PGIM INVESTMENTS

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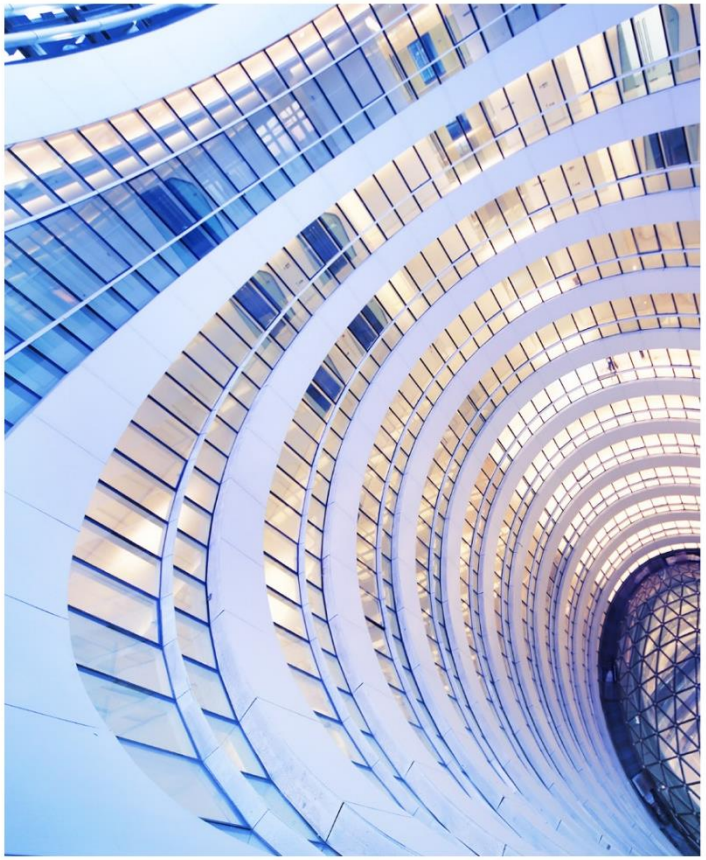
ON THE MARKETS



FIRST QUARTER 2018

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SPOTLIGHT

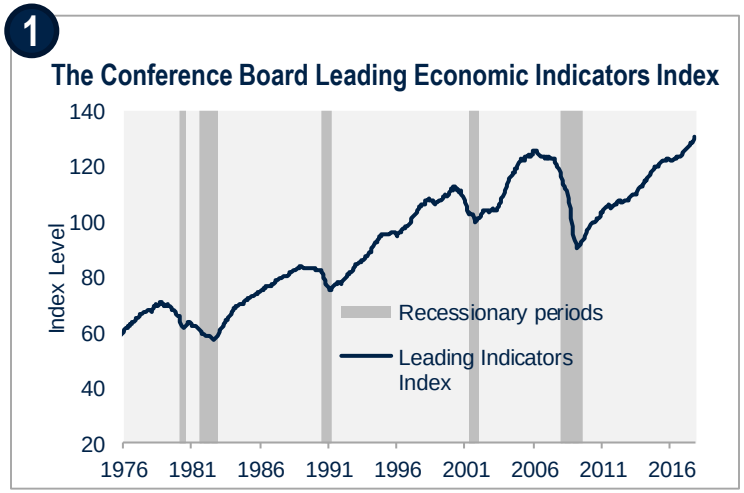
Commentary on current marketplace events and trends

Spotlight: Recession indicators

Four indicators still blinking green

At 100+ months, the current economic expansion is already one of the longest on record. Were it to stretch another year and a half, it would eclipse the old mark of 120 months set by the bellwether expansion of the 1990s. But will we get there? According to four key indicators often used to monitor recession risk, it appears the current expansion still has room to run.

1



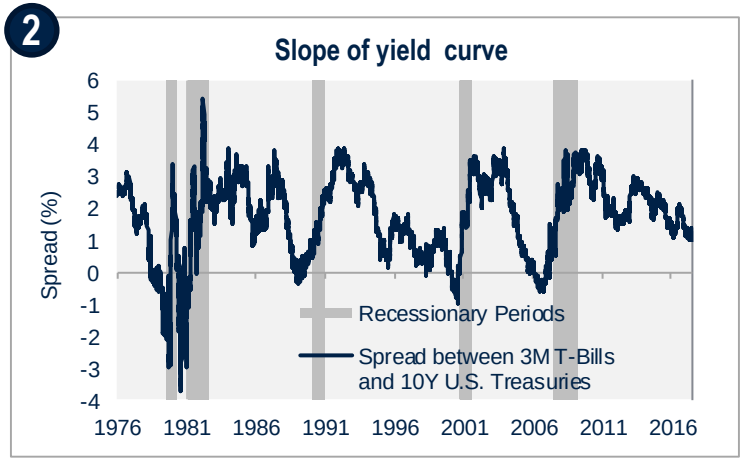
Recession indicator: The LEI Index is designed to signal peaks and troughs in the business cycle, with the trough corresponding to the depths of a recession.

Why? The index comprises 10 economic data points, all believed to be forward indicators of a change in economic environment. The recovery from the previous recession has been long and steady and is on pace to match previous business cycle expansion records.

What to watch: Historically, three months in a row of directional change in this index has been indicative of a turning point in the economy.

Should we be concerned? Despite the length, leading indicators have not shown any sign of a turn in the business cycle and continue to signal steady economic growth.

2



Recession indicator: Historically, the slope of the yield curve has signaled a recession is approaching when it "inverts," that is, when longer maturity yields are lower than shorter maturity yields.

Why: An inverted yield curve is an indication that investors believe monetary policy is too tight and future growth should deteriorate.

What to watch: Research by the U.S. Federal Reserve (Fed) has shown especially strong predictive power for the version of the curve using 3-month Treasuries for the curve's short end,[1] as shown in the chart at left.

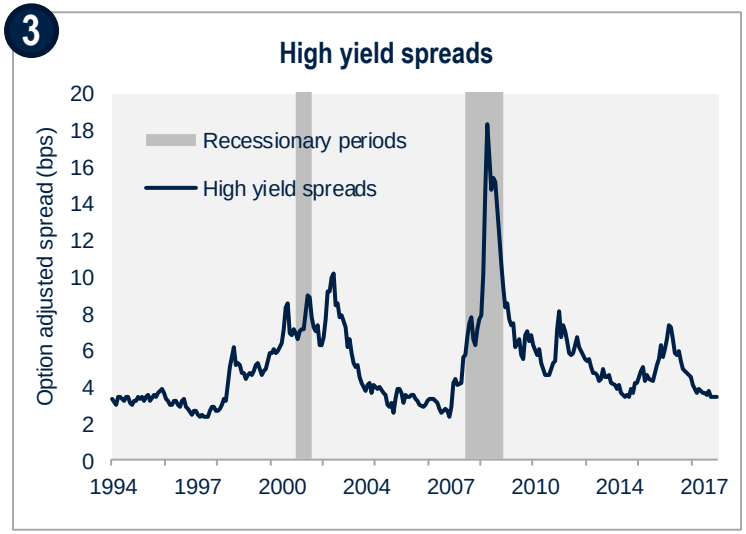
Should we be concerned? Although the curve has been "flattening" for a number of years as the Fed has begun to tighten, it is still well above a recession-signaling zone.

Source: QMA, Thomson Reuters Datastream, Bloomberg, Federal Reserve Bank of St. Louis, FRED. Unless otherwise disclosed, all information current as of 12/31/2017. [1]The Yield Curve as a Leading Indicator: Some Practical Issues," Current Issues in Economics and Finance, Volume 12, Number 5, Federal Reserve Bank of New York, July/August 2006.

Spotlight: Recession indicators

Four indicators still blinking green

3



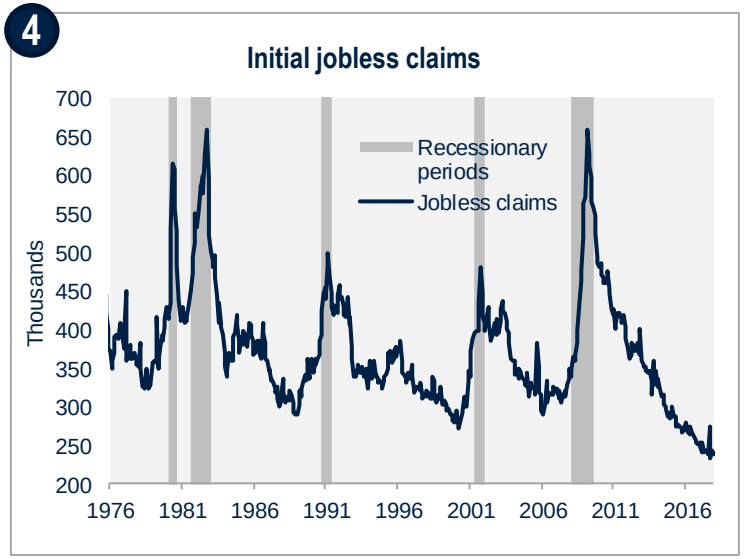
Recession indicator: A high spread indicates investors are demanding compensation for a greater perceived default risk of certain bonds.

Why? High yield bonds generally contain the highest amount of credit risk, so their spread is a useful and sensitive barometer of overall corporate health and hence the likelihood of an economy-wide downturn.

What to watch: Spikes in spreads can happen without indicating a recession, so watch in combination with other indicators. For example, high yield spreads saw a spike following the drop in oil prices as the energy sector endured rising defaults in 2015, but this has since reversed to a business-cycle low as corporate defaults have been contained.

Should we be concerned? Despite a worrying increase in the amount of corporate debt outstanding, interest costs have been muted by the low-rate environment, suggesting no imminent trouble.

4



Recession indicator: A marked rise in workers filing for unemployment insurance typically leads to a rise in the unemployment rate, a clear indication recession may be around the corner.

Why: There is a negative feedback loop between unemployment, household confidence, and consumer spending. In other words, when unemployment rises, households are less confident about their future ability to manage their expenses, and thus consumer spending drops.

What to watch: The U.S. has never averted a recession in the post-war period when unemployment has increased by more than one-third of a percentage point.

Should we be concerned? Currently, initial jobless claims are at their lowest level in over 40 years. This is made even more meaningful by the fact that this metric has not been adjusted for population growth, which has substantially increased the employable population during that time.

Source: QMA, Bloomberg, Federal Reserve Bank of St. Louis, FRED. High yield spreads based on Bloomberg Barclays Corporate High Yield Index. Unless otherwise disclosed, all information current as of 12/31/2017.

MARKET SUMMARY

Performance overview across equity, fixed income, and real asset markets

State of the market

International/Global Equity Performance (%)	Quarter	YTD	One Year
Global equities	**5.73**	**23.97**	**23.97**
Developed market equities	5.51	22.40	22.40
Emerging market equities	7.44	37.28	37.28
International equities	**5.00**	**27.19**	**27.19**

U.S. Equity Market Cap Performance (%)	Quarter	YTD	One Year
U.S. Large Cap Growth	7.86	30.21	30.21
U.S. Large Cap Value	5.33	13.66	13.66
U.S. Mid Cap Growth	6.81	25.27	25.27
U.S. Mid Cap Value	5.50	13.34	13.34
U.S. Small Cap Growth	4.59	22.17	22.17
U.S. Small Cap Value	2.05	7.84	7.84

U.S. Equity Sector Performance (%)	Quarter	YTD	One Year
S&P 500	**6.64**	**21.83**	**21.83**
Consumer Discretionary	9.87	22.98	22.98
Consumer Staples	6.49	13.49	13.49
Energy	6.02	-1.01	-1.01
Financials	8.63	22.18	22.18
Health Care	1.47	22.08	22.08
Industrials	6.05	21.03	21.03
Technology	9.01	38.83	38.83
Materials	6.93	23.84	23.84
Real Estate	3.22	10.85	10.85
Telecommunications	3.61	-1.25	-1.25
Utilities	0.21	12.11	12.11

U.S. Fixed Income Sector Performance (%)	Quarter	YTD	One Year
Global Bonds	**1.08**	**7.39**	**7.39**
U.S. Broad Market	**0.39**	**3.54**	**3.54**
U.S. Treasuries	0.05	2.31	2.31
U.S. TIPS	1.26	3.01	3.01
Municipals	0.75	5.45	5.45
High Yield Municipals	1.83	9.69	9.69
Agency MBS	0.15	2.47	2.47
CMBS	0.35	3.35	3.35
ABS	-0.01	1.55	1.55
Inv. Grade Corporate	1.17	6.42	6.42
High Yield	0.47	7.50	7.50
Leveraged Loans	1.17	4.25	4.25
International Bonds (Unhedged)	**1.63**	**10.51**	**10.51**
International Bonds (Hedged)	1.13	2.48	2.48
Emerging Hard Currency	1.16	10.26	10.26
Emerging Local Currency	0.82	15.21	15.21

Source: Morningstar. GICS sectors are subsets of the S&P 500 Index. **U.S. Large Cap Growth:** Russell 1000 Growth Index, **U.S. Large Cap Value:** Russell 1000 Value Index, **U.S. Mid Cap Growth:** Russell Mid Cap Growth Index, **U.S. Mid Cap Value:** Russell Mid Cap Value Index, **U.S. Small Cap Growth:** Russell 2000 Value Index, **U.S. Small Cap Growth**: Russell 2000 Value Index, **International Equities:** MSCI ACWI ex-USA Index, **Global Equities:** MSCI ACWI Index, **Developed Market Equities:** MSCI World Index, **Emerging Market Equities:** MSCI EM Index, **U.S. Broad Market:** BBG Barclays U.S. Aggregate, **U.S. Treasury:** BBG Barclays U.S. Treasury Index, **U.S. TIPS:** BBG Barclays U.S. Treasury TIPS Index, **Municipals:** BBG Barclays Municipal Bond Index, **High Yield Municipals:** BBG Barclays HY Muni Index, **Agency MBS:** BBG Barclays U.S. MBS-Agency Fixed Rate Index, **Commercial MBS:** BBG Barclays CMBS ERISA Eligible Index, **ABS:** BBG Barclays ABS Index, **Investment Grade Corporates:** BBG Barclays U.S. Corp IG Index, **High Yield:** BBG Barclays U.S. High Yield Corporate Index, **Leveraged Loans:** Credit Suisse Leveraged Loan Index, **International Bonds (Unhedged)**: BBG Barclays Global Aggregate ex-U.S., **International Bonds (Hedged):** BBG Barclays Global Aggregate ex-U.S. Hedged USD, **Global Bonds:** BBG Barclays Global Aggregate. **Emerging Market Local:** JPM EMBI Global Diversified, **Emerging Market Hard Currency:** JP Morgan GBI-EM Global Diversified Index. Past performance does not guarantee future results. Data as of 12/31/2017.

State of the market

Commodity Performance (%)	Quarter	YTD	One Year
All Commodities	**4.71**	**1.70**	**1.70**
Energy	**8.93**	**-4.31**	**-4.31**
Brent Oil	19.23	14.25	14.25
WTI Oil	17.01	12.48	12.48
Natural Gas	-11.78	-36.37	-36.37
Grains	**-4.82**	**-11.31**	**-11.31**
Corn	-4.59	-12.08	-12.08
Soybeans	-2.59	-8.13	-8.13
Industrial Metals	**10.72**	**29.35**	**29.35**
Copper	11.30	29.17	29.17
Aluminum	7.59	31.18	31.18
Livestock	**3.31**	**6.36**	**6.36**
Live Cattle	0.93	9.13	9.13
Precious Metals	**2.04**	**10.94**	**10.94**
Gold	0.62	12.66	12.66
Silver	2.55	5.79	5.79
Softs	**5.17**	**-14.80**	**-14.80**
Sugar	7.85	-25.38	-25.38
Coffee	-3.71	-16.02	-16.02

Real Estate Performance (%)	Quarter	YTD	One Year
Global Real Estate	3.77	15.01	15.01
Developed	3.83	11.42	11.42
Emerging	3.33	52.36	52.36
U.S. Real Estate	1.60	3.91	3.91
International Real Estate	5.71	26.45	26.45

Hybrid & Currency Performance (%)	Quarter	YTD	One Year
Preferreds	0.09	9.11	9.11
Convertibles	1.56	13.70	13.70
U.S. Dollar	-1.34	-10.16	-10.16

Source: Morningstar. **All Commodities:** Bloomberg Commodity, **Agriculture:** Bloomberg Sub Agriculture, **Corn:** Bloomberg Sub Corn, **Soybeans:** Bloomberg Sub Soybeans, **Energy:** Bloomberg Sub Energy, **Brent Oil:** Bloomberg Sub Brent Crude, **WTI Oil:** West Texas Crude Int Oil BL, **Natural Gas:** Bloomberg Sub Natural Gas, **Industrial Metals**: Bloomberg Sub Industrial Metals, **Copper:** Bloomberg Sub Copper, **Aluminum:** Bloomberg Sub Aluminum, **Livestock:** Bloomberg Sub Livestock, **Live Cattle:** Bloomberg Sub Live Cattle, **Precious Metals:** Bloomberg Sub Precious Metals, **Gold**: LMBA Gold Price PM USD, **Silver:** Bloomberg Sub Silver, **Softs:** Bloomberg Sub Softs, **Sugar**: Bloomberg Sub Sugar, **Coffee**: Bloomberg Sub Coffee. Softs includes Cocoa, Coffee, Cotton, and Sugar. **U.S. Real Estate:** FTSE EPRA/NAREIT United States, **International Real Estate:** FTSE EPRA/NAREIT Global Ex U.S., **Developed Real Estate:** FTSE EPRA/NAREIT Developed, **Emerging Real Estate:** FTSE EPRA/NAREIT Emerging, **Global Real Estate:** FTSE EPRA/NAREIT Global TR USD, **Preferreds:** S&P Preferred Stock Index, **Convertibles:** BofAML U.S. Convertible Index, **U.S. Dollar:** ICE USD Spot Index. Index returns based on total return calculations. Past performance does not guarantee future results. Data as of 12/31/2017.

MACRO ECONOMY

Global growth expectations and key economic variables

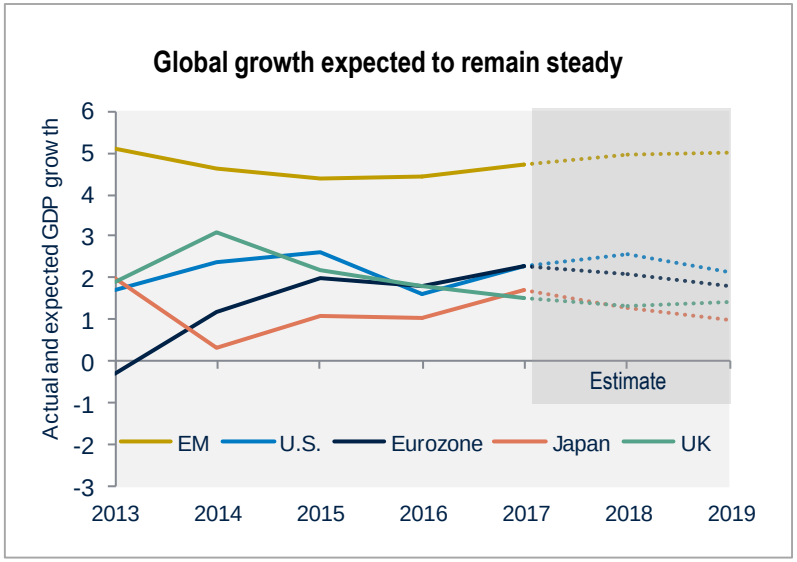
Global growth expectations

FORECAST AND ACTUAL REAL GDP GROWTH (%)

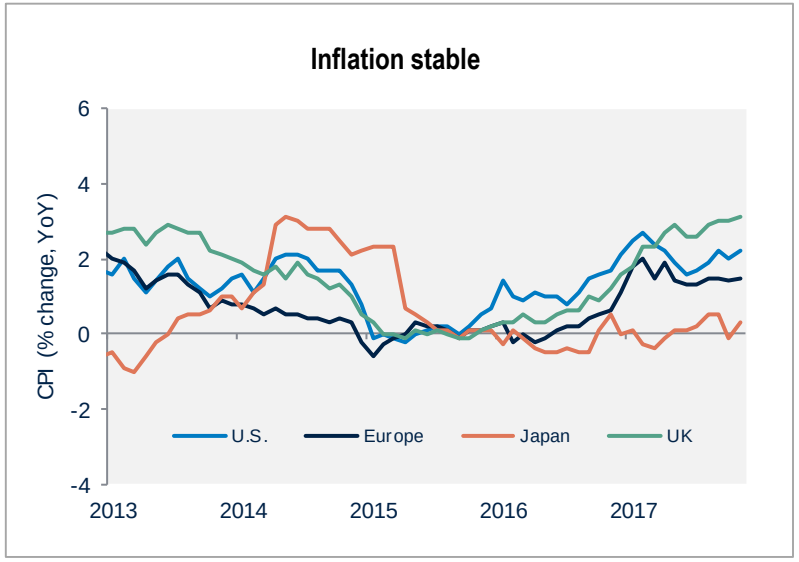
	2013	2014	2015	2016	2017	*2018 Estimate*	*2019 Estimate*
World	**3.4**	**3.5**	**3.4**	**3.1**	**3.6**	***3.7***	***3.6***
Developed economies	**1.4**	**2.0**	**2.3**	**1.7**	**2.4**	***2.3***	***2.0***
United States	1.7	2.4	2.6	1.6	2.3	*2.6*	*2.2*
Eurozone	-0.3	1.2	2.0	1.8	2.3	*2.1*	*1.8*
Japan	2.0	0.4	1.1	1.0	1.7	*1.3*	*1.0*
United Kingdom	1.9	3.1	2.2	1.8	1.5	*1.4*	*1.4*
Emerging economies	**5.1**	**4.6**	**4.4**	**4.4**	**4.7**	***5.0***	***5.0***
China	7.8	7.3	6.9	6.7	6.8	*6.5*	*6.2*
India	4.7	6.4	7.5	8.0	6.5	*6.7*	*7.5*
Brazil	3.0	0.5	-3.8	-3.6	1.0	*2.5*	*2.5*
Russia	1.3	0.7	-2.8	-0.2	1.8	*1.9*	*1.8*
Mexico	1.4	2.3	2.6	2.3	2.1	*2.2*	*2.4*

Source: Bloomberg. Consensus expectations are created by Bloomberg and are comprised of the estimates of a number of market economists. Any projections or forecasts presented herein are subject to change without notice. Data as of 12/31/2017.

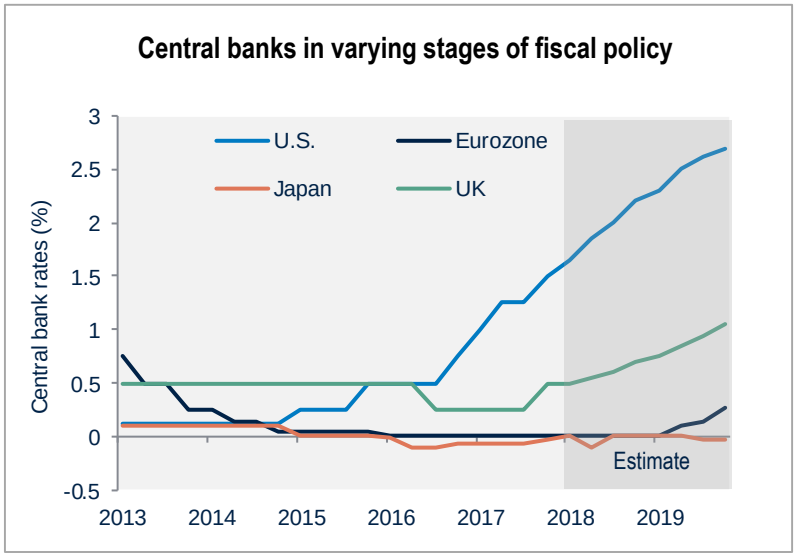
The global economy



Source: Bloomberg. Data as of 12/31/2017.



Source: Bloomberg. Data as of 11/30/2017.



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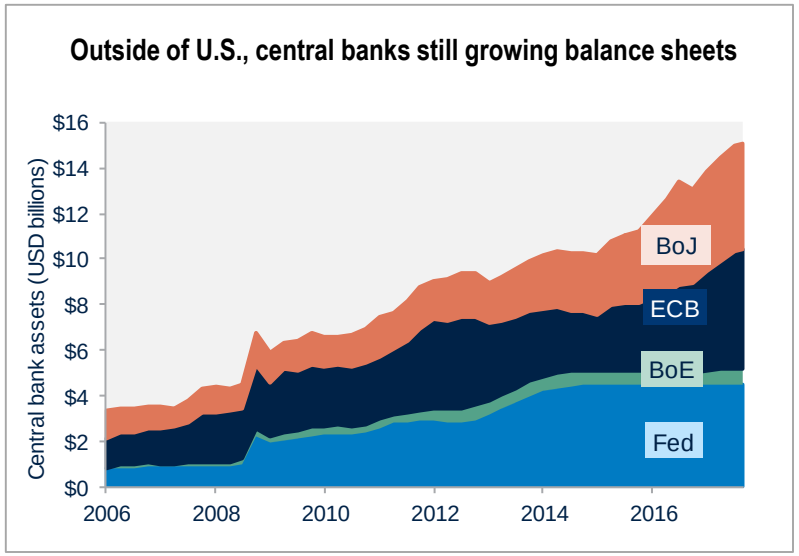


Source: Federal Reserve Bank of St. Louis, FRED and Bank of England. Assets converted to USD at month-end rates. BoJ and BoE data as of 9/30/2017. Fed and ECB data as of 11/30/2017.

Global currencies

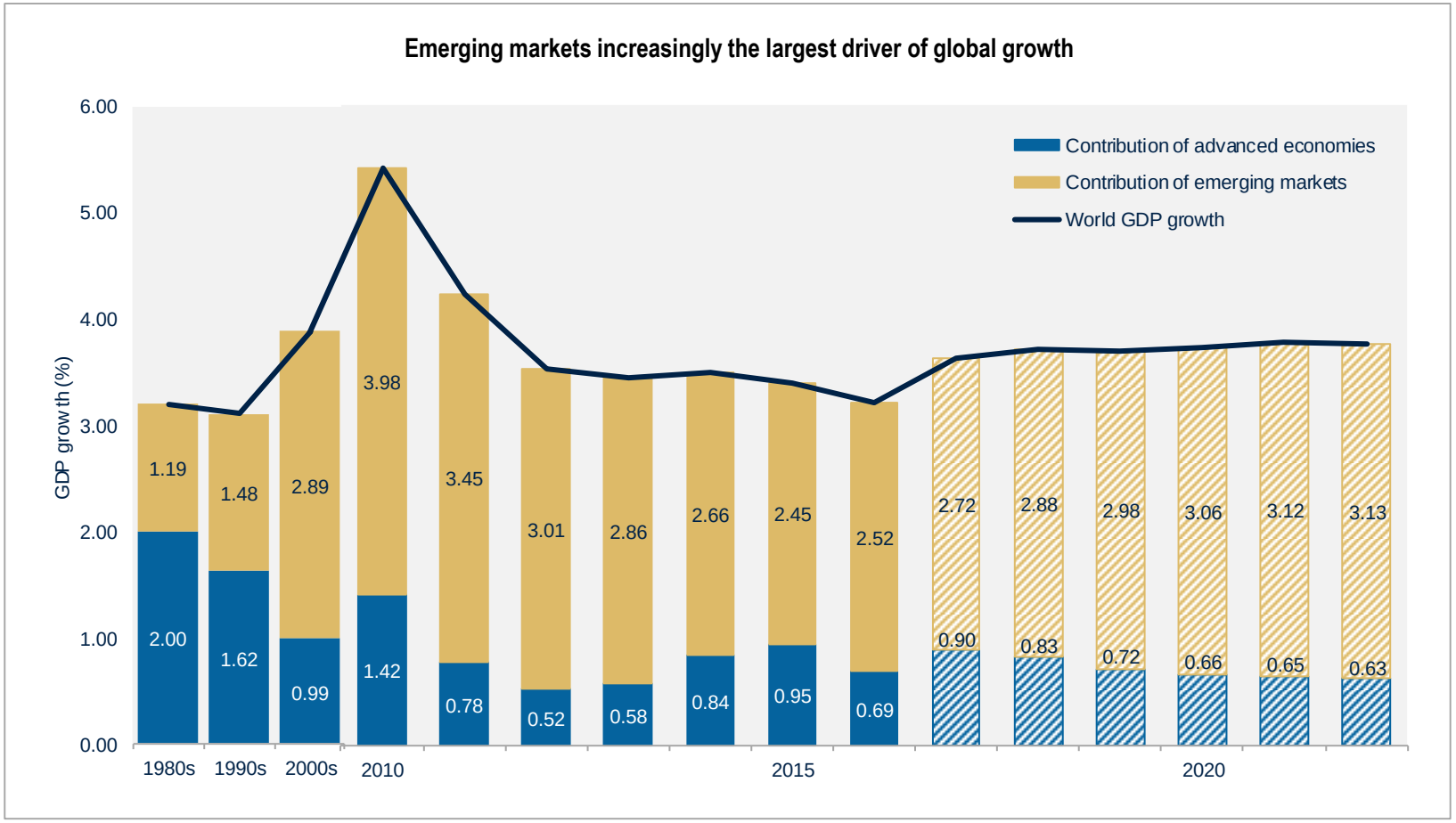
CURRENCY RETURNS VS. U.S. DOLLAR (%)

Developed	Quarter (%)	YTD (%)	One Year (%)	Cumulative Three Year (%)	Cumulative Five Year (%)	Cumulative Ten Year (%)
Australian dollar	-0.32	8.34	8.34	-4.48	-24.87	-10.76
British pound	0.86	9.51	9.51	-13.25	-16.87	-31.92
Canadian dollar	-0.79	6.92	6.92	-7.56	-21.08	-20.58
Euro	1.62	14.15	14.15	-0.77	-9.00	-17.71
Japanese yen	-0.16	3.79	3.79	6.29	-23.02	-0.83
Swedish krona	-0.43	11.28	11.28	-4.60	-20.53	-20.93
Swiss franc	-0.62	4.59	4.59	2.05	-6.05	16.34

Emerging	Quarter (%)	YTD (%)	One Year (%)	Cumulative Three Year (%)	Cumulative Five Year (%)	Cumulative Ten Year (%)
Brazilian real	-4.42	-1.77	-1.77	-19.66	-38.26	-46.20
Chinese yuan	2.25	6.74	6.74	-4.63	-4.25	12.25
Hong Kong dollar	-0.04	-0.74	-0.74	-0.75	-0.82	-0.18
Indian rupee	2.20	6.35	6.35	-1.30	-13.91	-38.29
Mexican peso	-7.14	5.43	5.43	-24.96	-34.62	-44.56
Russian ruble	-0.23	6.32	6.32	1.79	-47.19	-57.31
Singapore dollar	1.62	8.29	8.29	-0.79	-8.55	7.79
South African rand	9.50	10.96	10.96	-6.56	-31.57	-44.58
South Korean won	6.98	12.81	12.81	2.66	-0.01	-12.64
Taiwanese dollar	1.75	8.23	8.23	6.29	-2.41	8.83
Turkish lira	-6.18	-7.23	-7.23	-38.52	-53.04	-69.20

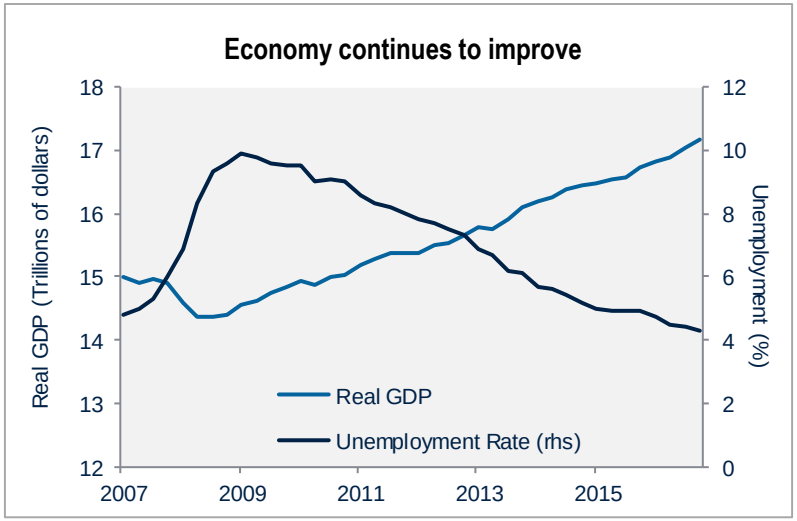
Source: Bloomberg. Data as of 12/31/2017.

Emerging markets

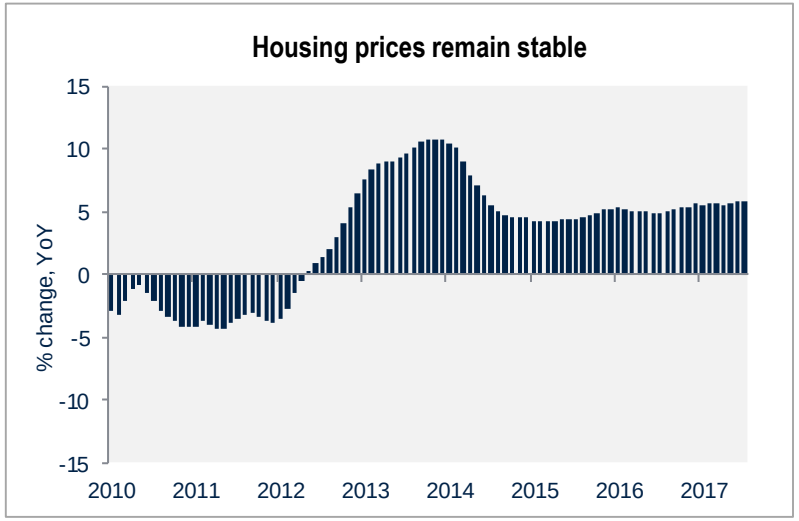


Source: International Monetary Fund (IMF), World Economic Outlook Database. Data as of 10/31/2017.

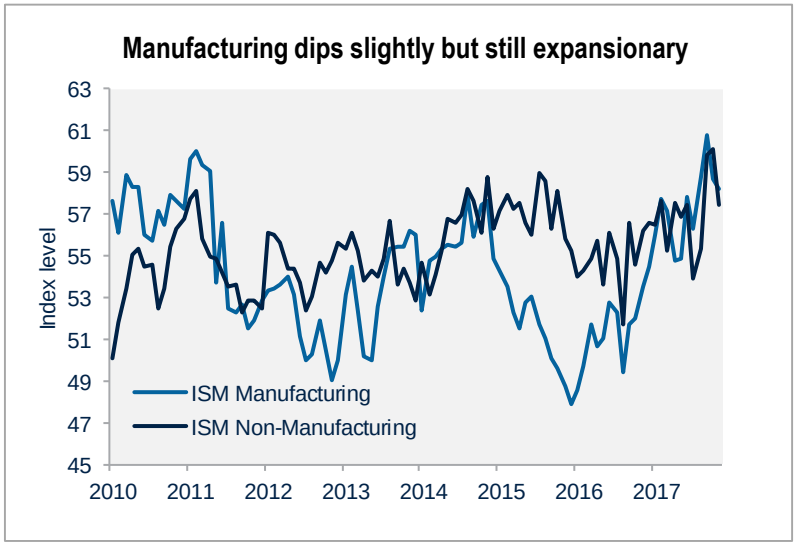
The U.S. economy



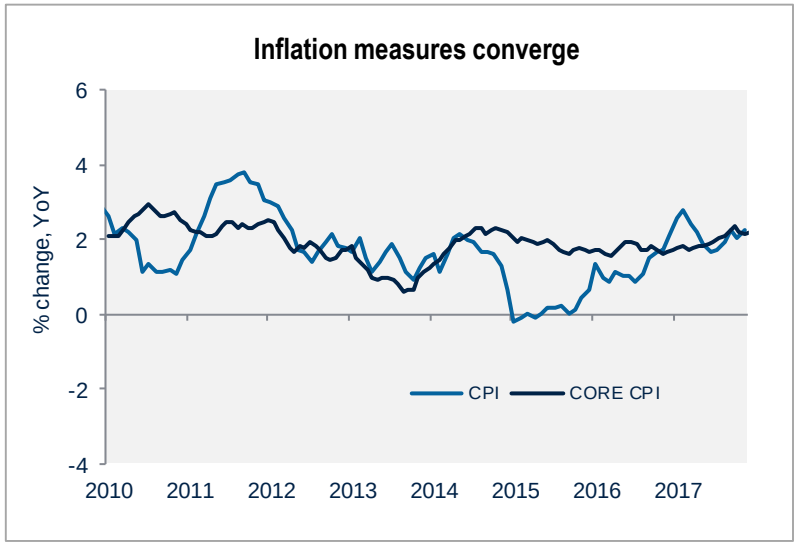
Source: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, retrieved from FRED. Real GDP and Employment indexed to Q4 2007. Data as of 9/30/2017.



Source: S&P Dow Jones Indices LLC, retrieved from FRED, S&P Corelogic Case-Schiller U.S. National Home Price Index. Data as of 10/31/2017.

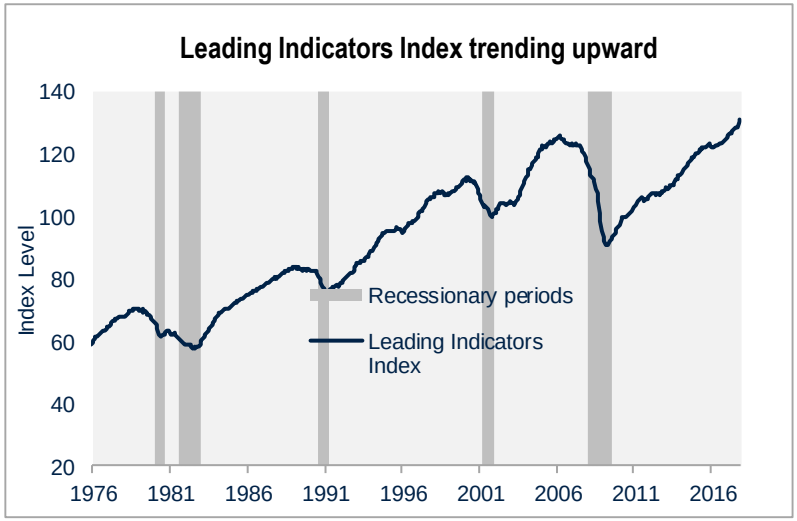


Source: Bloomberg. Data as of 12/31/2017.

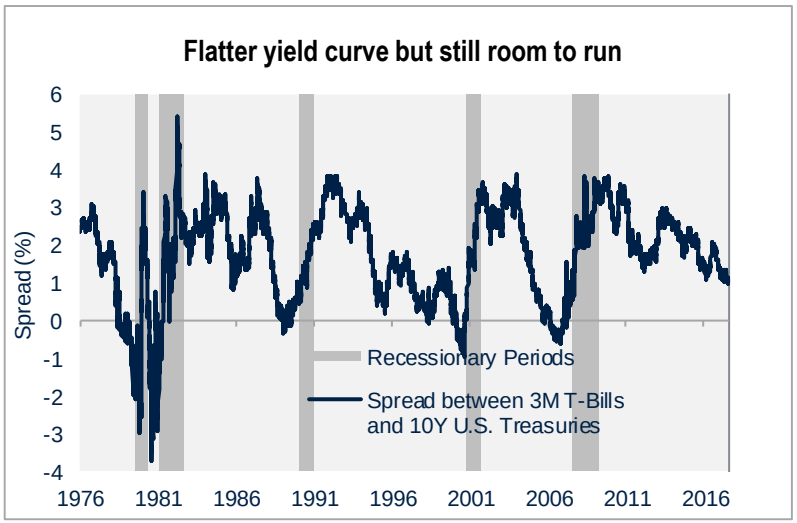


Source: U.S. Bureau of Economic Analysis, retrieved from FRED. CPI and PCE Core Indices based on prices for all items except food and energy. Data as of 11/30/2017.

Recession indicators: Still blinking green



Source: QMA, Bloomberg. Data as of 12/31/2017.



Source: QMA, Federal Reserve Bank of St. Louis, FRED. Data as of 12/31/2017.

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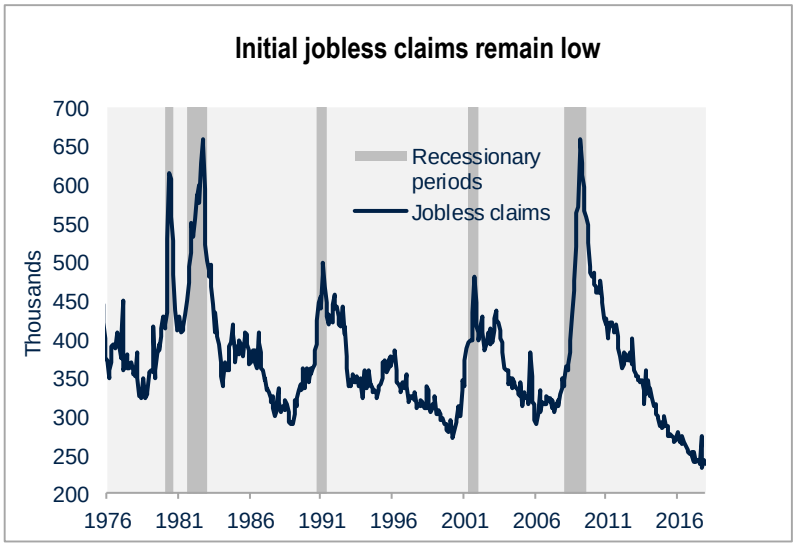
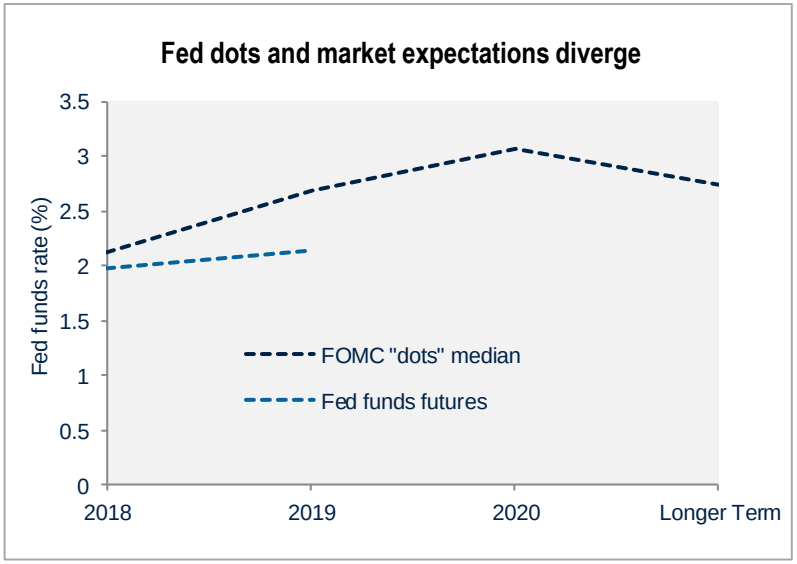
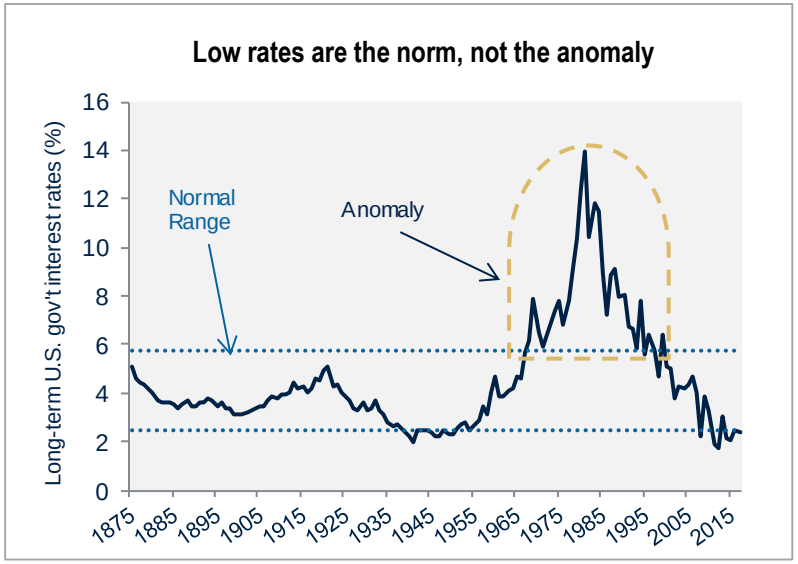


Source: QMA, Federal Reserve Bank of St. Louis, FRED. Data as of 12/31/2017.

U.S. rates



Source: Bloomberg, FOMC. Dots refers to the estimates for the fed funds rate by members of the Federal Open Market Committee. Data as of Fed mtg: 12/13/2017.



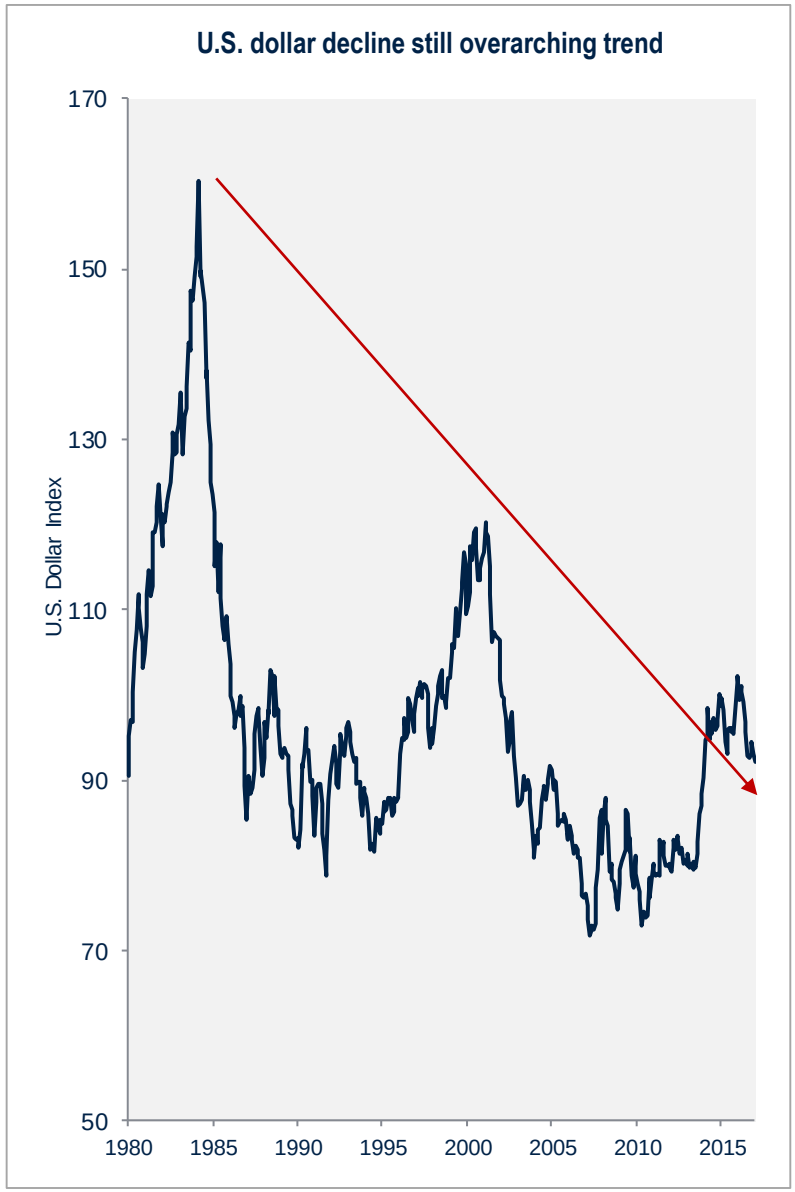
Source: Bloomberg, PGIM Fixed Income. Reflects period from 1875 to 2017.

	Spread	Short-Term Rates				
	2s/10s	1M	3M	6M	1Y	2Y
Current	0.52	1.23	1.38	1.53	1.74	1.89
Last quarter	0.85	0.94	1.05	1.19	1.29	1.49
Δ Bps	-33	29	33	34	44	40

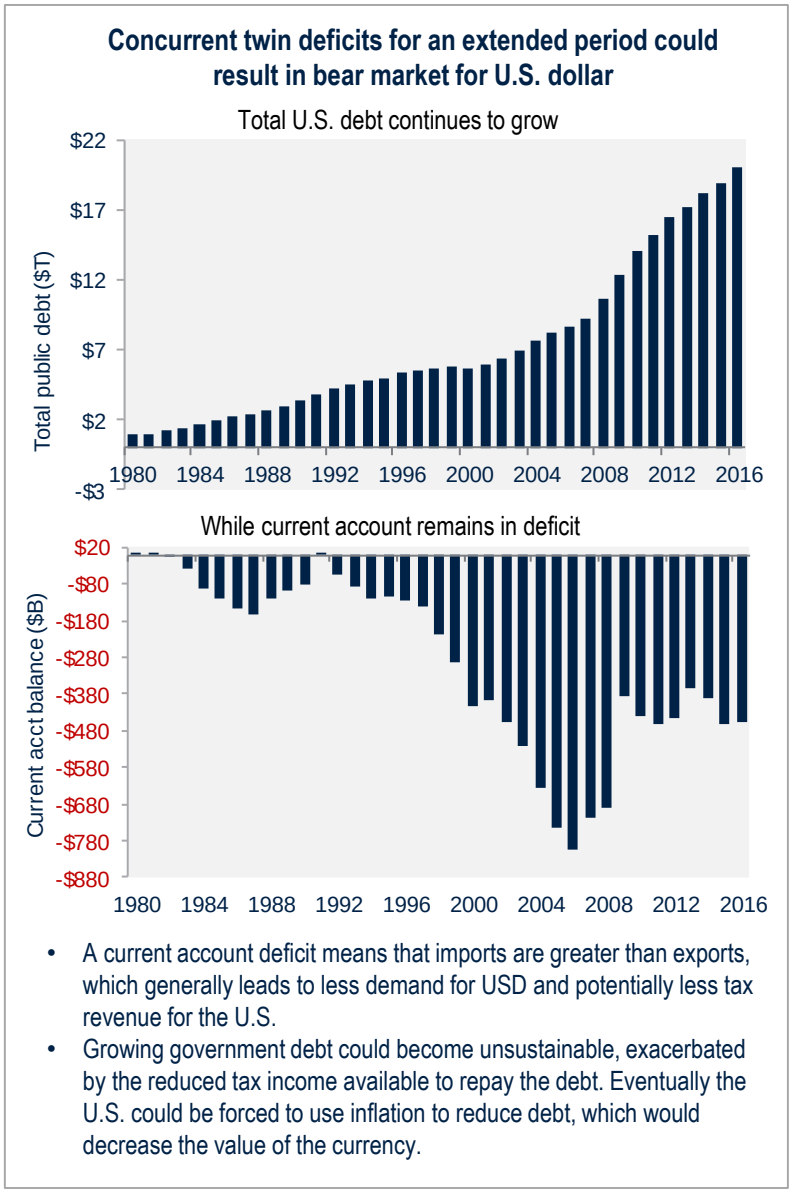
	Intermediate/Long Rates				
	3Y	5Y	7Y	10Y	30Y
Current	1.97	2.21	2.33	2.41	2.74
Last quarter	1.62	1.94	2.17	2.33	2.86
Δ Bps	35	27	16	7	-12

Source: Bloomberg. Data as of 12/31/2017.

U.S. dollar trends



Source: Bloomberg. ICE USD Spot Index. Data as of 12/31/2017.



- A current account deficit means that imports are greater than exports, which generally leads to less demand for USD and potentially less tax revenue for the U.S.
- Growing government debt could become unsustainable, exacerbated by the reduced tax income available to repay the debt. Eventually the U.S. could be forced to use inflation to reduce debt, which would decrease the value of the currency.

Source: Organization for Economic Co-operation and Development, retrieved from Federal Reserve Bank of St. Louis, FRED, World Bank. Data as of 12/31/2016.

EQUITIES

Insight into the global equity markets through market dynamics and fundamentals

Performance summary: U.S. equities

ANNUAL RETURNS AND CORRELATIONS FOR MAJOR U.S. EQUITY MARKET CAPS AND SECTORS (%)

U.S. Equity Market Cap Performance (%)							Correlations	
	Quarter	YTD	One Year	Three Year	Five Year	Ten Year	w/10Y UST	w/S&P 500
U.S. Large Cap Growth	7.86	30.21	30.21	13.79	17.33	10.00	-0.30	0.98
U.S. Large Cap Value	5.33	13.66	13.66	8.65	14.04	7.10	-0.30	0.98
U.S. Mid Cap Growth	6.81	25.27	25.27	10.30	15.30	9.10	-0.28	0.95
U.S. Mid Cap Value	5.50	13.34	13.34	9.00	14.68	9.10	-0.33	0.96
U.S. Small Cap Growth	4.59	22.17	22.17	10.28	15.21	9.19	-0.33	0.90
U.S. Small Cap Value	2.05	7.84	7.84	9.55	13.01	8.17	-0.27	0.89

U.S. Equity Sector Performance (%)							Correlations	
	Quarter	YTD	One Year	Three Year	Five Year	Ten Year	w/10Y UST	w/S&P 500
S&P 500	**6.64**	**21.83**	**21.83**	**11.41**	**15.79**	**8.50**	**-0.30**	**1.00**
Consumer Discretionary	9.87	22.98	22.98	12.81	17.64	13.52	-0.24	0.93
Consumer Staples	6.49	13.49	13.49	8.43	13.27	10.07	0.00	0.77
Energy	6.02	-1.01	-1.01	-0.18	2.78	1.16	-0.34	0.73
Financials	8.63	22.18	22.18	13.90	18.21	3.78	-0.33	0.87
Health Care	1.47	22.08	22.08	8.29	17.62	11.02	-0.14	0.80
Industrials	6.05	21.03	21.03	11.93	16.72	8.63	-0.27	0.95
Technology	9.01	38.83	38.83	18.74	20.90	11.90	-0.34	0.90
Materials	6.93	23.84	23.84	9.81	12.20	6.17	-0.32	0.90
Real Estate	3.22	10.85	10.85	6.26	9.67	7.46	-0.06	0.75
Telecommunications	3.61	-1.25	-1.25	8.03	7.68	5.07	0.04	0.55
Utilities	0.21	12.11	12.11	7.45	12.62	6.31	0.16	0.49

Source: Morningstar. Three-, five-, and ten- year returns are annualized. **U.S. Large Cap Growth:** Russell 1000 Growth Index, **U.S. Large Cap Value:** Russell 1000 Value Index, **U.S. Mid Cap Growth:** Russell Mid Cap Growth Index, **U.S. Mid Cap Value:** Russell Mid Cap Value Index, **U.S. Small Cap Growth:** Russell 2000 Value Index, **U.S. Small Cap Growth**: Russell 2000 Value Index. GICS sectors are subsets of the S&P 500 Index. Correlations based on 10 years of data. Past performance does not guarantee future results. Data as of 12/31/2017.

Performance summary: Global equities

ANNUAL RETURNS AND CORRELATIONS FOR MAJOR GLOBAL EQUITY MARKETS (%)

International/Global Equity Performance (%)							Correlations	
	Quarter	YTD	One Year	Three Year	Five Year	Ten Year	w/10Y UST	w/S&P 500
Global equities	**5.73**	**23.97**	**23.97**	**9.30**	**10.80**	**4.65**	**-0.27**	**0.96**
Developed market equities	5.51	22.40	22.40	9.26	11.64	5.03	-0.28	0.97
Emerging market equities	7.44	37.28	37.28	9.10	4.35	1.68	-0.19	0.80
International equities	**5.00**	**27.19**	**27.19**	**7.83**	**6.80**	**1.84**	**-0.24**	**0.89**
Americas								
S&P/TSX (Canada)	4.73	8.99	8.99	6.31	8.52	—	—	—
Europe								
CAC 40 (France)	-0.10	11.69	11.69	10.08	10.42	2.40	-0.24	0.85
DAX (Germany)	0.69	12.51	12.51	9.62	11.16	4.82	-0.23	0.86
FTSE 100 (UK)	5.02	11.95	11.95	9.57	9.47	5.69	-0.30	0.87
Asia/Pacific								
Hang Seng (Hong Kong)	8.84	41.29	41.29	12.29	9.74	4.33	-0.17	0.72
Nikkei 225 (Japan)	12.04	21.33	21.33	11.30	19.07	5.99	-0.16	0.74
Emerging Markets								
China	5.08	24.25	24.25	6.53	12.27	-1.07	-0.17	0.40
India	9.02	29.56	29.56	8.89	13.52	6.85	-0.14	0.68
Brazil	2.84	26.86	26.86	15.17	4.62	1.81	-0.19	0.63
Russia	1.84	-5.51	-5.51	14.74	7.42	—	—	—
Mexico	-1.97	8.13	8.13	4.58	2.46	5.27	-0.12	0.77

Source: Morningstar. Three-, five-, and ten- year returns are annualized. **Global Equities:** MSCI ACWI NR Index, **Developed Market Equities:** MSCI WorldNR Index, **Emerging Market Equities:** MSCI EM NR Index, **International Equities:** MSCI ACWI ex-U.S. NR Index, **S&P/TSX (Canada):** S&P Toronto Stock Exchange Index, **CAC 40 (France):** Euronext Paris CAC 40 Index, **Dax (Germany):** Deutsche Boerse AG German Stock Index, **FTSE 100 (UK):** Financial Times Stock Exchange 100, **Hang Seng (Hong Kong):** Hang Seng HIS TR HKD, **Nikkei 225 (Japan):** Nikkei 225 Average TR JPY, **China:** CSI 300 TR CNY, **India:** S&P BSE SENSEX TR INR, **Brazil:** BM&FBOVESPA Ibovespa IBOV TR BRL, **Russia:** MICEX PR RUB, **Mexico:** S&P/BMV IPC PR MXN. Correlations based on 10 years of data. Past performance does not guarantee future results. Data as of 12/31/2017.

Equity markets at a glance

ANNUAL RETURNS FOR MAJOR EQUITY MARKETS (%)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
-28.92 US Small Cap Value	78.51 Emerging Market Equity	29.09 US Small Cap Growth	2.64 US Large Cap Growth	18.51 US Mid Cap Value	43.30 US Small Cap Growth	14.75 US Mid Cap Value	5.67 US Large Cap Growth	31.74 US Small Cap Value	37.28 Emerging Market Equity
-36.85 US Large Cap Value	46.29 US Mid Cap Growth	26.38 US Mid Cap Growth	2.11 US Equity	18.22 Emerging Market Equity	35.74 US Mid Cap Growth	13.69 US Equity	1.38 US Equity	20.00 US Mid Cap Value	30.21 US Large Cap Growth
-37.00 US Equity	41.45 International Equities	24.75 US Mid Cap Value	0.39 US Large Cap Value	18.05 US Small Cap Value	34.52 US Small Cap Value	13.45 US Large Cap Value	-0.2 US Mid Cap Growth	17.34 US Large Cap Value	27.19 International Equities
-38.44 US Large Cap Growth	37.21 US Large Cap Growth	24.50 US Small Cap Value	-1.38 US Mid Cap Value	17.51 US Large Cap Value	33.48 US Large Cap Growth	13.05 US Large Cap Growth	-0.87 Developed Market Equities	11.96 US Equity	25.27 US Mid Cap Growth
-38.44 US Mid Cap Value	34.63 Global Equities	18.88 Emerging Market Equity	-1.65 US Mid Cap Growth	16.83 International Equities	33.46 US Mid Cap Value	11.90 US Mid Cap Growth	-1.38 US Small Cap Growth	11.32 US Small Cap Growth	23.97 Global Equities
-38.54 US Small Cap Growth	34.47 US Small Cap Growth	16.71 US Large Cap Growth	-2.91 US Small Cap Growth	16.13 Global Equities	32.53 US Large Cap Value	5.60 US Small Cap Growth	-2.36 Global Equities	11.19 Emerging Market Equity	22.40 Developed Market Equities
-40.71 Developed Market Equities	34.21 US Mid Cap Value	15.51 US Large Cap Value	-5.50 US Small Cap Value	16.00 US Equity	32.39 US Equity	4.94 Developed Market Equities	-3.83 US Large Cap Value	7.86 Global Equities	22.17 US Small Cap Growth
-42.19 Global Equities	29.99 Developed Market Equities	15.06 US Equity	-5.54 Developed World Equities	15.83 Developed Market Equities	26.68 Developed Market Equities	4.22 US Small Cap Value	-4.78 US Mid Cap Value	7.51 Developed Market Equities	21.83 US Equity
-44.32 US Mid Cap Growth	26.46 US Equity	12.67 Global Equities	-7.35 Global Equities	15.81 US Mid Cap Growth	22.80 Global Equities	4.16 Global Equities	-5.66 International Equities	7.33 US Mid Cap Growth	13.66 US Large Cap Value
-45.53 International Equities	20.58 US Small Cap Value	11.76 Developed Market Equities	-13.71 International Equities	15.26 US Large Cap Growth	15.29 International Equities	-2.19 Emerging Market Equity	-7.47 US Small Cap Value	7.08 US Large Cap Growth	13.34 US Mid Cap Value
-53.33 Emerging Market Equity	19.69 US Large Cap Value	11.15 International Equities	-18.42 Emerging Market Equity	14.59 US Small Cap Growth	-2.60 Emerging Market Equity	-3.87 International Equities	-14.92 Emerging Market Equity	4.50 International Equities	7.84 US Small Cap Value

Source: Morningstar. **U.S. Equities:** S&P 500 Index, **U.S. Large Cap Growth:** Russell 1000 Growth Index, **U.S. Large Cap Value:** Russell 1000 Value Index, **U.S. Mid Cap Growth:** Russell Mid Cap Growth Index, **U.S. Mid Cap Value:** Russell Mid Cap Value Index, **U.S. Small Cap Growth:** Russell 2000 Value Index, **U.S. Small Cap Growth**: Russell 2000 Value Index, **International Equities:** MSCI ACWI ex-U.S. NR Index, **Global Equities:** MSCI ACWI NR Index, **Developed Market Equities:** MSCI WorldNR Index**, Emerging Market Equities:** MSCI EM NR Index. Past performance does not guarantee future results. Data as of 12/31/2017.

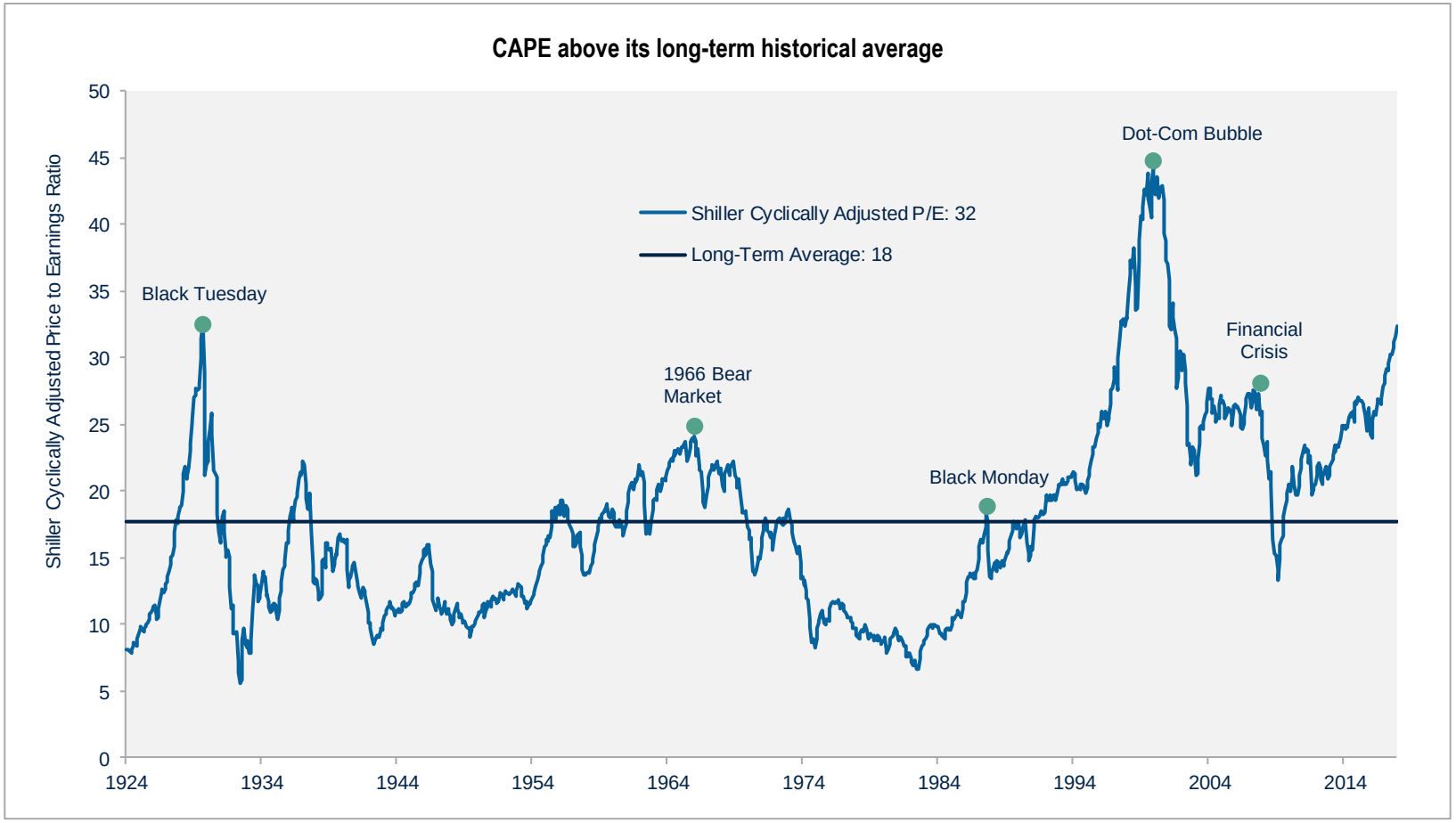
Equity sectors at a glance

ANNUAL RETURNS FOR U.S. EQUITY SECTORS (%)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
-15.43 Consumer Staples	61.72 Info. Tech.	32.32 Real Estate	19.91 Utilities	28.82 Financials	43.08 Consumer Discretionary	30.19 Real Estate	10.11 Consumer Discretionary	27.36 Energy	38.83 Info. Tech.
-22.81 Health Care	48.59 Materials	27.66 Consumer Discretionary	13.99 Consumer Staples	23.92 Consumer Discretionary	41.46 Health Care	28.98 Utilities	6.89 Health Care	23.49 Telecom	23.84 Materials
-28.98 Utilities	41.30 Consumer Discretionary	26.73 Industrials	12.73 Health Care	19.74 Real Estate	40.68 Industrials	25.34 Health Care	6.60 Consumer Staples	22.80 Financials	22.98 Consumer Discretionary
-30.49 Telecom	27.10 Real Estate	22.20 Materials	11.39 Real Estate	18.31 Telecom	35.63 Financials	20.12 Info. Tech.	5.92 Info. Tech.	18.86 Industrials	22.18 Financials
-33.49 Consumer Discretionary	20.93 Industrials	20.46 Energy	6.27 Telecom	17.89 Health Care	28.43 Info. Tech.	15.98 Consumer Staples	4.68 Real Estate	16.69 Materials	22.08 Health Care
-34.87 Energy	19.70 Health Care	18.97 Telecom	6.13 Consumer Discretionary	15.35 Industrials	26.14 Consumer Staples	15.20 Financials	3.40 Telecom	16.29 Utilities	21.03 Industrials
-39.92 Industrials	17.22 Financials	14.11 Consumer Staples	4.72 Energy	14.97 Materials	25.6 Materials	9.83 Industrials	-1.53 Financials	13.85 Info. Tech.	13.49 Consumer Staples
-42.31 Real Estate	14.89 Consumer Staples	12.13 Financials	2.41 Info. Tech.	14.82 Info. Tech.	25.07 Energy	9.68 Consumer Discretionary	-2.53 Industrials	6.03 Consumer Discretionary	12.11 Utilities
-43.14 Info. Tech.	13.82 Energy	10.19 Info. Tech.	-0.59 Industrials	10.76 Consumer Staples	13.21 Utilities	6.91 Materials	-4.85 Utilities	5.38 Consumer Staples	10.85 Real Estate
-45.66 Materials	11.91 Utilities	5.46 Utilities	-9.75 Materials	4.61 Energy	11.47 Telecom	2.99 Telecom	-8.38 Materials	3.39 Real Estate	-1.01 Energy
-55.32 Financials	8.93 Telecom	2.90 Health Care	-17.06 Financials	1.29 Utilities	1.60 Real Estate	-7.78 Energy	-21.12 Energy	-2.69 Health Care	-1.25 Telecom Services

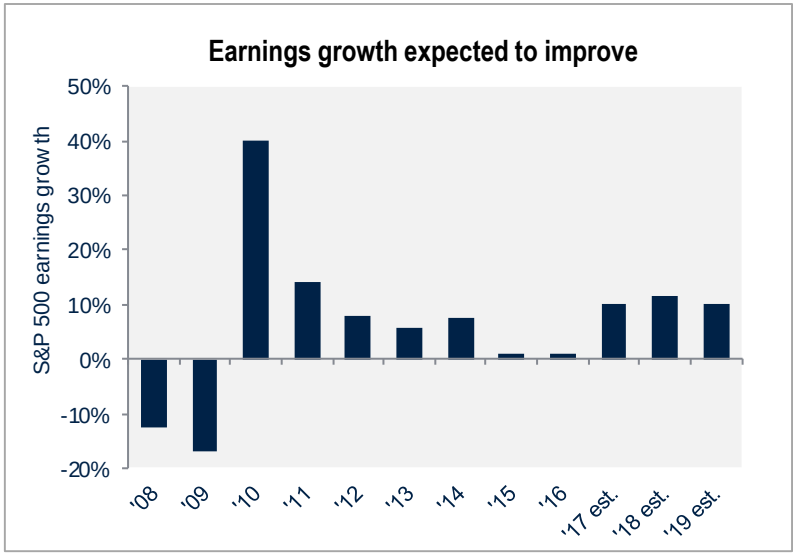
Source: Morningstar. GICS sectors are subsets of the S&P 500 Index. Past performance does not guarantee future results. Data as of 12/31/2017.

U.S. equity valuations above long-term average

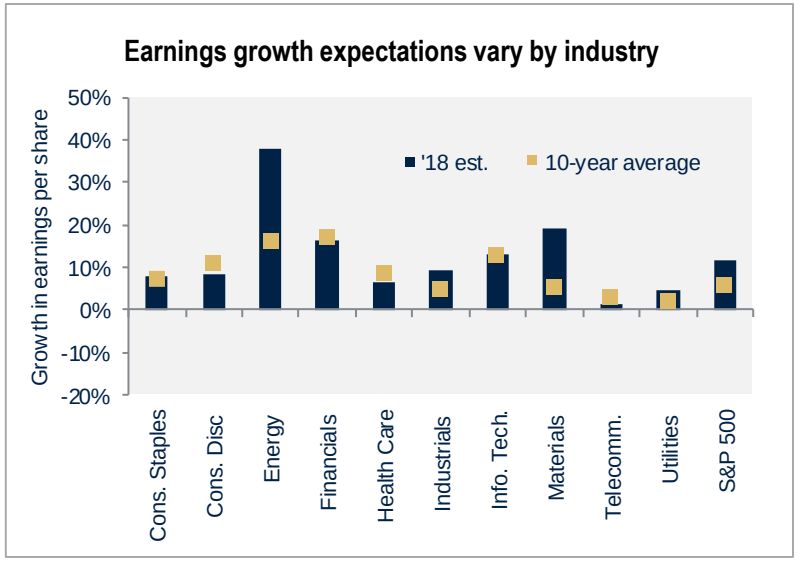


Source: Bloomberg. Shiller Cyclically Adjusted Price to Earnings Ratio of the S&P 500 Index. Long-term average calculated from 1924 to present. Data as of 12/31/2017.

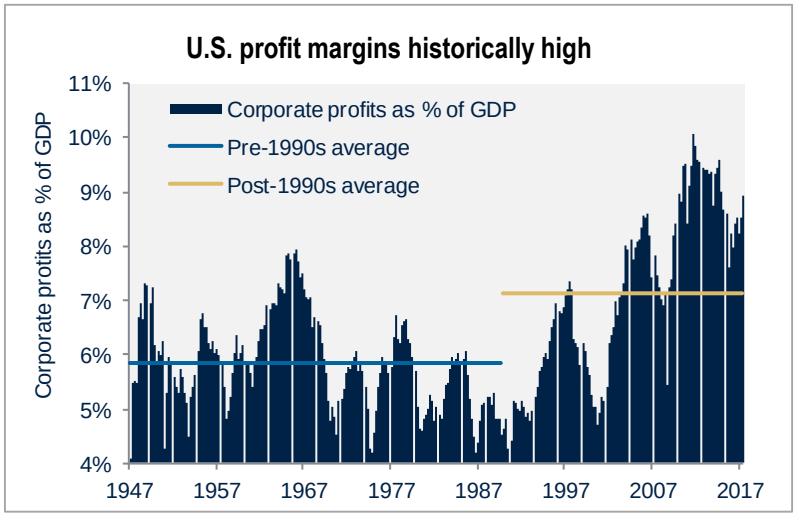
U.S. equity market fundamentals



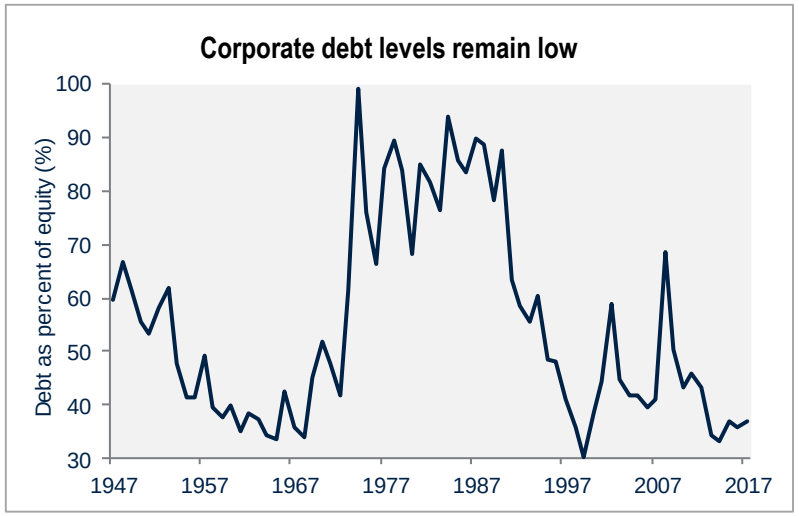
Source: FactSet. S&P 500 Index earnings growth, year over year. Data as of 12/31/2017.



Source: FactSet. S&P 500 Index sub-sectors. Growth calculated year over year. Data as of 12/31/2017.

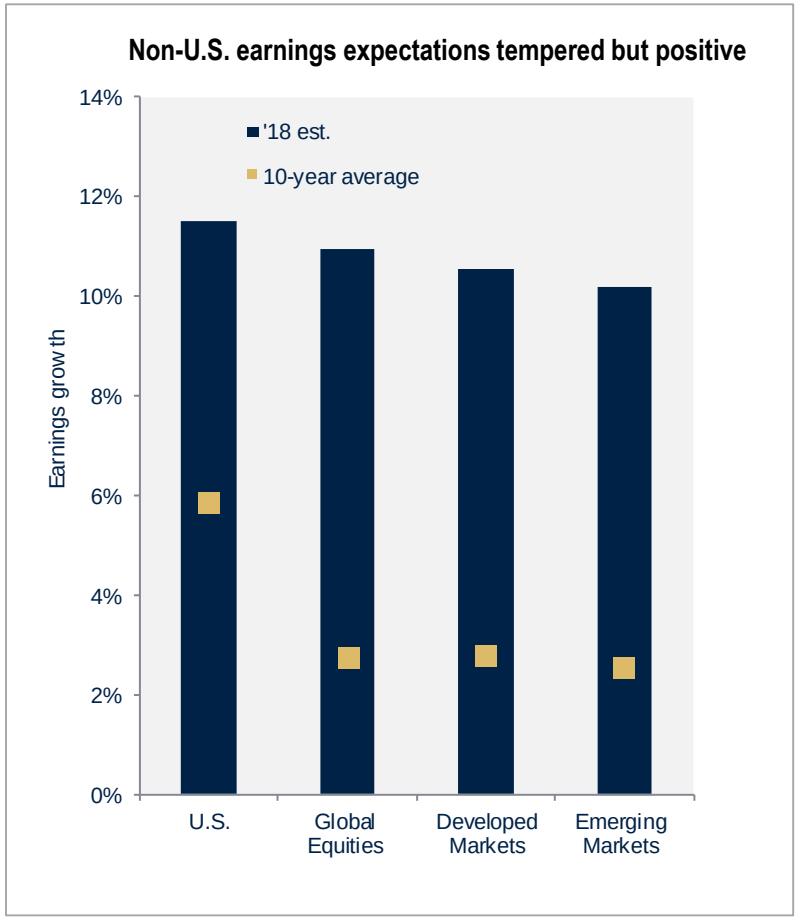


Source: U.S. Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis. Data as of 9/30/2017.

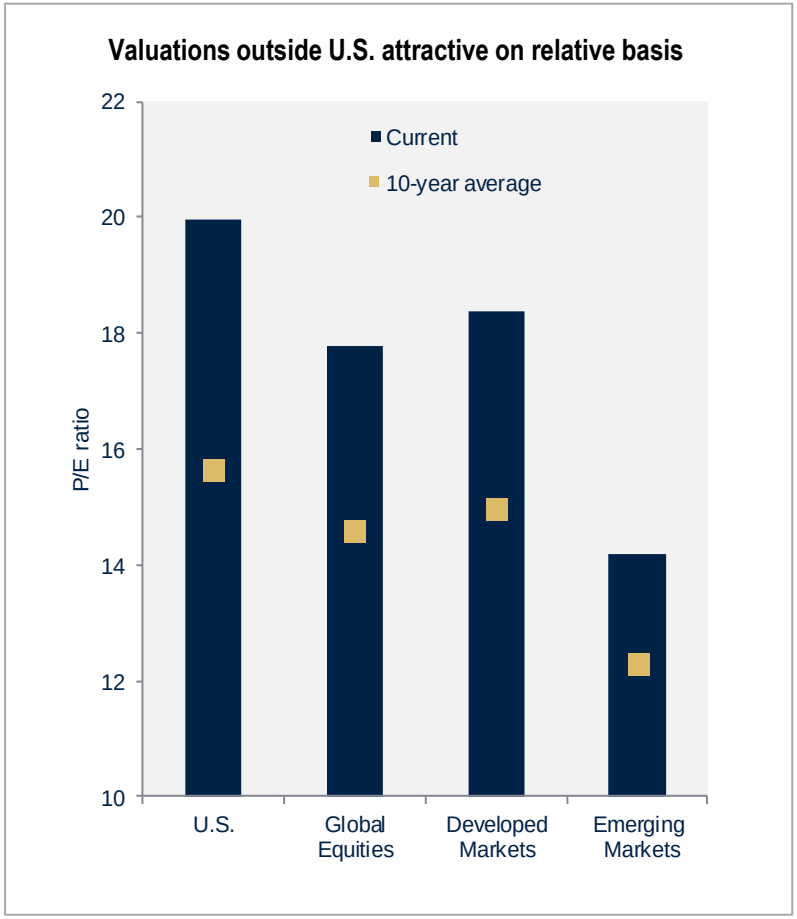


Source: Board of Governors of the Federal Reserve System (U.S.), Nonfinancial Corporate Business; Credit Market Debt as a Percentage of the Market Value of Corporate Equities, retrieved from FRED, Federal Reserve Bank of St. Louis. Data as of 12/31/2017.

Global equity earnings & valuations

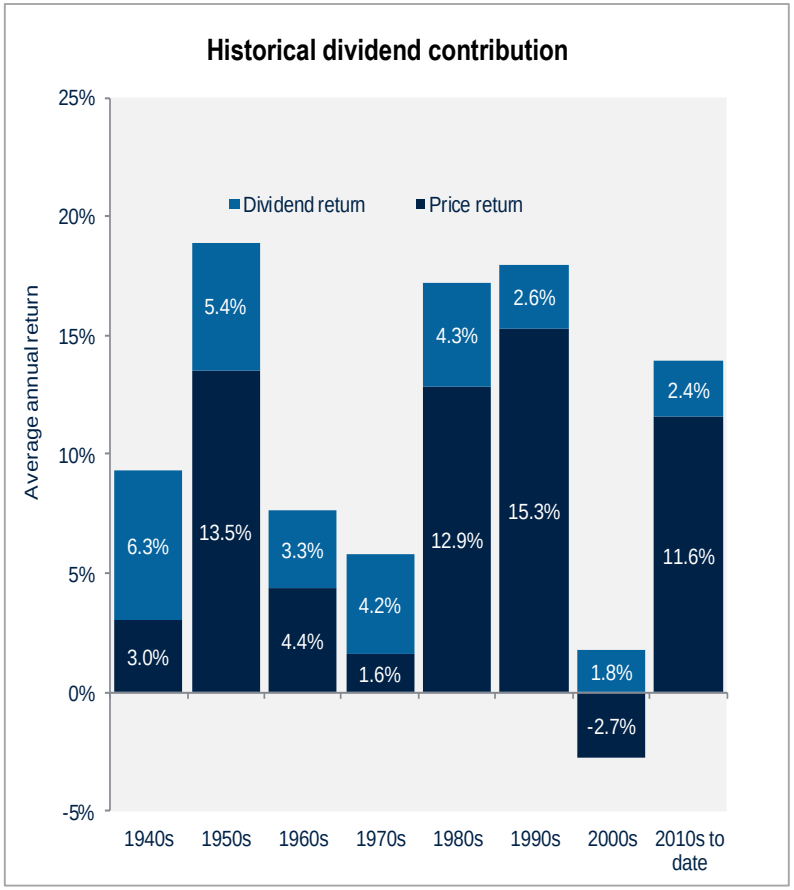


Source: Factset. Earnings growth, year over year. **U.S.:** S&P 500, **Global Equities:** MSCI ACWI, **Developed Markets:** MSCI World, **Emerging Markets:** MSCI EM. Data as of 12/31/2017.

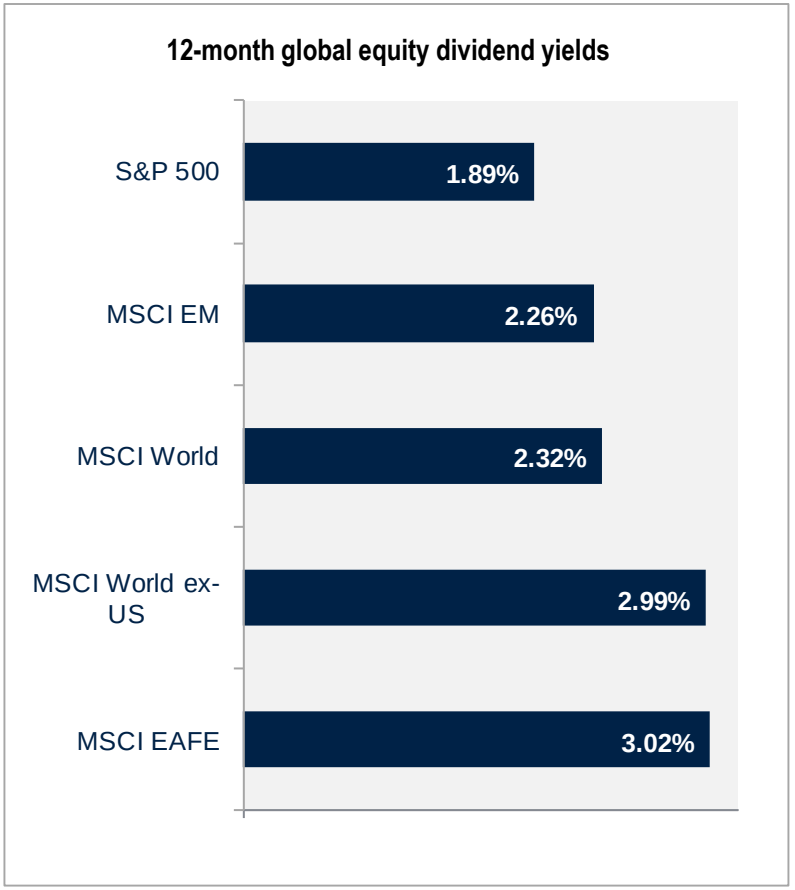


Source: Factset. Bloomberg. **U.S.:** S&P 500, **Global Equities:** MSCI ACWI, **Developed Markets:** MSCI World, **Emerging Markets:** MSCI EM. Data as of 12/31/2017.

Dividends

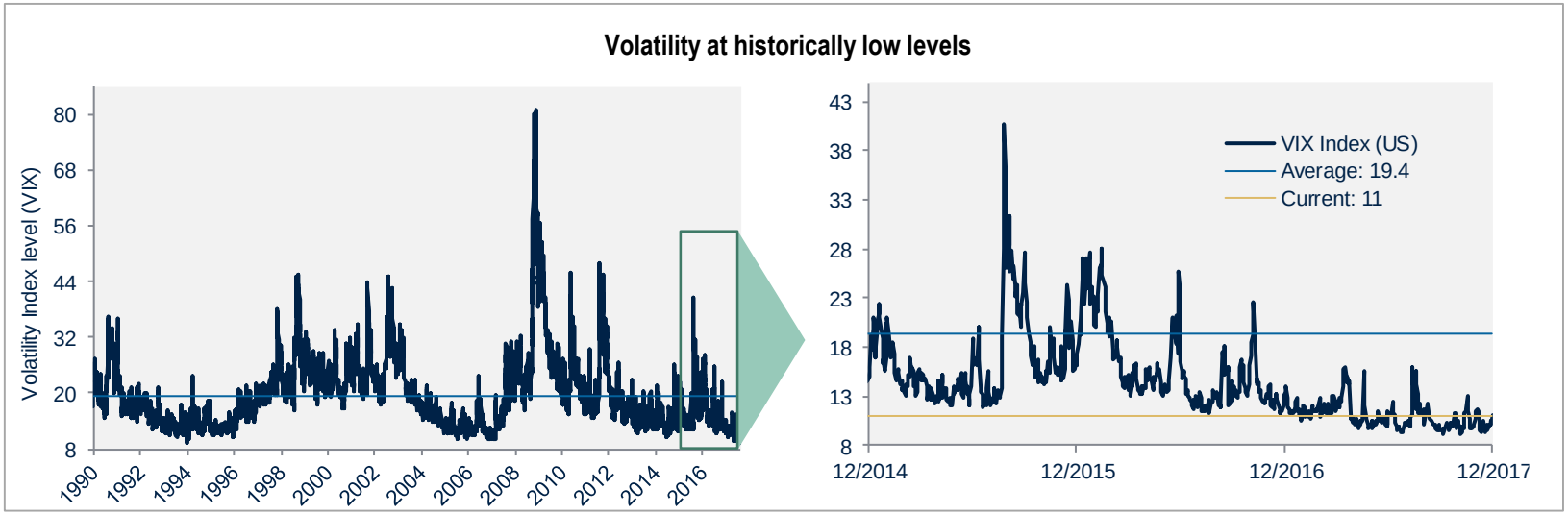


Source: Bloomberg. Returns for the S&P 500 Index. Data as of 12/31/2017.

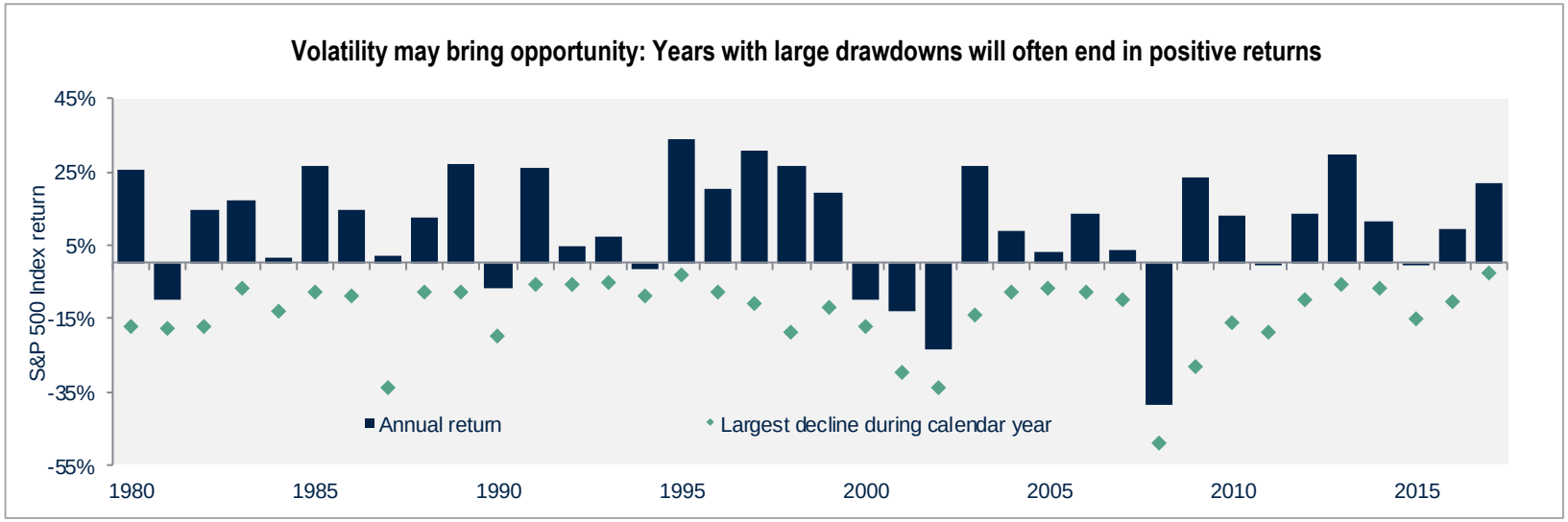


Source: Bloomberg. Data as of 12/31/2017.

Volatility



Source: Bloomberg. CBOE Volatility Index. Data as of 12/31/2017.



Source: Bloomberg. S&P 500 Index. Data as of 12/31/2017.

FIXED INCOME

Major themes in the investment grade and high yield fixed income markets

Performance summary: Fixed income

RETURNS AND CORRELATIONS FOR MAJOR FIXED INCOME SECTORS

U.S. Fixed Income Sector Performance (%)							
	Quarter	YTD	One Year	Three Year	Five Year	Ten Year	Correlation with 10Y UST
Global Bonds	**1.08**	**7.39**	**7.39**	**2.02**	**0.79**	**3.09**	**0.51**
U.S. Broad Market	**0.39**	**3.54**	**3.54**	**2.24**	**2.10**	**4.01**	**0.85**
U.S. Treasuries	0.05	2.31	2.31	1.40	1.27	3.31	0.99
U.S. TIPS	1.26	3.01	3.01	2.05	0.13	3.53	0.55
Municipals	0.75	5.45	5.45	2.98	3.02	4.46	0.37
High Yield Municipals	1.83	9.69	9.69	4.77	4.35	5.25	0.04
Agency MBS	0.15	2.47	2.47	1.88	2.04	3.84	0.80
CMBS	0.35	3.35	3.35	2.54	2.34	4.84	0.01
ABS	-0.01	1.55	1.55	1.61	1.28	2.96	0.06
Inv. Grade Corporate	1.17	6.42	6.42	3.90	3.48	5.65	0.46
High Yield	0.47	7.50	7.50	6.35	5.78	8.03	-0.24
Leveraged Loans	1.17	4.25	4.25	4.50	4.33	4.57	-0.43
International Bonds (Unhedged)	**1.63**	**10.51**	**10.51**	**1.77**	**-0.20**	**2.40**	**0.37**
International Bonds (Hedged)	1.13	2.48	2.48	2.90	3.70	4.23	0.74
Emerging Hard Currency	1.16	10.26	10.26	7.11	4.58	7.29	0.23
Emerging Local Currency	0.82	15.21	15.21	2.53	-1.55	3.56	0.12

Source: Morningstar. **U.S. Broad Market:** BBG Barclays U.S. Aggregate, **U.S. Treasury:** BBG Barclays U.S. Treasury Index, **U.S. TIPS:** BBG Barclays U.S. Treasury TIPS Index, **Municipals:** BBG Barclays Municipal Bond Index, **High Yield Municipals:** BBG Barclays HY Muni Index, **Agency MBS:** BBG Barclays U.S. MBS- Agency Fixed Rate Index, **Commercial MBS:** BBG Barclays CMBS ERISA Eligible Index, **ABS:** BBG Barclays ABS Index, **Investment Grade Corporates:** BBG Barclays U.S. Corp IG Index, **High Yield:** BBG Barclays U.S. High Yield Corporate Index, **Leveraged Loans:** Credit Suisse Leveraged Loan Index, **International Bonds (Unhedged):** BBG Barclays Global Aggregate ex-U.S., **International Bonds (Hedged):** BBG Barclays Global Aggregate ex-U.S. Hedged USD, **Global Bonds:** BBG Barclays Global Aggregate, **Emerging Market Local:** JPM EMBI Global Diversified TR, **Emerging Market Hard Currency:** JP Morgan GBI-EM Global Diversified Index. Correlations calculated over the last 10 years. Past performance does not guarantee future results. Correlations based on 10 years of data. Data as of 12/31/2017.

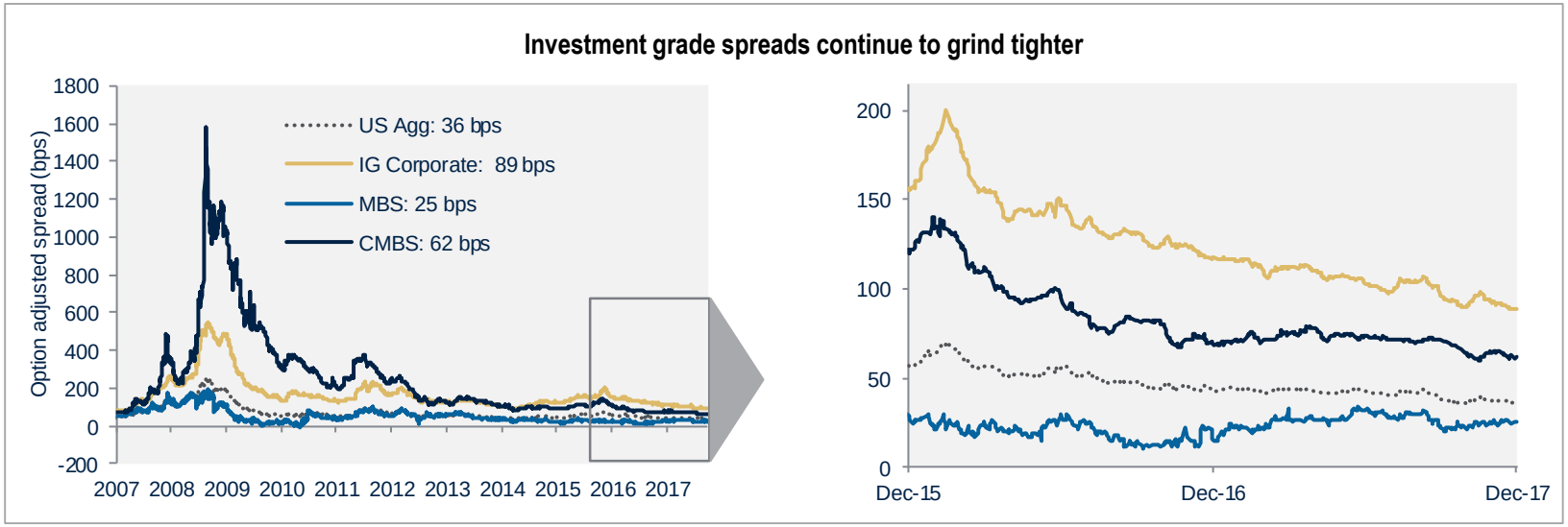
Fixed income sectors at a glance

ANNUAL RETURNS FOR MAJOR FIXED INCOME SECTORS (%)

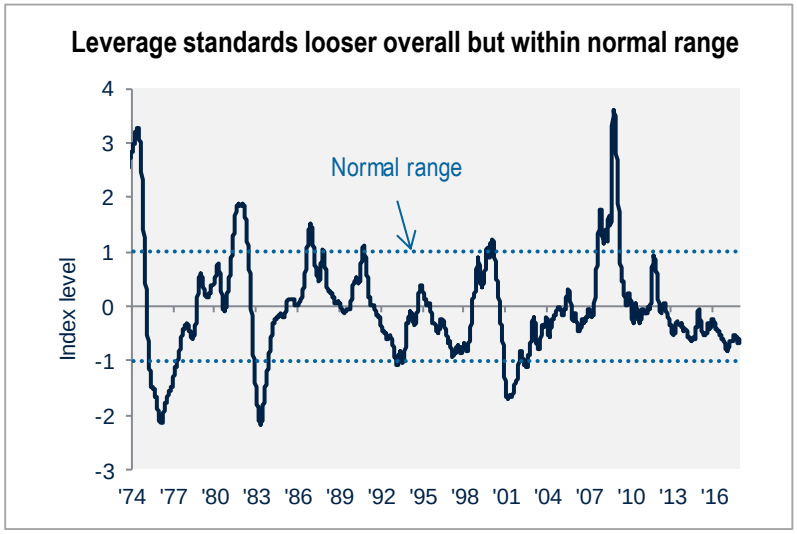
2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
13.74 US Treasuries	58.21 High Yield	20.40 CMBS	13.56 US TIPS	18.14 HY Municipals	7.44 High Yield	13.84 HY Municipals	3.30 Municipals	17.13 High Yield	15.21 EM Local Curr.
8.34 Agency MBS	44.87 Loans	15.68 EM Local Curr.	10.70 Municipals	17.44 EM Hard Curr.	6.15 Loans	9.05 Municipals	1.81 HY Municipals	10.15 EM Hard Curr.	10.51 International Bonds
5.24 US Broad Market	32.74 HY Municipals	15.12 High Yield	9.81 US Treasuries	16.76 EM Local Curr.	0.23 CMBS	7.46 Inv. Grade Corporate	1.51 Agency MBS	9.94 EM Local Curr.	10.26 EM Hard Curr.
4.79 Global Bonds	29.82 EM Hard Curr.	12.24 EM Hard Curr.	9.25 HY Municipals	15.81 High Yield	-0.27 ABS	7.43 EM Hard Curr.	1.25 ABS	9.88 Loans	9.69 HY Municipals
4.40 International Bonds	28.45 CMBS	9.98 Loans	8.15 Inv. Grade Corporate	9.82 Inv. Grade Corporate	-1.41 Agency MBS	6.08 Agency MBS	1.18 EM Hard Curr.	6.11 Inv. Grade Corporate	7.50 High Yield
-2.35 US TIPS	24.71 ABS	9.00 Inv. Grade Corporate	7.84 US Broad Market	9.66 CMBS	-1.53 Inv. Grade Corporate	5.97 US Broad Market	0.97 CMBS	4.68 US TIPS	7.39 Global Bonds
-2.47 Municipals	21.98 EM Local Curr.	7.79 HY Municipals	7.35 EM Hard Curr.	9.43 Loans	-2.02 US Broad Market	5.05 US Treasuries	0.84 US Treasuries	3.32 CMBS	6.42 Inv. Grade Corporate
-4.94 Inv. Grade Corporate	18.68 Inv. Grade Corporate	6.54 US Broad Market	6.23 Agency MBS	6.98 US TIPS	-2.55 Municipals	3.86 CMBS	0.55 US Broad Market	2.99 HY Municipals	5.45 Municipals
-5.22 EM Local Curr.	12.91 Municipals	6.31 US TIPS	6.02 CMBS	6.78 Municipals	-2.60 Global Bonds	3.64 US TIPS	-0.38 Loans	2.65 US Broad Market	4.25 Loans
-12.03 EM Hard Curr.	11.41 US TIPS	5.87 US Treasuries	5.64 Global Bonds	4.32 Global Bonds	-2.75 US Treasuries	2.45 High Yield	-0.68 Inv. Grade Corporate	2.09 Global Bonds	3.54 US Broad Market
-12.72 ABS	7.53 International Bonds	5.85 ABS	5.14 ABS	4.21 US Broad Market	-3.08 International Bonds	2.06 Loans	-1.44 US TIPS	2.03 ABS	3.35 CMBS
-20.52 CMBS	6.93 Global Bonds	5.54 Global Bonds	4.98 High Yield	4.09 International Bonds	-5.25 EM Hard Curr.	1.88 ABS	-3.15 Global Bonds	1.67 Agency MBS	3.01 US TIPS
-26.16 High Yield	5.93 US Broad Market	5.37 Agency MBS	4.36 International Bonds	3.66 ABS	-5.51 HY Municipals	0.59 Global Bonds	-4.47 High Yield	1.49 International Bonds	2.47 Agency MBS
-27.01 HY Municipals	5.89 Agency MBS	4.95 International Bonds	1.82 Loans	2.59 Agency MBS	-8.61 US TIPS	-3.08 International Bonds	-6.02 International Bonds	1.04 US Treasuries	2.31 US Treasuries
-28.75 Loans	-3.57 US Treasuries	2.38 Municipals	-1.75 EM Local Curr.	1.99 US Treasuries	-8.98 EM Local Curr.	-5.72 EM Local Curr.	-14.92 EM Local Curr.	0.25 Municipals	1.55 ABS

Source: Morningstar. **U.S. Broad Market:** BBG Barclays U.S. Aggregate, **U.S. Treasury:** BBG Barclays U.S. Treasury Index, **U.S. TIPS:** BBG Barclays U.S. Treasury TIPS Index, **Municipals:** BBG Barclays Municipal Bond Index, **High Yield Municipals:** BBG Barclays HY Muni Index, **Agency MBS:** BBG Barclays U.S. MBS- Agency Fixed Rate Index, **Commercial MBS:** BBG Barclays CMBS ERISA Eligible Index, **ABS:** BBG Barclays ABS Index, **Investment Grade Corporates:** BBG Barclays U.S. Corp IG Index, **High Yield:** BBG Barclays U.S. High Yield Corporate Index, **Leveraged Loans:** Credit Suisse Leveraged Loan Index, **International Bonds:** BBG Barclays Global Aggregate ex-U.S., **Global Bonds:** BBG Barclays Global Aggregate, **Emerging Market Local:** JPM GBI-EM Global Diversified TR, **Emerging Market Hard Currency:** JP Morgan GBI-EM Global Diversified Index. Past performance does not guarantee future results. Data as of 12/31/2017.

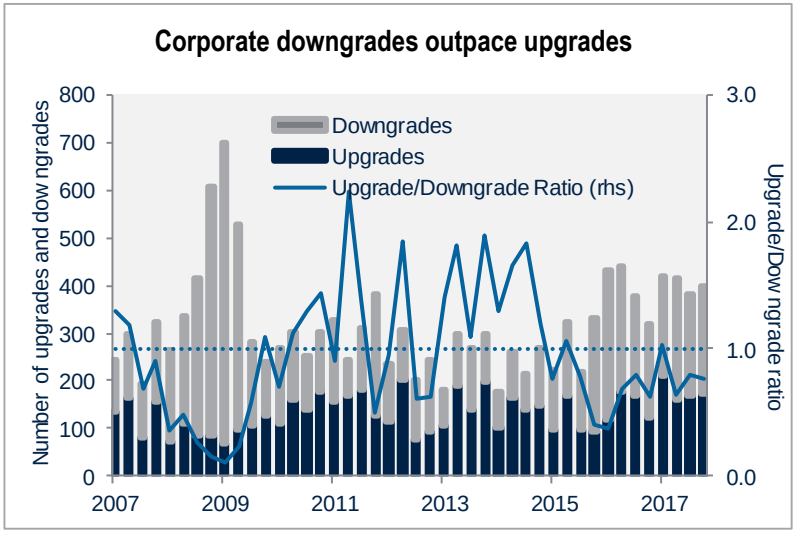
Credit



Source: Bloomberg. **IG Corporate:** Bloomberg Barclays U.S. Aggregate Corporate Index, **MBS:** BBG Barclays U.S. MBS-Agency Fixed Rate Index, **CMBS:** BBG Barclays CMBS ERISA Eligible Index. Data as of 12/31/2017.

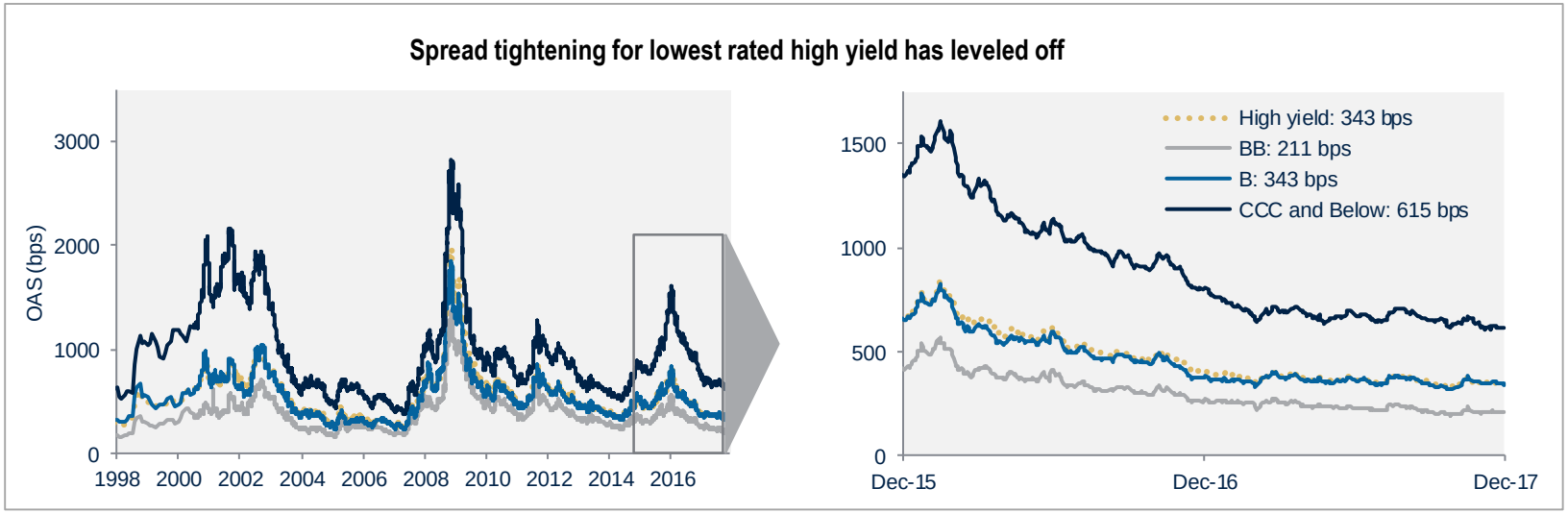


Source: Bloomberg, Chicago Fed National Financial Conditions Leverage Subindex. Data as of 12/31/2017.

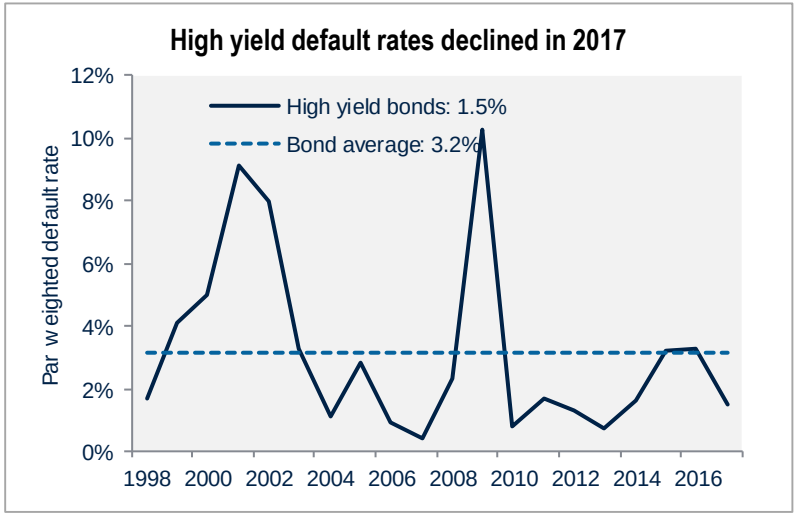


Source: Bloomberg. Includes investment grade and high yield issuers. When ratio is above blue dotted line, there are more upgrades than downgrades. Ratio below: more downgrades than upgrades. Data as of 12/31/2017.

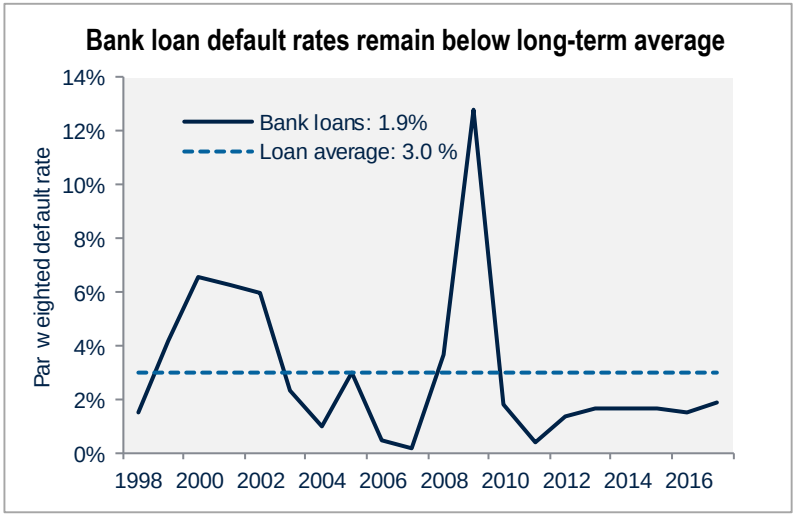
Leveraged credit



Source: Bloomberg. Bloomberg Barclays U.S. HY Corporate Index, BB, B, and CCC and below are subsets of this index. Data as of 12/31/2017.

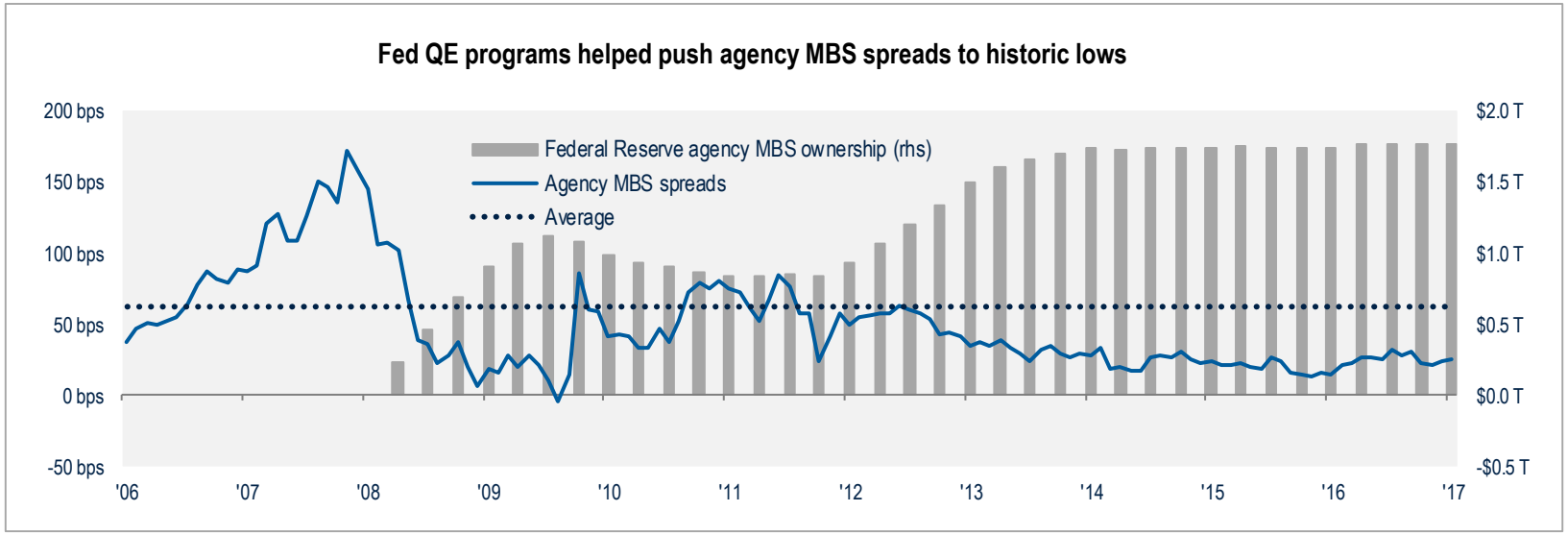


Source: JP Morgan. Data as of 12/31/2017.

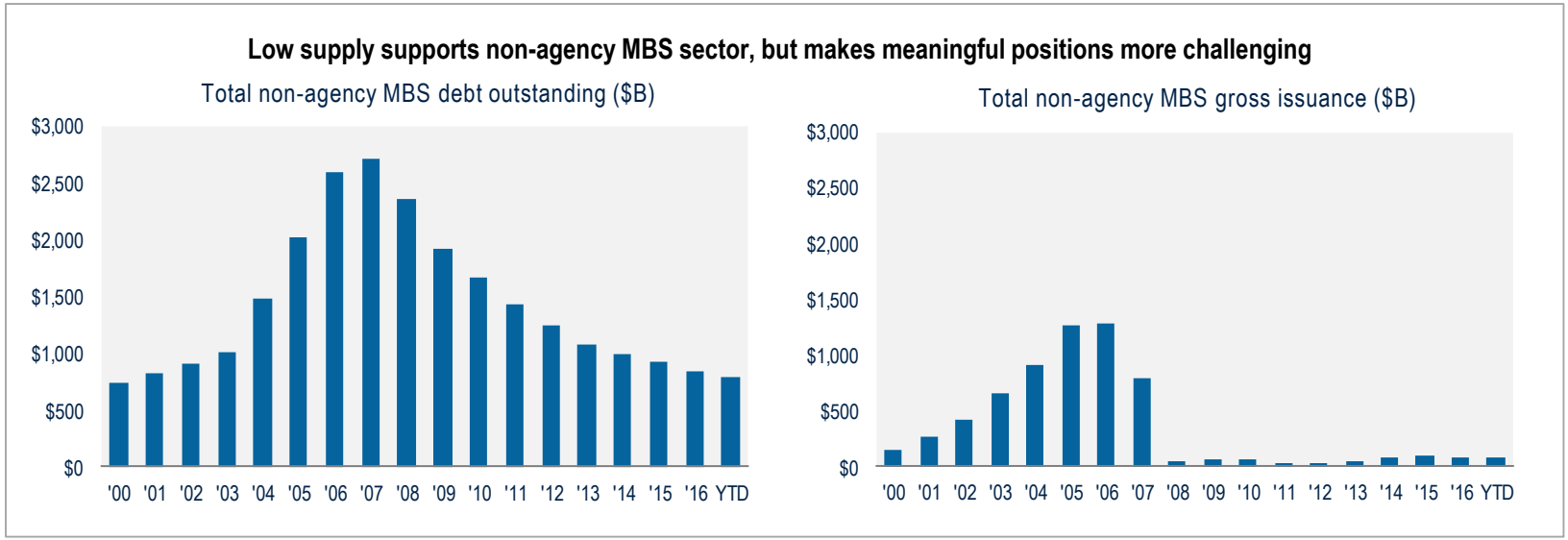


Source: JP Morgan. Data as of 12/31/2017.

Mortgage-backed securities

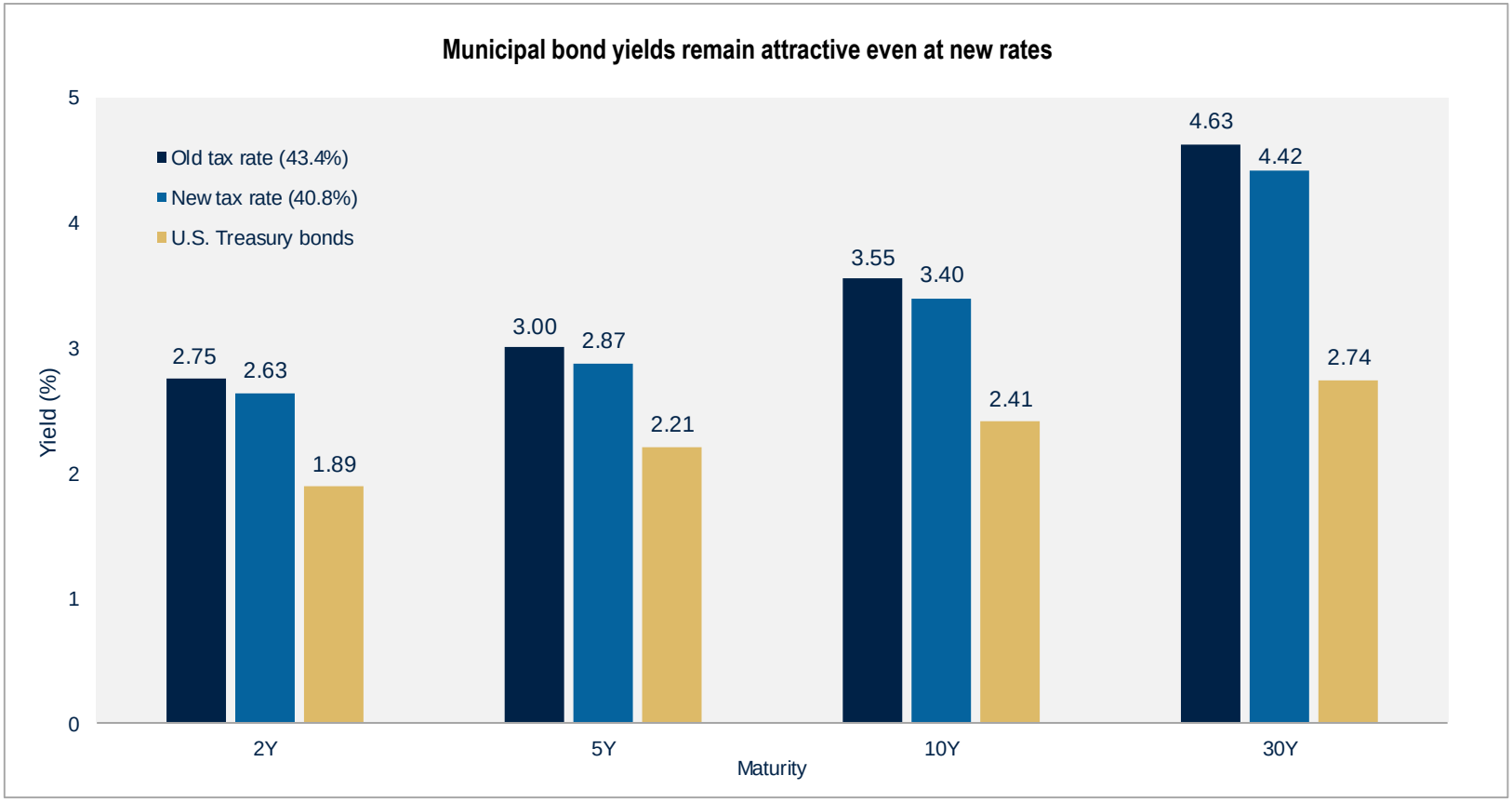


Source: Spreads, Bloomberg as of 12/31/17. Federal Reserve data, www.federalreserve.gov. QE1 (11/2008-3/2010) Federal Reserve bought $1.25 trillion of agency MBS. QE2 (11/2010-6/2011) Federal Reserve did not buy additional agency MBS. QE3 (9/2012-12/2013) Federal Reserve bought $620 billion of agency MBS.



Source: SIFMA as of 9/30/2017.

Municipal bonds

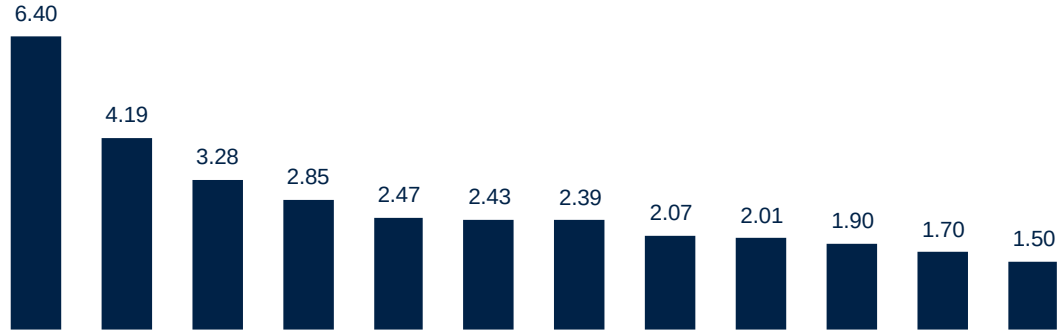


Source: Bloomberg. Tax rates from top tax bracket include 3.8% ACA add-on tax for net investment income. Data as of 12/31/2017.

Rising rates

Fixed income sector performance during periods of Fed rate hikes

Average annual return when rates rise (%)



Rate hike period	# Mos.	Δ in yield	Δ in curve steepness	Bank Loans	High Yield	Intl' Unhedged	EM Hard Curr.	Agency MBS	ABS	Global Bonds	Intl' Hedged	Broad Market	IG Corp.	U.S. Treas.	Muni
Feb. 1994 to Feb. 1995	13	+300 bps	-110 bps	9.54	1.43	8.75	-24.13	1.89	2.34	3.34	-2.05	0.01	-0.91	-0.79	-0.70
Jun. 1999 to May 2000	12	+175 bps	-64 bps	3.93	-3.21	-6.24	14.67	2.47	3.18	-2.38	2.5	2.11	-0.04	3.35	-0.86
Jun. 2004 to Jun. 2006	25	+425 bps	-212 bps	5.88	8.20	4.31	11.83	3.53	2.56	3.81	4.4	3.09	2.94	2.69	4.49
Dec. 2015 to Dec. 2017	25	+125 bps	-65 bps	6.25	10.34	6.29	9.04	1.97	1.62	4.78	3.42	2.81	5.61	1.53	3.05
AVERAGE	**19**	**+256 bps**	**-113 bps**	**6.40**	**4.19**	**3.28**	**2.85**	**2.47**	**2.43**	**2.39**	**2.07**	**2.01**	**1.90**	**1.70**	**1.50**

Source: Federal Reserve, Morningstar. Data as of 12/31/2017.

Global bonds

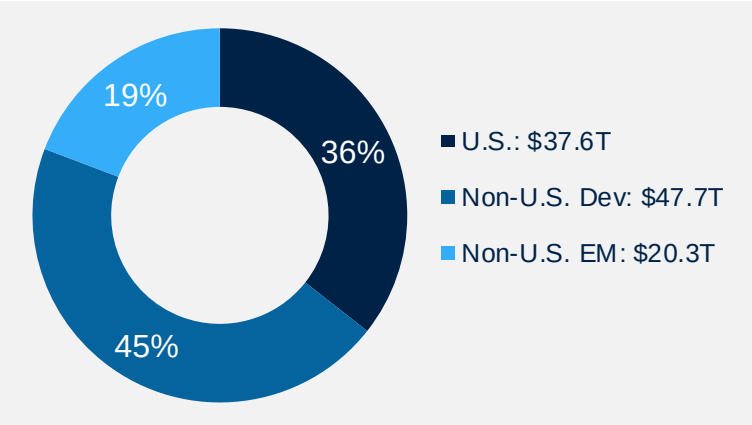
GOVERNMENT BOND YIELDS (%)

Developed	2Y	5Y	10Y
Australia	1.97	2.29	2.63
Canada	1.69	1.86	2.04
France	-0.49	-0.01	0.78
Germany	-0.64	-0.21	0.42
Italy	-0.27	0.73	2.01
Japan	-0.14	-0.11	0.04
Switzerland	-0.96	-0.56	-0.18
Spain	-0.38	0.37	1.56
U.S.	1.88	2.21	2.41
U.K.	0.43	0.72	1.19

Emerging	2Y	5Y	10Y
Brazil	7.78	8.44	9.80
China	3.88	3.85	3.90
India	6.78	7.13	7.32
Indonesia	5.54	5.96	6.32
Malaysia	3.32	3.53	3.91
Mexico	7.58	7.60	7.65
Russia	6.85	7.12	7.64
South Africa	7.30	7.92	8.72
South Korea	2.08	2.35	2.47
Turkey	13.40	12.36	11.67

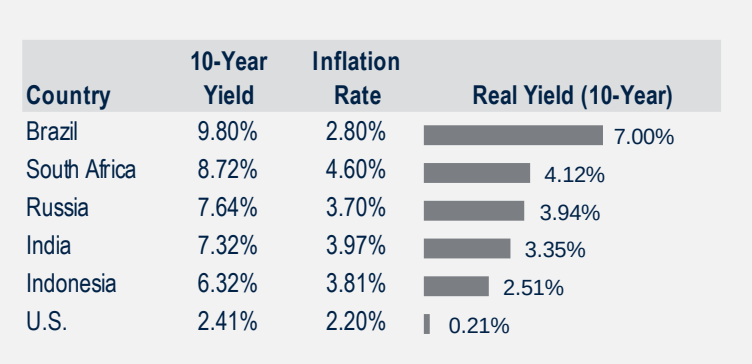
Source: Bloomberg. Data as of 12/31/2017.

Majority of global debt originates outside of the U.S.



Source: BIS as of 6/30/2017.

Attractive real yields in emerging markets



Country	10-Year Yield	Inflation Rate	Real Yield (10-Year)
Brazil	9.80%	2.80%	7.00%
South Africa	8.72%	4.60%	4.12%
Russia	7.64%	3.70%	3.94%
India	7.32%	3.97%	3.35%
Indonesia	6.32%	3.81%	2.51%
U.S.	2.41%	2.20%	0.21%

Source: Bloomberg. Data as of 12/31/2017.

REAL ASSETS

A focus on the main drivers of the real estate and commodity markets

Performance summary: Real assets

ANNUAL RETURNS FOR MAJOR COMMODITY AND REAL ESTATE SECTORS (%)

Commodity Performance (%)	Quarter	YTD	One Year	Three Year	Five Year	Ten Year
All Commodities	**4.71**	**1.70**	**1.70**	**-5.03**	**-8.45**	**-6.83**
Energy	**8.93**	**-4.31**	**-4.31**	**-12.06**	**-15.38**	**-17.42**
Brent Oil	19.23	14.25	14.25	-7.96	-15.23	-9.10
WTI Oil	17.01	12.48	12.48	4.19	-8.02	-4.51
Natural Gas	-11.78	-36.37	-36.37	-25.02	-21.05	-32.25
Grains	**-4.82**	**-11.31**	**-11.31**	**-12.38**	**-12.72**	**-7.00**
Corn	-4.59	-12.08	-12.08	-13.78	-17.28	-8.14
Soybeans	-2.59	-8.13	-8.13	-3.43	-1.21	2.46
Industrial Metals	**10.72**	**29.35**	**29.35**	**4.29**	**-1.82**	**-2.79**
Copper	11.30	29.17	29.17	3.83	-3.15	-0.56
Aluminum	7.59	31.18	31.18	3.52	-3.15	-5.96
Livestock	**3.31**	**6.36**	**6.36**	**-6.60**	**-2.60**	**-5.82**
Live Cattle	0.93	9.13	9.13	-4.69	0.08	-3.09
Precious Metals	**2.04**	**10.94**	**10.94**	**2.46**	**-7.03**	**3.16**
Gold	0.62	12.66	12.66	2.30	-4.88	4.47
Silver	2.55	5.79	5.79	1.72	-11.90	0.22
Softs	**5.17**	**-14.80**	**-14.80**	**-4.57**	**-8.27**	**-3.29**
Sugar	7.85	-25.38	-25.38	-4.41	-13.54	-3.72
Coffee	-3.71	-16.02	-16.02	-17.22	-11.49	-9.15

	Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Global Real Estate	3.77	15.01	15.01	6.22	7.05	3.80
Developed	3.83	11.42	11.42	5.38	7.20	4.09
Emerging	3.33	52.36	52.36	13.63	5.84	—
U.S. Real Estate	1.60	3.91	3.91	4.82	9.01	6.89
International Real Estate	5.71	26.45	26.45	7.49	5.62	1.96

Source: Morningstar. **All Commodities:** Bloomberg Commodity , **Agriculture:** Bloomberg Sub Agriculture, **Corn:** Bloomberg Sub Corn, **Soybeans:** Bloomberg Sub Soybeans, **Energy:** Bloomberg Sub Energy, **Brent Oil:** Bloomberg Sub Brent Crude, **WTI Oil:** Wtexas Crude Int Oil, **Natural Gas:** Bloomberg Sub Natural Gas, **Industrial Metals:** Bloomberg Sub Industrial Metals, **Copper:** Bloomberg Sub Copper, **Aluminum:** Bloomberg Sub Aluminum, **Livestock:** Bloomberg Sub Livestock, **Live Cattle:** Bloomberg Sub Live Cattle, **Precious Metals:** Bloomberg Sub Precious Metals, **Gold**: LMBA Gold Price PM USD, **Silver:** Bloomberg Sub Silver, **Softs:** Bloomberg Sub Softs . Softs includes Cocoa, Coffee, Cotton, and Sugar, **Sugar**: Bloomberg Sub Sugar, **Coffee:** Bloomberg Sub Coffee, **U.S. Real Estate:** FTSE EPRA/NAREIT United States, **International Real Estate:** FTSE EPRA/NAREIT Global Ex U.S., **Developed Real Estate:** FTSE EPRA/NAREIT Developed, **Emerging Real Estate:** FTSE EPRA/NAREIT Emerging, **Global Real Estate:** FTSE EPRA/NAREIT Global USD. Past performance does not guarantee future results. Data as of 12/31/2017.

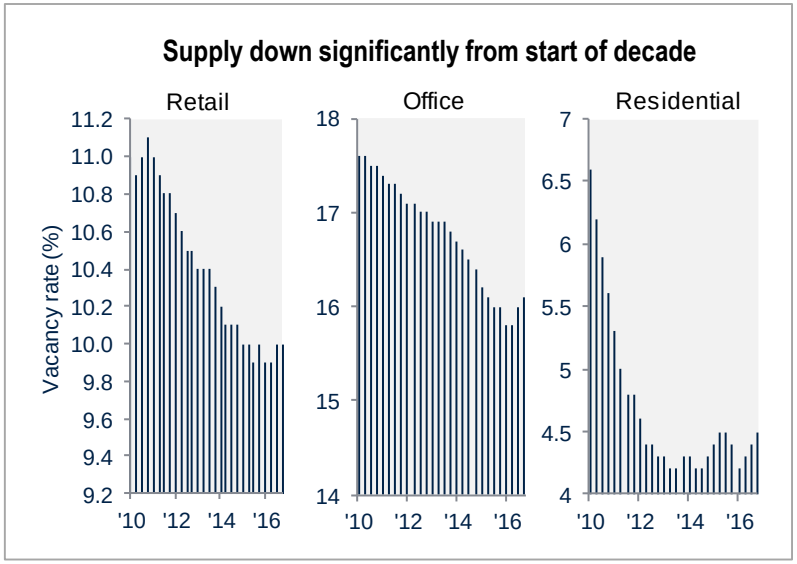
Real Asset sectors at a glance

ANNUAL RETURNS FOR MAJOR REAL ASSET SECTORS (%)

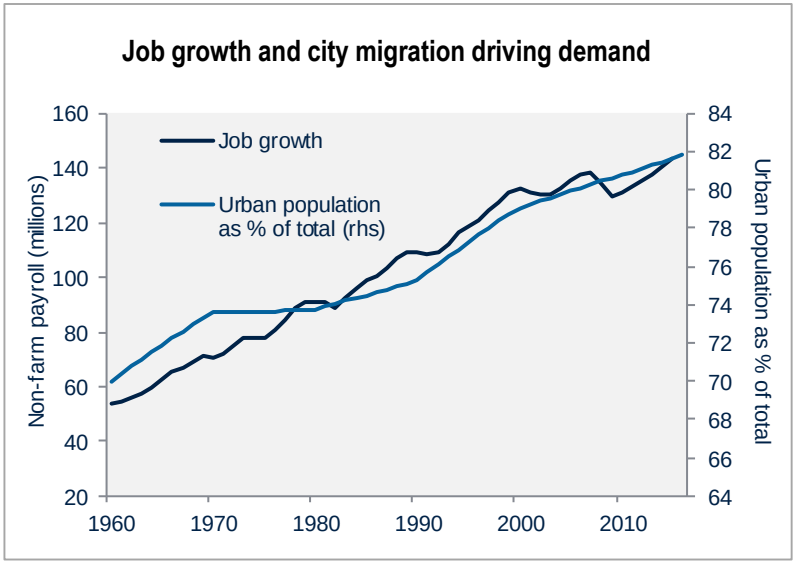
2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
-4.06 Precious Metals	79.98 Industrial Metals	59.90 Softs	7.75 US Real Estate	38.98 International Real Estate	5.20 Energy	30.43 US Real Estate	3.04 US Real Estate	19.92 Industrial Metals	29.35 Industrial Metals
-26.32 Grains	48.79 International Real Estate	42.66 Precious Metals	4.56 Precious Metals	29.85 Global Real Estate	2.46 US Real Estate	14.73 Global Real Estate	-0.41 Global Real Estate	16.27 Energy	26.45 International Real Estate
-28.41 Livestock	44.24 Softs	30.28 Grains	-2.30 Livestock	18.25 Grains	2.24 Global Real Estate	11.56 Livestock	-3.50 International Real Estate	13.16 Softs	15.01 Global Real Estate
-28.43 Softs	41.25 Global Real Estate	28.09 US Real Estate	-8.14 Global Real Estate	17.98 US Real Estate	2.12 International Real Estate	3.61 International Real Estate	-9.85 Softs	11.77 All Commodities	10.94 Precious Metals
-35.65 All Commodities	29.20 Precious Metals	20.03 Global Real Estate	-13.32 All Commodities	6.29 Precious Metals	-3.54 Livestock	-6.71 Precious Metals	-11.45 Precious Metals	9.50 Precious Metals	6.36 Livestock
-39.56 US Real Estate	28.61 US Real Estate	16.83 All Commodities	-13.97 Softs	0.67 Industrial Metals	-9.52 All Commodities	-6.87 Industrial Metals	-18.83 Livestock	7.55 US Real Estate	3.91 US Real Estate
-47.33 Energy	18.91 All Commodities	16.24 Industrial Metals	-14.41 Grains	-1.06 All Commodities	-13.63 Industrial Metals	-9.37 Grains	-19.42 Grains	4.62 Global Real Estate	1.70 All Commodities
-48.27 Industrial Metals	-1.65 Grains	15.89 International Real Estate	-15.97 Energy	-3.54 Livestock	-16.86 Softs	-10.10 Softs	-24.66 All Commodities	1.78 International Real Estate	-4.31 Energy
-48.90 Global Real Estate	-5.30 Energy	9.27 Livestock	-17.50 International Real Estate	-9.36 Energy	-16.90 Grains	-17.01 All Commodities	-26.88 Industrial Metals	-5.63 Livestock	-11.31 Grains
-53.26 International Real Estate	-15.07 Livestock	-10.55 Energy	-24.23 Industrial Metals	-22.39 Softs	-30.80 Precious Metals	-39.34 Energy	-38.87 Energy	-5.88 Grains	-14.80 Softs

Source: Morningstar. **All Commodities:** Bloomberg Commodity, **Energy:** Bloomberg Sub Energy, **Precious Metals:** Bloomberg Sub Precious Metals, **Industrial Metals:** Bloomberg Sub Industrial Metals, **Agriculture:** Bloomberg Sub Agriculture, **Livestock:** Bloomberg Sub Livestock, **U.S. Real Estate:** FTSE EPRA/NAREIT United States, **International Real Estate:** FTSE EPRA/NAREIT Global Ex U.S., **Global Real Estate:** FTSE EPRA/NAREIT Global. Indices are total return, USD. Past performance does not guarantee future results. Data as of 12/31/2017.

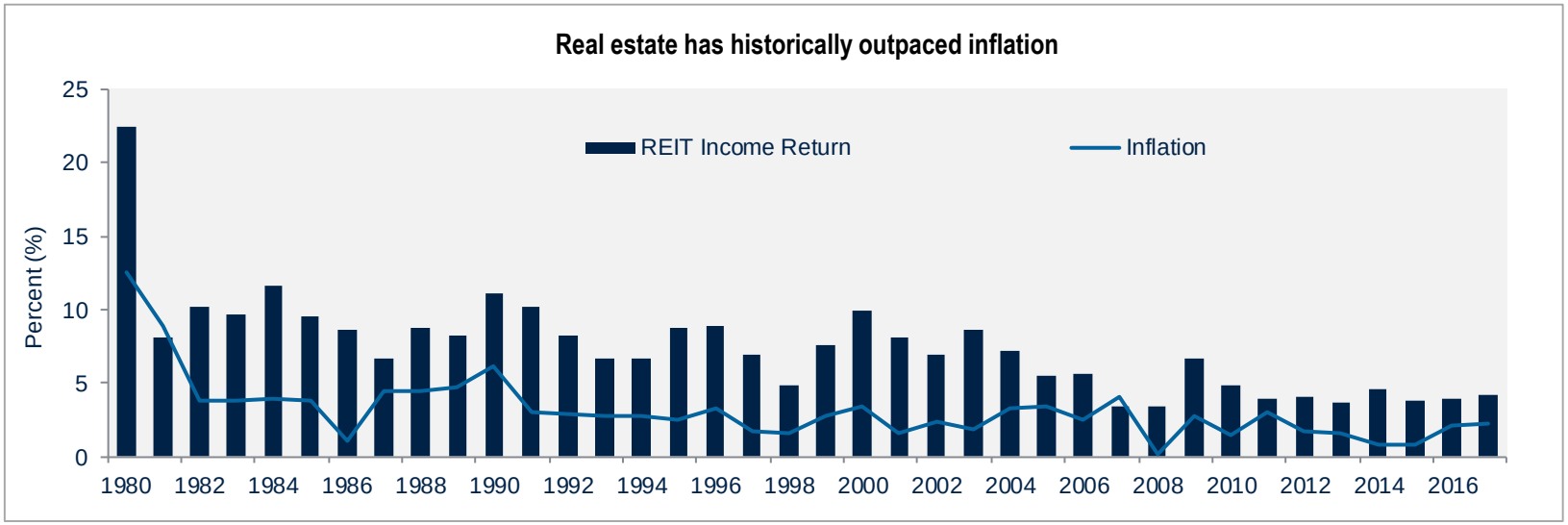
Real estate



Source: Bloomberg. Vacancy rates are for the U.S. Metro Total. Data as of 9/30/2017.

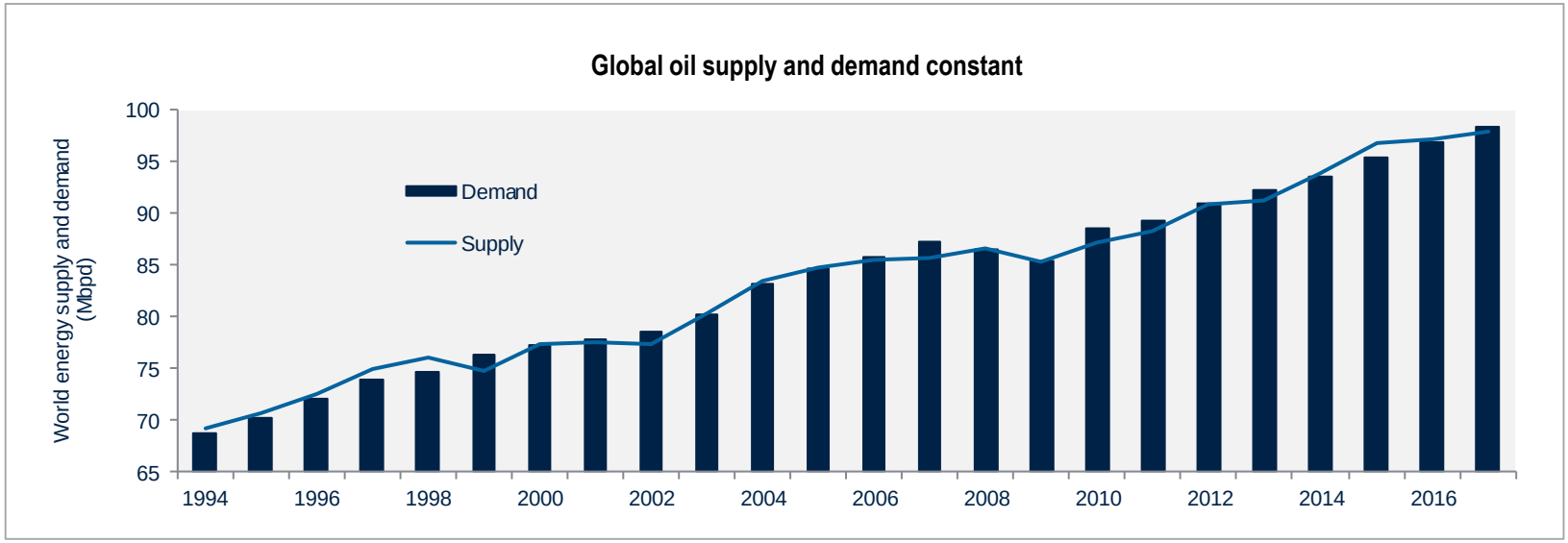


Source: Bureau of Labor Statistics via FRED, World Bank. Data as of 12/31/2016. Urban population as percent of total in U.S.

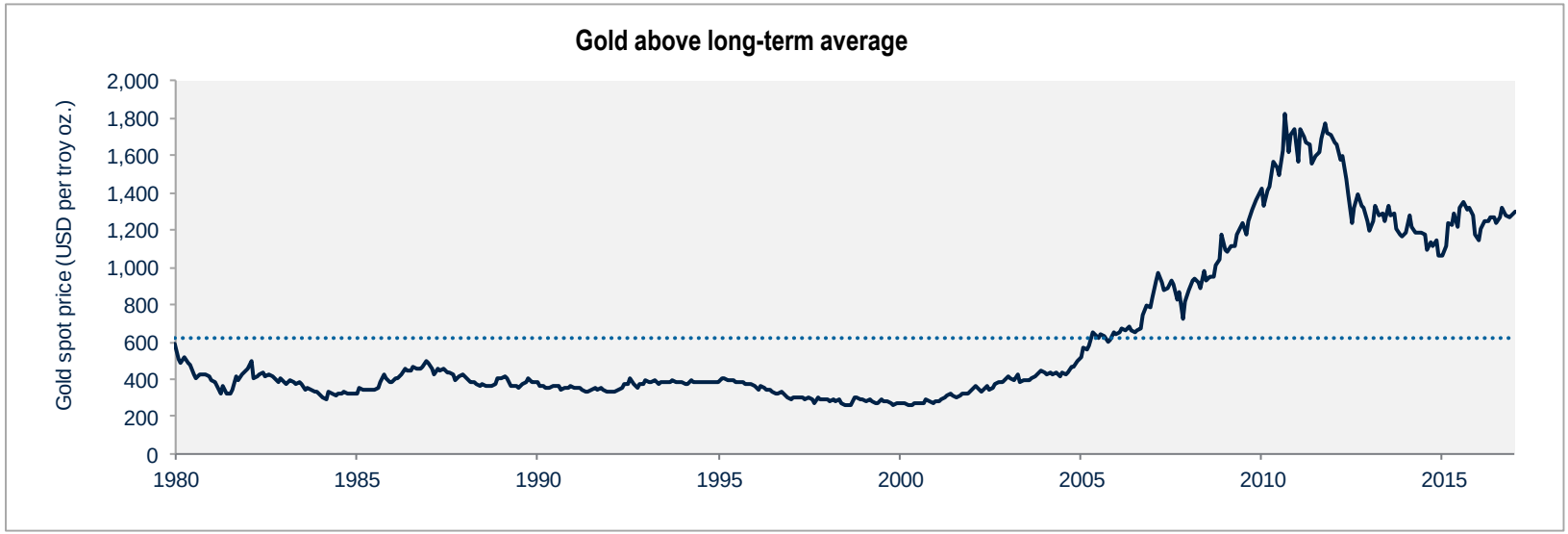


Source: Morningstar, FRED. **REIT income return:** FTSE NAREIT All Equity REITs Index. **Inflation:** CPI All Urban Consumers. Data as of 12/31/2017.

Commodities



Source: EIA, Bloomberg. Total world energy supply and demand in thousand barrels per day (mbpd). Data as of 12/31/2017.



Source: Bloomberg. Data as of 12/31/2017.

Index definitions

BANK OF AMERICA MERRILL LYNCH EUROPEAN CURRENCY HIGH YIELD EX-FINANCE 2% CONSTRAINED INDEX tracks the performance of EUR- and GBP-denominated below-investment-grade corporate debt publicly issued in the eurobond, sterling domestic, or euro domestic markets. Qualifying securities must have a below-investment-grade rating and an investment-grade country of risk. The index contains all non-financial securities but caps issuer exposure at 2%.

BANK OF AMERICA MERRILL LYNCH U.S. CONVERTIBLE INDEX consists of convertible bonds traded in the U.S. dollar-denominated investment-grade and non-investment grade convertible securities sold into the U.S. market and publicly traded in the United States. The Index constituents are market value-weighted based on the convertible securities prices and outstanding shares, and the underlying index is rebalanced daily.

BANK OF AMERICA MERRILL LYNCH U.S. HIGH YIELD INDEX is unmanaged and tracks the performance of below-investment-grade U.S.-dollar-denominated corporate bonds.

BLOOMBERG BARCLAYS ABS INDEX is a subset of the Bloomberg Barclays U.S. Aggregate. The index includes only the asset-backed securities that are part of the larger index.

BLOOMBERG BARCLAYS CMBS: ERISA ELIGIBLE INDEX is a subset of the Bloomberg Barclays U.S. Aggregate and includes investment-grade CMBS securities that are ERISA eligible under the underwriter's exemption. It is the only CMBS sector that is included in the U.S. Aggregate Bond Index.

BLOOMBERG BARCLAYS EURO CORPORATE BOND INDEX (UNHEDGED) is a broad-based benchmark that measures the investment grade, euro-denominated, fixed rate corporate bond market. Inclusion is based on the currency denomination of a bond and not the country of risk of the issuer. The Euro Corporate Index is a subset of Barclays broader-based flagship indices, such as the Euro Aggregate and the multi-currency Global Aggregate Index.

BLOOMBERG BARCLAYS GLOBAL AGGREGATE BOND INDEX is an unmanaged index of global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan European Aggregate, and the Asian Pacific Aggregate indices. The index also includes Eurodollar and Euro-yen corporate bonds, Canadian government, agency and corporate securities.

BLOOMBERG BARCLAYS GLOBAL AGGREGATE EX USD BOND INDEX is an unmanaged index of global investment-grade fixed income markets excluding the U.S. The two major components of this index are the Pan European Aggregate, and the Asian Pacific Aggregate indices. The index also includes eurodollar and euro-yen corporate bonds, and Canadian government, agency, and corporate securities.

BLOOMBERG BARCLAYS GLOBAL AGGREGATE EX-USD HEDGED USD BOND INDEX is an unmanaged index of global investment-grade fixed income markets excluding the U.S. and is hedged back to the U.S. dollar. The two major components of this index are the Pan European Aggregate, and the Asian Pacific Aggregate indices. The index also includes eurodollar and euro-yen corporate bonds, Canadian government, agency, and corporate securities.

BLOOMBERG BARCLAYS HIGH YIELD MUNICIPAL BOND INDEX measures the non-investment grade and non-rated U.S. dollar-denominated, fixed rate, tax-exempt bond market within the 50 United States and four other qualifying regions (Washington D.C., Puerto Rico, Guam, and the Virgin Islands). The index allows state and local general obligation, revenue, insured, and pre-refunded bonds, however, historically the index has been comprised of mostly revenue bonds. The U.S. Municipal High Yield Index is a stand-alone index with no crossover into other Bloomberg Barclays taxable indices, such as the U.S. High Yield Index.

BLOOMBERG BARCLAYS MUNICIPAL BOND INDEX is an unmanaged index of over 39,000 long-term investment-grade municipal bonds, and Bloomberg Barclays Non-Investment-Grade Municipal Bond Index, an unmanaged index of non-rated or Ba1- or below-rated municipal bonds.

BLOOMBERG BARCLAYS TIPS INDEX measures the performance of U.S. Treasury Inflation Protected Securities (TIPS) and is selected by a market value process.

BLOOMBERG BARCLAYS U.S. AGGREGATE BOND INDEX represents securities that are SEC-registered, taxable, and dollar-denominated. It covers the U.S. investment-grade, fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

BLOOMBERG BARCLAYS U.S. CORPORATE BOND INDEX: This unmanaged index is the corporate component of the U.S. Credit Index and covers publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. The corporate sectors are Industrial, Utility, and Finance, which include both U.S. and non-U.S. corporations. The non-corporate sectors are Sovereign, Supranational, Foreign Agency, and Foreign Local Government.

BLOOMBERG BARCLAYS U.S. CORPORATE INVESTMENT GRADE BOND INDEX is an unmanaged index considered representative of publicly issued, fixed-rate, nonconvertible, investment-grade debt securities. This index is a component of the Bloomberg Barclays U.S. Aggregate Index.

Index definitions

BLOOMBERG BARCLAYS U.S. GOVERNMENT BOND INDEX comprises the U.S. Treasury and U.S. Agency Indices. The index includes U.S. dollar-denominated, fixed rate, nominal U.S. Treasuries and U.S. agency debentures (securities issued by U.S. government-owned or government-sponsored entities, and debt explicitly guaranteed by the U.S. government). The U.S. Government Index is a component of the U.S. Government/Credit and U.S. Aggregate Indices, and eligible securities also contribute to the multi-currency Global Aggregate Index.

BLOOMBERG BARCLAYS U.S. HIGH YIELD INDEX covers the USD-denominated, non-investment grade, fixed rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below. A small number of unrated bonds are included in the index. The index excludes emerging markets debt.

BLOOMBERG BARCLAYS U.S. HIGH YIELD BB INDEX is a subset of the Bloomberg Barclays U.S. High Yield Index which contains only BB rated debt.

BLOOMBERG BARCLAYS U.S. HIGH YIELD B INDEX is a subset of the Bloomberg Barclays U.S. High Yield Index which contains only B rated debt.

BLOOMBERG BARCLAYS U.S. HIGH YIELD CCC AND BELOW INDEX is a subset of the Bloomberg Barclays U.S. High Yield Index which contains only CCC and below rated debt.

BLOOMBERG BARCLAYS U.S. HIGH YIELD ENERGY INDEX is a subset of the Bloomberg Barclays U.S. High Yield Index which contains only bonds in the energy sector.

BLOOMBERG BARCLAYS U.S. HIGH YIELD EX-ENERGY INDEX is a subset of the Bloomberg Barclays U.S. High Yield Index which contains all bonds in the index except those in the energy sector.

BLOOMBERG BARCLAYS LONG U.S. CORPORATE INDEX includes dollar-denominated debt from U.S. and non-U.S. industrial, utility, and financial institutions issuers with a duration of 10+ years.

BLOOMBERG BARCLAYS LONG U.S. TREASURIES INDEX includes all publicly issued, U.S. Treasury securities that have a remaining maturity of 10 or more years, are rated investment grade, and have $250 million or more of outstanding face value.

BLOOMBERG BARCLAYS U.S. MBS–AGENCY FIXED RATE INDEX. This index is a subset of the Bloomberg Barclays U.S. Aggregate and is comprised of publicly issued debt of U.S. government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. government (such as USAID securities).

BLOOMBERG BARCLAYS U.S. TREASURY BOND INDEX: This index is a subset of the Bloomberg Barclays U.S. Aggregate and is an unmanaged index of public obligations of the U.S. Treasury with a remaining maturity of one year or more.

BLOOMBERG BARCLAYS U.S. TREASURY U.S. TIPS INDEX: An unmanaged index that consists of inflation-protected securities issued by the U.S. Treasury.

BLOOMBERG COMMODITY INDEX is composed of futures contracts and reflects the returns on a fully collateralized investment in the BCOM. This combines the returns of the BCOM with the returns on cash collateral invested in 13 week (3 Month) U.S. Treasury Bills.

BLOOMBERG SUB AGRICULTURE INDEX: Formerly known as Dow Jones-UBS Agriculture Subindex, the index is a commodity group subindex of the Bloomberg Commodity Index. It is composed of futures contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar, and wheat. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB CORN INDEX is a commodity group subindex of the Bloomberg CI composed of futures contracts on Corn. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB SOYBEANS INDEX is a commodity group subindex of the Bloomberg CI composed of futures contracts on Soybeans. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB ENERGY INDEX is a commodity group subindex of the Bloomberg CITR. The index is composed of futures contracts on crude oil, heating oil, unleaded gasoline and natural gas. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB BRENT CRUDE INDEX: Formerly known as Dow Jones-UBS Brent Crude Subindex Total Return (DJUBCOT), the index is a single commodity index composed of futures contracts on Brent crude. The index is part of the Bloomberg CITR family. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB NATURAL GAS INDEX: Formerly known as Dow Jones-UBS Natural Gas Subindex Total Return (DJUBNGTR), the index is a single commodity subindex of the Bloomberg CI composed of futures contracts on Natural Gas. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB INDUSTRIAL METALS INDEX: Formerly known as Dow Jones-UBS Industrial Metals Subindex (DJUBSIN), the index is composed of futures contracts on aluminum, copper, nickel, and zinc. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB COPPER INDEX: Formerly known as Dow Jones-UBS Copper Subindex (DJUBSHG), the index is a commodity group subindex of the Bloomberg CI composed of futures contracts on Copper. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

Index definitions

BLOOMBERG SUB ALUMINUM INDEX: Formerly known as Dow Jones-UBS Aluminum Subindex (DJUBSAL), the index is a commodity group subindex of the Bloomberg CI composed of futures contracts on Aluminum. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB LIVESTOCK INDEX: A commodity group subindex of the Bloomberg CI composed of futures contracts on livestock. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB LIVE CATTLE INDEX: Formerly known as Dow Jones-UBS Live Cattle Subindex Total Return (DJUBLCTR), the index is a single commodity subindex of the Bloomberg CI composed of futures contracts on Live Cattle. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB PRECIOUS METALS INDEX: Formerly known as Dow Jones-UBS Precious Metals Subindex Total Return (DJUBPRTR), the index is a commodity group subindex of the Bloomberg CITR. The index is composed of futures contracts on gold and silver. It reflects the return on fully collateralized futures positions and is quoted in USD.

BLOOMBERG SUB SILVER INDEX: Formerly known as Dow Jones-UBS Silver Subindex Total Return (DJUBSIT), the index is a single commodity index composed of futures contracts on silver. The index is part of the Bloomberg CITR family. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB SOFTS INDEX: Formerly known as Dow Jones-UBS Softs Subindex Total Return (DJUBSOTR), the index is a commodity group subindex of the Bloomberg CI. It is composed of futures contracts on coffee, cotton and sugar. It reflects the return of fully collateralized futures price movements only and is quoted in USD.

BLOOMBERG SUB SUGAR INDEX: Formerly known as Dow Jones-UBS Sugar Subindex Total Return (DJUBSBTR), the index is a single commodity subindex of the Bloomberg CI composed of futures contracts on Sugar. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BLOOMBERG SUB COFFEE INDEX: Formerly known as Dow Jones-UBS Coffee Subindex Total Return (DJUBKCTR), the index is a single commodity subindex of the Bloomberg CI composed of futures contracts on Coffee. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

BM&F BOVESPA INDEX is composed exclusively of shares and units representing shares of BM&FBOVESPA-listed issuers that meet the inclusion criteria.

CBOE VOLATILITY INDEX (VIX) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.

CHICAGO FED NATIONAL FINANCIAL CONDITIONS LEVERAGE SUBINDEX provides a comprehensive weekly update on U.S. financial conditions in money markets, debt and equity markets, and the traditional and "shadow" banking systems. Positive values of the NFCI indicate financial conditions that are tighter than average, while negative values indicate financial conditions that are looser than average. The three subindexes of the NFCI (risk, credit and leverage) allow for a more detailed examination of the movements in the NFCI. The leverage subindex consists of debt and equity measures. Increasing risk, tighter credit conditions and declining leverage are consistent with tightening financial conditions.

CITI ECONOMIC SURPRISE INDEX (EM-Emerging Market and DM-Developed Market) are data series that measure how economic data releases have fared relative to market expectations. A positive reading means that data releases have been stronger than expected and a negative reading means that data releases have been worse than expected.

CREDIT SUISSE HEDGE FUND INDEX is an asset-weighted hedge fund index diversified across ten style based sectors, including convertible arbitrage, dedicated short bias, emerging markets, equity market neutral, event driven, fixed income arbitrage, global macro, managed futures, long/short equity, and multi-strategy.

CREDIT SUISSE LEVERAGED LOAN INDEX: This index represents the investable universe of the U.S.-dollar-denominated leveraged loan market. The federal funds rate is the interest rate banks charge each other for overnight loans.

CREDIT SUISSE WESTERN EUROPEAN LEVERAGED LOAN INDEX is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

CONSUMER PRICE INDEX (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care.

CONFERENCE BOARD LEADING ECONOMIC INDICATOR INDEX (LEI) is essentially a composite average of ten individual leading indicators of peaks and troughs in the business cycle. They are constructed to summarize and reveal common turning point patterns in economic data in a clearer and more convincing manner than any individual component – primarily because they smooth out some of the volatility of individual components.

CPI CORE PRICE INDEX is similar to the Consumer Price Index, but tracks the prices of all items except for food and energy.

CSI 300 is a capitalization-weighted stock market index designed to replicate the performance of 300 stocks traded in the Shanghai and Shenzhen stock exchanges.

DEUTSCHE BOERSE AG GERMAN STOCK INDEX (DAX): The German Stock Index is a total return index of 30 selected German blue chip stocks traded on the Frankfurt Stock Exchange. The equities use free float shares in the index calculation. The DAX has a base value of 1,000 as of December 31, 1987. As of June 18, 1999 only XETRA equity prices are used to calculate all DAX indices.

Index definitions

EURO STOXX BANKS INDEX tracks supersectors of the relevant benchmark index. Companies are categorized according to their primary source of revenue.

EURO STOXX 50 INDEX provides a blue-chip representation of supersector leaders in the Eurozone. The index covers 50 stocks from 12 Eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

EURO STOXX 50 VOLATILITY (VSTOXX) INDEX is based on EURO STOXX 50 realtime options prices and is designed to reflect the market expectations of near-term up to long-term volatility by measuring the square root of the implied variance across all options of a given time to expiration.

EURONEXT PARIS CAC 40: The CAC 40, the most widely-used indicator of the Paris market, reflects the performance of the 40 largest equities listed in France, measured by free-float market-capitalization and liquidity. The index was developed with a base level of 1000 as of December 31, 1987.

FTSE 100 INDEX is a capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange. The equities use an investibility weighting in the index calculation. The index was developed with a base level of 1000 as of December 30, 1983.

FTSE EPRA/NAREIT DEVELOPED is a composite of the existing EPRA Europe Index, EPRA/NAREIT North America Index, and EPRA/NAREIT Asia Index. The index contains publicly quoted real estate companies that meet the EPRA Rules in 25 countries throughout Europe, North America, and Asia. The index was developed with a base value of 1000 as of December 31, 1999.

FTSE EPRA/NAREIT EMERGING is an extension to the FTSE EPRA/NAREIT GLOBAL Index Series. This index has been designed to support the development of index-linked products.

FTSE EPRA/NAREIT GLOBAL is designed to track the performance of listed real estate companies and REITS in both developed and emerging markets. By making the index constituents free-float adjusted, liquidity, size and revenue screened, the series is suitable for use as the basis for investment products, such as derivatives and Exchange Traded Funds (ETFs).

FTSE EPRA/NAREIT GLOBAL EX U.S. is designed to track the performance of listed real estate companies and REITS in both developed and emerging markets excluding the United States. By making the index constituents free-float adjusted, liquidity, size and revenue screened, the series is suitable for use as the basis for investment products, such as derivatives and Exchange Traded Funds (ETFs).

FTSE EPRA/NAREIT UNITED STATES is a subset of the EPRA/NAREIT Global Index and the EPRA/NAREIT North America Index and contains publicly quoted real estate companies that meet the EPRA Ground Rules. EPRA/NAREIT Index series is seen as the representative benchmark for the real estate sector.

FTSE NAREIT ALL REIT TOTAL RETURN INDEX is a free-float adjusted, market capitalization-weighted index of U.S. Equity REITs. Constituents of the Index include all tax-qualified REITs with more than 50 percent of total assets in qualifying real estate assets other than mortgages secured by real property.

HONG KONG HANG SENG INDEX is a free-float capitalization-weighted index of a selection of companies from the Stock Exchange of Hong Kong. The components of the index are divided into four subindices: Commerce and Industry, Finance, Utilities, and Properties. The index was developed with a base level of 100 as of July 31, 1964.

ICE DOLLAR INDEX SPOT RATE indicates the general international value of the USD. This is done by averaging the exchange rates between the USD and major world currencies. The ICE computes this by using the rates supplied by some 500 banks.

ISM MANUFACTURING INDEX is based on a survey of over 300 manufacturing firms and monitors employment, production, inventory, new orders, and supplier deliveries. It is conducted by the Institute of Supply Management.

ISM NON-MANUFACTURING INDEX is conducted by the Institute of Supply Management and surveys more than 400 non-manufacturing firms. The index acts as a measure of national economic conditions.

JP MORGAN CORPORATE EMERGING MARKETS BOND INDEX BROAD DIVERSIFIED (GBI-EM) is a global benchmark for U.S.-dollar-denominated corporate emerging markets bonds.

JP MORGAN EMERGING LOCAL MARKETS INDEX PLUS tracks total returns for local-currency-denominated money market instruments in 24 emerging markets countries.

JP MORGAN EMERGING MARKETS BOND INDEX GLOBAL DIVERSIFIED is an unmanaged index of emerging market debt, including USD-denominated Brady bonds, Eurobonds, and traded loans issued by sovereign and quasi-sovereign entities. It limits the weights of those index countries with larger debt stocks by including only a specified portion of these countries' eligible current face amounts of debt outstanding.

LIBOR is a benchmark rate that some of the world's leading banks charge each other for short-term loans.

Index definitions

LMBA GOLD PRICE PM USD provides the evening result of the LMBA Gold price auction. The LBMA Gold price auction takes place twice daily by ICE Benchmark Administration (IBA) at 10:30 and 15:00 with the price set in U.S. dollars per fine troy ounce. These prices are internationally regarded as the pricing mechanism for a variety of precious metal transactions and products.

MICEX 10 is an unweighted price **index** that tracks the ten most liquid Russian stocks listed on Moscow Exchange.

MSCI ALL COUNTRY WORLD INDEX (ACWI) is a market capitalization weighted index designed to provide a broad measure of equity-market performance throughout the world. The MSCI ACWI is maintained by Morgan Stanley Capital International, and is comprised of stocks from both developed and emerging markets.

MSCI EAFE is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada. The Index is available for a number of regions, market segments/sizes and covers approximately 85% of the free float-adjusted market capitalization in each of the 21 countries.

MSCI EMERGING MARKETS is an equity index covering 23 countries representing 10% of world market capitalization. The Index is available for a number of regions, market segments/sizes and covers approximately 85% of the free float-adjusted market capitalization in each of the 23 countries.

MSCI EMERGING MARKET SMID CAP INDEX captures mid and small cap representation across 23 Emerging Markets countries. The index covers approximately 29% of the free float-adjusted market capitalization in each country.

MSCI EUROPE EX-UK INDEX captures large and mid cap representation across 14 Developed Markets (DM) countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization across European Developed Markets excluding the UK.

MSCI FRANCE is designed to measure the performance of the large and mid cap segments of the French market. The index covers about 85% of the equity universe in France.

MSCI GERMANY is designed to measure the performance of the large and mid cap segments of the German market. The index covers about 85% of the equity universe in Germany.

MSCI ITALY is designed to measure the performance of the large and mid cap segments of the Italian market. The index covers about 85% of the equity universe in Italy.

MSCI JAPAN is designed to measure the performance of the large and mid cap segments of the Japanese market. The index covers about 85% of the free float-adjusted market capitalization in Japan.

MSCI SPAIN is designed to measure the performance of the large and mid cap segments of the Spanish market. The index covers about 85% of the equity universe in Spain.

MSCI UK is designed to measure the performance of the large and mid cap segments of the UK market. The index covers about 85% of the free float-adjusted market capitalization in the UK.

MSCI WORLD EX-U.S. captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries--excluding the United States. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI WORLD is a broad global equity benchmark that represents large and mid-cap equity performance across 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country. MSCI World benchmark does not offer exposure to emerging markets.

NASDAQ COMPOSITE INDEX is a broad-based capitalization-weighted index of stocks in all three NASDAQ tiers: Global Select, Global Market and Capital Market. The index was developed with a base level of 100 as of February 5, 1971.

NIKKEI 225: The Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange. The Nikkei Stock Average was first published on May 16, 1949, where the average price was ¥176.21 with a divisor of 225.

PERSONAL CONSUMPTION INDEX is a measure of price changes in consumer goods and services. Personal consumption expenditures consist of the actual and imputed expenditures of households.

RUSSELL 1000 Index consists of the 1,000 largest securities in the Russell 3000 Index, which is composed of the 3,000 largest U.S. securities, as determined by total market capitalization.

RUSSELL 1000 VALUE INDEX measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

RUSSELL 1000 GROWTH INDEX measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

RUSSELL TOP 200 INDEX is composed of the 200 largest U.S. securities, as determined by total market capitalization.

RUSSELL 2000 INDEX measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

Index definitions

RUSSELL MID CAP INDEX A market capitalization weighted index representing the smallest 800 companies in the Russell 1000 Index. The average Russell Midcap Index member has a market cap of $8 billion to $10 billion, with a median value of $4 billion to $5 billion. The index is reconstituted annually so that stocks that have outgrown the index can be removed and new entries can be added.

S&P/BMV IPC seeks to measure the performance of the largest and most liquid stocks listed on the Bolsa Mexicana de Valores.

S&P 500® INDEX (STANDARD & POOR'S 500® INDEX) (registered trademark of McGraw-Hill Financial) is an unmanaged index of 500 common stocks of large U.S. companies, weighted by market capitalization. It gives a broad look at how U.S. stock prices have performed.

S&P 500 CONSUMER STAPLES INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) consumer staples sector.

S&P 500 CONSUMER DISCRETIONARY INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) consumer discretionary sector.

S&P 500 ENERGY INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) energy sector.

S&P 500 FINANCIALS INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) financials sector.

S&P 500 HEALTH CARE INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) health care sector.

S&P 500 INDUSTRIALS INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) industrials sector.

S&P 500 MATERIALS INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) materials sector.

S&P 500 REAL ESTATE comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) real estate sector.

S&P 500 TECHNOLOGY INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) technology sector.

S&P 500 TELECOMMUNICATIONS INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) telecommunications sector.

S&P 500 UTILITIES INDEX comprises those companies included in the S&P 500 that are classified as members of the Global Industry Classification Standard (GICS) utilities sector.

S&P BSE SENSEX is a free-float market-weighted stock market index of 30 well-established and financially sound companies listed on **Bombay Stock Exchange**.

S&P CORELOGIC CASE SHILLER U.S. NATIONAL HOME PRICE INDEX is a composite of single-family home price indices for the nine U.S. Census divisions and is calculated monthly. It is included in the S&P CoreLogic Case-Shiller Home Price Index Series which seeks to measure changes in the total value of all existing single-family housing stock.

S&P DEVELOPED PROPERTY INDEX defines and measures the investable universe of publicly traded property companies domiciled in developed markets. The companies in the index are engaged in real estate related activities, such as property ownership, management, development, rental and investment.

S&P GLOBAL INFRASTRUCTURE INDEX is designed to track 75 companies from around the world chosen to represent the listed infrastructure industry while maintaining liquidity and tradability. To create diversified exposure, the index includes three distinct infrastructure clusters: energy, transportation, and utilities.

S&P PREFERRED STOCK INDEX is designed to serve the investment community's need for an investable benchmark representing the U.S. preferred stock market. Preferred stocks are a class of capital stock that pays dividends at a specified rate and has a preference over common stock in the payment of dividends and the liquidation of assets.

S&P/CASE SHILLER 20-CITY COMPOSITE HOME PRICE INDEX seeks to measures the value of residential real estate in 20 major U.S. metropolitan areas: Atlanta, Boston, Charlotte, Chicago, Cleveland, Dallas, Denver, Detroit, Las Vegas, Los Angeles, Miami, Minneapolis, New York, Phoenix, Portland, San Diego, San Francisco, Seattle, Tampa and Washington, D.C.

S&P/TSX (TORONTO STOCK EXCHANGE) COMPOSITE INDEX is a capitalization-weighted index designed to measure market activity of stocks listed on the TSX. This index does not contain investment trusts.

SHILLER CYCLICALLY ADJUSTED PRICE TO EARNINGS RATIO is a valuation measure usually applied to the U.S. S&P 500 equity market. It is defined as price divided by the average of ten years of earnings (moving average), adjusted for inflation.

THOMSON REUTERS/CORE COMMODITY CRB INDEX is a commodity futures price index.

Terminology

CORRELATION describes the way two securities move in relation to each other and can take a value anywhere between positive and negative 1. A correlation of +1 means the two securities move in unison, a correlation of zero indicates the two securities do not move together at all, and a correlation of -1 means the two securities move exactly opposite of each other.

CREDIT SPREADS are the difference in yield between a treasury and a non-treasury security which are identical outside of credit rating.

DIVIDEND YIELD is how much a company pays out in dividends each year relative to its share price.

EARNINGS GROWTH (next 12 months): Growth in earnings per share using forecasted earnings growth for the next 12 months.

EARNINGS PER SHARE (EPS) is a company's profit divided by the number of shares of common stock outstanding.

EBIT (EARNINGS BEFORE INTEREST AND TAXES) is an indicator of a company's profitability, calculated as revenue minus expenses, excluding tax and interest. It is also referred to as "operating earnings", "operating profit" and "profit before interest and taxes."

FEDERAL OPEN MARKET COMMITTEE (FOMC) is a branch of the Federal Reserve Board which is charged with setting monetary policy. The committee is comprised of a seven-member board of governors and the five presidents of the regional reserve banks.

INTERNATIONAL MONETARY FUND (IMF) is an organization of 189 countries, working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment, and sustainable economic growth, and reduce poverty around the world.

MARKET CAPITALIZATION refers to a company's total dollar market value of shares outstanding and represents a company's size. Typically public companies are divided into groups by size of market capitalization: Large Cap, Mid Cap, and Small Cap, though there is no set standard dollar amount defining these groups. Large Cap refers to companies with the highest dollar value of shares outstanding, generally over $10 Billion. Mid Cap refers to companies between about $2 billion and $10 billion outstanding and Small Cap refers to those companies with less than $2.5 billion outstanding.

MBPD stands for Thousands of Barrels Per Day and is a unit of measurement of crude oil and petroleum production and consumption.

NON-FARM PAYROLL is a monthly statistic collected and reported by the U.S. Bureau of Labor Statistics which represents the total number of paid workers of any business in the United States. The figure excludes general government employees, private household employees, non-profit employees who provide assistance to individuals, and farm employees.

OPTION ADJUSTED SPREAD (OAS) is the difference between a bond's yield and the rate of return for a similar maturity, risk free security after adjusting for options.

ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) is a union of oil-producing countries that regulates the amount of oil each country produces.

PRICE TO EARNINGS (P/E) RATIO is a company's share price divided by its earnings per share.

PERSONAL CONSUMPTION EXPENDITURES reflects monthly Personal Income and Outlays data which are published by the U.S. Bureau of Economic Analysis. Personal consumption expenditures include consumer spending for all goods and services.

PROFIT MARGIN is the amount by which revenue from sales exceeds costs in a business.

REAL GROSS DOMESTIC PRODUCT (**GDP**) reflects the value of all goods and services produced by an economy in a given year, expressed in base-year prices. The measure is inflation-adjusted.

REAL PERSONAL CONSUMPTION EXPENDITURES measures the price changes in consumer goods and services.

UP OR DOWN REVISION is the number of stocks on which analysts had to revise their earnings expectations upward divided by the number of stocks on which analysts had to revise their earnings expectations downward in a particular earnings reporting season. When the ratio is greater than 1, it describes an environment in which companies are more profitable than expected. When the ratio is less than 1, corporate profitability is underperforming expectations.

URBAN POPULATION refers to people living in urban areas as defined by national statistical offices. The data is collected and smoothed by United Nations Population Division.

YIELD CURVE is a curve on a graph in which the yield of fixed-interest securities is plotted against the length of time they have to run to maturity.

Disclosures

All data as of cover date unless otherwise specified.

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