CHARTBOOK

JUNE 2019

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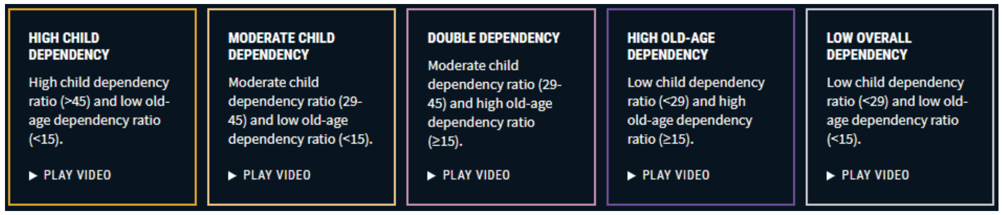
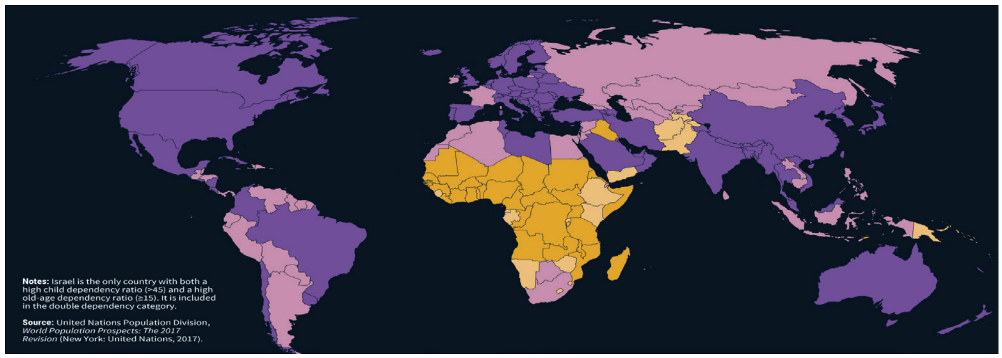
GLOBAL DEMOGRAPHICS CONTINUE TO IMPACT GROWTH

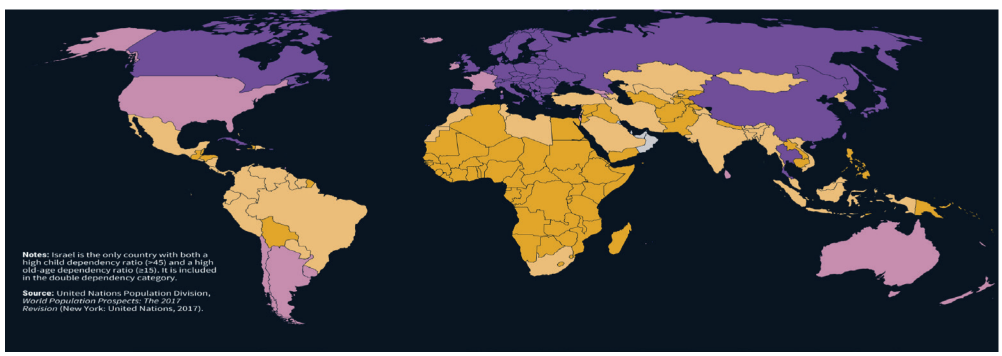
The aging of the developed world, and increasingly, the developing world, will continue to moderate global growth. Focus especially on double (pink) and old-age dependent (purple) regions.



2050 GLOBAL DEMOGRAPHICS



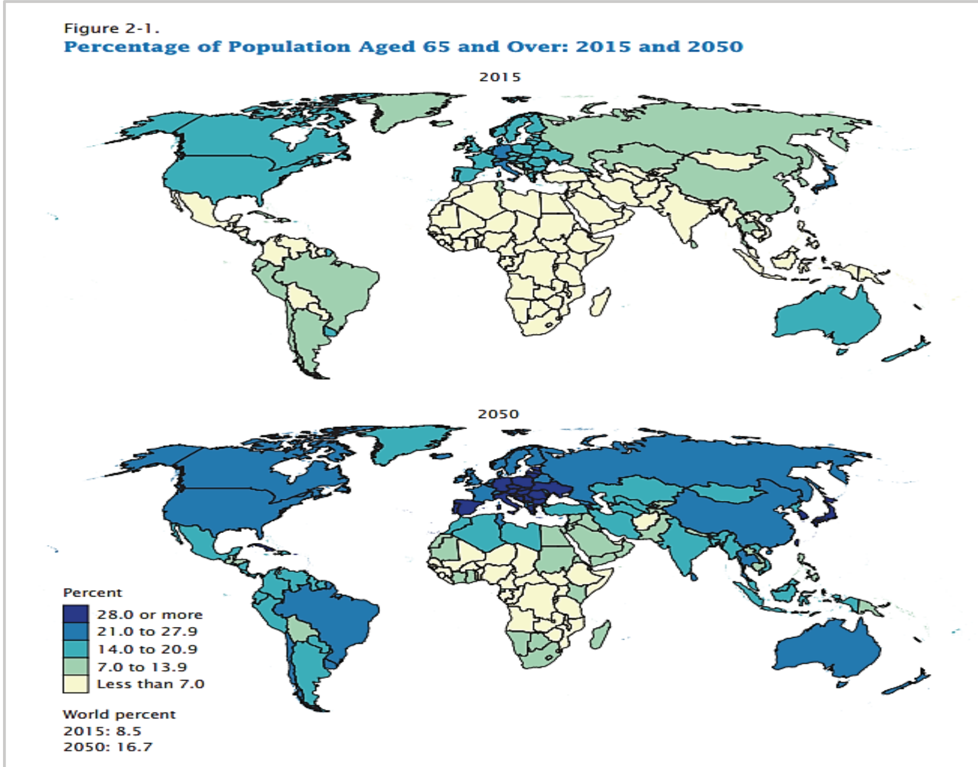
2018 GLOBAL DEMOGRAPHICS



Source: World Pop Data, United Nations 2017

GLOBAL GROWTH IMPACTED BY AGING WORLD

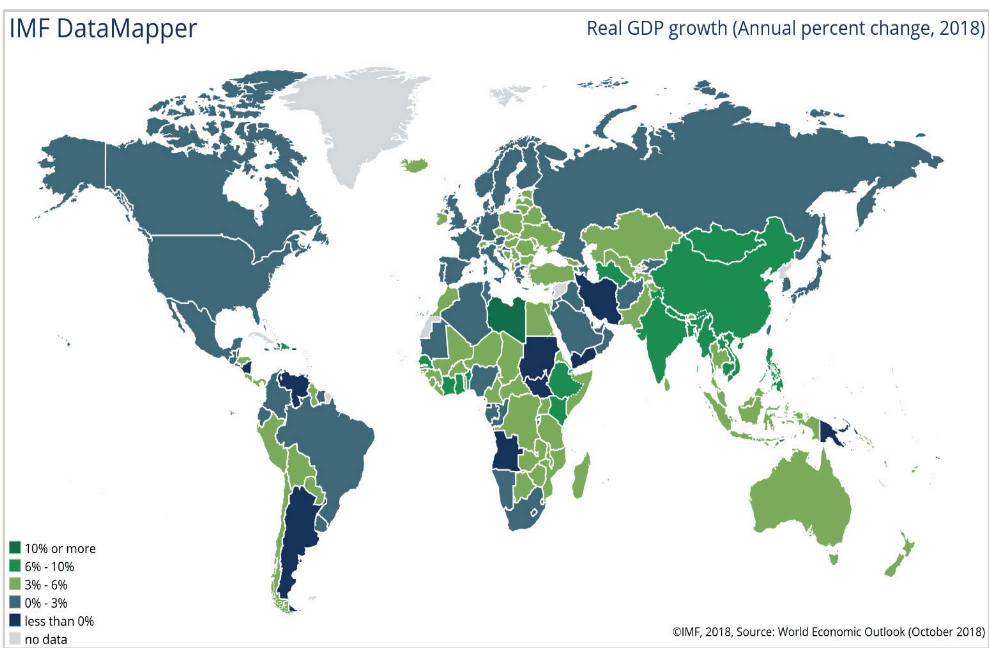
Again, the aging of the world population has a lot to do with modest economic growth. However, older people are working longer; partially moderating worker drain.



Source: An Aging World: 2015 International Population, March 2016

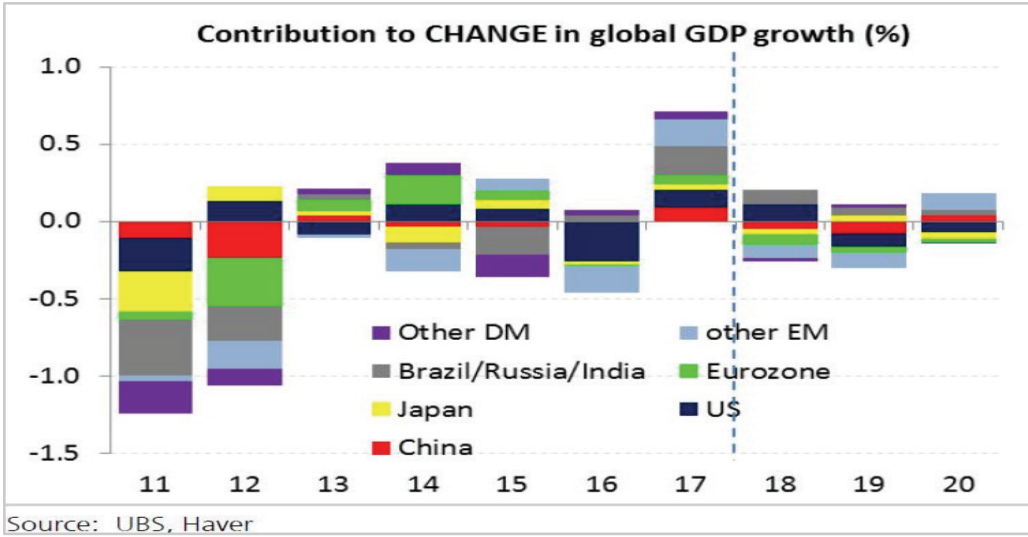
NOT SURPRISINGLY, GDP GROWTH FOLLOWS YOUTH

The Developed World is and will continue to grow more slowly. GDP growth is highly correlated to a young, growing population.

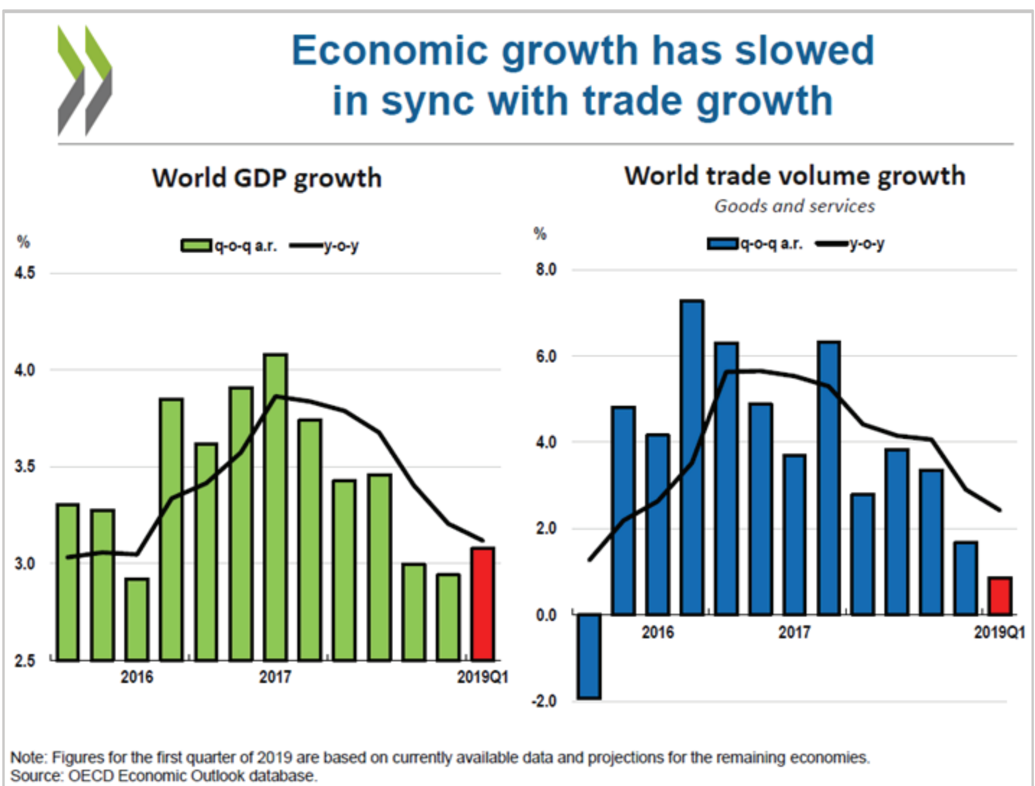


GROWTH WILL SLOW VIRTUALLY EVERYWHERE

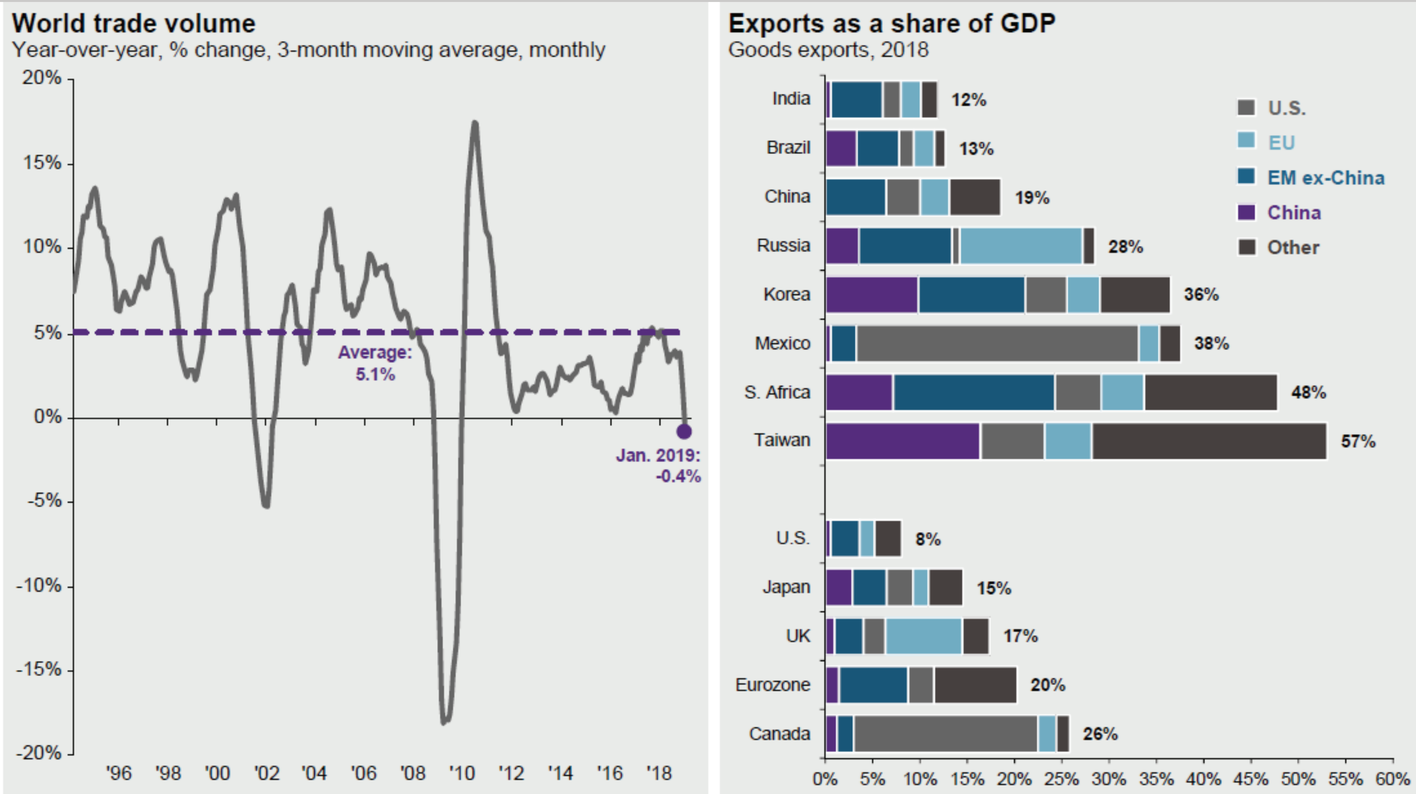
The world IS expected to keep growing. Developing economies contribute the most.



TARIFFS NOW ALSO IMPACTING WORLD GROWTH



TARIFFS ARE BITING INTO GROWTH NOW



Source: FactSet, J.P. Morgan Asset Management; (Left) CPB Netherlands Bureau for Economic Policy Analysis; (Right) IMF.
Guide to the Markets – U.S. Data are as of March 31, 2019.

President Trump picked a fight that the U.S. is uniquely positioned to win. Our exports are the smallest percentage of our GDP of any region or country above.

APRIL, 2019 WEOU UPDATE: GLOBAL GROWTH RATE SLIPPED A BIT

Table 1.1. Overview of the *World Economic Outlook* Projections
(Percent change, unless noted otherwise)

		Projections		Difference from January 2019 *WEO Update*[1]		Difference from October 2018 WEO[1]	
	2018	2019	2020	2019	2020	2019	2020
World Output	**3.6**	**3.3**	**3.6**	**–0.2**	**0.0**	**–0.4**	**–0.1**
Advanced Economies	**2.2**	**1.8**	**1.7**	**–0.2**	**0.0**	**–0.3**	**0.0**
United States	2.9	2.3	1.9	–0.2	0.1	–0.2	0.1
Euro Area	1.8	1.3	1.5	–0.3	–0.2	–0.6	–0.2
Germany	1.5	0.8	1.4	–0.5	–0.2	–1.1	–0.2
France	1.5	1.3	1.4	–0.2	–0.2	–0.3	–0.2
Italy	0.9	0.1	0.9	–0.5	0.0	–0.9	0.0
Spain	2.5	2.1	1.9	–0.1	0.0	–0.1	0.0
Japan	0.8	1.0	0.5	–0.1	0.0	0.1	0.2
United Kingdom	1.4	1.2	1.4	–0.3	–0.2	–0.3	–0.1
Canada	1.8	1.5	1.9	–0.4	0.0	–0.5	0.1
Other Advanced Economies[2]	2.6	2.2	2.5	–0.3	0.0	–0.3	0.0
Emerging Market and Developing Economies	**4.5**	**4.4**	**4.8**	**–0.1**	**–0.1**	**–0.3**	**–0.1**
Commonwealth of Independent States	2.8	2.2	2.3	0.0	0.0	–0.2	–0.1
Russia	2.3	1.6	1.7	0.0	0.0	–0.2	–0.1
Excluding Russia	3.9	3.5	3.7	–0.2	0.0	–0.1	0.0
Emerging and Developing Asia	6.4	6.3	6.3	0.0	–0.1	0.0	–0.1
China	6.6	6.3	6.1	0.1	–0.1	0.1	–0.1
India[3]	7.1	7.3	7.5	–0.2	–0.2	–0.1	–0.2
ASEAN-5[4]	5.2	5.1	5.2	0.0	0.0	–0.1	0.0
Emerging and Developing Europe	3.6	0.8	2.8	0.1	0.4	–1.2	0.0
Latin America and the Caribbean	1.0	1.4	2.4	–0.6	–0.1	–0.8	–0.3
Brazil	1.1	2.1	2.5	–0.4	0.3	–0.3	0.2
Mexico	2.0	1.6	1.9	–0.5	–0.3	–0.9	–0.8
Middle East, North Africa, Afghanistan, and Pakistan	1.8	1.5	3.2	–0.9	0.2	–1.2	0.2
Saudi Arabia	2.2	1.8	2.1	0.0	0.0	–0.6	0.2
Sub-Saharan Africa	3.0	3.5	3.7	0.0	0.1	–0.3	–0.2
Nigeria	1.9	2.1	2.5	0.1	0.3	–0.2	0.0
South Africa	0.8	1.2	1.5	–0.2	–0.2	–0.2	–0.2
Memorandum							
European Union	2.1	1.6	1.7	–0.3	–0.1	–0.4	–0.1
Low-Income Developing Countries	4.6	5.0	5.1	–0.1	0.0	–0.2	–0.2
Middle East and North Africa	1.4	1.3	3.2	–0.9	0.3	–1.2	0.3
World Growth Based on Market Exchange Rates	3.1	2.7	2.9	–0.3	0.0	–0.4	0.0
World Trade Volume (goods and services)	**3.8**	**3.4**	**3.9**	**–0.6**	**–0.1**	**–0.6**	**–0.2**
Imports							
Advanced Economies	3.3	3.0	3.2	–1.1	–0.1	–1.0	–0.3
Emerging Market and Developing Economies	5.6	4.6	5.3	–0.5	–0.3	–0.2	–0.2
Exports							
Advanced Economies	3.1	2.7	3.1	–0.2	–0.3	–0.4	–0.3
Emerging Market and Developing Economies	4.3	4.0	4.8	–0.5	0.0	–0.8	0.0
Commodity Prices (US dollars)							
Oil[5]	29.4	–13.4	–0.2	0.7	0.2	–12.5	4.2
Nonfuel (average based on world commodity export weights)[6]	1.6	–0.2	1.1	2.5	–0.1	0.5	0.8
Consumer Prices							
Advanced Economies	2.0	1.6	2.1	–0.1	0.1	–0.3	0.1
Emerging Market and Developing Economies[7]	4.8	4.9	4.7	–0.2	0.1	–0.3	0.1
London Interbank Offered Rate (percent)							
On US Dollar Deposits (six month)	2.5	3.2	3.8	0.0	0.0	–0.2	–0.1
On Euro Deposits (three month)	–0.3	–0.3	–0.2	0.0	–0.2	–0.1	–0.3
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.0	–0.1	–0.1	–0.1

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during January 14–February 11, 2019. Economies are listed on the basis of economic size. The aggregated quarterly data are seasonally adjusted. WEO = *World Economic Outlook*.
[1]Difference based on rounded figures for the current, January 2019 *World Economic Outlook Update*, and October 2018 *World Economic Outlook* forecasts. The differences are also adjusted to include Argentina's consumer prices since the July 2018 Update.
[2]Excludes the Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.
[3]For India, data and forecasts are presented on a fiscal year basis and GDP from 2011 onward is based on GDP at market prices with fiscal year 2011/12 as a base year.
[4]Indonesia, Malaysia, Philippines, Thailand, Vietnam.

THE STOCK MARKET IS HIGHLY CORRELATED TO QE

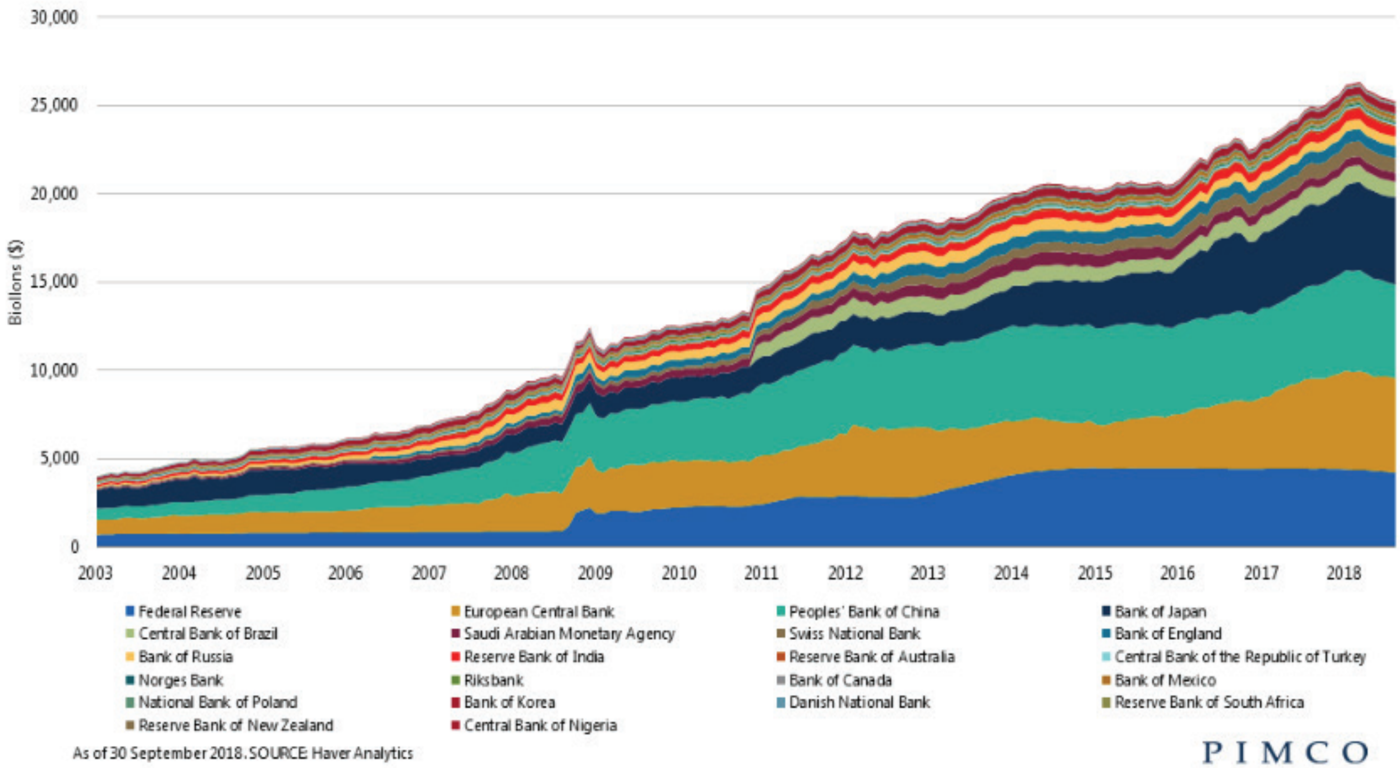
Figure 4.

Note: QE1 (11/25/08) = Fed starts buying $1.24tn in mortgage securities. QE1 expanded (3/16/2009) = Fed starts buying $300bn in Treasuries. QE2 (11/3/10) = Fed starts buying $600bn in Treasuries. QE3 (9/13/12) = Fed starts buying $40bn/month in mortgage securities (open ended). QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries.
Source: Federal Reserve Board, Standard & Poor's and Haver Analytics.

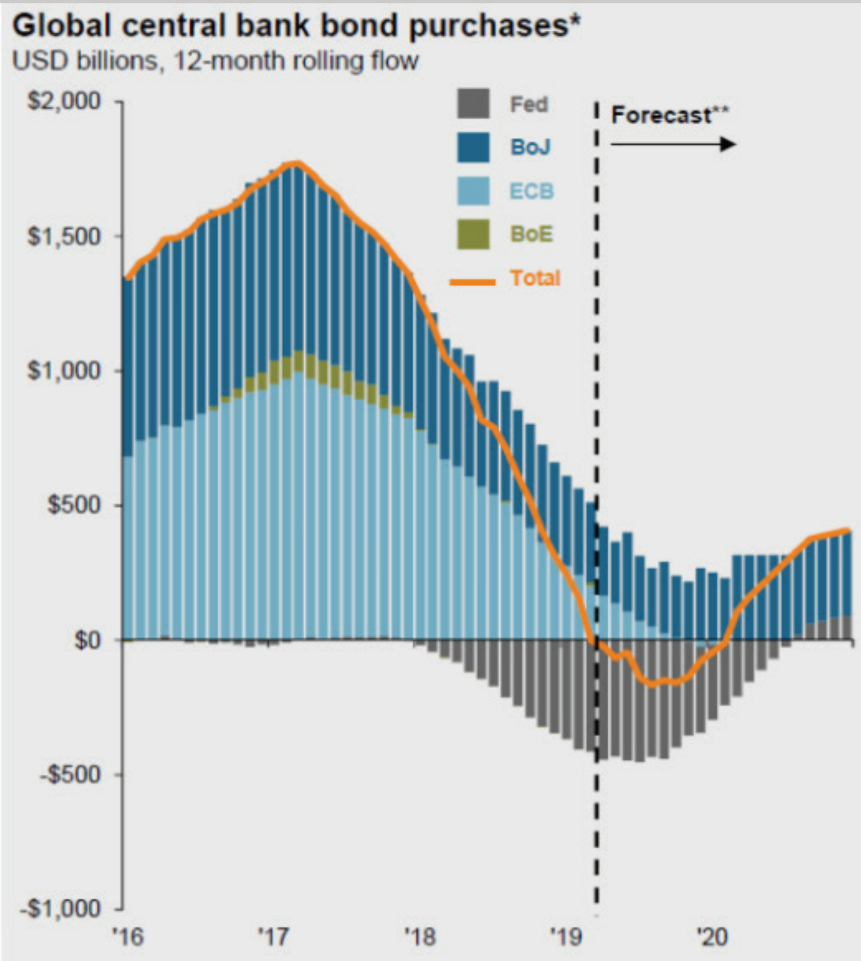
Source: Yardeni Research | Through March 2018

This rising Quantitative Easing (QE) helps markets to rise, while falling QE creates volatility at best; descending market prices at worst. The link is strong for U.S. stocks, U.S. real estate, global stocks and global real estate although only the first is reflected above.

GLOBAL CENTRAL BANKS ASSETS KEEP GROWING



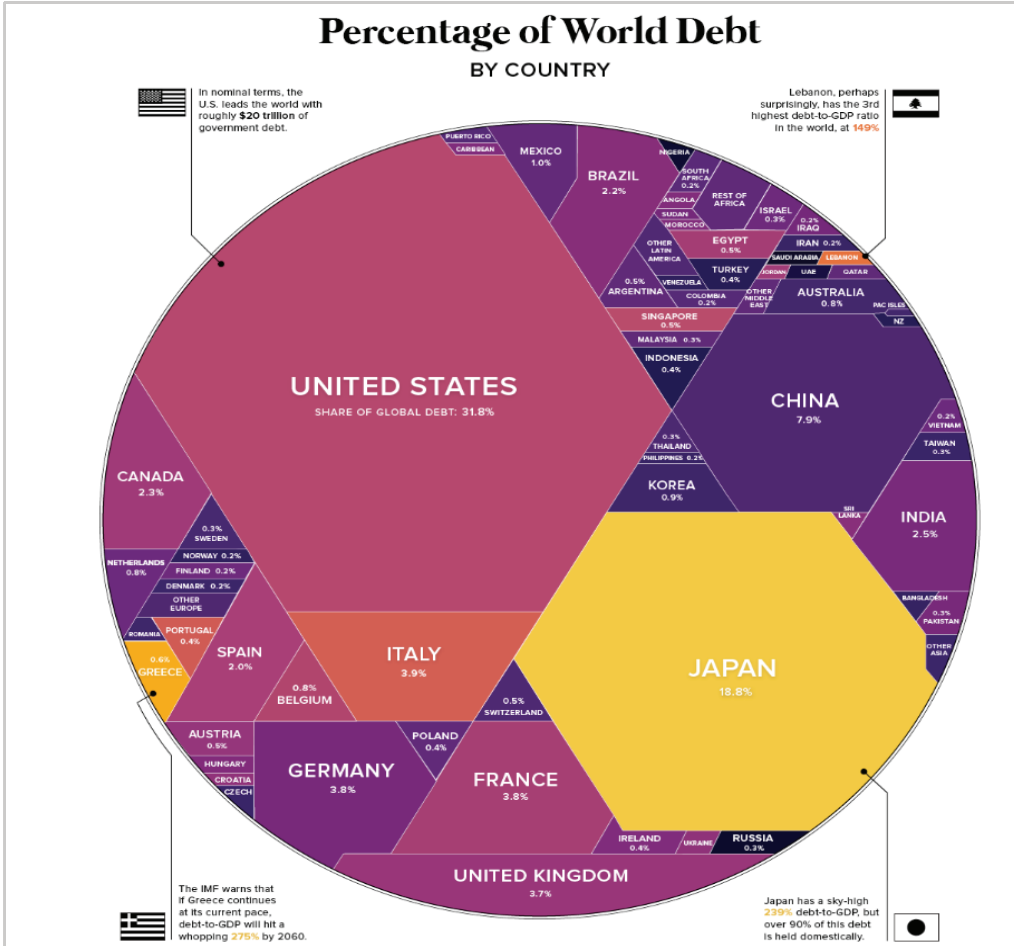
The planned transition from Quantitative Easing (QE) to Quantitative Tightening (QT) was an obvious place for volatility to begin and returns to compress. The prospect of QT ahead sunk global markets in Q4, 2018. The prospect of a rapid end to QT, similarly, caused world markets to soar in 2019. Cessation of QT means we now can't accurately see the end of bull markets although something else could de-rail them. Now that the Central banks have capitulated; it would take a grossly large event to cause significant market disruption.



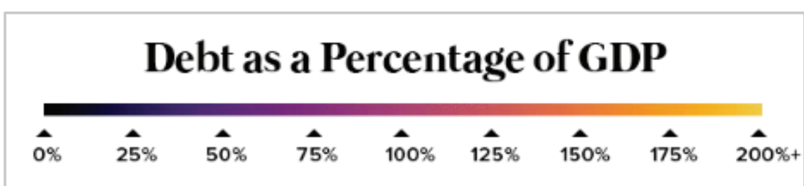
Source: J.P. Morgan Asset Management; (Left) Bank of England, Bank of Japan, European Central Bank, FactSet, Federal Reserve System, J.P. Morgan Global Economic Research; (Right) Bloomberg. *Includes the Bank of Japan (BoJ), Bank of England (BoE), European Central Bank (ECB) and Federal Reserve. **Bond purchase forecast assumes no further purchases from BoE or ECB through 2019 or 2020; continued BoJ QE of 35tm JPY ann. for 2019 and 2020; and conclusion of Fed balance sheet reduction per the March 2019 FOMC statement, in which the cap for maturing Treasury securities is lowered from 30bn to 15bn from May to September 2019 and beginning October 2019, maturing MBS holdings will be reinvested in Treasuries up to $20bn per month, anything in excess of that is reinvested back into MBS. The Fed balance sheet begins to rise again due to rising liabilities. **Including: Australia, Canada, Denmark, eurozone, Japan, Norway, Sweden, Switzerland, UK and U.S.
Guide to the Markets – U.S. Data are as of March 31, 2019.

The rate of growth of QE was dropping (left of dotted line) and expected to keep dropping, in line with the forecast to the right. However, projections now reflect a small bump up in future QE.

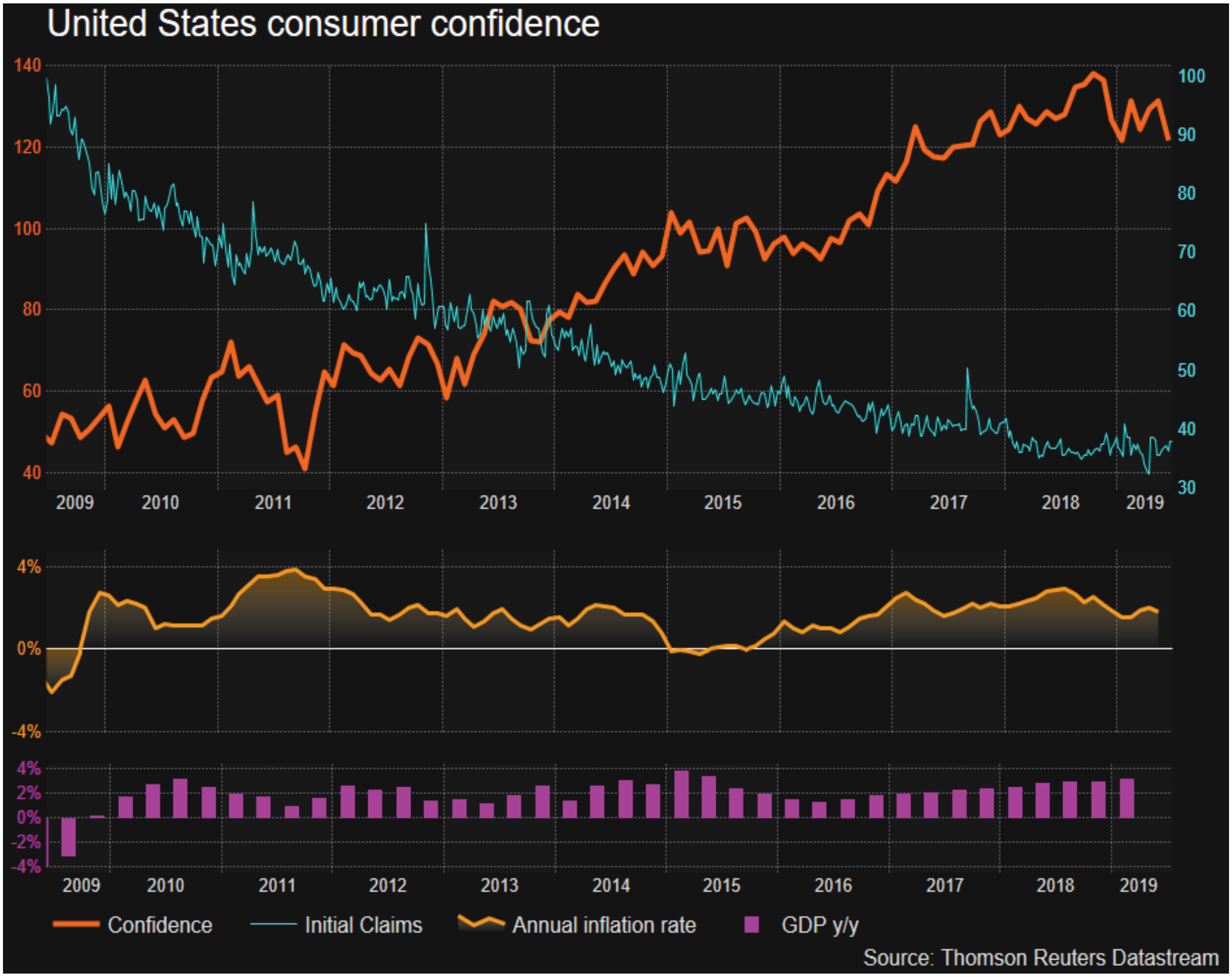
Debt as a percent of GDP has burgeoned; sowing the seeds of a future global crisis. The future crisis will likely last much longer than the 2008 crisis as governments and Central banks (the former rescuers) are tapped out.



Source: Visual Capitalist



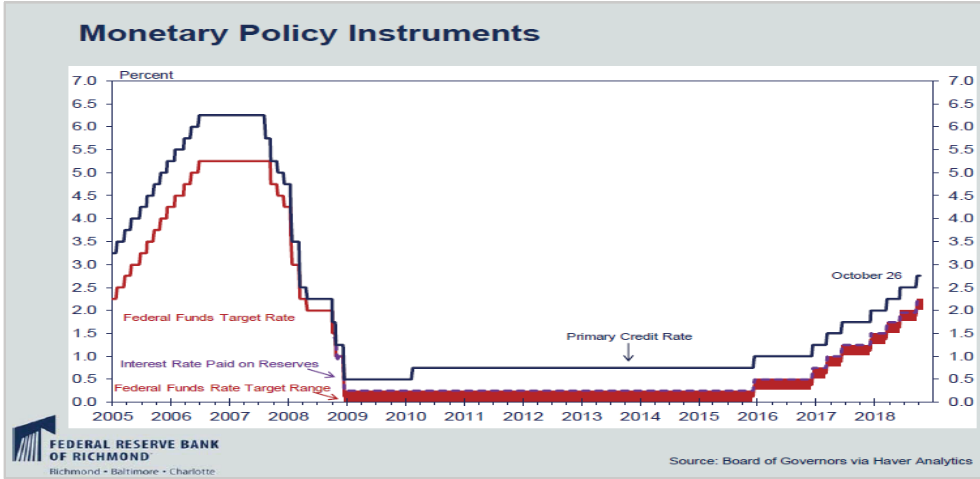
THE U.S. IS STILL ENJOYING A BENIGN ENVIRONMENT



Initial claims for unemployment are very low, GDP is growing moderately and inflation is tame leading to off-the-charts consumer confidence. This is likely as good as it will get.

SHORT RATES HAVE BEEN RISING SINCE 2016

Rate moves have been slow by historical standards to preserve the economic equilibrium achieved post-crisis. Recently, the Fed has considered reducing rates.



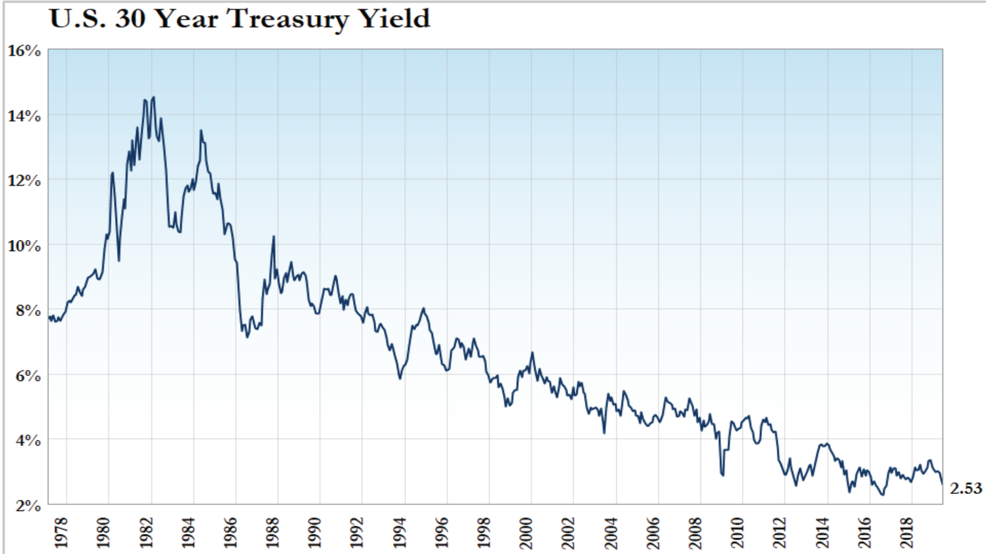
U.S. 30 YEAR TREASURY YIELD

Long rates pierced historical highs but fell back sharply. We had posited in March, 2018 that until rates moved outside of their long term trend, the rapid rise predicted by market watchers would not occur. Similarly, it is unlikely that rates will now decline much past their channel of 37 years. See page 13.

Source: Eikon, through June 30, 2019

U.S. 30 YEAR TREASURY YIELD

A reversal of the 37-year downward trend is not imminent. Rates are likely to remain in their historical channel until government debt loads rise to common conversation, at which time it is likely that market forces, not Central banks, will propel interest rates of profligate countries higher.



Source: Eikon, through June 30, 2019

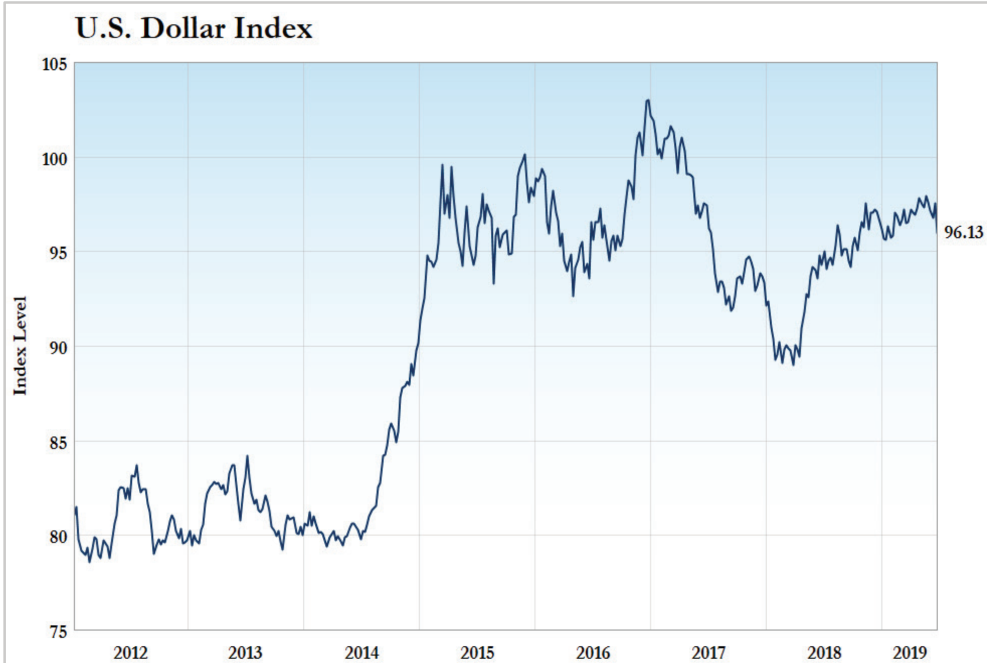
GOLD PRICE

Should inflation or interest rates rise due to a glut of debt, metals and commodities might once again shine. As well, gold has recently moved up as an alternative currency.

Source: Eikon, through June 30, 2019

U.S. DOLLAR INDEX

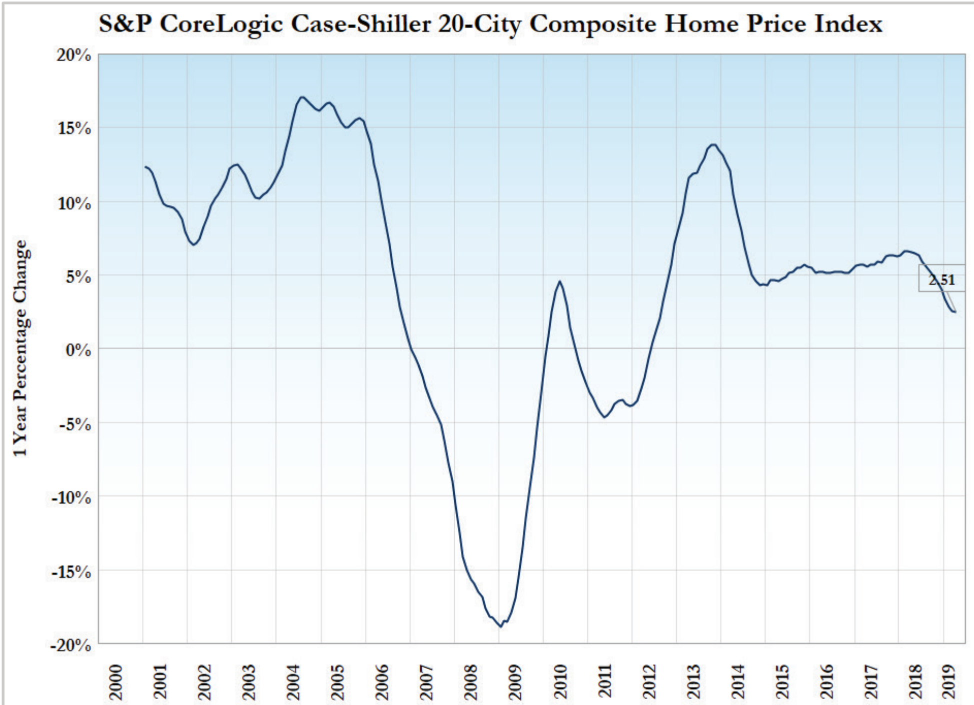
We said in December, it is likely that the dollar's rally will slow perhaps making commodities and international investments more attractive. This appears to be occurring.



Source: Eikon, through June 30, 2019

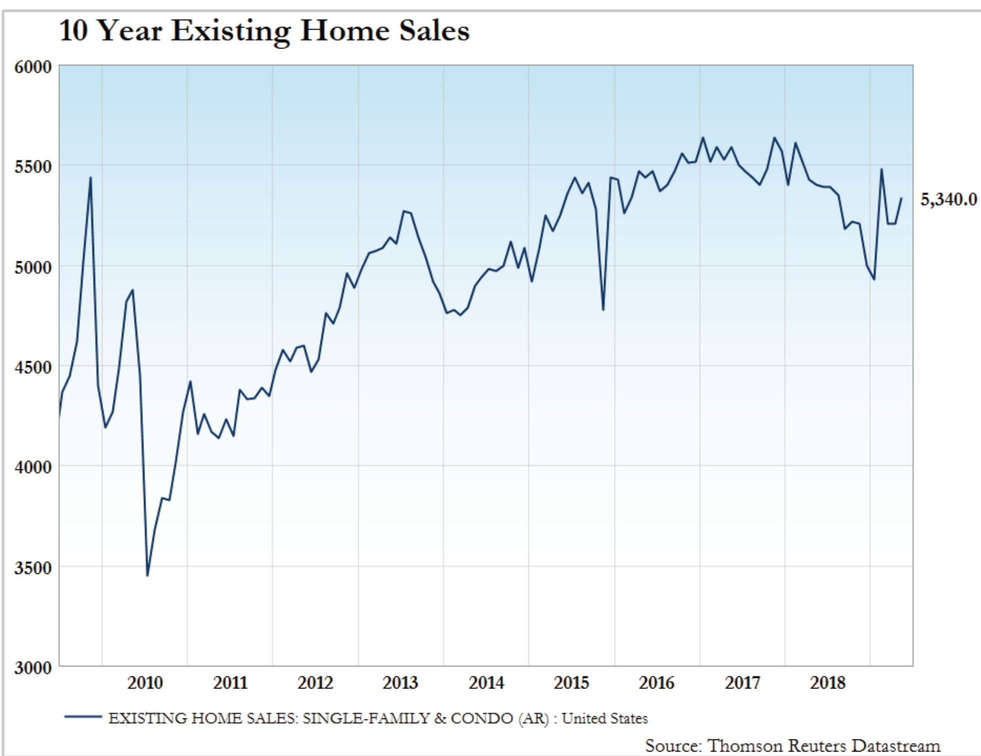
S&P CORELOGIC CASE-SHILLER 20-CITY COMPOSITE HOME PRICE INDEX

Will the slight dip in pricing correct with lower mortgage rates?



EXISTING HOME SALES

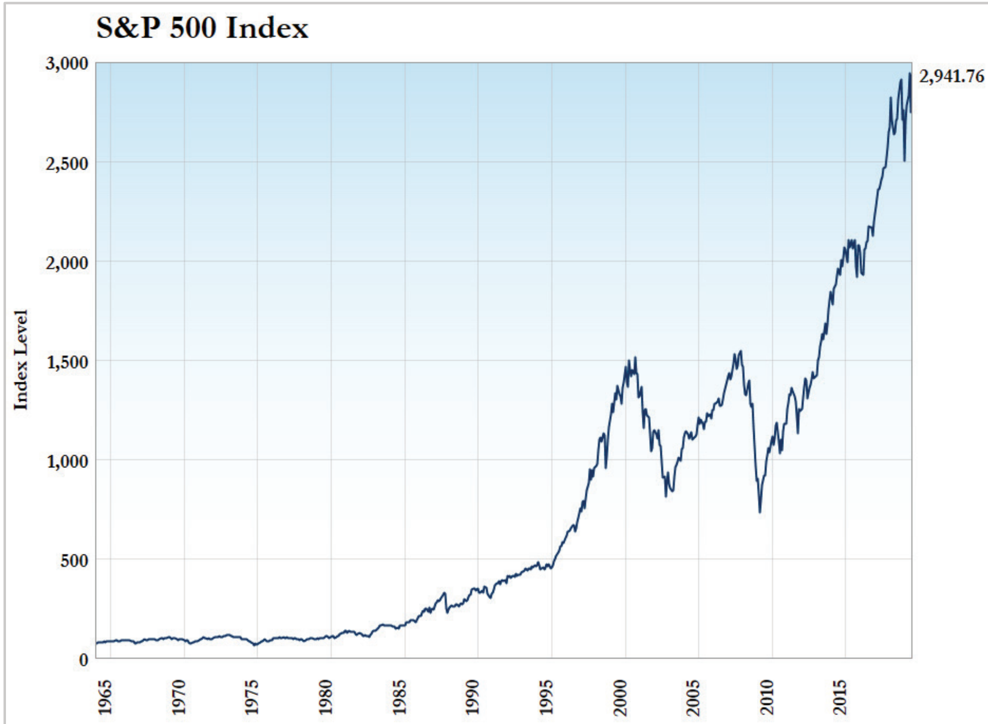
Will the reduction in mortgage rates kickstart existing home sales?



Source: Eikon through June 30, 2019

S&P 500 INDEX

Is this a rally that needs to correct or just catch-up for 10 years of “dead time”? With the recent and quick death of QT, markets might have more room to run but things are getting a bit frothy.



Source: Eikon through June 30, 2019

TWENTY YEAR VIEW OF ASSET CLASS RETURNS

Annual Returns of Key Indices (1999-2018) Ranked in Order of Performance (Best to Worst)

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Small Cap Growth 43.09%	Real Estate 31.04%	Small Cap Value 14.03%	Cmdty 23.86%	Small Cap Growth 48.53%	Real Estate 33.16%	Cmdty 17.54%	Real Estate 43.72%	Large Cap Growth 11.81%	Fixed Income 5.24%
Large Cap Growth 28.25%	Cmdty 24.21%	Real Estate 12.35%	Fixed Income 10.26%	Small Cap Value 46.02%	Small Cap Value 22.25%	Real Estate 13.82%	Small Cap Value 23.48%	Cmdty 11.09%	Small Cap Value -28.92%
Int'l 26.96%	Small Cap Value 22.83%	Fixed Income 8.44%	Real Estate 3.58%	Int'l 39.17%	Int'l 20.69%	Int'l 13.50%	Int'l 23.47%	Int'l 8.62%	Cmdty -36.61%
Large Cap Core 21.04%	Fixed Income 11.63%	Small Cap Growth -9.23%	Small Cap Value -11.43%	Real Estate 36.18%	Large Cap Value 15.71%	Large Cap Value 7.10%	Large Cap Value 22.24%	Small Cap Growth 7.05%	Large Cap Value -36.85%
Cmdty 18.60%	Large Cap Value 6.08%	Large Cap Value -11.71%	Int'l -15.94%	Large Cap Value 31.77%	Small Cap Growth 14.31%	Large Cap Growth 5.26%	Large Cap Core 15.77%	Fixed Income 6.97%	Large Cap Core -37.03%
Large Cap Value 12.72%	Large Cap Core -9.11%	Large Cap Core -11.88%	Large Cap Value -20.85%	Large Cap Core 28.67%	Large Cap Core 10.88%	Large Cap Core 4.88%	Small Cap Growth 13.35%	Large Cap Core 5.48%	Large Cap Growth -38.44%
Fixed Income -0.82%	Int'l -14.17%	Large Cap Growth -12.73%	Large Cap Core -22.10%	Large Cap Growth 25.65%	Cmdty 7.64%	Small Cap Value 4.71%	Large Cap Growth 9.07%	Large Cap Value -0.17%	Small Cap Growth -38.54%
Small Cap Value -1.49%	Large Cap Growth -22.08%	Int'l -21.44%	Large Cap Growth -23.59%	Cmdty 22.66%	Large Cap Growth 6.13%	Small Cap Growth 4.15%	Fixed Income 4.33%	Real Estate -4.65%	Int'l -43.38%
Real Estate -2.58%	Small Cap Growth -22.43%	Cmdty -22.32%	Small Cap Growth -30.26%	Fixed Income 4.11%	Fixed Income 4.33%	Fixed Income 2.43%	Cmdty -2.71%	Small Cap Value -9.78%	Real Estate -48.90%

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Real Estate 41.25%	Small Cap Growth 29.09%	Fixed Income 7.84%	Real Estate 29.85%	Small Cap Growth 43.30%	Real Estate 14.73%	Large Cap Growth 5.67%	Small Cap Value 31.74%	Large Cap Growth 30.21%	Fixed Income 1.68%
Large Cap Growth 37.21%	Small Cap Value 24.50%	Large Cap Growth 2.64%	Small Cap Value 18.05%	Small Cap Value 34.52%	Large Cap Core 13.69%	Large Cap Core 1.38%	Large Cap Value 17.34%	Int'l 25.03%	Large Cap Growth -1.52%
Small Cap Growth 24.47%	Real Estate 20.03%	Large Cap Core 2.11%	Large Cap Value 17.51%	Large Cap Growth 33.48%	Large Cap Value 13.45%	Fixed Income 0.55%	Large Cap Core 11.96%	Small Cap Growth 22.17%	Large Cap Core -4.38%
Int'l 27.75%	Large Cap Growth 16.71%	Large Cap Value 0.39%	Large Cap Core 16.00%	Large Cap Value 32.53%	Large Cap Growth 13.05%	Real Estate -0.41%	Cmdty 11.77%	Large Cap Core 21.83%	Real Estate -5.50%
Large Cap Core 26.50%	Cmdty 16.67%	Small Cap Growth -2.91%	Large Cap Growth 15.26%	Large Cap Core 32.39%	Fixed Income 5.97%	Int'l -0.81%	Small Cap Growth 11.31%	Real Estate 15.01%	Large Cap Value -8.27%
Small Cap Value 20.58%	Large Cap Value 15.51%	Small Cap Value -5.50%	Small Cap Growth 14.59%	Int'l 22.78%	Small Cap Growth 5.60%	Small Cap Growth -1.38%	Large Cap Growth 7.07%	Large Cap Value 13.66%	Small Cap Growth -9.31%
Large Cap Value 19.69%	Large Cap Core 15.06%	Real Estate -8.14%	Int'l 13.55%	Real Estate 2.23%	Small Cap Value 4.22%	Large Cap Value -3.83%	Real Estate 4.62%	Small Cap Value 7.84%	Cmdty -11.25%
Cmdty 18.72%	Fixed Income 6.54%	Cmdty -13.37%	Fixed Income 4.22%	Fixed Income -2.03%	Int'l -4.90%	Small Cap Value -7.48%	Fixed Income 2.65%	Fixed Income 3.54%	Small Cap Value -12.86%
Fixed Income 5.93%	Int'l 4.90%	Int'l -14.82%	Cmdty -1.14%	Cmdty -9.58%	Cmdty -17.04%	Cmdty -24.70%	Int'l 1.00%	Cmdty 1.70%	Int'l -13.79%

The Barclays US Aggregate Bond Index is an unmanaged market-weighted index that consists of U.S. Government and agency securities, mortgage-backed securities issued by the Government National Mortgage Association, the Federal Home Loan Mortgage Corporation, or the Federal National Mortgage Association, and investment-grade (rated BBB or better) corporate bonds, all of which will mature within 30 years.

The Morgan Stanley Capital International (MSCI) EAFE Index is an unmortgaged index that measures the total returns of developed foreign stock markets in Europe, Asia, and the Far East.

The Russell 2000 Growth Index consists of small-cap companies that have higher price-to-book ratios and higher forecasted growth values.

The Russell 2000 Value Index consists of small-cap companies that have lower price-to-book ratios and lower forecasted growth values.

The S&P 500 Index is an unmanaged index that consists of the common stocks of 500 large-capitalization companies, within various industrial sectors, most of which are listed on the New York Stock Exchange.

The FTSE EPRA/NAREIT Global Real Estate Index is designed to represent general trends in eligible real estate equities worldwide.*

The Russell 1000 Growth Index consists of large-cap companies that have higher price-to-book ratios and higher forecasted growth values.*

The Russell 1000 Value Index consists of large-cap companies that have lower price-to-book ratios and lower forecasted growth values.*

The Bloomberg Commodity Index reflects the return of underlying futures prices of 22 physical commodities. (Cmdty)

*As of 11/05, the Russell 1000 Growth and the Russell 1000 Value replaced the S&P/Barra Growth and the S&P/Barra Value, respectively. As of 11/06, the FTSE EPRA/NAREIT Index replaced the Wilshire U.S. REIT Index. Through 2004 on this chart, the S&P/Barra indices were used for Large Cap Growth and Large Cap Value. Through 2005 on this chart, the Wilshire U.S. REIT Index was used for Real Estate.

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