is not a consensus judgment and certainly does not represent FOMC's forward actions or plans. However, it does provide transparency to what the members are considering.



The left chart summaries the median expected Fed Funds rate paths from September and December 2018 projections. According to the December projection, three rate hikes are expected between 2019 and 2020 with two in 2019 and one more in 2020. In the longer run (not shown on this chart), the projection is 2.8%, a rate decrease in 2021 or beyond. With the clear understanding that the median forecast for interest rates does not equate to FOMC rate action, it is reasonable however to suggest that the neutral rate range is 300 – 325bp.

What has been extraordinary is the shape of the yield curve during the tumultuous fourth quarter. Here are two graphs showing how the curve has changed over time.

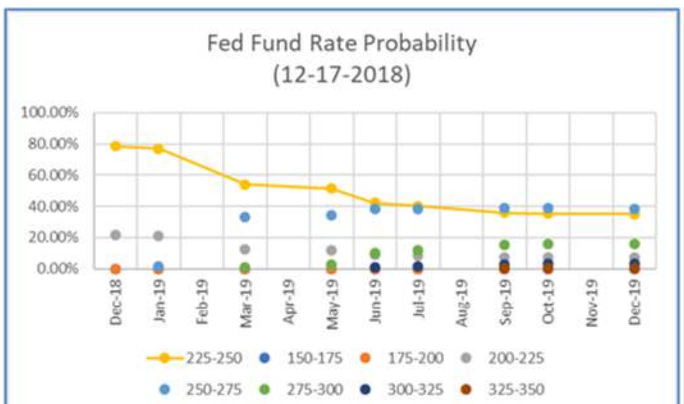


The upper left graph shows an inverted yield curve between the 1- and 7-year treasury. The curve turns back, barely, positive at the 10-year treasury. It is clear that the front end of the yield curve has moved up as the FOMC normalized rates, but it is unexpected that the drop in rates are at the longer end of the yield curve. This segment of the curve informs us of the lack of confidence in long term interest rates going beyond 2%, and the economy is not likely supportive of many more rate hikes. This is also the part of the yield curve that tends to attract assets when equities are selling off. Perhaps this low yield for the 10-year treasuries is transitory. As the equities market recovers, the yield will naturally move higher. The second graph compared the yield spread between the 3-month bills and 10-year treasuries and the 2-year and 10-year treasuries. There is almost no difference. The entire yield curve has continued to flatten and with a portion even inverted.

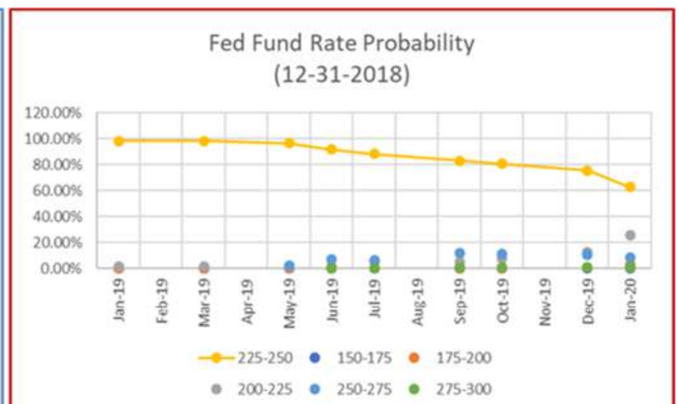
Median Projections	Y2018	Y2019	Y2020	Y2021	Longer run
Change in real GDP	**3.0**	**2.3**	2.0	1.8	**1.9**
Sep projection	3.1	2.5	2.0	n.a.	1.8
Unemployment rate	**3.7**	3.5	**3.6**	**3.8**	**4.4**
Sep projection	3.7	3.5	3.5	3.7	4.5
PCE inflation	**1.9**	**1.9**	2.1	2.1	2.0
Sep projection	2.1	2.0	2.1	2.1	2.0
Core PCE inflation	**1.9**	**2.0**	**2.0**	**2.0**	
Sep projection	2.0	2.1	2.1	2.1	
Memo: Projected appropriate policy path					
Federal funds rate	2.4	**2.9**	**3.1**	**3.1**	**2.8**
Sep projection	2.4	3.1	3.4	3.4	3.0

The SEP also revised downward the annual real GDP for the next few years. This is consistent with IMF and OECD projections. In the case of unemployment, the projection for December revised up by 0.1% in 2020 and 2021 with core PCE inflation revised lower by 0.1% for the next 36 months.

The reaction to the December 2018 FOMC rate hike decision was spectacular. Somehow, as the FOMC date got closer, the market got increasingly concerned that the "punchbowl" would be drained some more and the "party" was progressively ending. The market convinced itself that the FOMC will see the same "slowing" data and the absence of inflation and that it would be a dovish December meeting. Encouraged by President Trump's Tweets and public comments[13] that he was against rate hikes and wanted to keep interest rates low, the market was hoping for no hike and/or a one and done "forward guidance" by Chairman Powell. The following charts show the probability of rate hikes for the December 18th meeting was 78.4% with a likelihood of one more hike in 2019. As of year-end, the probability has shifted in several ways. First, the market is pricing in no more hikes in 2019 (see yellow line), and second, the market is beginning to consider the possibility of a rate reduction towards the end of 2019 and into 2020.



Rate Range	Dec-18	Jan-19	Mar-19	May-19	Jun-19	Jul-19	Sep-19	Oct-19	Dec-19
150-175	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
175-200	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
200-225	21.60%	21.20%	12.40%	11.70%	9.00%	8.40%	7.20%	7.10%	7.10%
225-250	78.40%	77.10%	54.00%	51.50%	42.20%	40.20%	35.80%	35.20%	35.10%
250-275		1.70%	32.90%	34.10%	38.20%	38.40%	38.70%	38.60%	38.50%
275-300			0.70%	2.60%	10.00%	11.70%	15.40%	15.90%	16.00%
300-325					0.60%	1.20%	2.70%	2.90%	3.00%
325-350							0.20%	0.30%	0.30%

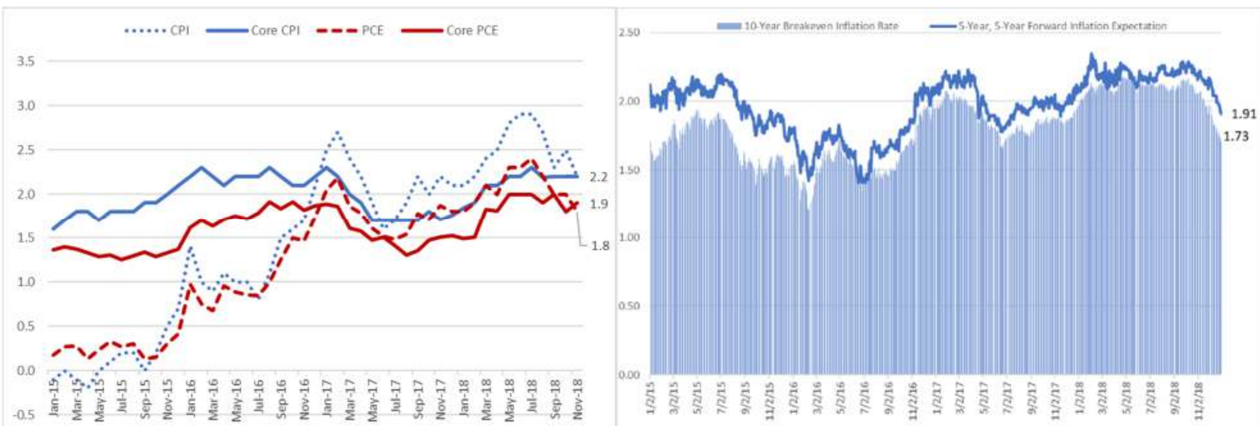


Rate Range	Jan-19	Mar-19	May-19	Jun-19	Jul-19	Sep-19	Oct-19	Dec-19	Jan-20
150-175	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%
175-200	0.00%	0.00%	0.00%	0.00%	0.10%	0.10%	0.20%	0.70%	3.10%
200-225	1.60%	1.60%	1.60%	1.50%	5.20%	4.90%	7.40%	12.80%	25.30%
225-250	98.40%	98.40%	96.50%	91.70%	88.20%	83.00%	80.70%	75.60%	62.60%
250-275			2.00%	6.70%	6.40%	11.60%	11.20%	10.40%	8.40%
275-300				0.10%	0.10%	0.50%	0.50%	0.40%	0.40%
300-325									
325-350									

[13] https://www.bloomberg.com/news/articles/2018-12-17/all-the-trump-quotes-on-powell-as-attacks-on-fed-intensify

In our December 3, 2018, analysis, "r* in Three Acts[14]" and in our third quarter commentary, we hold the view that r* is at or around 3%, which is approximately 1% above the core PCE inflation rate. (In the past, the long-term neutral rate has been 200bp above inflation, or this would be a 4% target today.) It is important to note that the r* we are referring to is the neutral rate for this economic cycle. This also means that the Rate Normalization process is expected to be topped out for this cycle at 2.75% to 3%. The long-term r* on the other hand is expected to be lower to much lower than the past since disinflation is more likely than inflation as a longer term threat due to well known factors of demographics and digitization of the world. Language is never perfect, and it is helpful to be timeframe specific. We affirm that we still expect two 25bp hikes in 2019. With eight live meetings, the FOMC has the full flexibility to pause, wait or raise rates. We are not in the camp of asking for or expecting a rate decrease in 2019.

Inflation - Still in Check

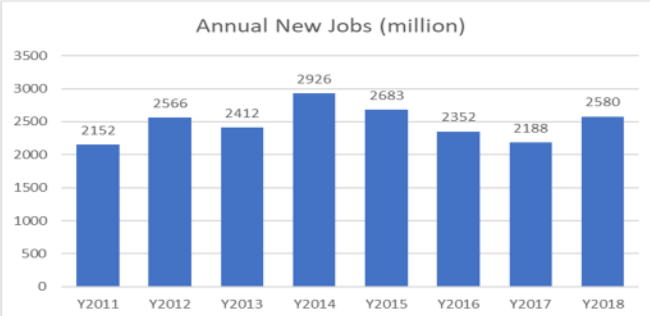


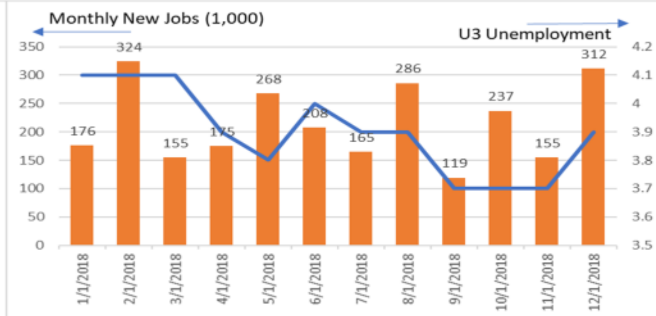
The November 2017 BLS CPI report shows that core CPI remains flat at 2.2% while the CPI dropped from 2.5% annualized rate in October to 2.2%. This is primarily due to a 4.2% drop in energy (commodities, gasoline and fuel oil) prices. The November Personal Income and Outlays release by BEA shows that core PCE increased from the prior month by 0.1% and is at an annualized rate of 1.8%. This is a drop from 2% in October. The FOMC's preferred inflation measure, core PCE, came in at 1.9%, an increase of 0.1% from the prior month.

Market-based measures for inflation show a continuing decline since mid-September. The "5-Year, 5-Year Forward Inflation Expectation Rate", a measure of expected inflation (on average) over the five-year period that begins five years from today, expects the same rate as CPI today at 1.9%. The "10-Year Breakeven Inflation Rate" at 1.7% represents a measure of expected inflation derived from 10-Year Treasury Constant Maturity Securities and 10-Year Treasury Inflation-Indexed Constant Maturity Securities. At this point, the current inflation rate (headline or core) and the 5-year are almost identical. The 10-year forward inflation expectation is a bit disturbing as market participants do not expect the FOMC can reflate the economy. As such, this would support a pause as we are very close to r*.

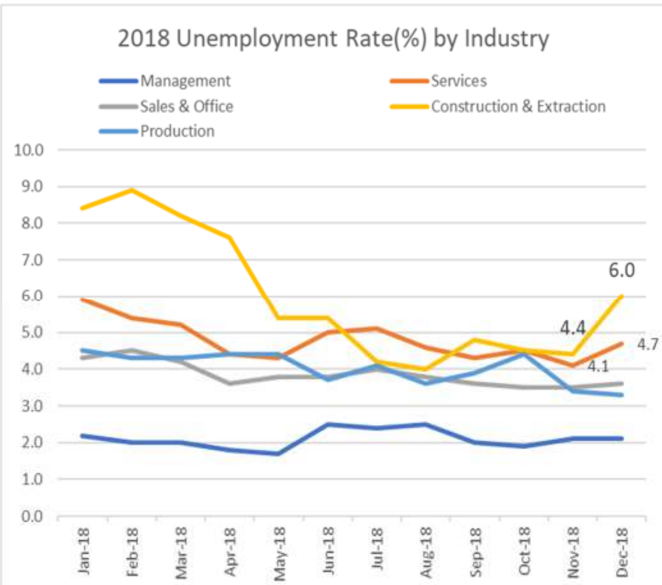
[14] https://chaoco.com/behind-the-headline-r-stars-in-three-acts/

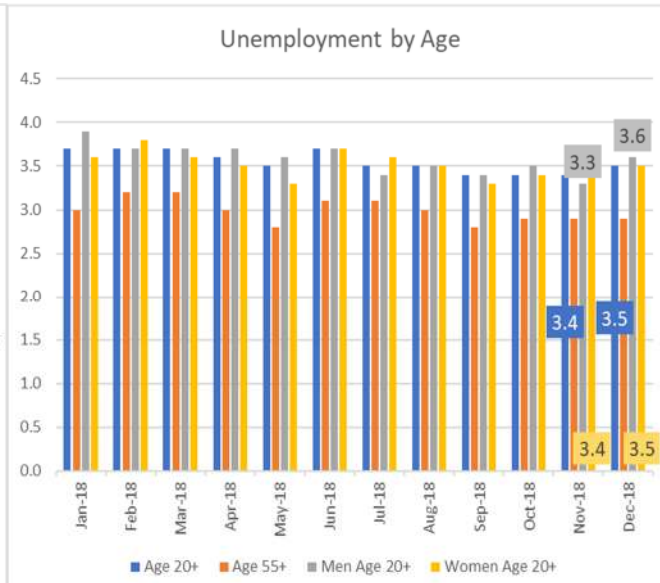
Employment & Wages — Bright Spots





The unbelievable 312,000 new jobs reported in the December Employment Situation Summary from BLS surprised even the most optimistic among us. Although this number may be revised downward, any number over 200,000 would be significant.





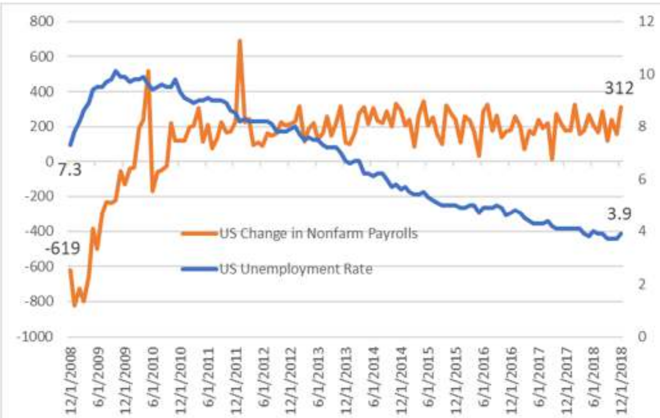
The headline unemployment rate rose by 0.2% to 3.9% in December. The underlying industry specific unemployment data shows a sharp rise from 4.4% to 6% in the Construction and

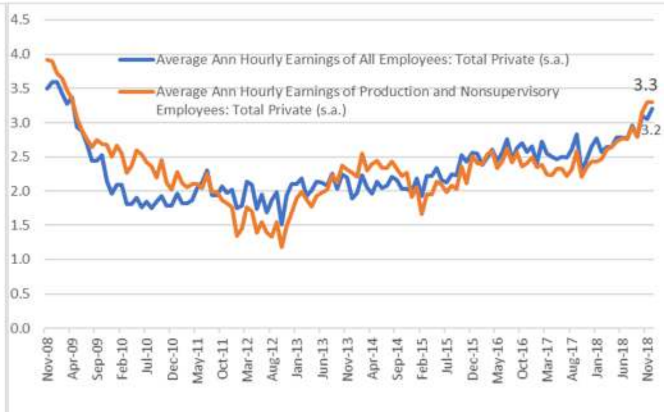
	# of Unemployed (1,000)		Unemployment Rates	
Industry and class of worker	2017 Dec	2018 Dec	2017 Dec	2018 Dec
Total, 16 years and over(1)	6,278	6,029	3.9	3.7
Nonagricultural private wage and salary workers	4,841	4,605	3.8	3.6
Mining, quarrying, and oil and gas extraction	41	21	5.1	2.6
Construction	554	493	5.9	5.1
Manufacturing	505	441	3.3	2.8
Durable goods	289	231	3.0	2.3
Nondurable goods	217	210	3.8	3.5
Wholesale and retail trade	841	753	4.1	3.7
Transportation and utilities	208	280	3.0	3.9
Information	108	103	3.8	3.9
Financial activities	143	248	1.5	2.4
Professional and business services	712	723	4.2	4.3
Education and health services	706	519	3.0	2.1
Leisure and hospitality	833	814	6.2	6.0
Other services	189	211	2.8	3.0
Agriculture and related private wage and salary workers	210	151	11.9	8.6
Government workers	460	526	2.2	2.5
Self-employed workers, unincorporated, and unpaid family workers	287	251	2.9	2.5

	< 5Wks	5 to 14 Wks	15 to 26 Wks	27Wks +
Jan-18	2271	1927	959	1428
Feb-18	2458	1900	933	1403
Mar-18	2266	1976	900	1337
Apr-18	2121	1975	1018	1311
May-18	2019	1906	967	1197
Jun-18	2218	1865	862	1467
Jul-18	2092	1818	959	1418
Aug-18	2199	1722	927	1320
Sep-18	2065	1751	861	1379
Oct-18	2062	1845	859	1370
Nov-18	2128	1842	865	1259
Dec-18	2126	2027	897	1306

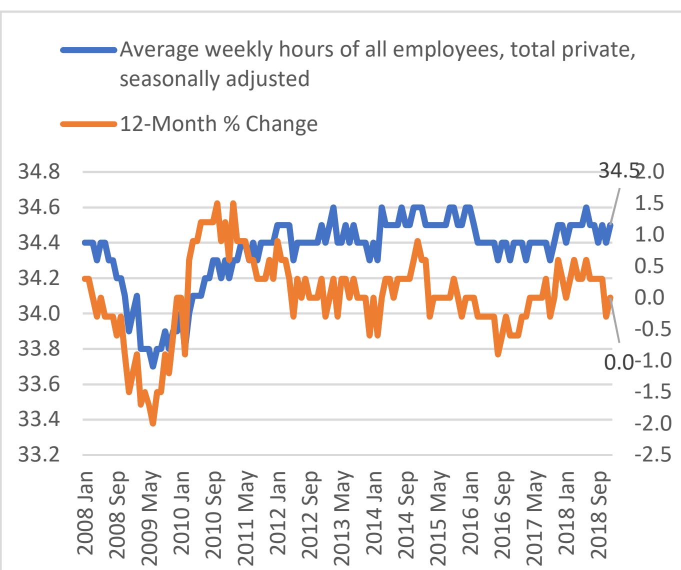
Extraction sector of the economy. We also see an unemployment increase in general in the Services sector from 4.1% to 4.7%.

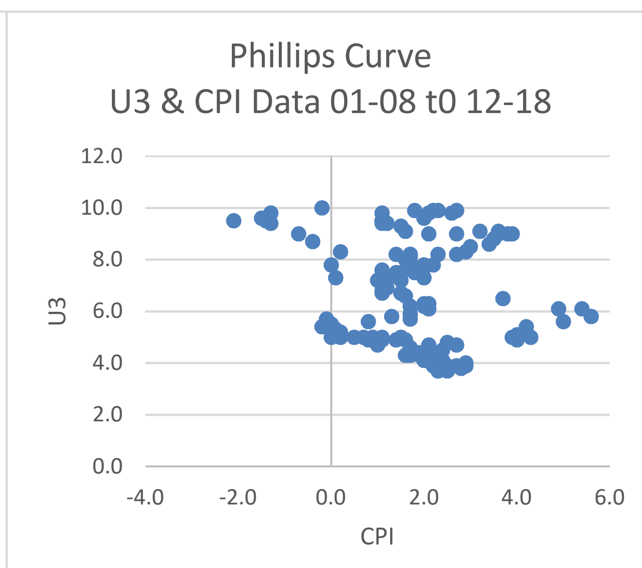
The above table to the left shows detailed industry breakdowns comparing December 2017 and 2018 data. It shows that, except for 5 categories, the unemployment rates have continued to come down among many sectors. The December 2018 increase from November could be partially explained by workers quitting to find new jobs. The above right table shows a meaningful increase in 5- to 14-week job seekers.





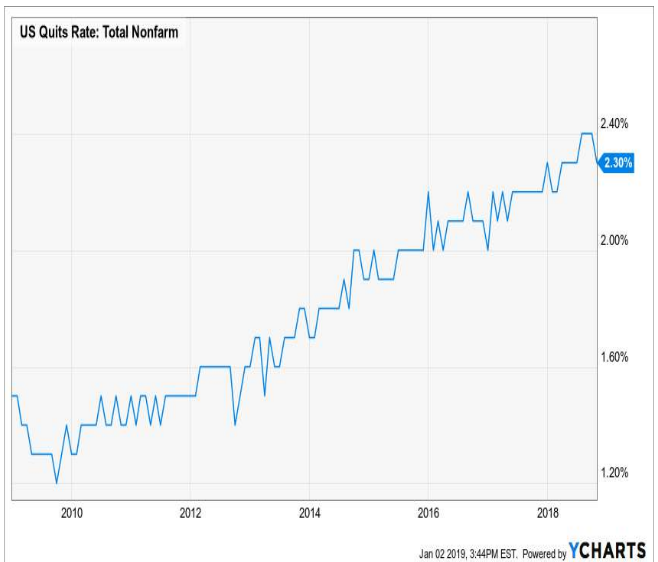
The miraculous US labor economy continues to surprise us all. At a U3 unemployment rate of 3.9%, the economy continues steadily creating on average 200,000 jobs each month. This speaks to how well the economy is doing and, with an increasing unemployment rate, speaks to the existence of slack in the labor force. At the current job creation rate, a 3.5% or lower U3 rate can be a reality in 2019. The labor tightness is reflecting in the average hourly earnings of workers. The average, seasonally adjusted, annualized wage is now growing in excess of 3%. The lower left graph shows the number of hours worked per week and is currently at 34.5, which equals the average 34.5 hours from 2008 Jan through 2018 Oct. This could mean that the labor





market can still squeeze some more work out of the existing workforce before seeing wages rise significantly more. The flat Phillips Curve still has to wait before normalization.

Although wages have increased since Jan 2008, the Phillips Curve (plotting US unemployment monthly data against CPI for the same period of time) shows no discernable relationship between unemployment and inflation. Most of the dots are congregated at the middle between 0% to 3% inflation regardless of unemployment rate (4 to 10%). One of the effects from a significant financial shock (Global Financial Crisis for example) is the amount of time taken for inflation to come back. For now, even after 8-years of solid employment gains, wage growth remains disappointing or at least the growth in wages is not universal. In fact, even with wage gains, it is not a certainty that workers will spend all or most of the gains and result in meaningfully restoring the Phillips Curve relationship as demographics have shifted.



The left table plots the employment Quit Rate. This is the group of employees with existing jobs voluntarily quit to find better paying or better positioned jobs. The current reading is almost at a 10-year high, an encouraging sign of a healthy and more secure job market for most. It has been for some time now that there are more job openings than the number of people looking for jobs. In a perfect world, this means an unemployment rate of zero, but skill mismatch and other reasons are causing a shortage of labor. However, the higher unemployment rate, the steady average work week and the wage increases have not demonstrated the kind of tightness we have all been expecting.

Financial Stability

During Chairman Powell's November 28th speech[15] at The Economic Club of New York, he introduced the Financial Stability Report[16]. In the report's Purpose section, it states that the Federal Reserve is to promote financial stability which is a key element in meeting the FOMC's dual mandate for monetary policy regarding full employment and stable prices. Although financial stability is not a congressional mandate for the Federal Reserve, it has significant influence over employment and price stability over time. Thus, Rate Normalization has the effect (through tightening financial conditions) of tempering future excesses in the financial markets. It would be too simplistic a view for investors to simply view monetary decisions (Forward Guidance, Rate Normalization and QT for example) as solely a response to incoming data to manage for full employment and price stability. The FOMC has a much longer policy

[15] https://www.federalreserve.gov/newsevents/speech/files/powell20181128a.pdf
[16] https://www.federalreserve.gov/publications/files/financial-stability-report-201811.pdf

time horizon than the average market participant and the two-year election cycle of politicians. The interest rate and balance sheet size decisions have long-term impacts and consequences and cannot be understood with a short-term view.

As a part of the process for meeting its dual mandates, the Federal Reserve's framework is to maintain financial stability. There is no question that there will be sudden changes to financial or economic conditions or "shocks" to the system in the future, and if the system is unstable, credit and lending flows would be disrupted, leading to increases in unemployment and shrinking economic activities. Shocks are difficult to predict, but the Federal Reserve can monitor and manage system vulnerability as they tend to build up over time. It is important to note that liquidity and maturity transformation and lending to households, businesses, and financial firms are key aspects of how the financial system supports the economy. There are four broad categories of vulnerabilities, and they often interact or feed on each other. The Report gave an illustration of how vulnerabilities lead to financial instability –

(1) elevated valuation pressures tend to be associated with

(2) excessive borrowing by businesses and households because both borrowers and

(3) lenders are more willing to accept higher degrees of risk and leverage when asset prices are appreciating rapidly. The associated debt and leverage, in turn, make the risk of outsized declines in asset prices more likely and more damaging. Similarly,

(4) the risk of a run on a financial institution and the consequent fire sales of assets are greatly amplified when there is significant leverage involved.

On December 10th, Former Federal Reserve Chair Janet Yellen spoke with New York Times columnist Paul Krugman at the CUNY Stone Center[17] on Socio-Economic Inequality about the 2008 financial crisis, her time at the Federal Reserve, and the US economy.

Krugman's questions:

1. At current low interest rate, is she worried if another shock hits?
   "Yes, absolutely, because interest rates are low, and I believe they will likely to remain lower than they have been in the past decades that pre-date the Financial Crisis. It's a developed country phenomenon. It reflects a world where savings is in some sense plentiful and the demand for it in investment is relatively weak. In a typical recession, the Fed in the past has cut interest rates by 5% and if the normal level of short term interest rates are not at this level yet, but is estimated to be around 3%, that means there is much less scope to cut interest rates."

2. Where shocks may be coming from?
   "I do not see a shock in the offing that likely cause that kind of financial crisis. I worry about leverage lending, the kind of lending to highly indebted corporations. Corporate indebtedness is now quite high and I think it is a danger if there is something else that causes a downturn, high levels of corporate leverage would prolong the downturn and lead to lots of bankruptcies in non-financial corporate sector. That's something I worried

[17] https://www.c-span.org/video/?455091-1/janet-yellen-paul-krugman-discuss-2008-financial-crisis

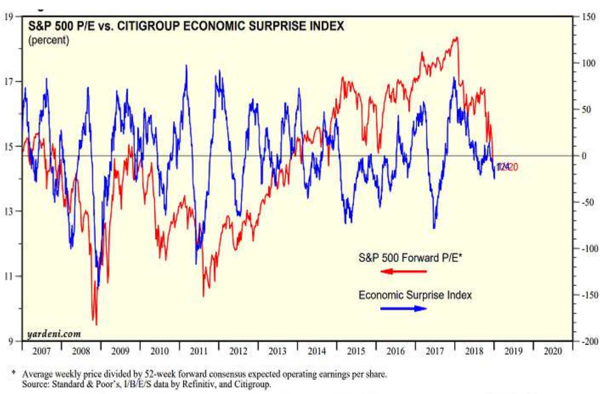
about. Thinking that many of the underwriting of that debt is weak and investors hold it in packages, like the sub-prime packages mortgages, now in the form of CLOs or collateralized loan obligations. Investors may not know how risky the loans are and their underwriting standards are very weak, but there is much less leverage on the financial sectors now, as far as I can see, relative to before the crisis. Most of those risky loans are owned by investors that are not leveraged. So, they may suffer losses but they are unlikely to turn around and sell other assets that can lead of fire sale contagion. So, I do see some risks, and I think asset prices are elevated, commercial real estate prices and very high and rates of returns are very low. But another financial crisis like the one we have, I do not see what the trigger would be."

3. Have we learned enough to prevent a similar crisis?
   "Things have improved but there are gigantic holes in the system. The tools to deal with emerging problems are not great in the US. Take leverage lending, I talked about. I don't think the banking agencies have sufficient tools. We can deal with that if it is a safety and soundness problem for a bank. But if it is a question of selling risky things into the market that can undermine financial stability, we don't have a set of tools to deal with that. We also seeing a lot of pushback against regulation. To some extent, after eight years of writing thousands of pages of regulation, it probably should be adjusted around the margins, particularly smaller institutions. But we are seeing more than that happening now, and we are entering again, only a decade after the crisis, an era of focus on deregulation. Plus, I'll say, there is an agenda of unfinished work. We made some progress, there was a big to-do list of things still needed to be worked on and I am not sure we are working on those things in the way we should and then there remains holes and then there is regulatory push back. I do worry that we would have another financial crisis."

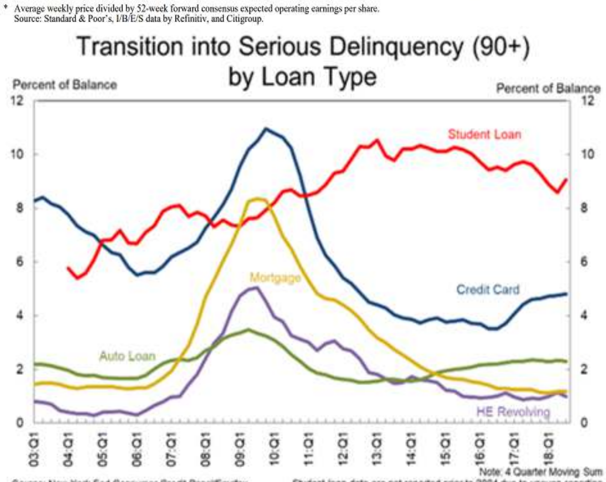
Looking forward

	Nov-18	Dec-18
Brazil Manufacturing	52.7%	**52.6%**
Canada Manufacturing	54.9%	**53.6%**
China Manufacturing	50.2%	**49.7%**
Czech Manufacturing	51.8%	**49.7%**
EZ Manufacturing	51.8%	**51.4%**
France Manufacturing	50.8%	**49.7%**
Germany Manufacturing	51.8%	**51.5%**
Global Manufacturing	52.0%	**51.5%**
Greece Manufacturing	54.0%	**53.8%**
India Manufacturing	54.0%	**53.2%**
Ireland Manufacturing	55.4%	**54.5%**
Italy Manufacturing	48.6%	49.2%
Mexico Manufacturing	49.7%	49.7%
Netherland Manufacturing	56.1%	57.2%
Spain Manufacturing	52.6%	**51.1%**
UK Manufacturing	53.6%	54.2%
US Manufacturing	55.3%	**53.8%**

The market volatility is caused by the market repricing the decelerating growth of the US and, the global economy. Years of accommodative interest rate and QE from global central banks have pushed us all to take on more risk than we would otherwise be comfortable. This safety net is slowly but definitively being removed. Rate Normalization means that investors can actually earn a reasonable (albeit still low) interest income and safe assets become more attractive to hold. As rates rise, it impacts on the value of high duration fixed income as well as stocks with high fixed income beta. At the same time, with the expectation of a slowing world, corporate earnings must be revised. Since multiple expansion is not in the cards, investors will be less focused on corporate revenue, free cash flow, and earnings. The consumer financial leverage remains sound.



The left graph plots the Citi US Economic Surprise Index and the Forward S&P 500 P/E[18]. Both have been falling since the beginning last year. The Index measures data surprises relative to market expectations. A positive reading means that the data releases have been stronger than expected and a negative reading means that the data releases have been worse than expected. The Index and the market forward P/E are both showing that the expectation of the future is lower growth and the surprise is on the down side.



Corporate leverage is rising, but as long as the economy continues to be humming along at a sustainable level around 2% with Rate Normalization in check, we can muddle through. We don't expect a recession in 2019, and the market will adjust to the new reality and stabilize and grow again.

[18] https://www.yardeni.com/pub/citigroup.pdf

The consumer's (70% of the economy) financial excess that brought down the economy is currently well contained. The graph above shows the relative low consumer debt as compared to the build up to the Great Recession. This is not a sign of trouble for the economy.

Among many other anniversaries in 2019, two stand out as reminders of the risks we are likely to face going forward for years to come. The first is the 20th anniversary of the euro. The single market and the monetary union through the use of a common currency have proven that, in good times, relationships tend to be smooth. What the Global Financial Crisis has shown is the fault lines that define the tectonic plate boundaries. The aftermath of the Global Financial Crisis has laid bare the structural problems that the European Union has yet to solve and the uneven distribution of debt, work, income and wealth among its 19-member eurozone member countries. For this grand experiment to survive, there is no question that they must achieve an "ever closer union", but anti-immigrant spillover and the rise of populism and nationalism stemming from economic reasons are new forces that intend to pull the union apart. Although the UK is not part of the monetary union, BREXIT is nonetheless the poster child of a large economy divorcing from the Single Market. The test will be how this group of nations will behave during the next economic downturn.

The second is the 40th anniversary of China's "reform, opening up and socialist modernization" policy and 49-years since Nixon visited China. On January 1, 1979, The Joint Communiqué on the Establishment of Diplomatic Relations stated the formal recognition of China (replacing Taiwan). Since then, China has continued to grow and expand, primarily through trade, and to ascend as an economic super power second to the US. (The EU is a single market and not a country.) With the support of the US, on December 2001, China joined the World Trade Organization. In 2017, China had $1.26 trillion in total exports and $1.844 in total imports creating $420 billion in trade surplus. On October 1, 2016, China's yuan joined the IMF's special drawing rights (SDR) basket of reserve currencies, which determines currencies that countries can receive as part of IMF loans. And June 1, 2018, 234 China A shares were added to relevant global and regional indexes, including the MSCI Emerging Markets Index. The liberation by and recognition of China in trade and influence brings people to question China's long-term motivation.

In late 2015, Chinese President Xi announced to the world The Belt and Road Initiative ("BRI"), which consists of infrastructure projects connecting China to countries globally. The Silk Road Economic "Belt" is made up of a series of corridors connecting China with Europe via Central Asia and the Middle East. The Twenty-First Century Maritime Silk "Road" consists of a sea route linking China's southern coast to East Africa and the Mediterranean. Under BRI, China will find new export markets for state-owned enterprises with excess capacity, as well as higher-value-added infrastructure projects (such as cell towers, high-speed rail systems, etc.). This would improve and expand regional influence across Asia, Africa and Europe. At the same time, this would bring economic prosperity and equality to Western, less developed China while fostering energy security via access to natural resources. Finally, BRI would expand Chinese financial and currency liberation. BRI is certainly not only a way for China to become less export and manufacturing dependent on the West but to exert and secure its own regional influence and ultimate hegemony.

Understanding that, in order to continue moving up middle class income and standard of living and to be less dependent on basic manufacturing through cheap labor, China must compete in higher or high value sectors. This pivot comes at a time when China is looking for its next stage of economic growth through emphasizing domestic consumption as well as the need to modify the global supply chain and the increasing sophistication of the value chain. In 2015, Premier Li Keqiang announced the "Made in China 2025" plan. Its aim is to develop China into a "powerful manufacturing state" from a "big manufacturing state" by 2025, placing particular emphasis on research and development in the country's technological and scientific field. This has been criticized as being largely reliant on industrial espionage (theft), primarily targeting the United States and Europe.

In 2017, the China/US relationship has definitively moved to a new chapter. The Trump Administration's imposition of trade tariff threats and placing trade and technology restrictions directly and indirectly (through other countries and trade organizations and treaties) on China grabbed all the headlines, but the longer-term objective is for the West to contain the systematic rise of China, economically and militarily. This is about deterrent or slowing down China's efforts. The challenge for the West, and especially for the US, is that we are short-term thinkers (election cycle) while China, under its one party, industrial policy driven model, thinks in 10- to 25-year chunks. Our base case is that a face-saving deal with the Trump Administration will happen this year, but political tension, masked as intellectual theft, and trade imbalance will continue.

Finally, if Donald Trump intends to run for re-election in 2020, he will do whatever it takes to keep the economy going. Although not our base case, fiscal deals may be done with the Democrats in 2019, that would be supportive to this late stage business cycle. But before all that, we need to get the government opened!

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