Quarterly Economic and Market Update

March 2018

Presented by Global Manager Research

RBC Wealth Management

Table of Contents

Past performance shown on the following slides does not guarantee future results.

RBC | Wealth Management

Market Returns

1st Quarter 2018 and Trailing 12 Months
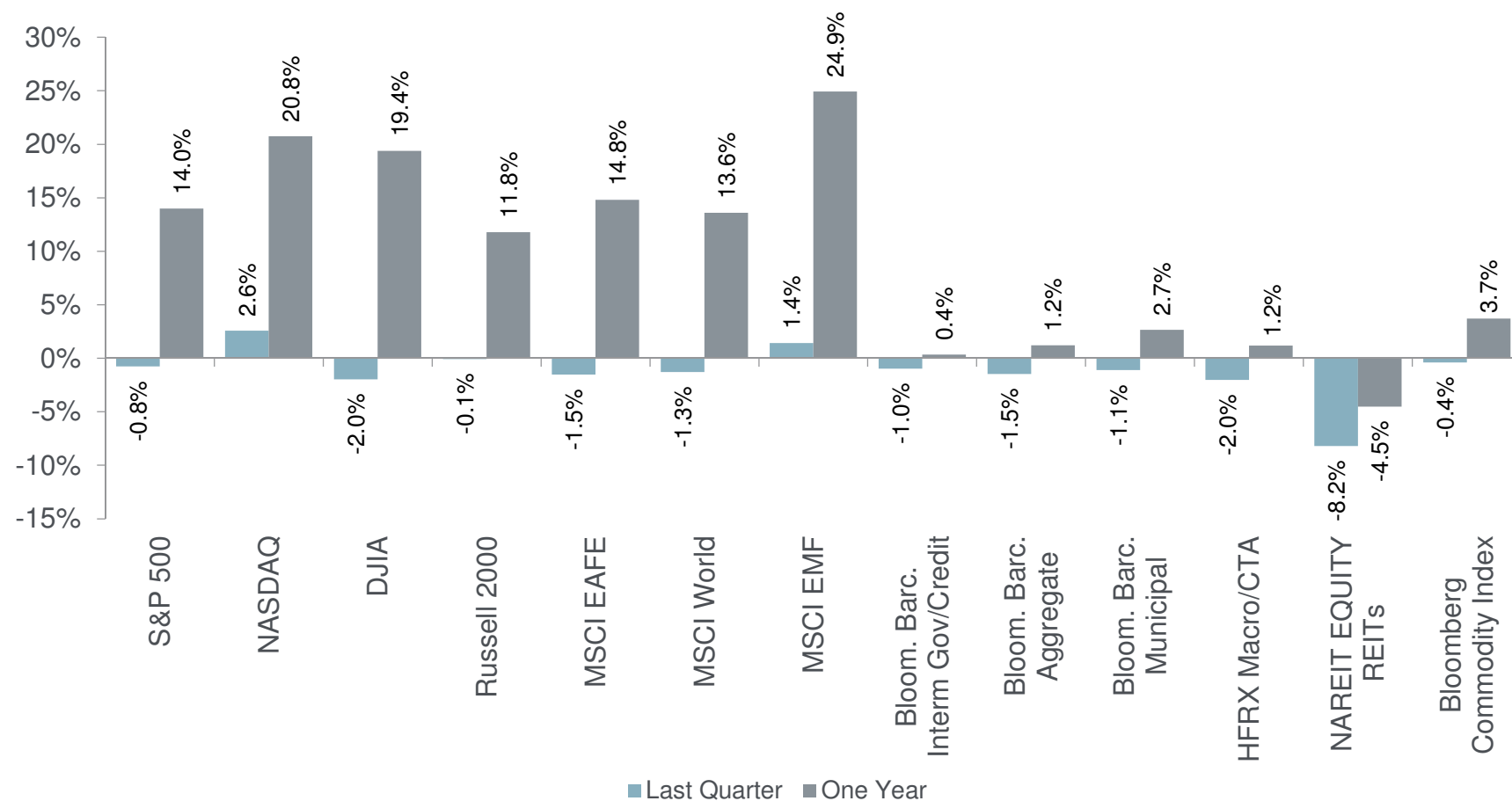
Index Returns

Last Quarter ■ One Year

Index	Last Quarter	One Year
S&P 500	-0.8%	14.0%
NASDAQ	2.6%	20.8%
DJIA	-2.0%	19.4%
Russell 2000	-0.1%	11.8%
MSCI EAFE	-1.5%	14.8%
MSCI World	-1.3%	13.6%
MSCI EMF	1.4%	24.9%
Bloom. Barc. Interm Gov/Credit	-1.0%	0.4%
Bloom. Barc. Aggregate	-1.5%	1.2%
Bloom. Barc. Municipal	-1.1%	2.7%
HFRX Macro/CTA	-2.0%	1.2%
NAREIT EQUITY REITs	-8.2%	-4.5%
Bloomberg Commodity Index	-0.4%	3.7%

Returns represent total returns through 03/31/2018
Data Source: FactSet Research Systems.

RBC Wealth Management

Market Returns: Fixed Income
1st Quarter 2018 and Trailing 12 Months
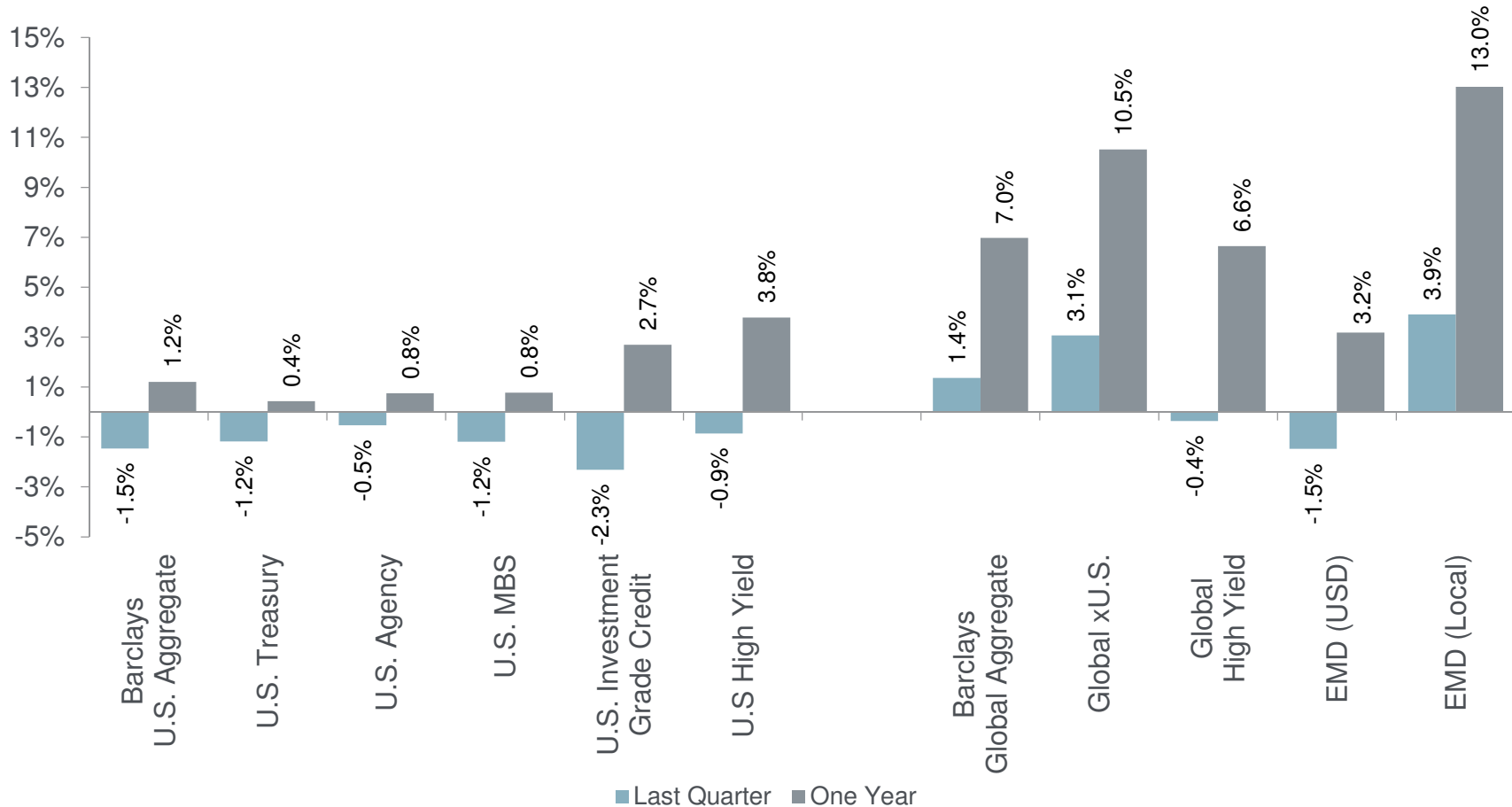
Index Returns

Last Quarter values: Barclays U.S. Aggregate -1.5%, U.S. Treasury -1.2%, U.S. Agency -0.5%, U.S. MBS -1.2%, U.S. Investment Grade Credit -2.3%, U.S High Yield -0.9%, Barclays Global Aggregate 1.4%, Global xU.S. 3.1%, Global High Yield -0.4%, EMD (USD) -1.5%, EMD (Local) 3.9%

One Year values: Barclays U.S. Aggregate 1.2%, U.S. Treasury 0.4%, U.S. Agency 0.8%, U.S. MBS 0.8%, U.S. Investment Grade Credit 2.7%, U.S High Yield 3.8%, Barclays Global Aggregate 7.0%, Global xU.S. 10.5%, Global High Yield 6.6%, EMD (USD) 3.2%, EMD (Local) 13.0%

Returns represent total returns through 03/31/2018.
Data Source: FactSet Research Systems.

4

RBC Wealth Management

Market Returns: U.S. Credit
1st Quarter 2018 and Trailing 12 Months

Index Returns

	Last Quarter	One Year
U.S. Investment Grade Credit	-2.3%	2.7%
AAA	-3.1%	3.8%
AA	-1.8%	1.8%
A	-2.6%	2.2%
BBB	-2.1%	3.3%
U.S High Yield	-0.9%	3.8%
BB	-1.6%	3.5%
B	-0.5%	3.3%
CCC	0.3%	5.8%

Returns represent total returns through 03/31/2018.
Data Source: FactSet Research Systems.

RBC Wealth Management

Market Returns: U.S. Sectors

1st Quarter 2018 and Trailing 12 Months
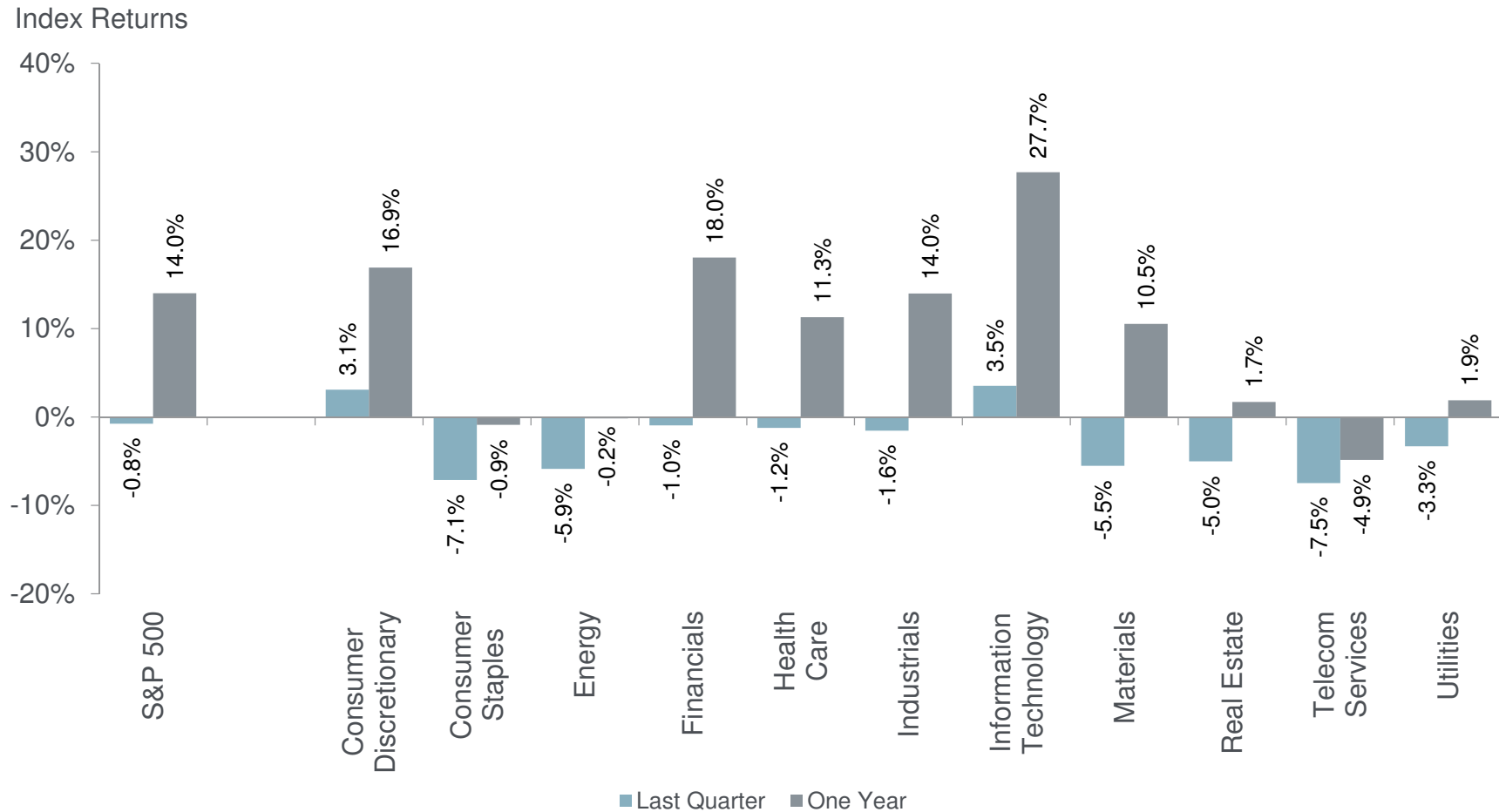
Index Returns

	Last Quarter	One Year
S&P 500	-0.8%	14.0%
Consumer Discretionary	3.1%	16.9%
Consumer Staples	-7.1%	-0.9%
Energy	-5.9%	-0.2%
Financials	-1.0%	18.0%
Health Care	-1.2%	11.3%
Industrials	-1.6%	14.0%
Information Technology	3.5%	27.7%
Materials	-5.5%	10.5%
Real Estate	-5.0%	1.7%
Telecom Services	-7.5%	-4.9%
Utilities	-3.3%	1.9%

Returns represent total returns through 03/31/2018.
Data Source: FactSet Research Systems.

6

RBC Wealth Management

Upcoming GICS Sector Changes

New Telecommunication Services being added Sept 2018

Upcoming GICS Sector Changes
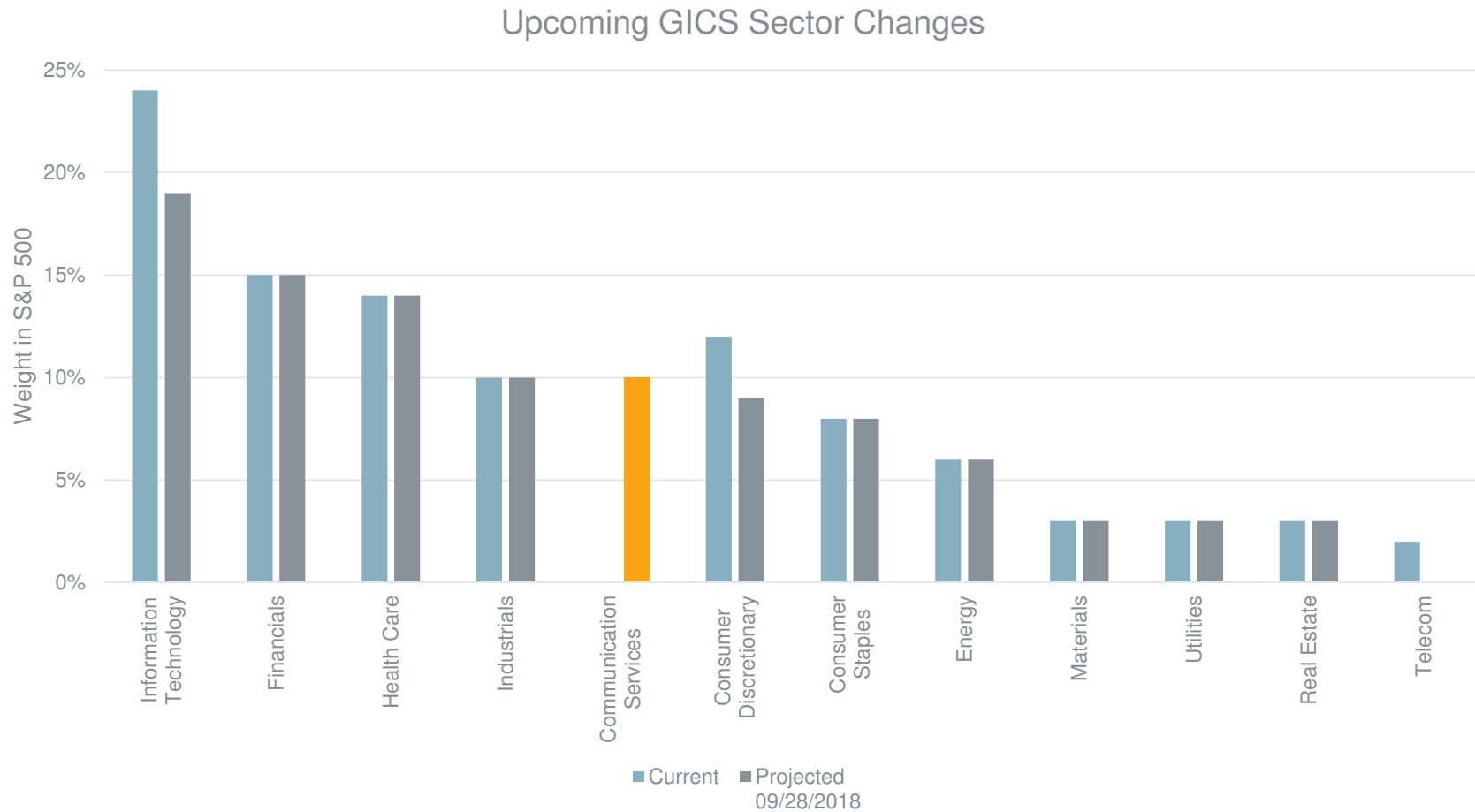
Data Source: RBC Wealth Management, FactSet Research Systems. Projected allocations as of 2/28/2018.
Global Industry Classification System (GICS) structure facilitates industry analysis by classifying companies at four different levels – Sectors, Industry Groups, Industries and Sub-Industries. Due to the global nature and flexibility of the GICS structure, its classifications have become widely used throughout the financial community.

Economy
U.S. Real GDP Growth

U.S. Real GDP Growth
(Seasonally Adjusted Annual Rate)

2.37

Recession — Atlanta Fed GDPNow Forecast — Real Gross Domestic Product
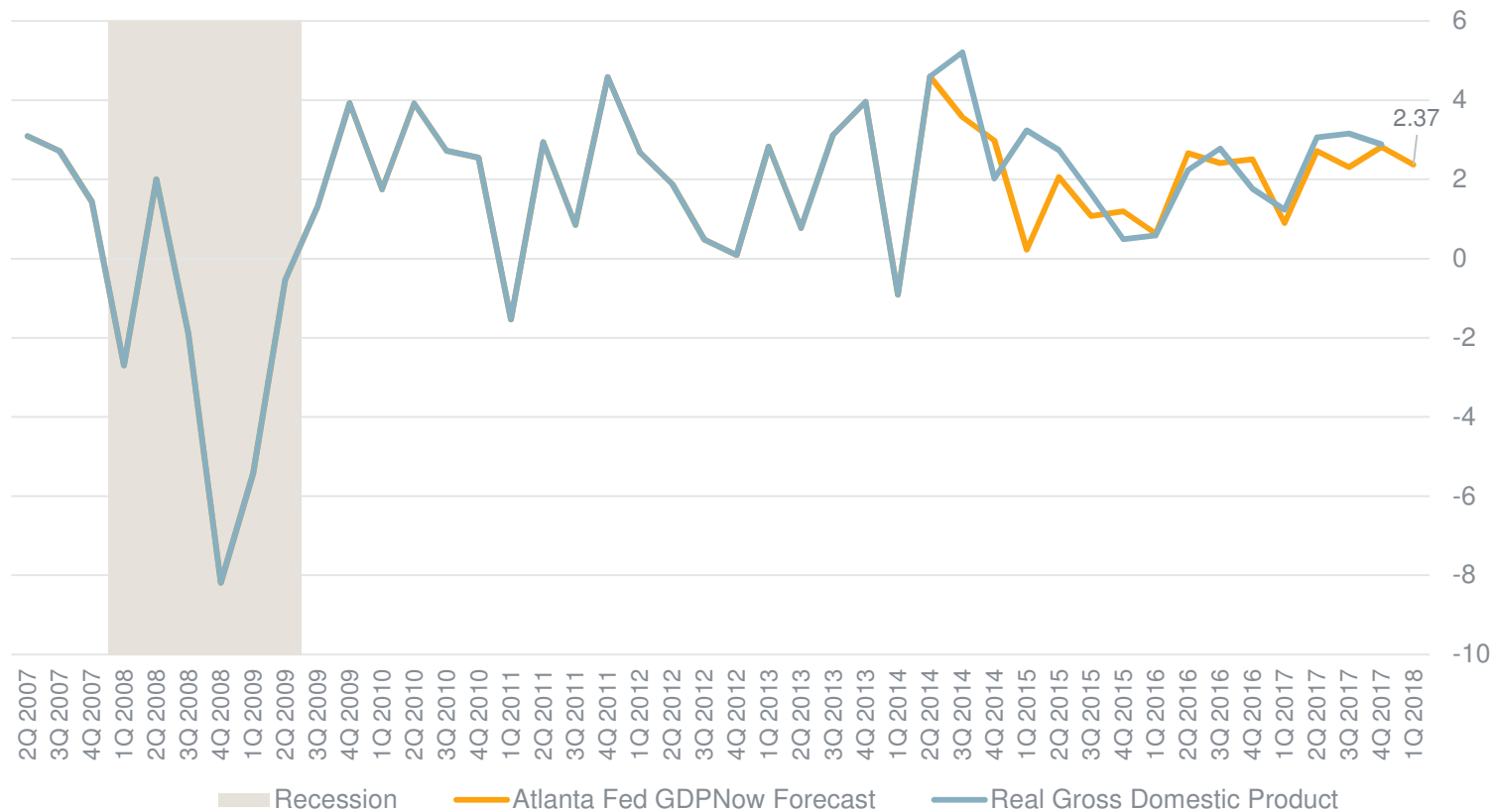
Data Source: St. Louis Federal Reserve and Atlanta Federal Reserve. Recessions are shaded. Data through 3/31/2018

RBC | **Wealth Management**

Economy

Institute for Supply Management: PMI
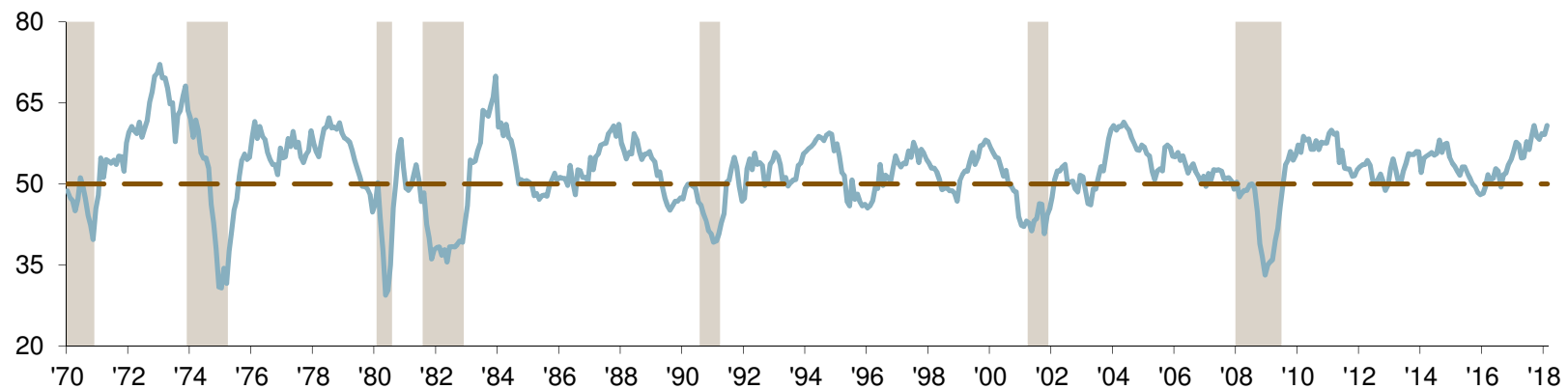
Inflation: CPI-U and Core CPI yoy % Change
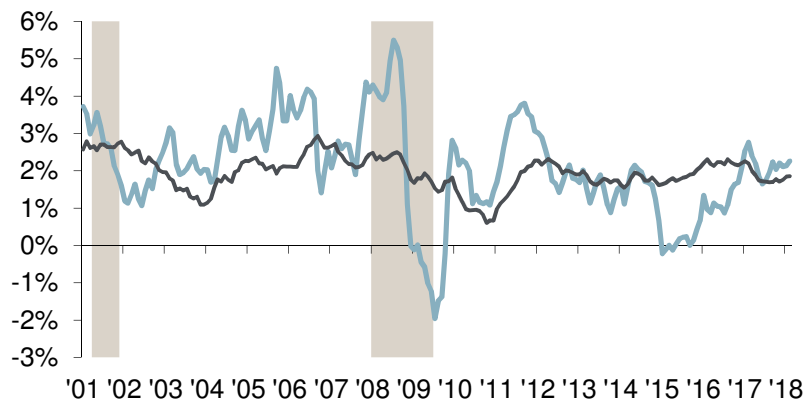
Housing Starts: New Privately Owned Units
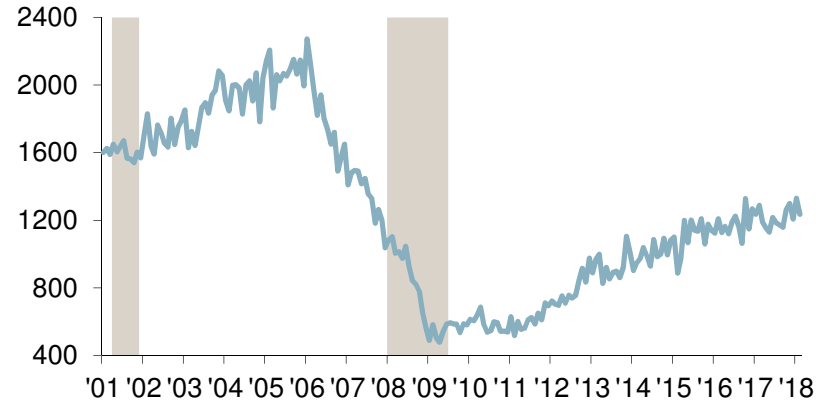
Data Source: St. Louis Federal Reserve. Recessions are shaded. Data through 2/28/2018.

Employment

Civilian Labor Force Participation Rate
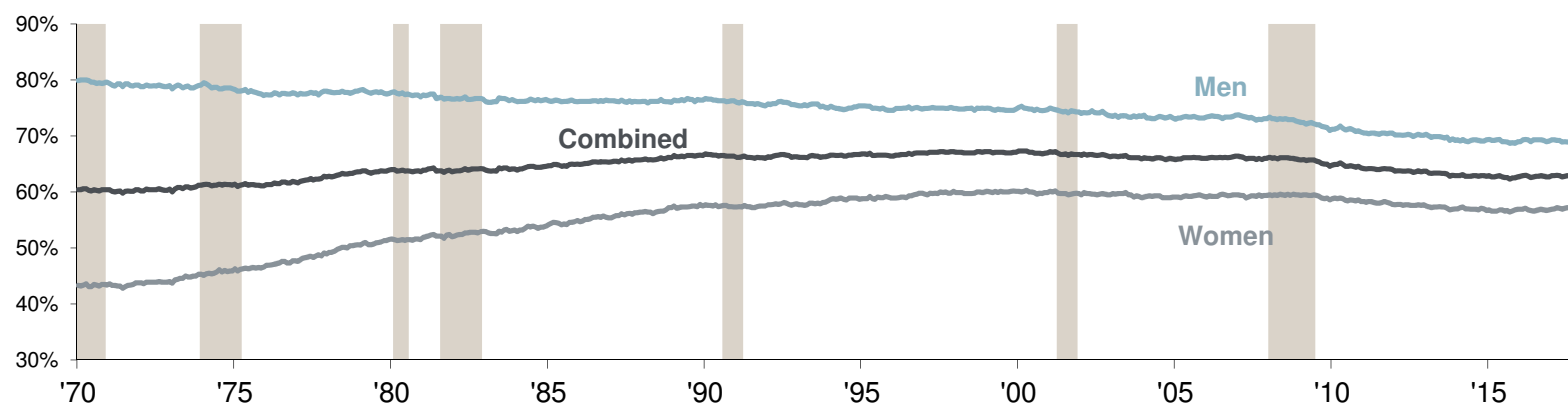
Unemployment: Headline vs U6
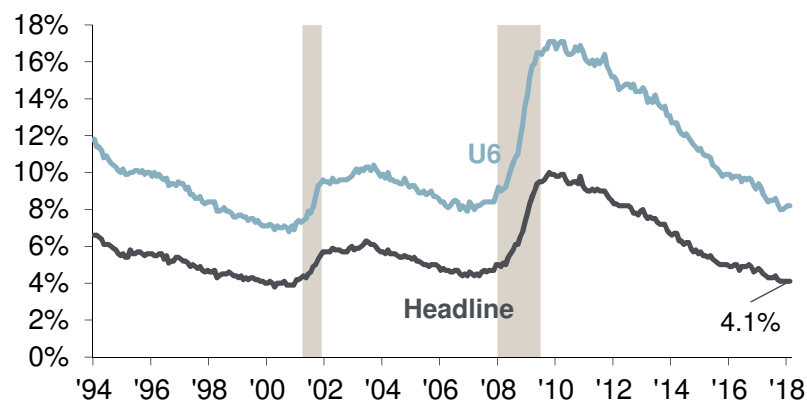
Not In Labor Force, Want Job Now (thousands)
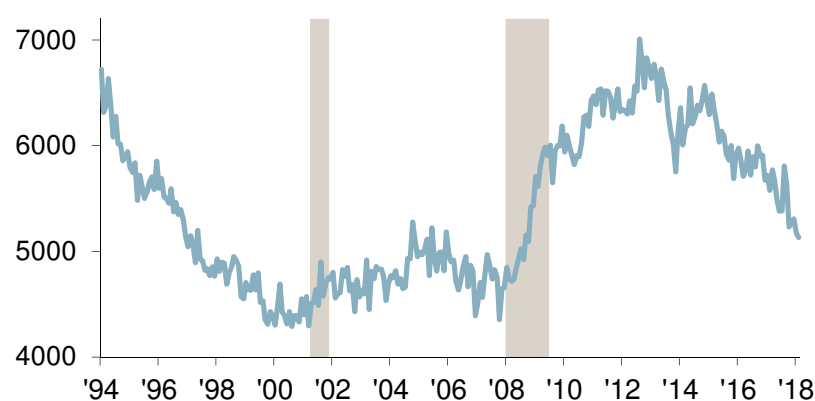
Data Source: St. Louis Federal Reserve, BLS. Recessions are shaded. Data through 02/28/2018.

U.S. Recession Indicators

Philadelphia Fed Business Outlook Index:

Chicago Fed National Activity Index:

Yield Curve (10 Yr - 2 Yr):

Unemployment Rate: (24 month prior - current rate)
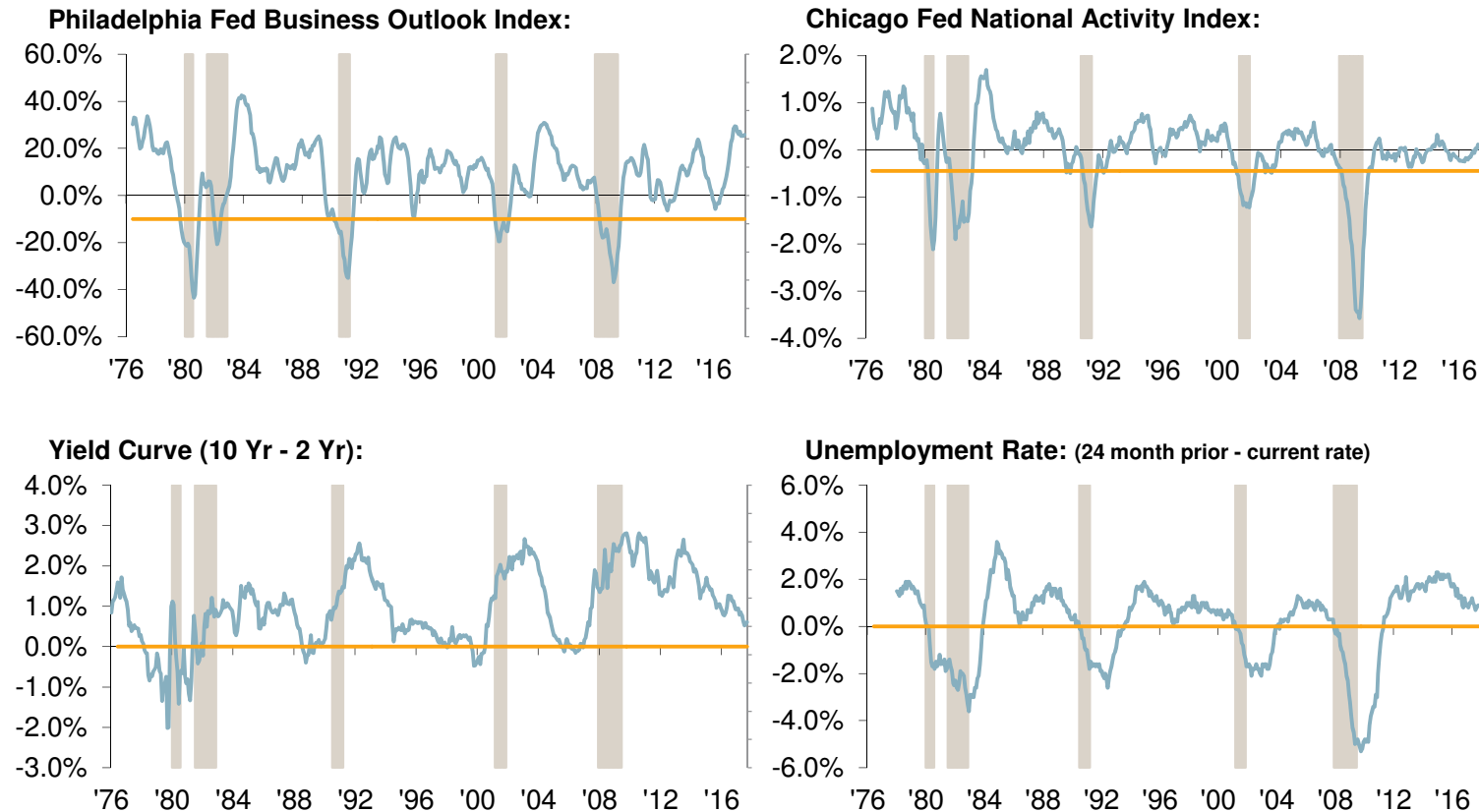
The economic statistics above are leading U.S. economic statistics that are manipulated in a way to signal potential recessions. When the economic statistic drops below the orange line, this indicates a recession is imminent or has already begun. The shaded vertical bars indicate the date of past U.S. recessions.
Data Source: St. Louis Federal Reserve, Bloomberg. Recessions are shaded. Data through 2/28/2018

Fixed Income Spreads

Yield Curve Slope: 10 yr. - 3 mo.
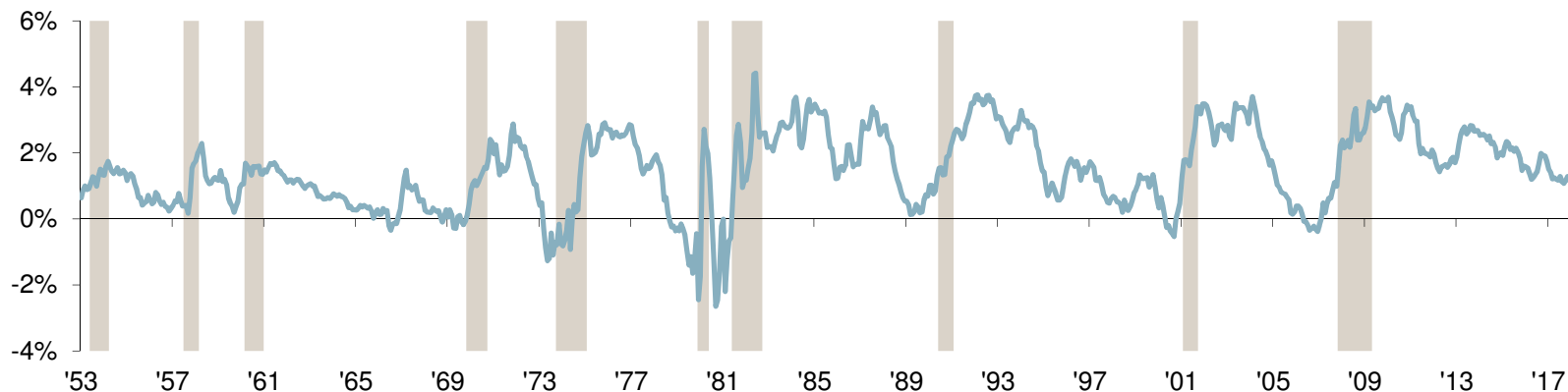
High Yield OAS
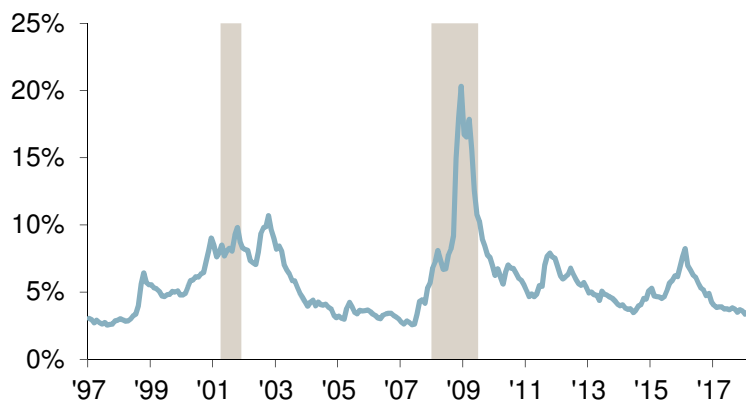
US AAA Corporate OAS
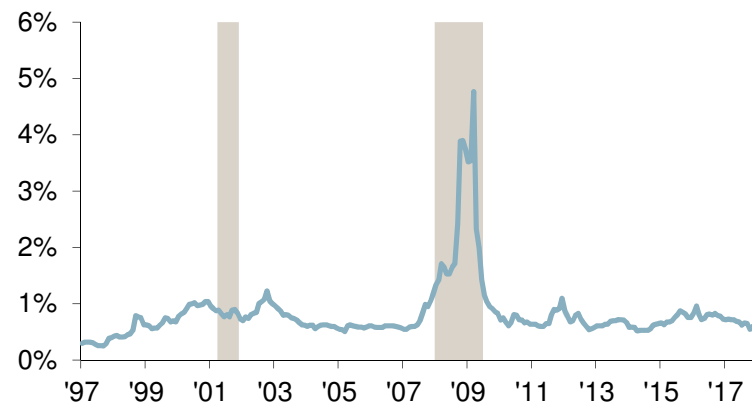
Data Source: Bloomberg

Yield curve slope is calculated as the difference between the 10 year constant maturity treasury and the 3 month t-bill. High yield OAS is the calculated spreads between bonds in the BofAML High Yield Master II Index and the treasury spot curve. US AAA Corporate OAS is the calculated spread between bonds in the BofAML US Corporate Master Index and the treasury spot curve. Recessions are shaded. Data as of 3/31/2018.

RBC Wealth Management

Duration of Expansion in the U.S. Business Cycle
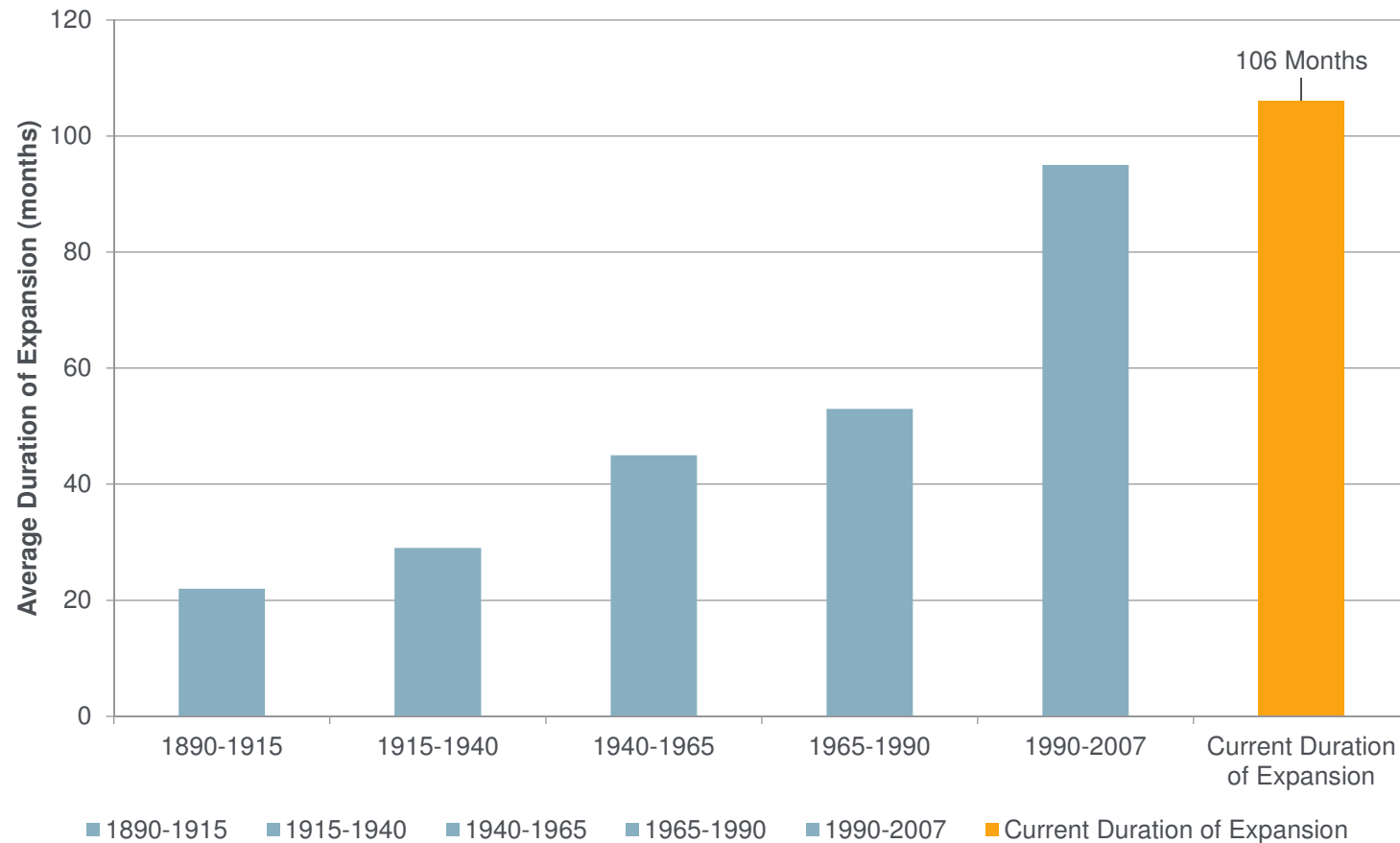
Data Source: National Bureau of Economic Research. Data through 3/31/2018.

S&P Index Calendar Year Total Returns

Since 1926
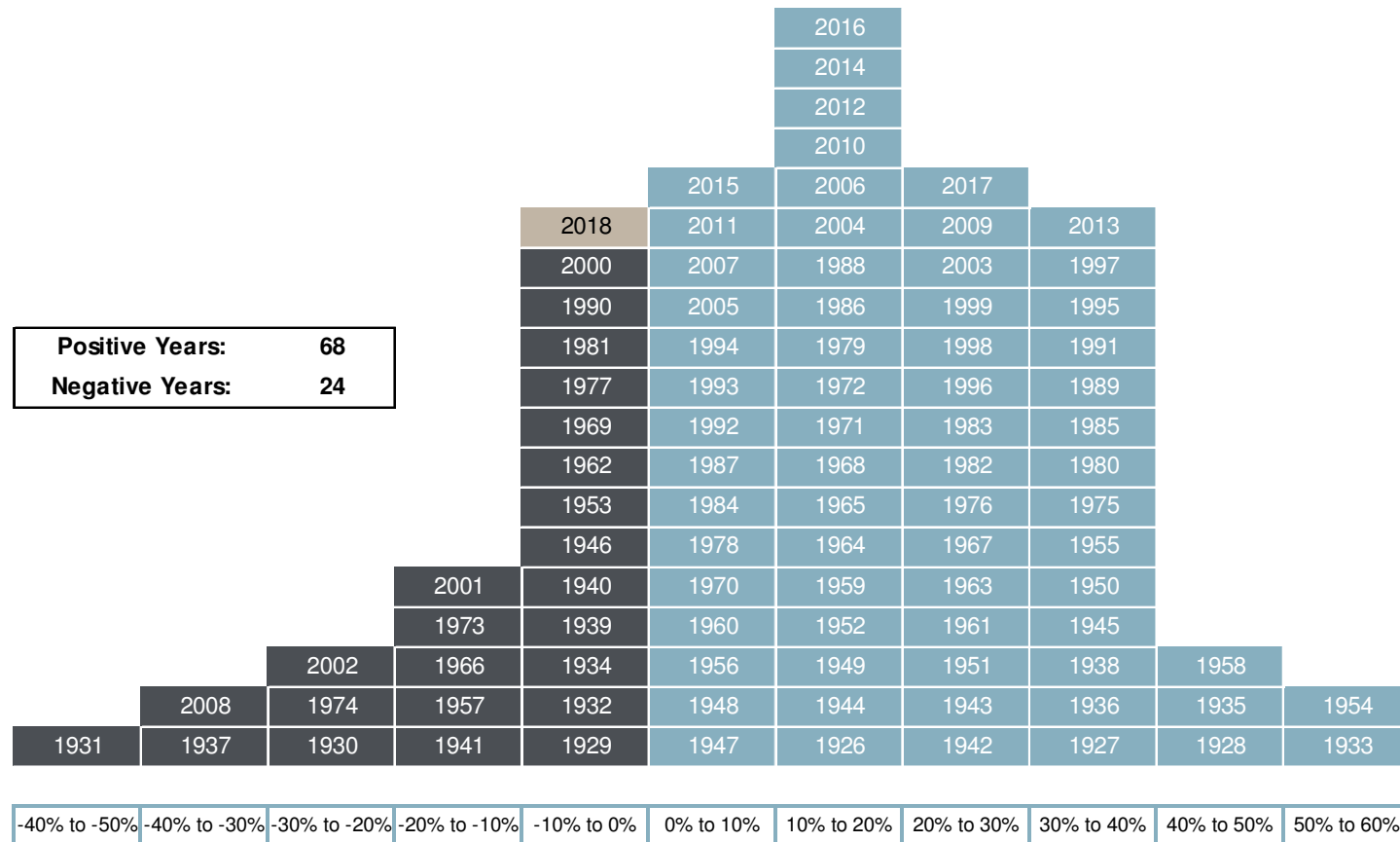
Positive Years:	68
Negative Years:	24

-40% to -50%	-40% to -30%	-30% to -20%	-20% to -10%	-10% to 0%	0% to 10%	10% to 20%	20% to 30%	30% to 40%	40% to 50%	50% to 60%
						2016				
						2014				
						2012				
						2010				
					2015	2006	2017			
				2018	2011	2004	2009	2013		
				2000	2007	1988	2003	1997		
				1990	2005	1986	1999	1995		
				1981	1994	1979	1998	1991		
				1977	1993	1972	1996	1989		
				1969	1992	1971	1983	1985		
				1962	1987	1968	1982	1980		
				1953	1984	1965	1976	1975		
				1946	1978	1964	1967	1955		
			2001	1940	1970	1959	1963	1950		
			1973	1939	1960	1952	1961	1945		
		2002	1966	1934	1956	1949	1951	1938	1958	
	2008	1974	1957	1932	1948	1944	1943	1936	1935	1954
1931	1937	1930	1941	1929	1947	1926	1942	1927	1928	1933

Returns through 03/31/2018.
Data Source: Ibbotson Associates and FactSet Research Systems.
Returns prior to 1974 are from Ibbotson Associates. Returns from 1974 to present are from FactSet Research Systems. The Ibbotson returns are computed as the S&P 90 From 1926 through 1956 and the S&P 500 thereafter.

RBC Wealth Management

S&P 500 Market Corrections of 10% or More

Since 1946

Dates of Correction	Duration of Correction (Months)	Extent of Correction	Gain or Loss in Succeeding 12 Months	Dates of Correction	Duration of Correction (Months)	Extent of Correction	Gain or Loss in Succeeding 12 Months
02/05/46–02/26/46	1	-10.10%	-9.00%	02/13/80–03/27/80	1	-17.10%	37.10%
05/29/46–11/22/46	6	-26.60%	8.50%	11/28/80–09/25/81	10	-19.80%	9.40%
02/11/47–05/19/47	3	-14.70%	18.90%	12/04/81–03/08/82	3	-15.00%	40.90%
07/24/47–03/16/48	8	-14.10%	7.80%	05/11/82–08/12/82*	3	-14.20%	58.30%
06/15/48–06/13/49	12	-20.60%	42.10%	10/10/83–07/24/84	9	-14.40%	29.60%
06/12/50–07/17/50	1	-14.00%	31.40%	08/25/87–12/04/87	3	-33.50%	21.40%
01/05/53–09/14/53	9	-14.80%	37.70%	01/02/90–01/30/90	1	-10.20%	5.60%
08/02/56–02/12/57	6	-14.80%	-3.40%	07/16/90–10/11/90*	3	-19.90%	29.10%
07/15/57–10/22/57	3	-20.70%	31.00%	07/17/98–10/08/98	3	-19.20%	39.30%
08/03/59–10/25/60	14	-13.90%	30.70%	03/24/00–04/04/01	12	-27.80%	2.10%
12/12/61–06/26/62	6	-28.00%	32.70%	05/21/01–09/21/01	4	-26.40%	-12.50%
08/22/62–10/23/62	2	-10.50%	36.50%	01/04/02–10/09/02*	9	-33.80%	33.70%
02/09/66–10/07/66	8	-22.20%	32.90%	11/27/02–03/11/03	4	-14.70%	38.20%
11/29/68–05/26/70*	18	-36.10%	43.70%	10/09/07–03/09/09*	17	-54.89%	70.39%
04/28/71–11/23/71	7	-13.90%	29.70%	04/23/10–07/02/10	2	-15.40%	30.40%
01/05/73–10/04/74*	21	-48.00%	37.90%	04/29/11–10/03/11	5	-19.20%	29.10%
07/15/75–09/15/75	2	-13.30%	25.80%	07/20/15–08/25/15	1	-12.04%	19.08%
09/21/76–03/16/78	18	-17.00%	12.50%	11/03/15–02/11/16	3	-12.71%	29.34%
09/12/78–11/14/78	2	-13.60%	11.80%	11/03/15–02/11/16	3	-12.71%	29.34%
10/05/79–11/07/79	1	-10.30%	29.40%	01/26/18–02/08/18	1	-10.16%	2.32%
				Averages ------------>	6	-19.51%	25.77%

Based on the S&P 500 Price Index (Does not include the effect of dividends)
*Denotes recession
**Returns from 2/08/18 to 3/31/18
Data Source: Morningstar and Standard & Poor's

RBC Wealth Management

Rolling 10-Year S&P 500 Total Returns

Contributors to Rolling 10-Year S&P 500 Return
Calendar Years 1971 - 2017
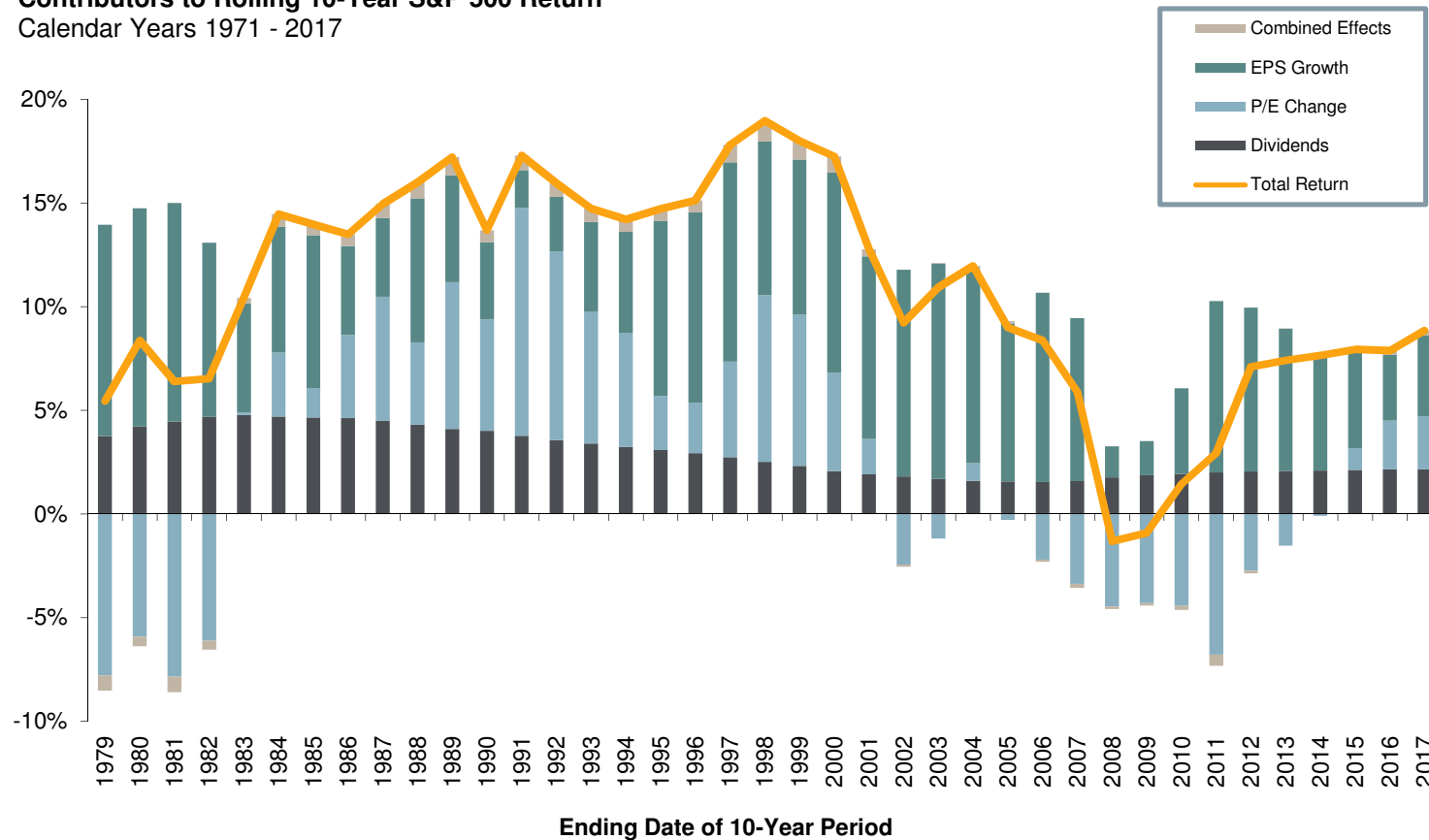
Returns shown are based on calendar years from 1971 to 2017

Data Source: Bloomberg

S&P 500: Earnings Ratios and Subsequent 10 Year Returns

P/PE and Subsequent Annualized 10-yr Total Return
Quarterly, Since 1946

Current P/PE 25.3x
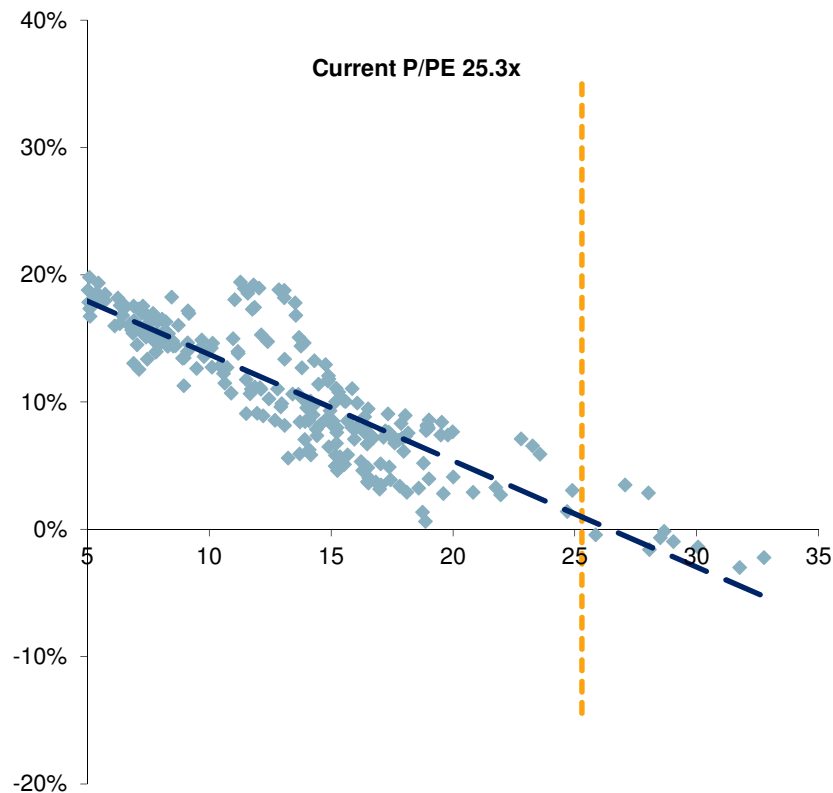
CAPE and Subsequent Annualized 10-yr Total Return
Quarterly, Since 1946
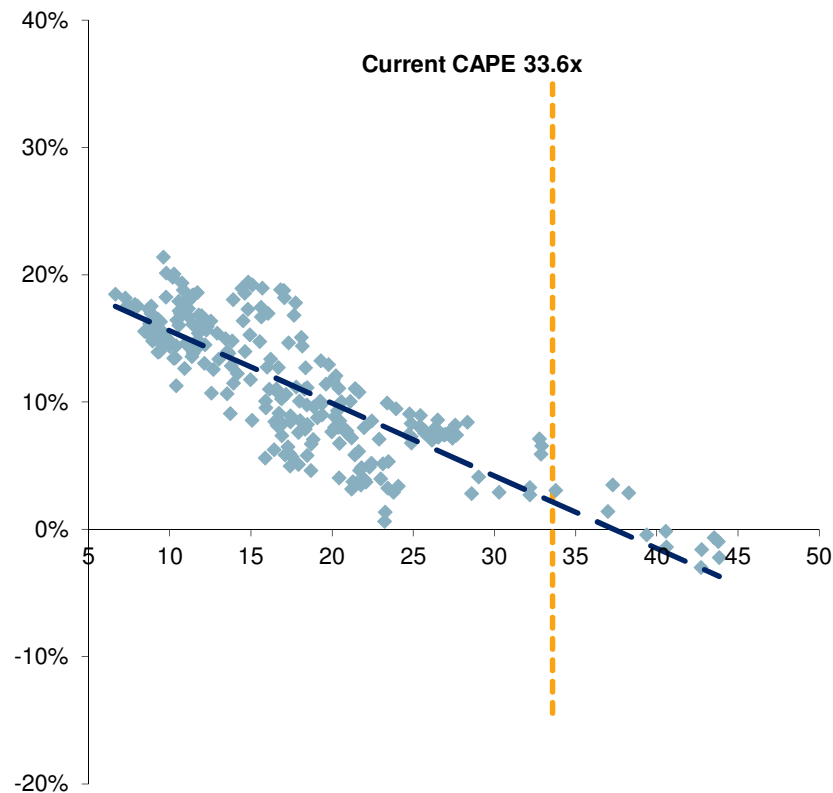
Current CAPE 33.6x

P/PE: Price to Peak Earnings. Calculated as the current market price over the prior peak earnings of the index.
CAPE: Cyclically Adjusted Price to Earnings. Calculated as the inflation adjusted market price over a 10 year average of real earnings.
Data through 03/31/2018
Data Source: Bloomberg, Robert Shiller

RBC Wealth Management

Returns by Style

Russell 3000 Growth vs Value: Last 12 Months

Russell 3000 Growth (RHS)
Russell 3000 Value (LHS)
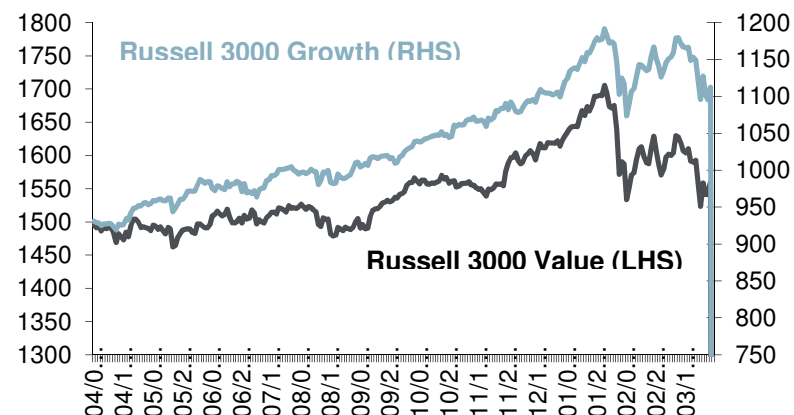
Russell 3000 Growth vs Value: 3/09 - 12/16

Russell 3000 Growth (RHS)
Russell 3000 Value (LHS)

1Q 2018

	Value	Blend	Growth
Large	-2.8%	-0.8%	1.4%
Mid	-2.5%	-0.5%	2.2%
Small	-2.6%	-0.1%	2.3%

Trailing 1 Year

	Value	Blend	Growth
Large	6.9%	14.0%	21.3%
Mid	6.5%	12.2%	19.7%
Small	5.1%	11.8%	18.6%

Since Market Peak (October 2007)

	Value	Blend	Growth
Large	77.1%	111.4%	154.1%
Mid	112.7%	122.7%	132.5%
Small	89.5%	109.3%	128.7%

Since Market Low (March 2009)

	Value	Blend	Growth
Large	341.7%	372.4%	418.3%
Mid	443.1%	437.4%	437.4%
Small	368.7%	404.7%	439.6%

Best   Worst

Source: FactSet Research Systems, Bloomberg
Since Market Low represents period 3/9/09 – 03/31/18, illustrating market returns since the S&P 500 Index low on March 9, 2009.
Since Market Peak represents period 10/9/07 – 03/31/18, illustrating market returns since the most recent S&P 500 Index high on October 9, 2007. For all time periods, total return is based on Russell style indexes with the exception of the Large Blend category, which is reflected by the S&P 500.

Wealth Management
RBC

U.S. Growth vs. U.S. Value

Calendar Year Returns

Annual Performance: Growth Stocks - Value Stocks
Percent Difference
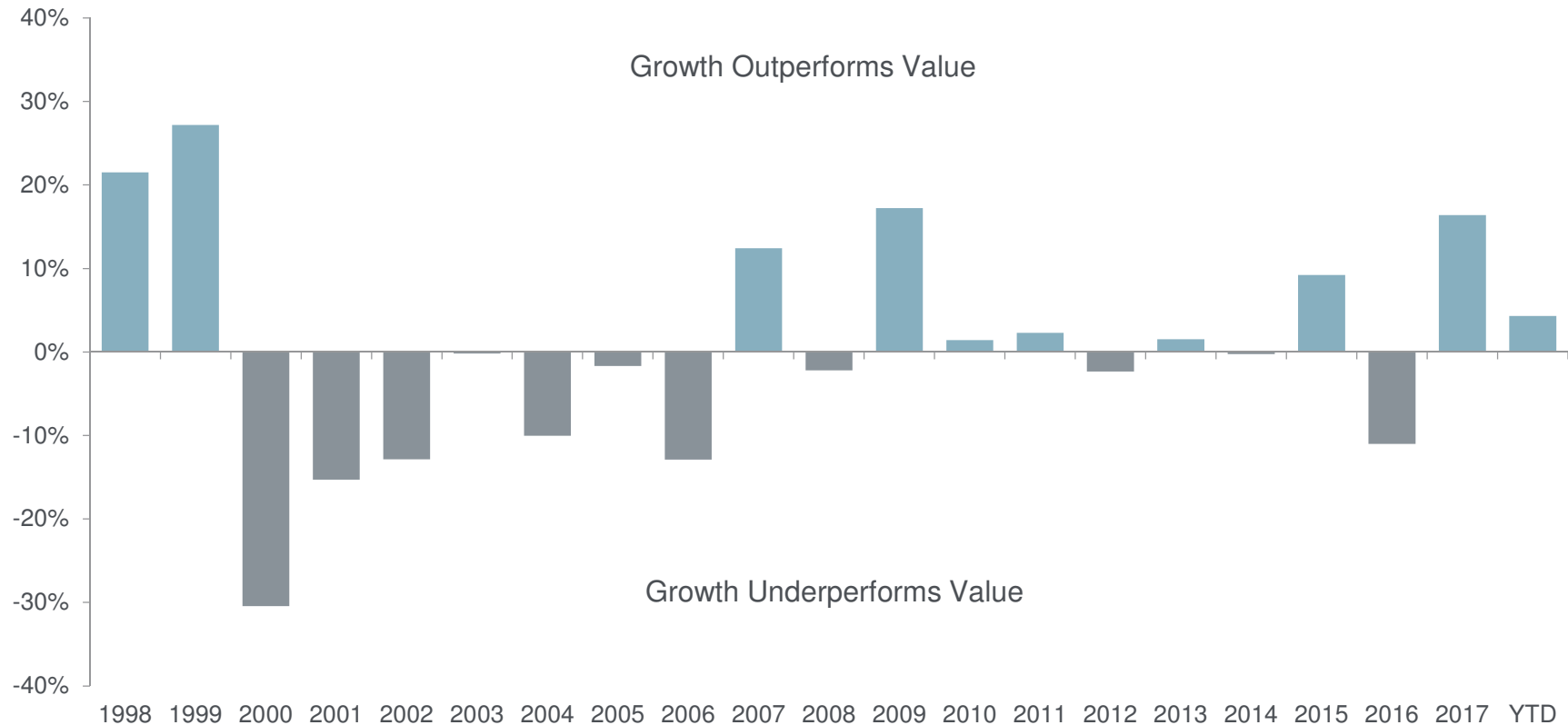
Returns through 03/31/2018.
Growth represented by the Russell 3000 Growth Index and Value represented by the Russell 3000 Value Index.
Data Source: FactSet Research Systems

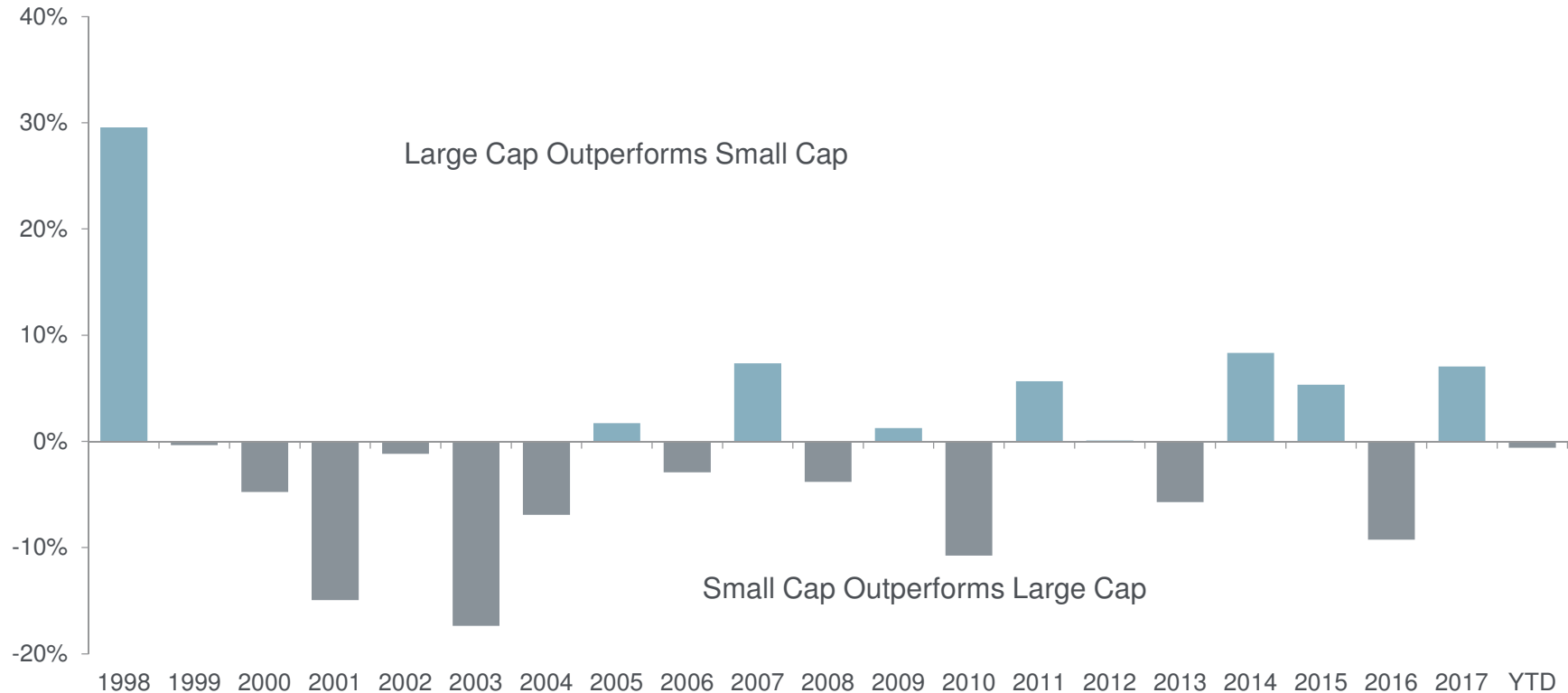# U.S. Large Caps vs. U.S. Small Caps

Calendar Year Returns

Annual Performance: Large Cap Stocks - Small Cap Stocks
Percent Difference

Large Cap Outperforms Small Cap

Small Cap Outperforms Large Cap

Returns through 03/31/2018.
Large Caps represented by the S&P 500 Index and Small Caps represented by the Russell 2000 Index.
Data Source: FactSet Research Systems

RBC | Wealth Management

U.S. Large Caps vs. U.S. Small Caps

Market Valuations

Large Cap Valuation Ratios

Small Cap Valuation Ratios

Current   12 Months Ago   10 Year Average

1 Standard Deviation   High/Low Bar
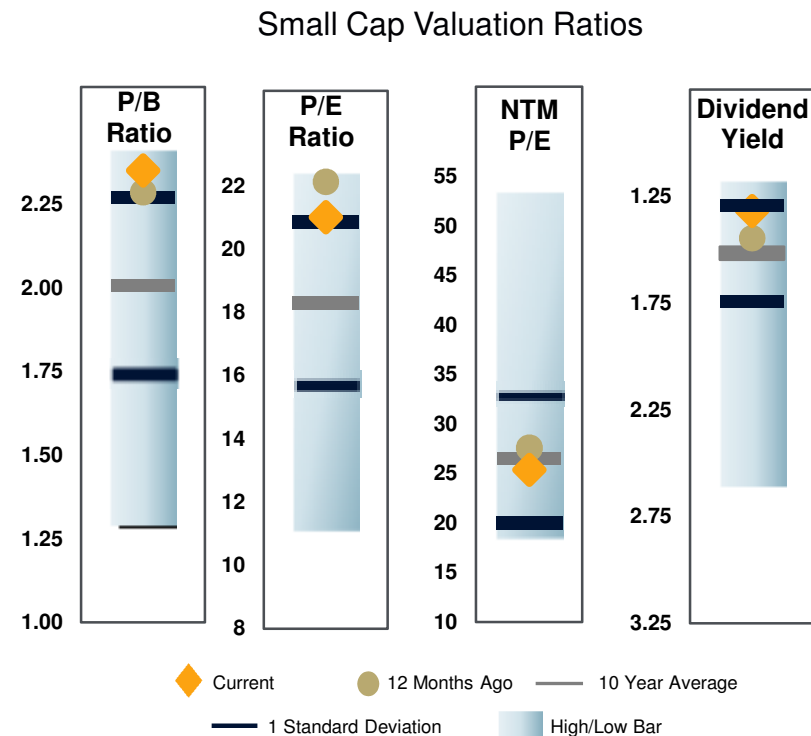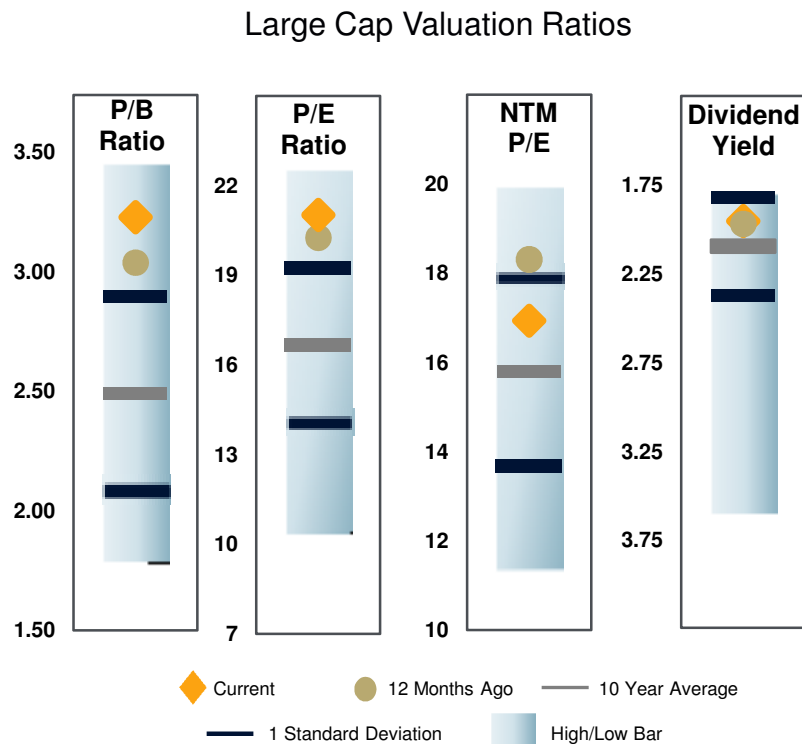
Data through 3/31/2018.
Data Source: Bloomberg.
Large Caps represented by the S&P 500 Index and Small Caps represented by the Russell 2000 Index.

Dividend Yield: Multiplies the DPS over the last year then divides the resulting figure by the price.
Price/Earnings: Reflects the closing price for the company at fiscal quarter end divided by earnings per share before extraordinary items for last twelve months.
NTM P/PE: Price to Next Twelve Months Earnings. Calculated as the current market price over the estimated earnings for the next twelve months for the index.
Price/Book: Displays the book value per share for the ending month divided by share price.

Wealth Management

S&P 500 Historical P/E Range

S&P 500 Historical P/E Range

Data through 03/31/2018

Data Source: Factset

U.S. Large Caps vs. U.S. Small Caps

Relative Valuations – 6 month average z-score

Relative Valuation: Z-score
6 month moving average (S&P 600 - S&P 500)

Data through 03/31/2018.   Data Source: Bloomberg.
Large Caps represented by the S&P 500 Index and Small Caps represented by the S&P 600 Index.
Z-score is a statistical measurement of a score's relationship to its mean. A z-score of 0 occurs when the current score is equal to the historical mean.
A Z-score of a 1 represents a 1 standard deviation event, 68% of all events fall within 1 standard deviation (assuming a normal distribution curve).

Composite Valuation for each index is made up of the following metrics which are adjusted by sector:
Price/Earnings: Reflects the closing price for the company at fiscal quarter end divided by earnings per share before extraordinary items for last twelve months.
NTM P/PE: Price to Next Twelve Months Earnings . Calculated as the current market price over the estimated earnings for the next twelve months for the index.
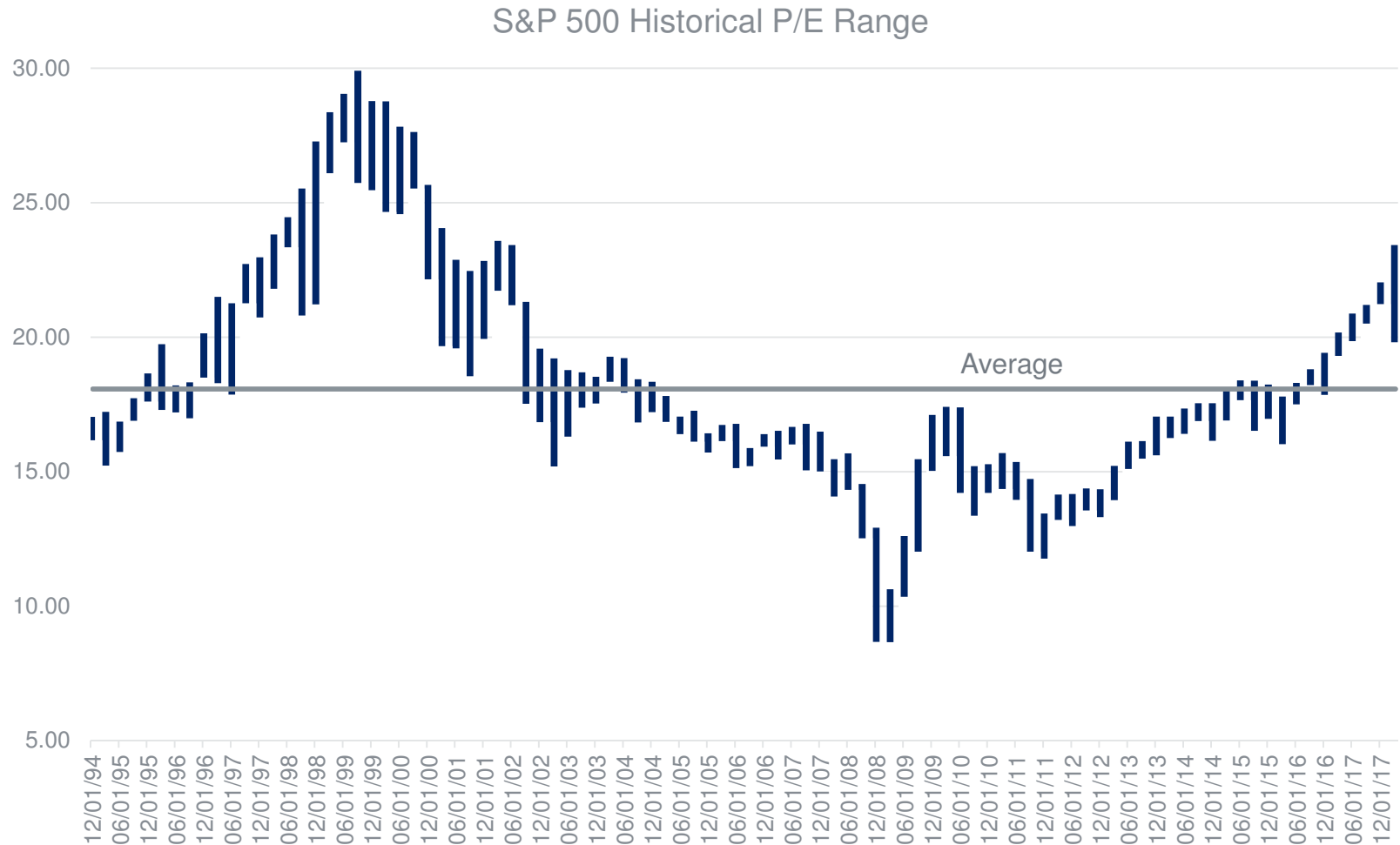Price/Book: Displays the book value per share for the ending month divided by share price.
Free Cash Flow Yield: Trailing 12 month free cash flow divided by the price.

Sector Valuations – Z-Scores

Sector Valuation Z-Score

Data through 03/31/2018.   Data Source: Bloomberg.
Large Caps represented by the S&P 500 Index and Small Caps represented by the S&P 600 Index.
Z-score is a statistical measurement of a score's relationship to its mean. A z-score of 0 occurs when the current score is equal to the historical mean.
A Z-score of a 1 represents a 1 standard deviation event, 68% of all events fall within 1 standard deviation (assuming a normal distribution curve).

Composite Valuation for each index is made up of the following metrics which are adjusted by sector:
Price/Earnings: Reflects the closing price for the company at fiscal quarter end divided by earnings per share before extraordinary items for last twelve months.
NTM P/PE: Price to Next Twelve Months Earnings . Calculated as the current market price over the estimated earnings for the next twelve months for the index.
Price/Book: Displays the book value per share for the ending month divided by share price.
Free Cash Flow Yield: Trailing 12 month free cash flow divided by the price.

Regional Market Valuations
Forward P/E
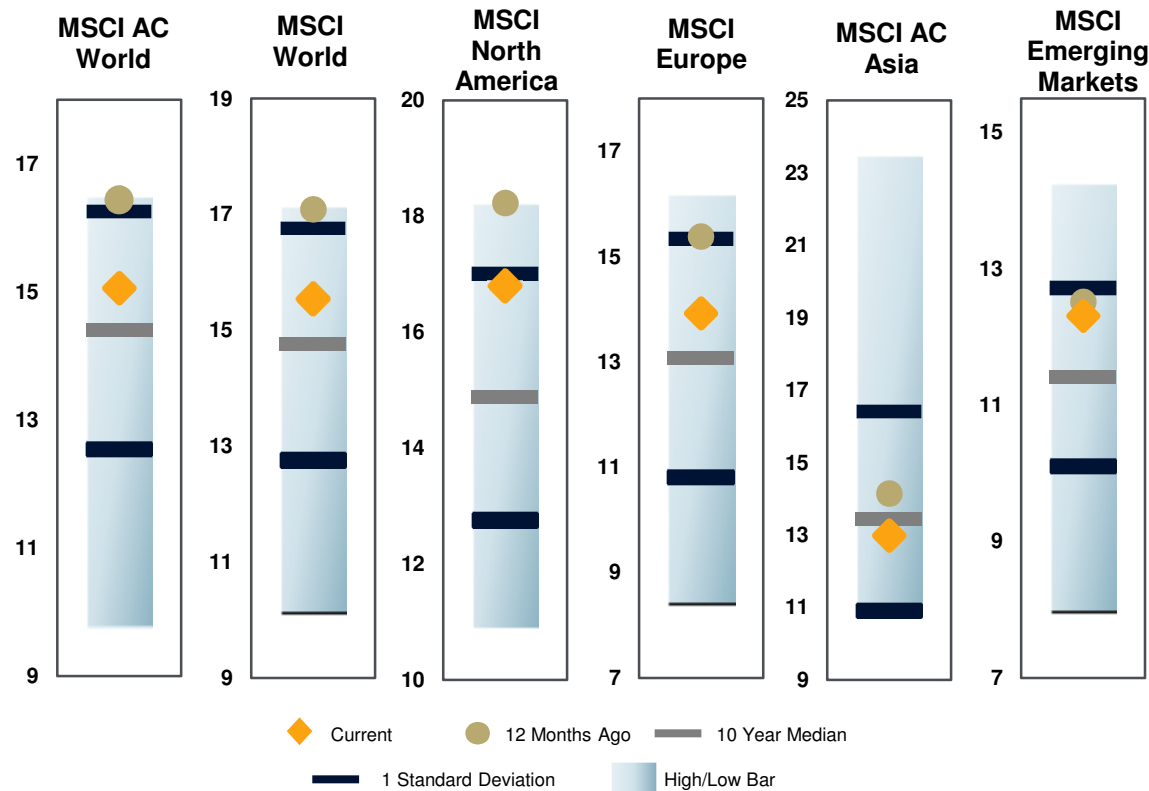
Current   12 Months Ago   10 Year Median

1 Standard Deviation   High/Low Bar

Forward P/E: Price to Next Twelve Months Earnings. Calculated as the current market price over the estimated earnings for the next twelve months for the index
Note: The MSCI AC World index includes emerging market countries. The MSCI World index only includes developed market countries.
Data through 03/31/2018 based on MSCI Market Indices.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: Morgan Stanley Capital International and Bloomberg.

Select Country Market Valuations
Forward P/E
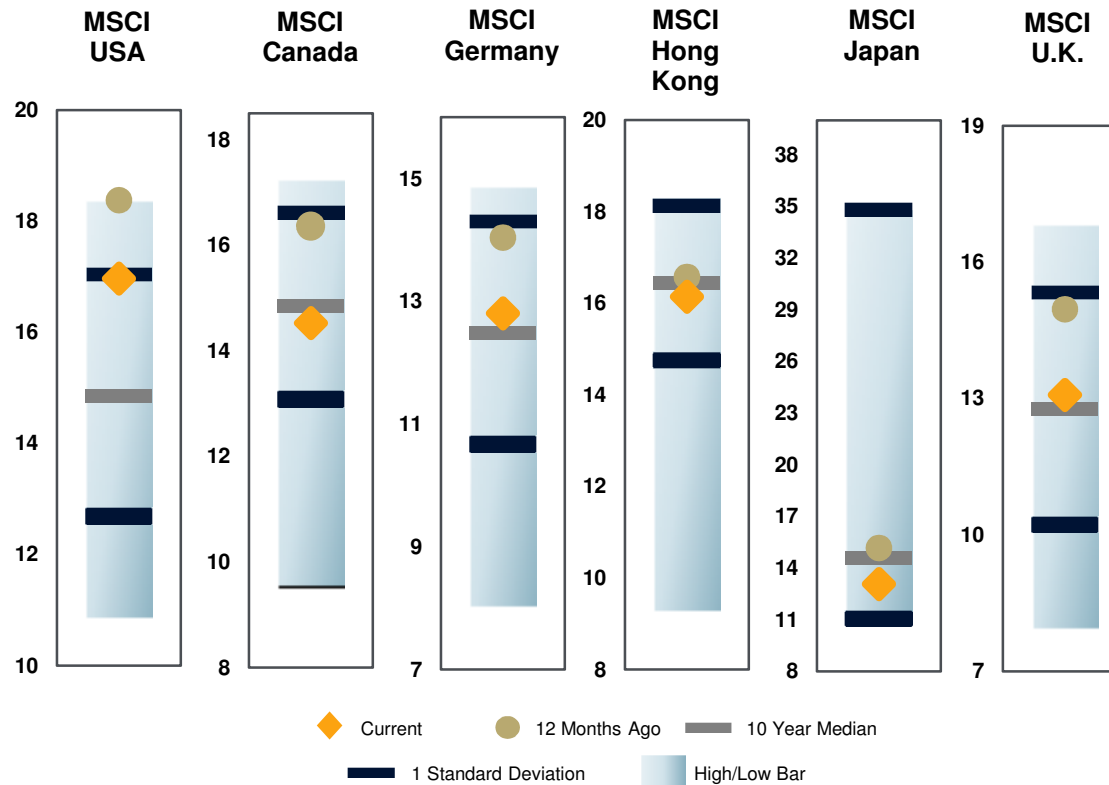
Current   12 Months Ago   10 Year Median

1 Standard Deviation   High/Low Bar

Forward P/E: Price to Next Twelve Months Earnings. Calculated as the current market price over the estimated earnings for the next twelve months for the index
Data through 03/31/2018 based on MSCI Market Indices.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: Morgan Stanley Capital International and Bloomberg.

Developed Market Equity Performance

Best and Worst Markets Since 1995

Year	Best Market	Worst Market	U.S. Return	U.S. Rank	Year	Best Market	Worst Market	U.S. Return	U.S. Rank
1995	Switzerland 45.0%	Austria -4.4%	38.2%	2	2007	Finland 50.1%	Ireland -19.6%	6.0%	19
1996	Spain 41.3%	Japan -15.4%	24.1%	11	2008	Japan -29.1%	Ireland -71.7%	-37.1%	3
1997	Portugal 27.9%	Singapore -30.1%	34.1%	6	2009	Norway 88.6%	Japan 6.4%	27.1%	16
1998	Finland 122.6%	Norway -29.7%	30.7%	8	2010	Sweden 34.8%	Greece -44.7%	15.5%	7
1999	Finland 153.3%	Belgium -13.8%	22.4%	10	2011	Ireland 14.3%	Greece -62.7%	2.0%	2
2000	Switzerland 6.4%	Finland -37.8%	-12.5%	12	2012	Belgium 40.7%	Spain 4.7%	16.1%	14
2001	Australia 2.7%	Finland -37.8%	-12.0%	7	2013	Greece 52.7%	Singapore 1.7%	32.6%	4
2002	Austria 17.3%	Germany -32.9%	-22.7%	17	2014	Israel 23.7%	Portugal -37.7%	13.4%	2
2003	Greece 69.5%	Finland 20.5%	29.1%	21	2015	Denmark 24.4%	Canada -23.6%	1.3%	11
2004	Austria 72.3%	Finland 7.1%	10.7%	21	2016	Canada 25.5%	Israel -24.5%	11.6%	6
2005	Canada 28.9%	Ireland -2.1%	5.7%	18	2017	Austria 59%	Israel 2.6%	21.9%	16
2006	Spain 50.2%	Japan 6.3%	15.3%	21	2018	Finland 8.6%	Canada -7.2%	-0.6%	11

Returns through 03/31/2018 and based on MSCI Developed Market Indices. As of December 2013, MSCI classified 23 countries as Developed Markets. Recent changes include the removal of Greece in November 2013 and the addition of Israel in 2010. International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: Morgan Stanley Capital International and Bloomberg.

RBC | Wealth Management

Developed Market Equities

Top Performing Countries

	One-Year	Three-Year	Five-Year	Ten-Year

Chart values:

One-Year: AUSTRIA 49.0%, NORWAY 30.7%, ITALY 28.6%

Three-Year: AUSTRIA 22.3%, NETHERLANDS 11.0%, USA 10.6%

Five-Year: FINLAND 14.2%, USA 13.2%, DENMARK 12.8%

Ten-Year: USA 9.5%, HONG KONG 7.4%, DENMARK 7.1%

Returns through 03/31/2018 are based on 22 MSCI Developed Market Indices. Returns greater than one year are annualized.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: Morgan Stanley Capital International and Bloomberg.

RBC | Wealth Management

U.S. Stocks vs. International Stocks

Calendar Year Returns

Annual Performance: U.S. Stocks - International Stocks
Percent Difference

U.S. Stocks Outperform International Stocks

U.S. Stocks Underperform International Stocks

Returns through 03/31/2018.
U.S. stocks represented by the S&P 500 Index. International stocks represented by the MSCI EAFE Index.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: FactSet Research Systems.

29

RBC | Wealth Management

U.S. Stock vs. U.S. Bonds

Calendar Year Returns

Annual Performance: Stocks - Bonds
Percent Difference
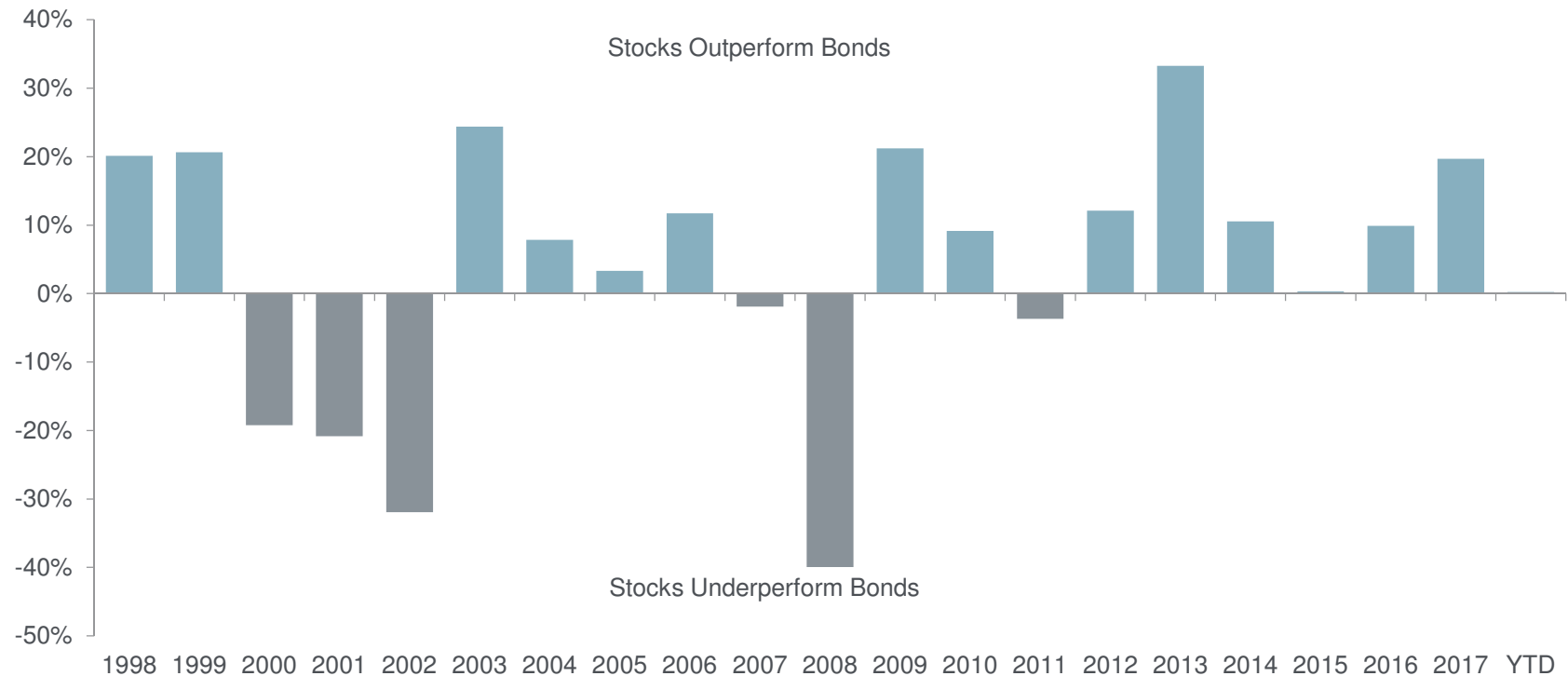
Returns through 03/31/2018.
U.S. Stocks represented by the S&P 500 Index.
U.S. Bonds represented by the Bloomberg Barclays Intermediate Government Credit Index.
Data Source: FactSet Research Systems.

RBC | Wealth Management

S&P 500 Div. Yield vs. 10-Year Treasury Yield

Yield Comparison
S&P 500 vs 10-Year Treasury
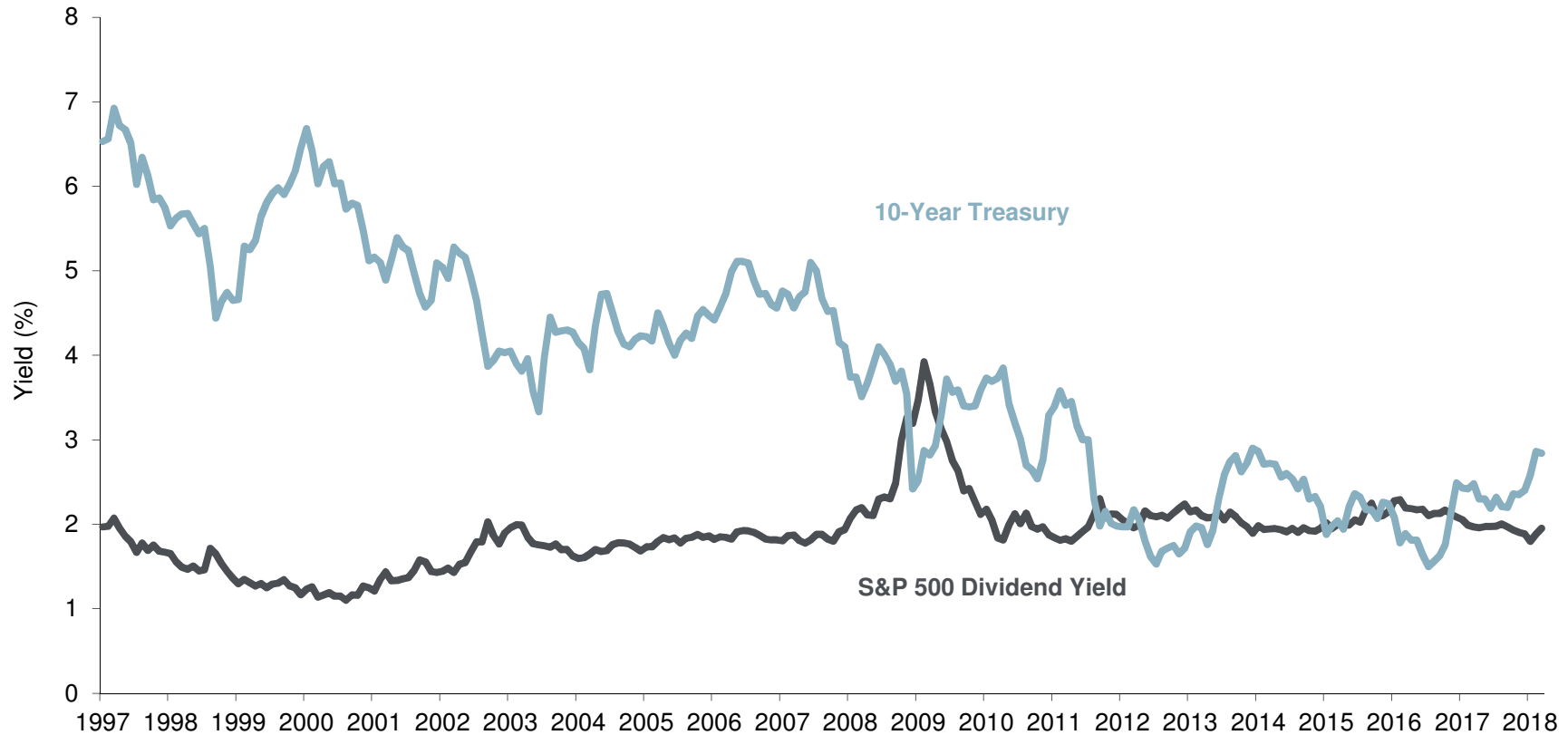
Before time period shown, the last historical point where the S&P 500 dividend yield was greater than the 10-Year Treasury yield was 1958.
Data as of 03/31/2018.
Source: FactSet Research Systems, Compustat, Standard and Poor's, Bloomberg.

31

Historical Yield

Since January 1999

Long Bond Yields: Treasuries, Munis, & Corps
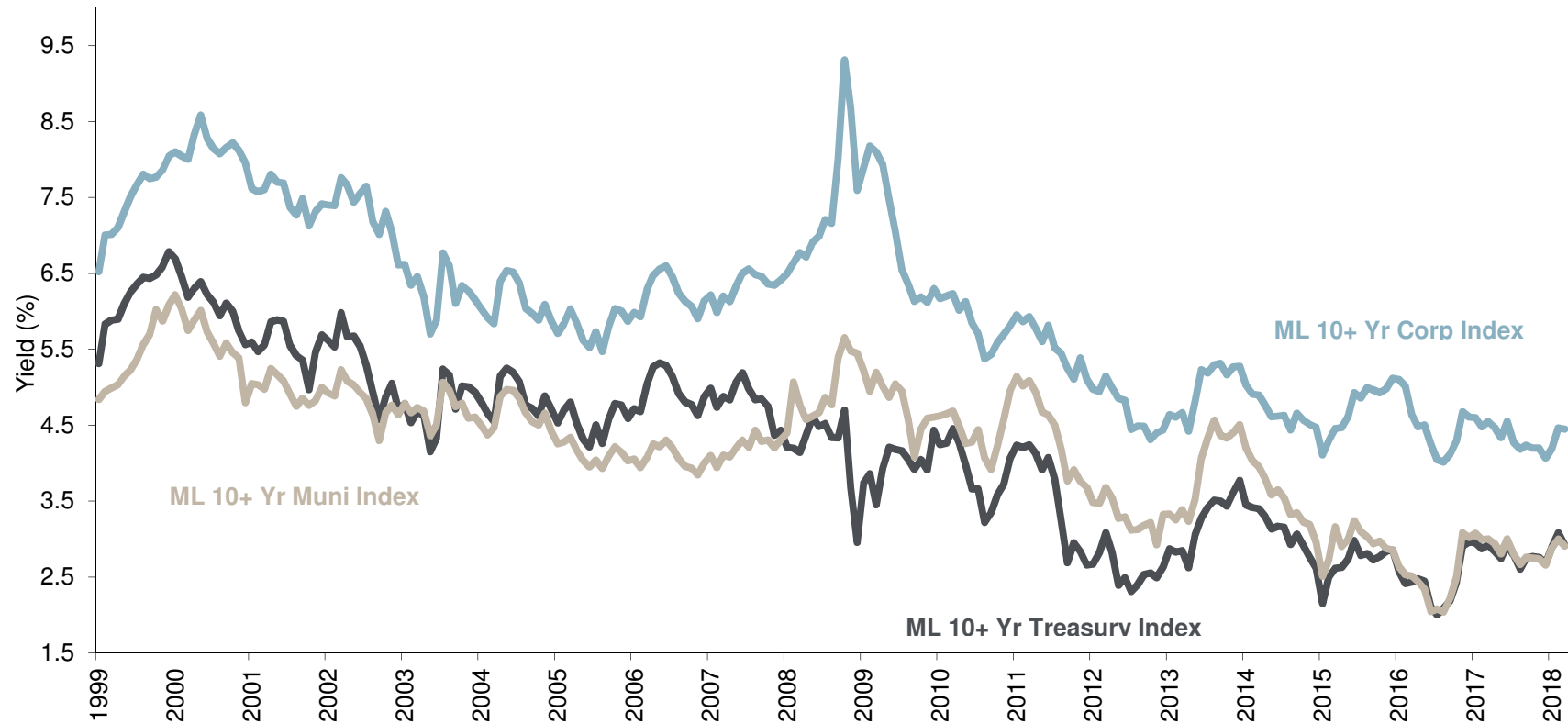
Data through 03/31/2018.

Data Source: Bloomberg.

Historical Government Yield

Since January 1999

10 Year Government Yields:
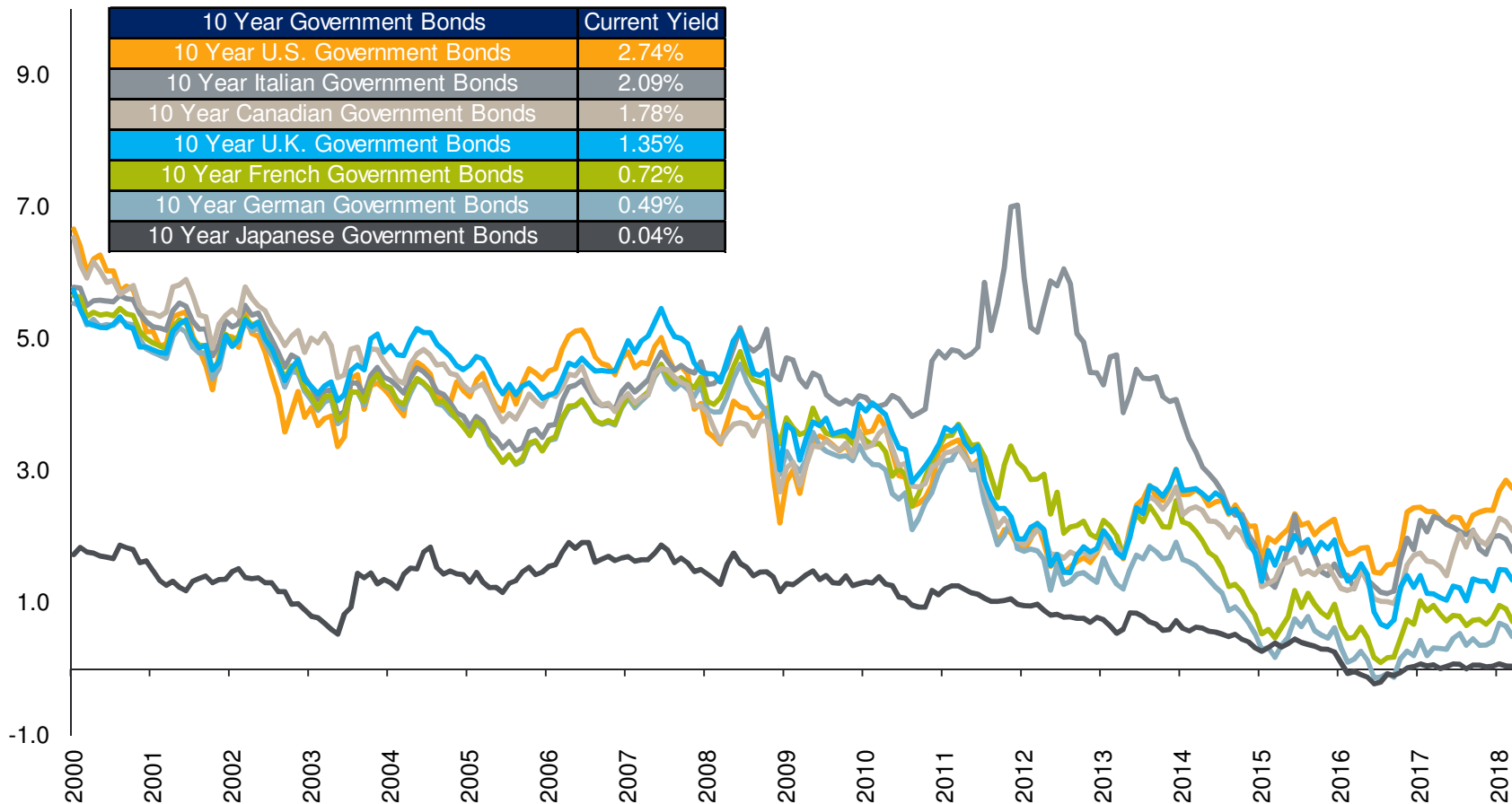
10 Year Government Bonds	Current Yield
10 Year U.S. Government Bonds	2.74%
10 Year Italian Government Bonds	2.09%
10 Year Canadian Government Bonds	1.78%
10 Year U.K. Government Bonds	1.35%
10 Year French Government Bonds	0.72%
10 Year German Government Bonds	0.49%
10 Year Japanese Government Bonds	0.04%

Data through 03/31/2018.

Data Source: Bloomberg.

RBC Wealth Management

Treasury Curve

Change in Yield
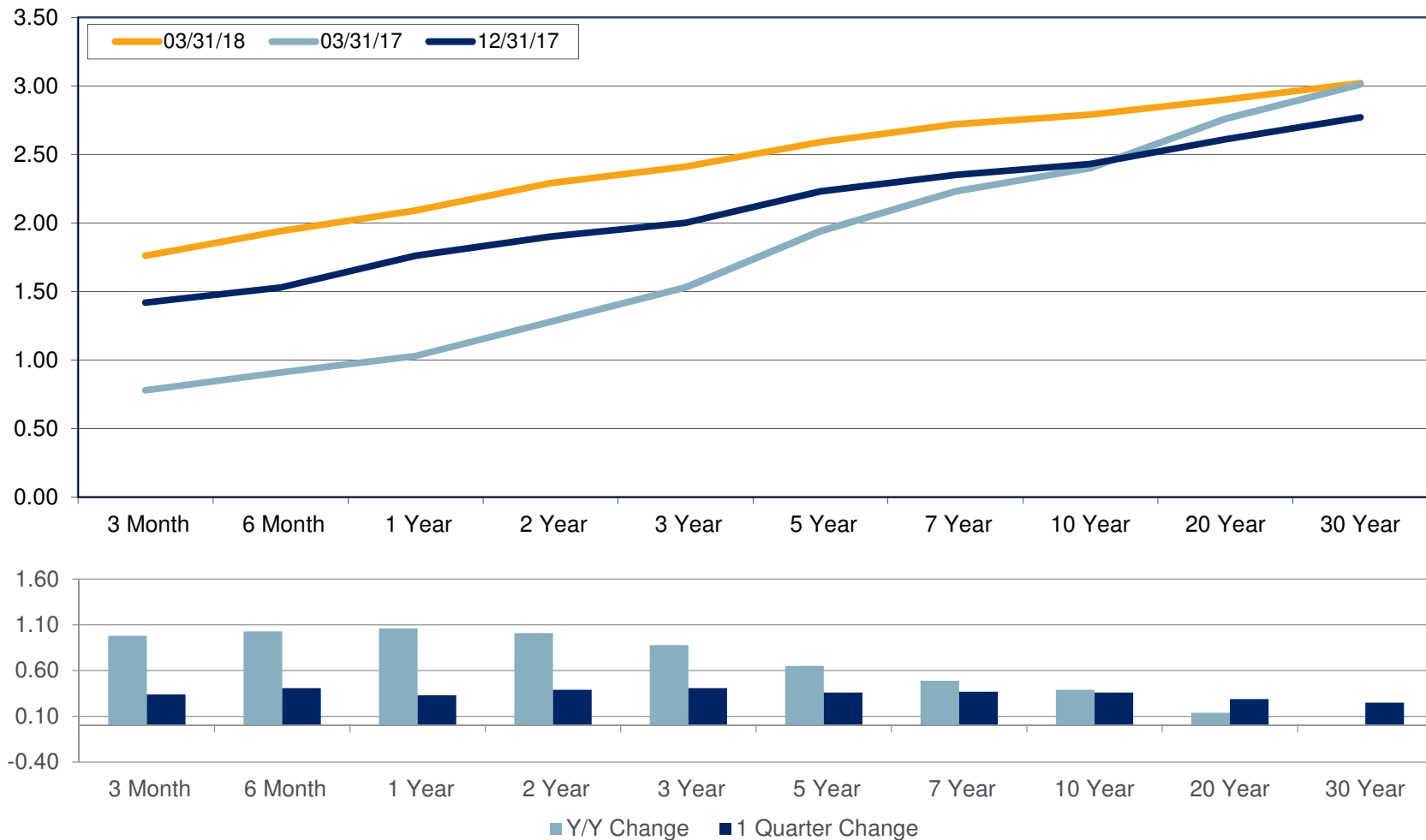
Data through 03/31/2018.

Data Source: St. Louis Federal reserve.

Impact of a 1% Rise in Interest Rates

Assumes a parallel shift in the yield curve and steady spreads

Impact of a 1% rise in interest rates
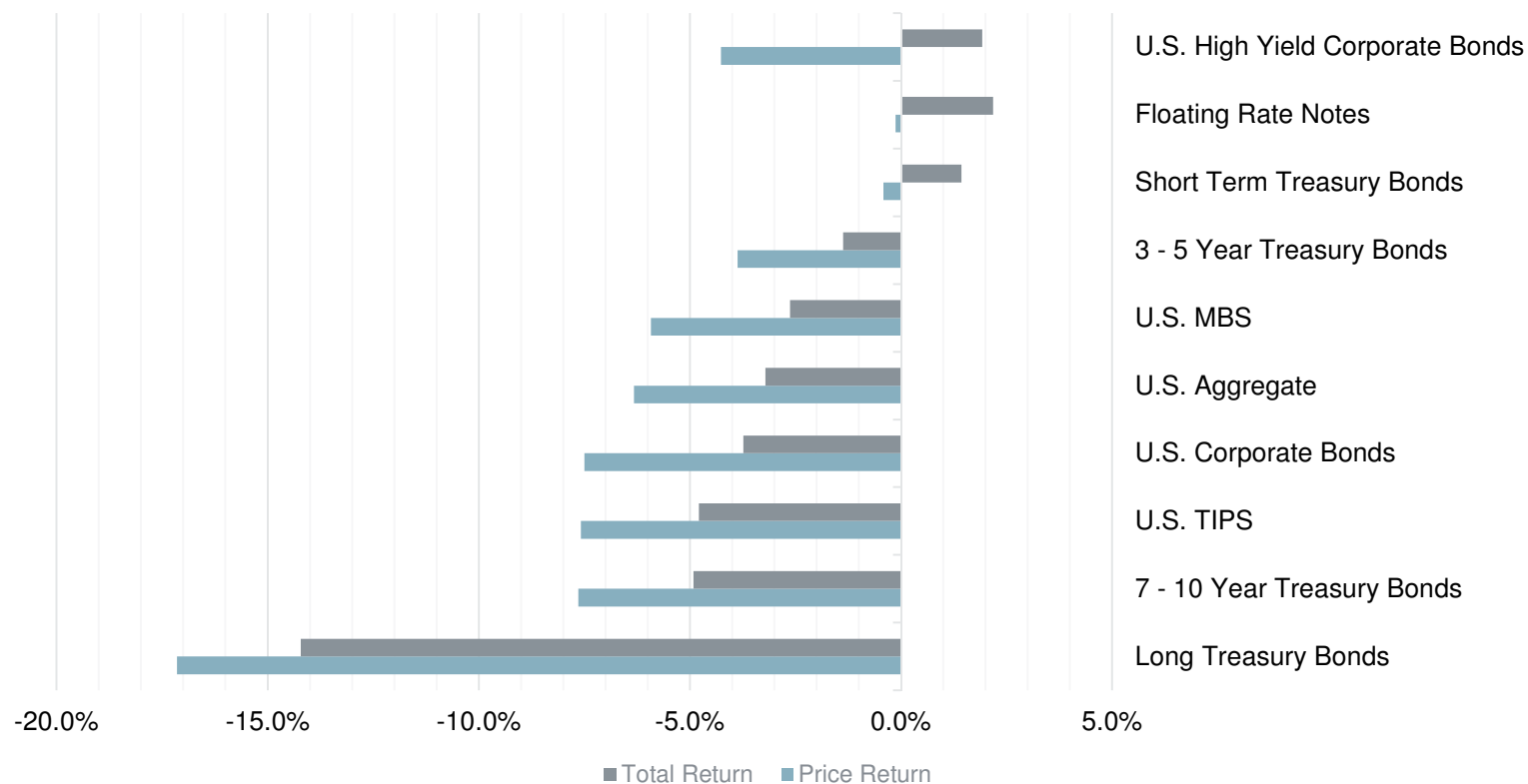
Data Source: Bloomberg. Data through 03/31/2018.
Total Return incorporates both duration and convexity according to the following formula:
New Price = (Price*-Duration*Change in Interest Rates))+(0.5*Price*Convexity*(change in Rates)^2)

Bloomberg Barclays Agg. Index Quarterly Total Returns
Since 1990

Bloomberg Barclays Aggregate Index Quarterly Returns
Since 1990
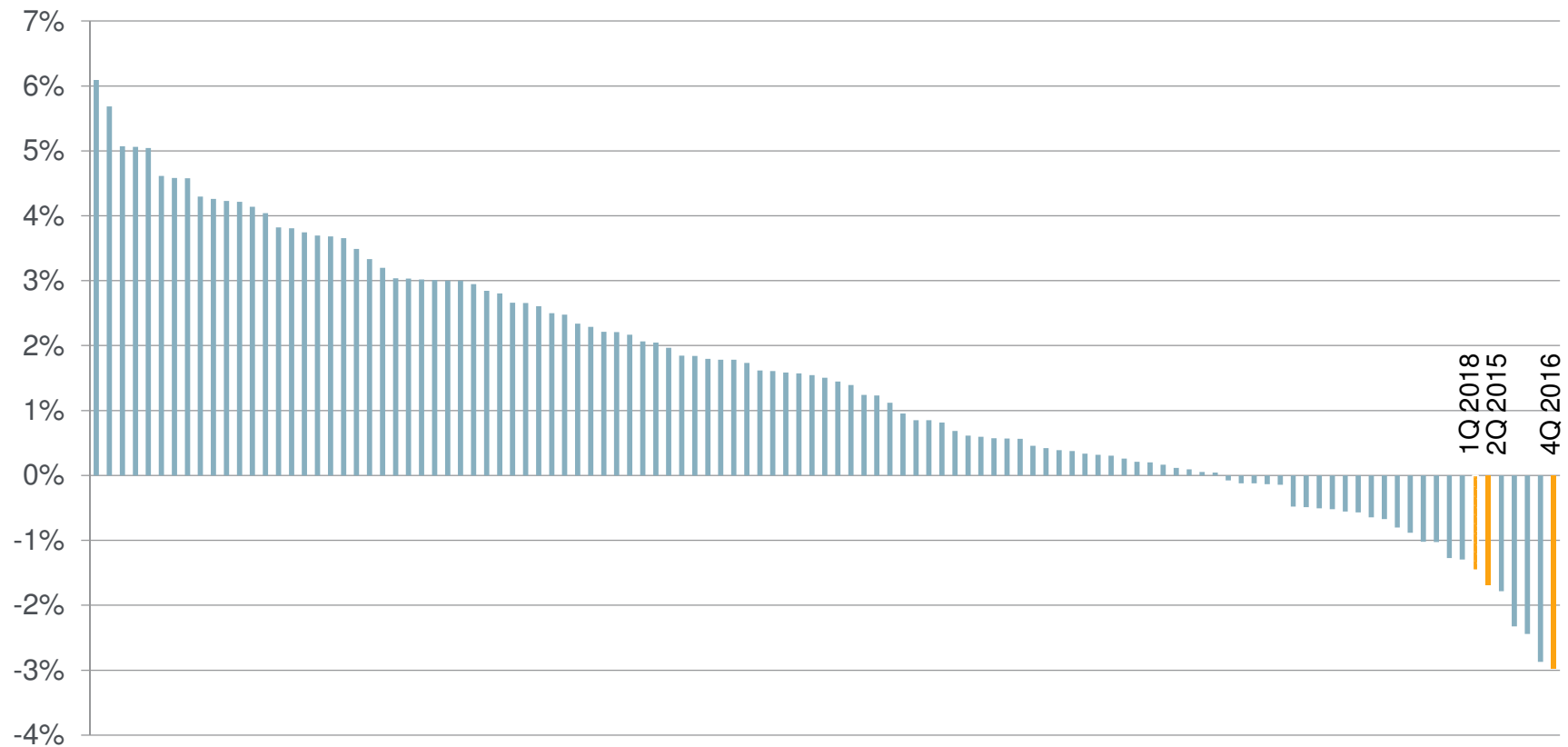
Data Source: FactSet Research Systems
Returns from 1/1/1990 through 03/31/2018.

Returns During 10 Worst Bond Markets
Since 1990

	Average	4Q 2016	1Q 1994	2Q 2004	2Q 2013	1Q 1996	2Q 2015	1Q 2018	4Q 2010	1Q 1992	2Q 1994
Convertibles	2.1%	2.1%	-2.9%	-0.6%	2.2%	6.5%	0.6%	2.4%	6.7%	6.7%	-3.1%
High Yield Bonds	1.3%	1.8%	-1.9%	-1.0%	-1.4%	1.8%	0.0%	-0.9%	7.4%	7.4%	-0.3%
Bank Loans	0.8%	2.2%			-0.2%		-0.1%	1.4%			
HFRI Fund of Funds	0.7%	0.9%	-3.3%	-1.5%	0.0%	3.1%	0.2%		3.3%	3.3%	0.1%
S&P 500	0.5%	3.8%	-3.8%	1.7%	2.9%	5.4%	0.3%	-0.8%	-2.5%	-2.5%	0.4%
Short-Term Government Bonds	-0.3%	-0.5%		-1.1%	-0.1%		0.1%	-0.2%			
Preferreds	-0.9%	-3.8%	-4.4%	-5.4%	-2.4%	1.0%	-1.1%	-1.0%	4.0%	4.0%	-0.2%
Telecom	-1.8%	4.8%	-5.0%	-1.0%	1.0%	-4.2%	1.6%	-7.5%	-6.7%	-6.7%	5.8%
Bloomberg Barclays US Aggregate	**-1.9%**	**-3.0%**	**-2.9%**	**-2.4%**	**-2.3%**	**-1.8%**	**-1.7%**	**-1.5%**	**-1.3%**	**-1.3%**	**-1.0%**
Staples	-1.9%	-2.0%	-4.3%	0.5%	0.5%	3.6%	-1.7%	-7.1%	-4.0%	-4.0%	-0.9%
REITS	-2.0%	-2.9%	2.2%	-6.6%	-3.4%	2.6%	-8.9%	-6.7%	1.0%	1.0%	1.4%
Investment Grade Bonds	-2.4%	-2.8%	-3.5%	-3.4%	-3.3%	-2.6%	-3.2%	-2.3%	-0.7%	-0.7%	-1.6%
MLPs	-2.5%	2.0%		-6.6%	1.9%	4.6%	-6.1%	-11.1%			
TIPS	-2.9%	-2.4%		-3.1%	-7.1%		-1.1%	-0.8%			
Intermediate-Term Government Bonds	-3.4%	-5.6%	-4.8%	-4.3%	-4.2%	-3.3%	-2.4%	-1.9%	-3.1%	-3.1%	-1.5%
Utilities	-4.8%	0.1%	-11.1%	-1.3%	-2.7%	-2.0%	-5.8%	-3.3%	-7.5%	-7.5%	-6.6%
Long-Term Government Bonds	-6.6%	-12.2%	-6.4%	-5.7%	-5.8%	-7.5%	-9.1%	-3.4%			-3.1%

Highest Average Return ➝

⬅ Lowest Average Return

Data Source: FactSet Research Systems, and Bloomberg
Returns from 1/1/1990 through 03/31/2018.

RBC | Wealth Management

Commodity Prices

Commodity Prices: Gold and Copper

	Current Price	QTD Return	1 Yr Return
Gold	$1,322.80	1.0%	6.1%
Copper	$ 302.55	-8.3%	14.1%
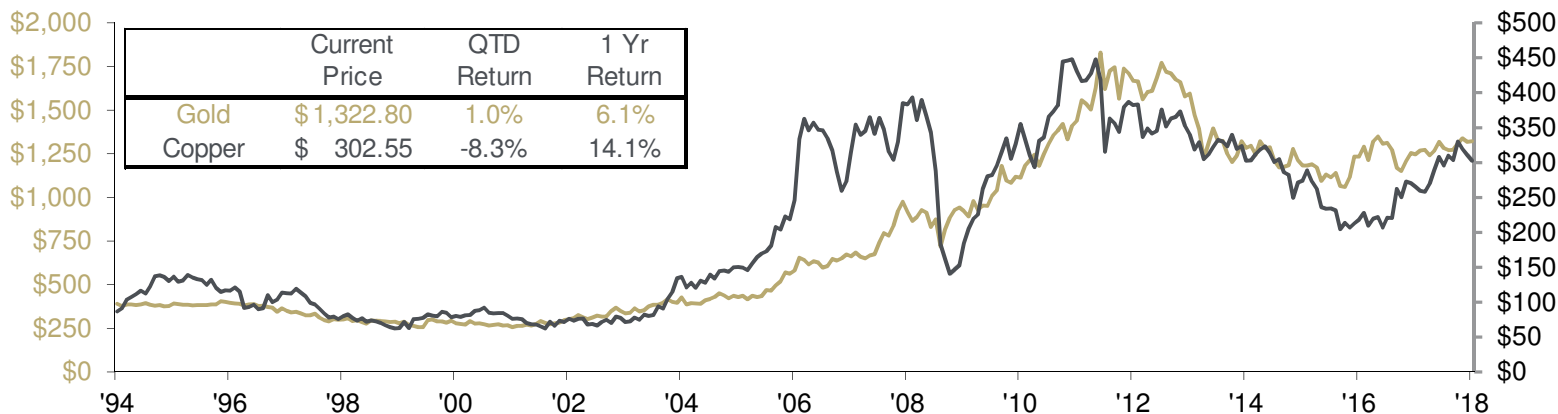
Commodity Prices: Oil and Natural Gas
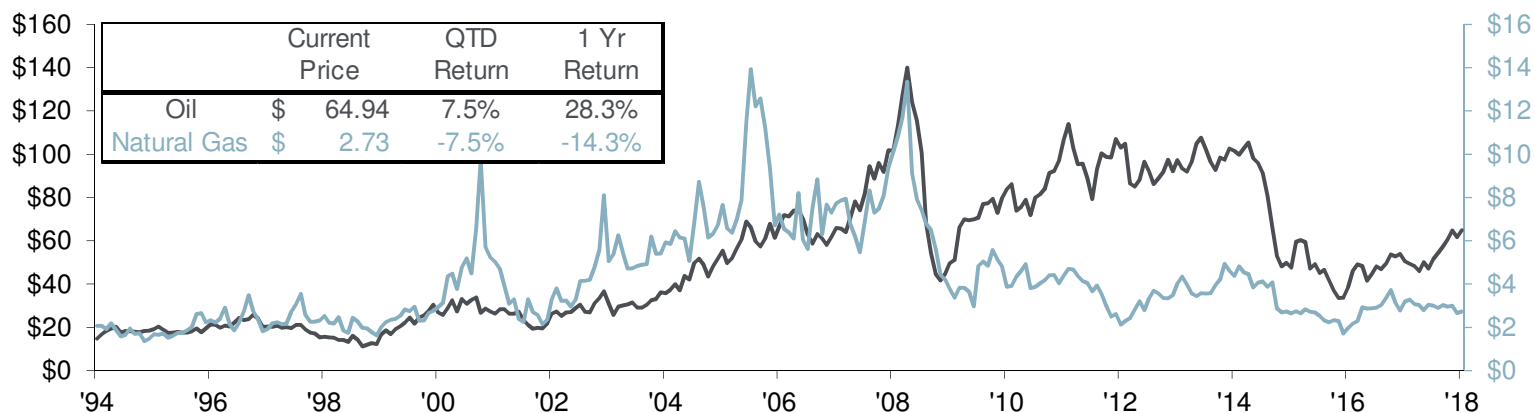
	Current Price	QTD Return	1 Yr Return
Oil	$ 64.94	7.5%	28.3%
Natural Gas	$ 2.73	-7.5%	-14.3%

Data Source: Bloomberg.
Data through 03/31/2018.

RBC **Wealth Management**

Gold Relative to Crude Oil

Commodity Prices: How much oil will 1 oz. of gold buy?

Barrels of oil per ounce of gold		Date
Current	20.37	03/30/18
High	36.57	02/29/16
low	6.31	08/31/05
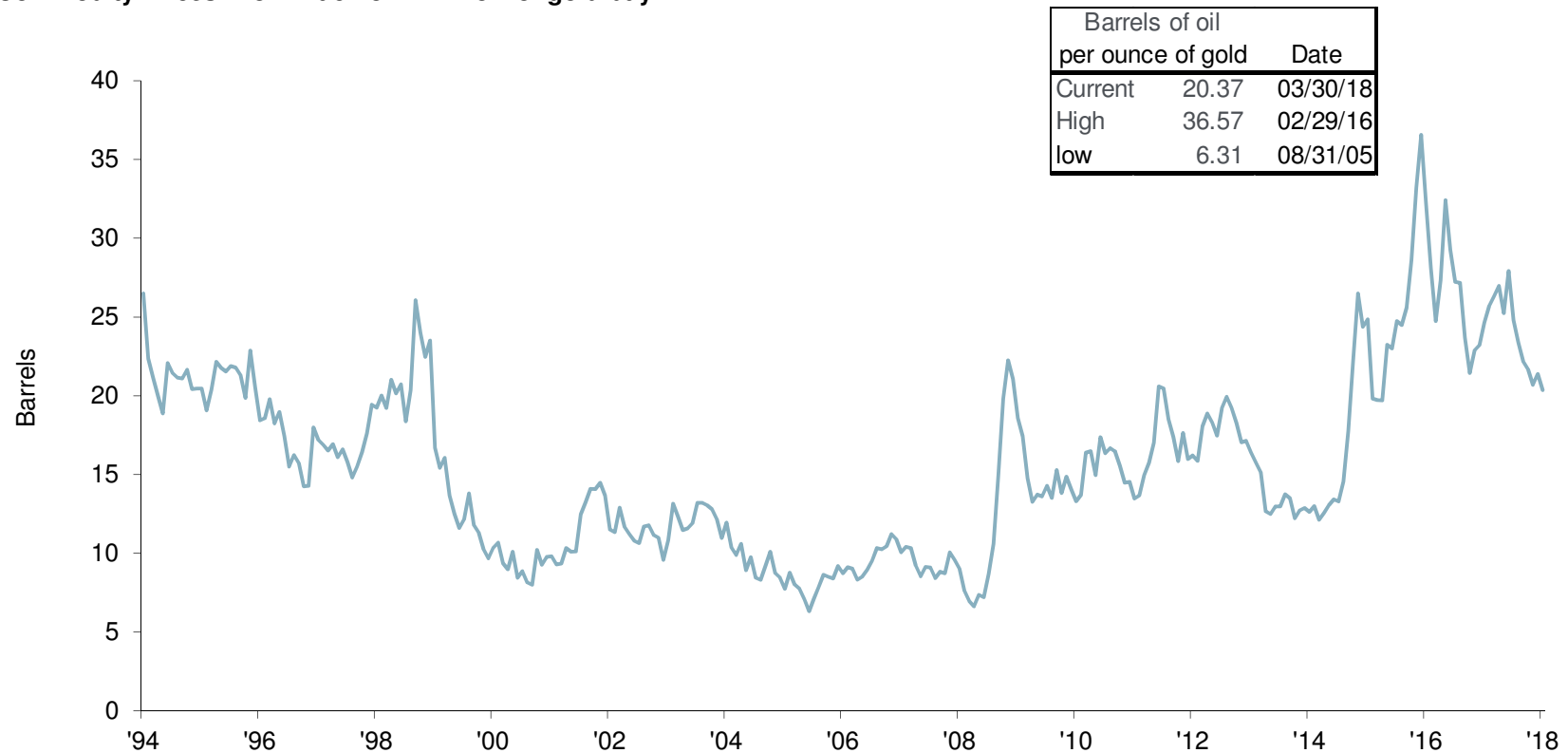
Data Source: Bloomberg. Data through 03/31/2018.
Oil price based on West Texas Intermediate (WTI).

RBC | **Wealth Management**

Historical Growth of $1

Since January 1923
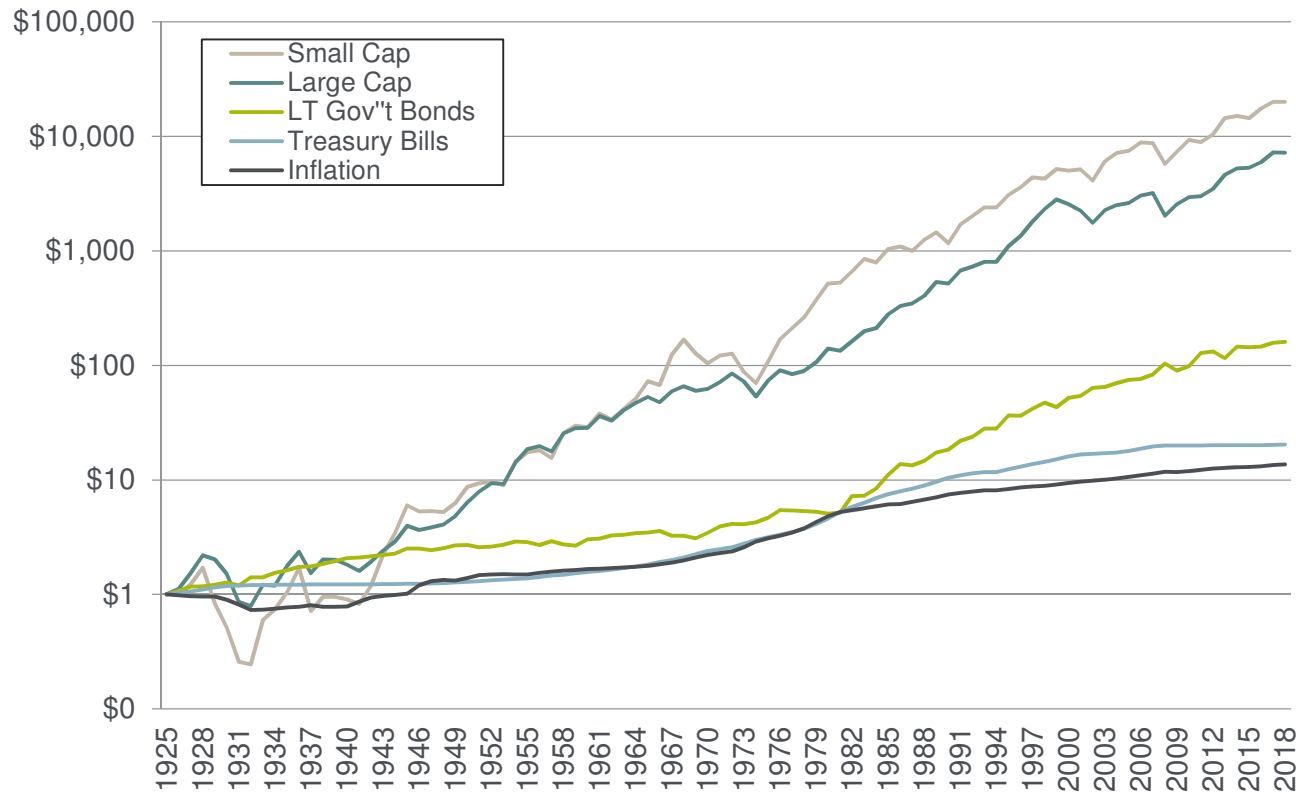
Asset Class	Ending Balance	Annualized Return
Small Cap	$20,060	11.2%
Large Cap	$7,195	10.0%
LT Gov't Bonds	$161	5.6%
Treasury Bills	$20	3.3%
Inflation	$14	2.8%

Chart legend: Small Cap, Large Cap, LT Gov''t Bonds, Treasury Bills, Inflation

Small Cap Equities: Represented by the Russell 2000 Index.
Large Cap Equities: Represented by the S&P 500 Index.
Long Term Gov't Bonds: Represented by the Citigroup USBIG Treasury 10+ Year Index.
Treasury Bills: Represented by the Citigroup 3-month T-Bill Index.
Inflation: Represented by the Consumer Price Index – All Urban Consumers (CPI-U).
Past performance does not guarantee future results.
Data Source: FactSet Research Systems. Data through 3/31/2018.

RBC Wealth Management

Historical Growth of $1 With REITs

Since January 1971
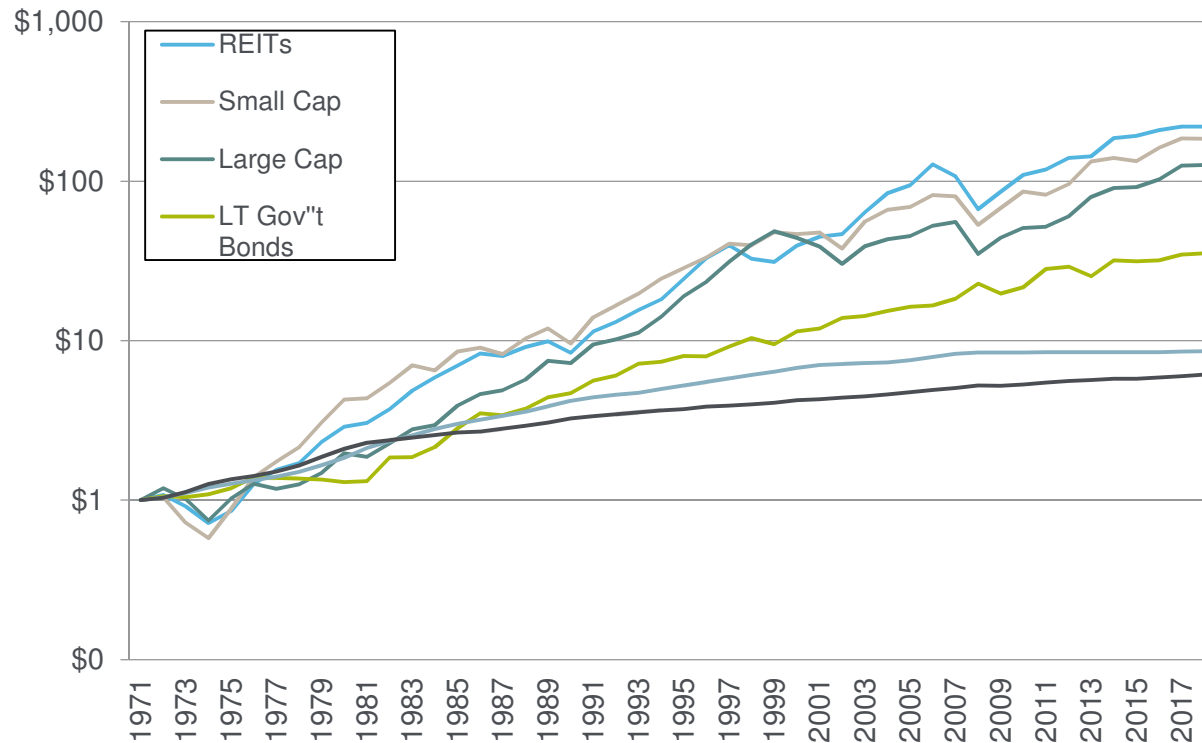
Asset Class	Ending Balance	Annualized Return
REITS	$219	12.0%
Small Cap	$185	11.4%
Large Cap	$127	10.3%
LT Gov't Bonds	$35	7.6%
Treasury Bills	$9	4.6%
Inflation	$6	3.9%

REITs: Represented by FTSE NAREIT Equity Real Estate Investment Trusts Index.
Small Cap Equities: Represented by the Russell 2000 Index.
Large Cap Equities: Represented by the S&P 500 Index.
Long Term Gov't Bonds: Represented by the Citigroup USBIG Treasury 10+ Year Index.
Treasury Bills: Represented by the Citigroup 3-month T-Bill Index.
Inflation: Represented by the Consumer Price Index – All Urban Consumers (CPI-U).
See disclosures for more detailed information on the indices used in this chart.
Past performance does not guarantee future results.
Data Source: FactSet Research Systems. Data through 3/31/2018.

Historical Returns by Holding Period

Range of Stock, Bond and Blended Total Returns
Rolling Total Returns, Since 1979

Legend:
- Stocks (S&P 500)
- Bonds (Bloomberg Barclays US Agg)
- Balanced (50% Stocks, 50% Bonds)

1-Year: Stocks 61% / -43%; Bonds 35% / -9%; Balanced 45% / -23%
5-Year: Stocks 30% / -7%; Bonds 20% / 2%; Balanced 23% / -1%
10-Year: Stocks 20% / -3%; Bonds 14% / 4%; Balanced 16% / 1%
20-Year: Stocks 18% / 6%; Bonds 11% / 5%; Balanced 15% / 6%
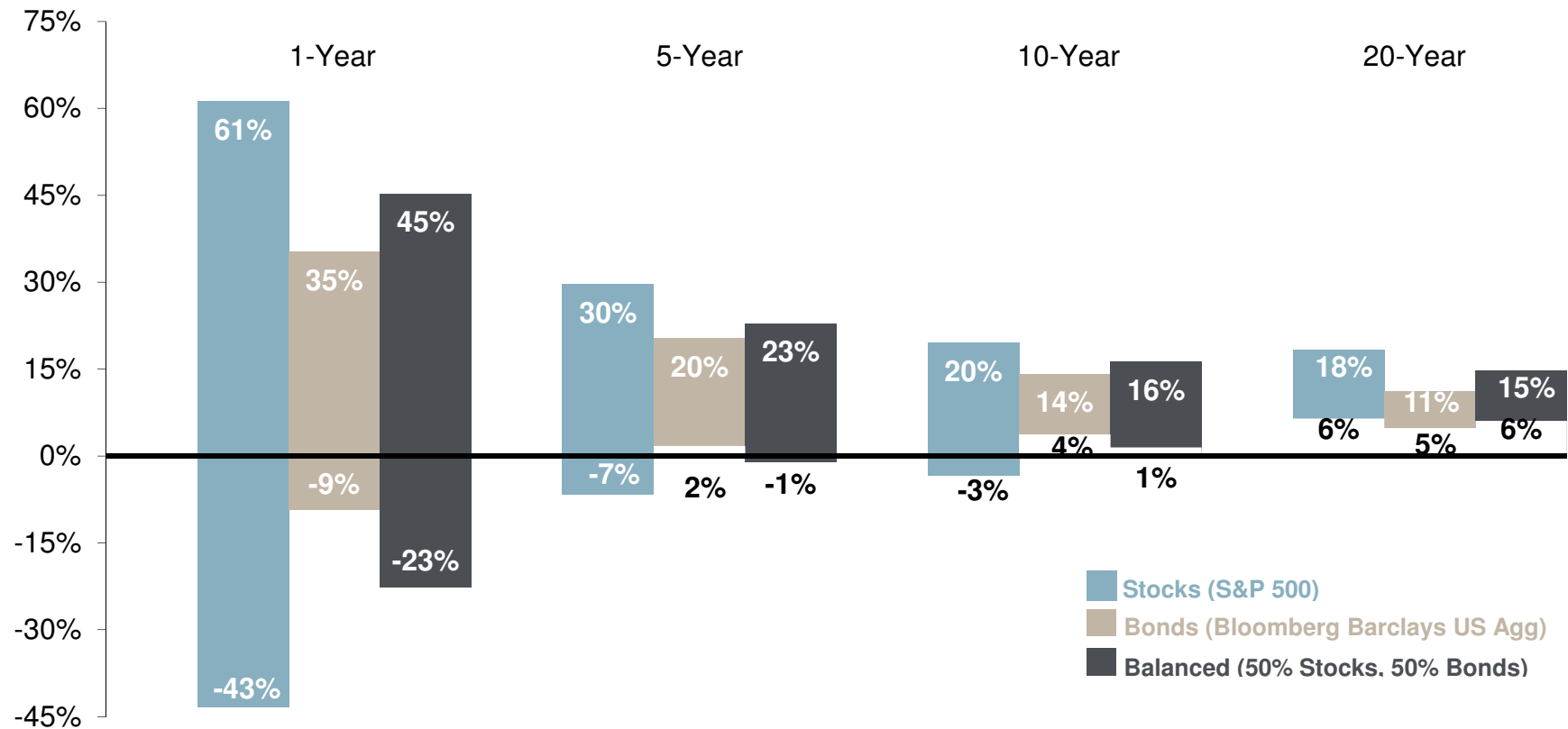
Bar Chart Returns 1/1/1979 through 03/31/2018.
Data source: Ibbotson Associates and FactSet Research Systems.

RBC | Wealth Management

Historical 10 Year Rolling Returns
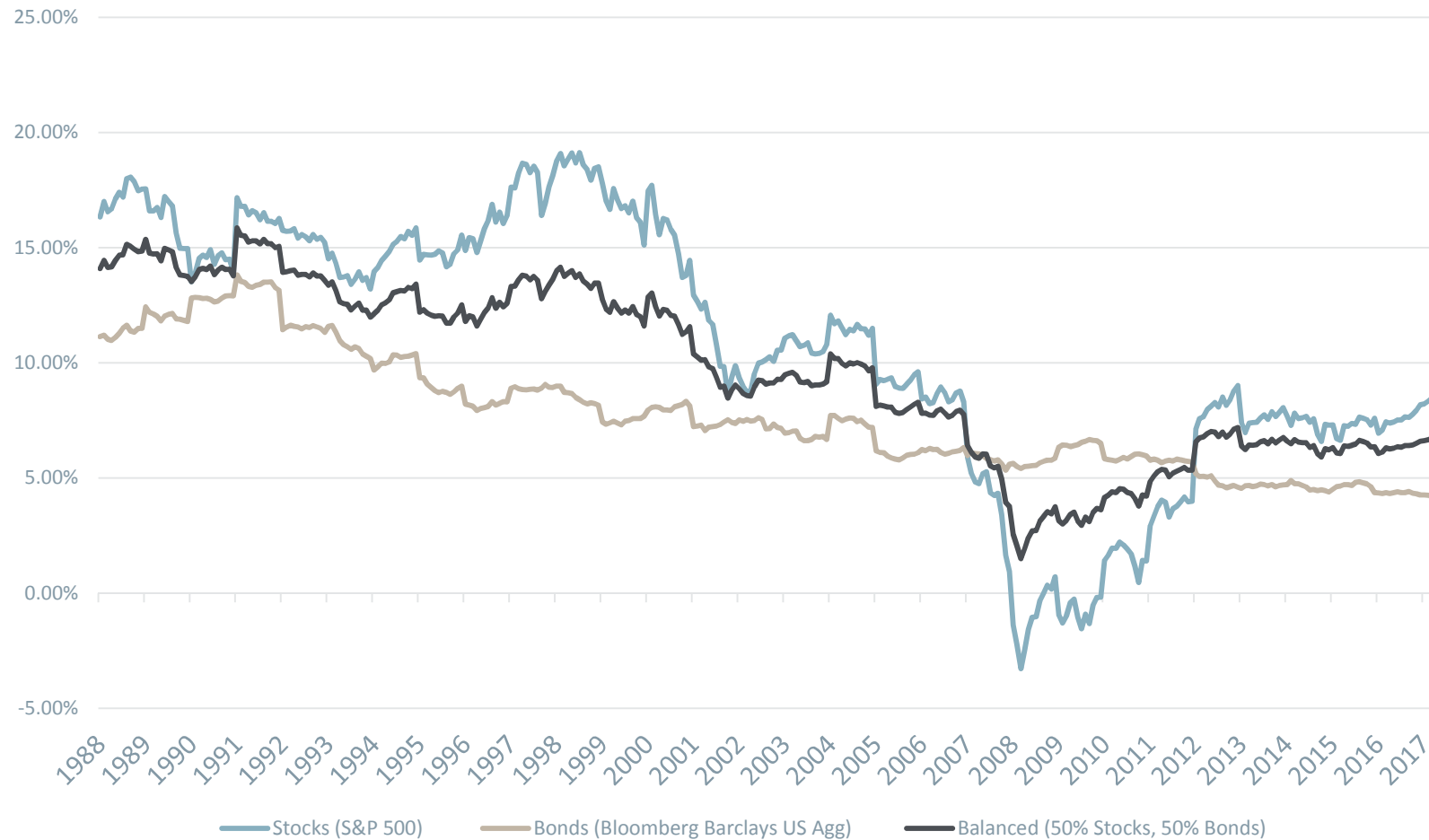
Stocks (S&P 500)　　　Bonds (Bloomberg Barclays US Agg)　　　Balanced (50% Stocks, 50% Bonds)

Returns through 03/31/2018.
Data source: FactSet Research Systems.

43

RBC | **Wealth Management**

Efficient Frontier

Fixed Income Diversification Opportunities

Efficient Frontier: U.S. Stocks and Bonds
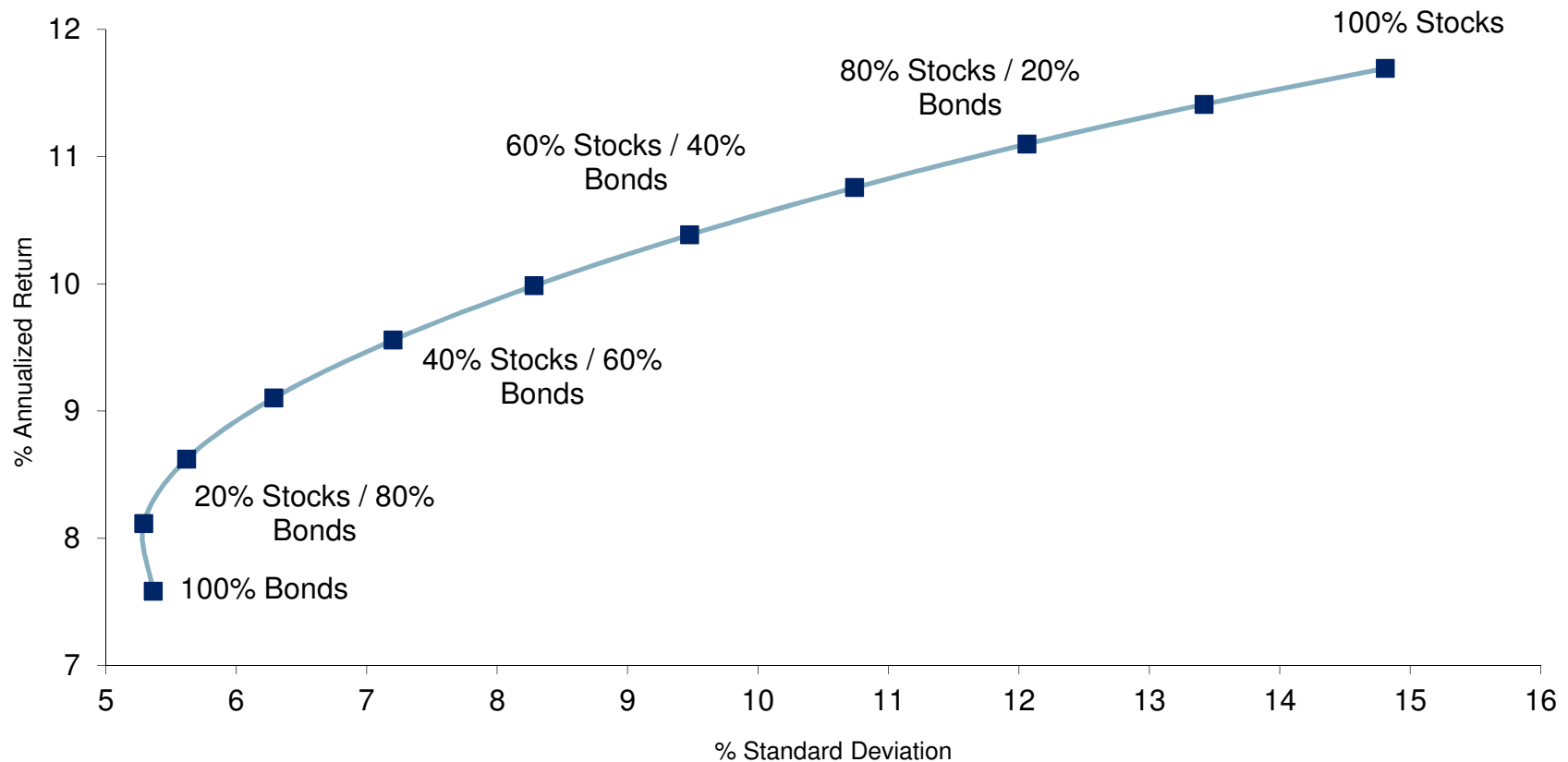
Data Source: FactSet Research Systems.
Returns from 1/1/1980 through 03/31/2018.
Stocks represented by the S&P 500 Index. Bonds represented by the Bloomberg BarCap Aggregate Index.

RBC Wealth Management

Efficient Frontier

International Diversification Opportunities

Efficient Frontier: U.S. and International Equities
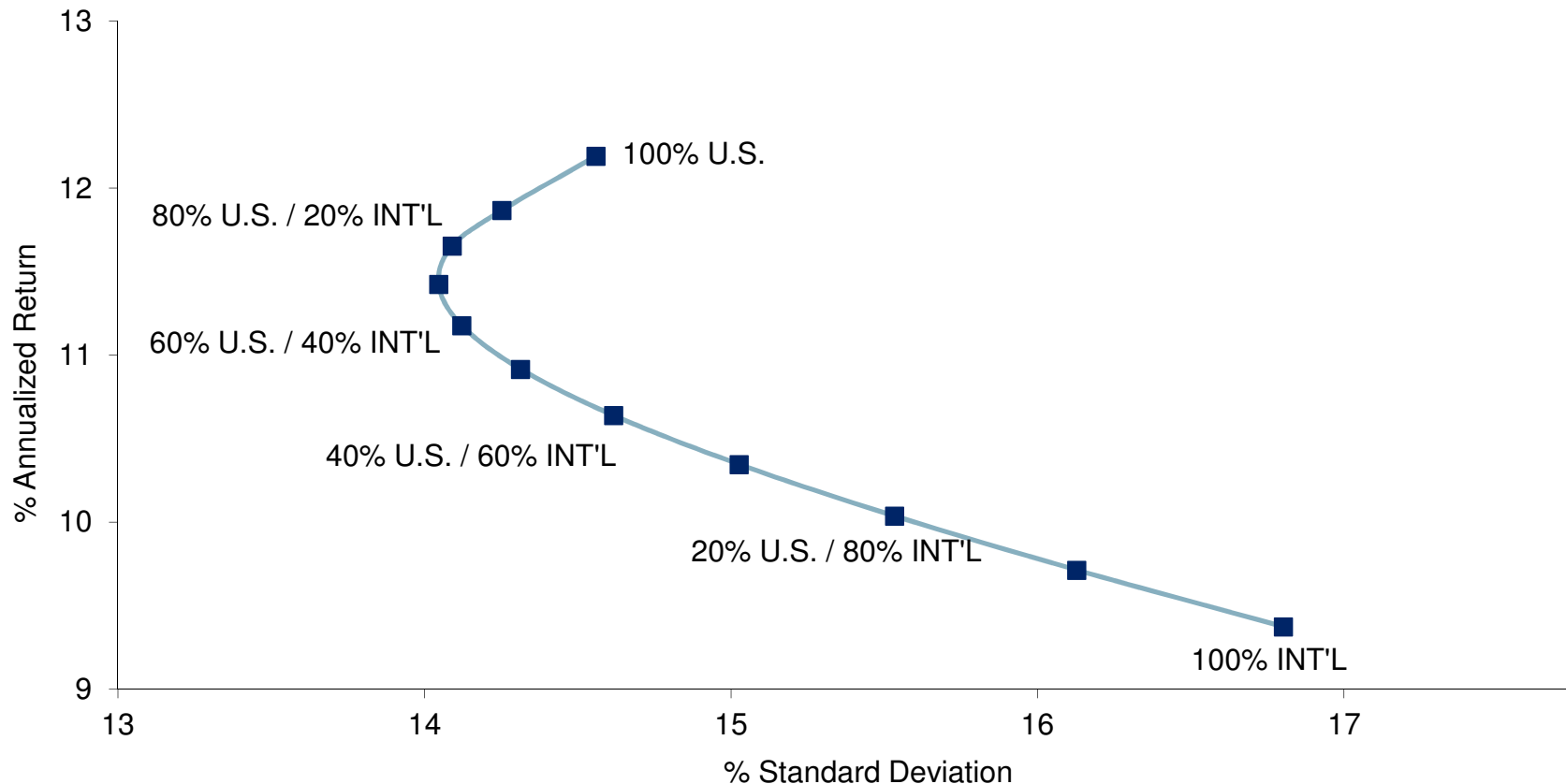
Returns from 1/1/1980 through 03/30/2018.
U.S. stocks represented by the S&P 500 Index. International stocks represented by the MSCI EAFE Index.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: FactSet Research Systems.

Equity Index Correlations

Equity Index Correlations to the S&P 500
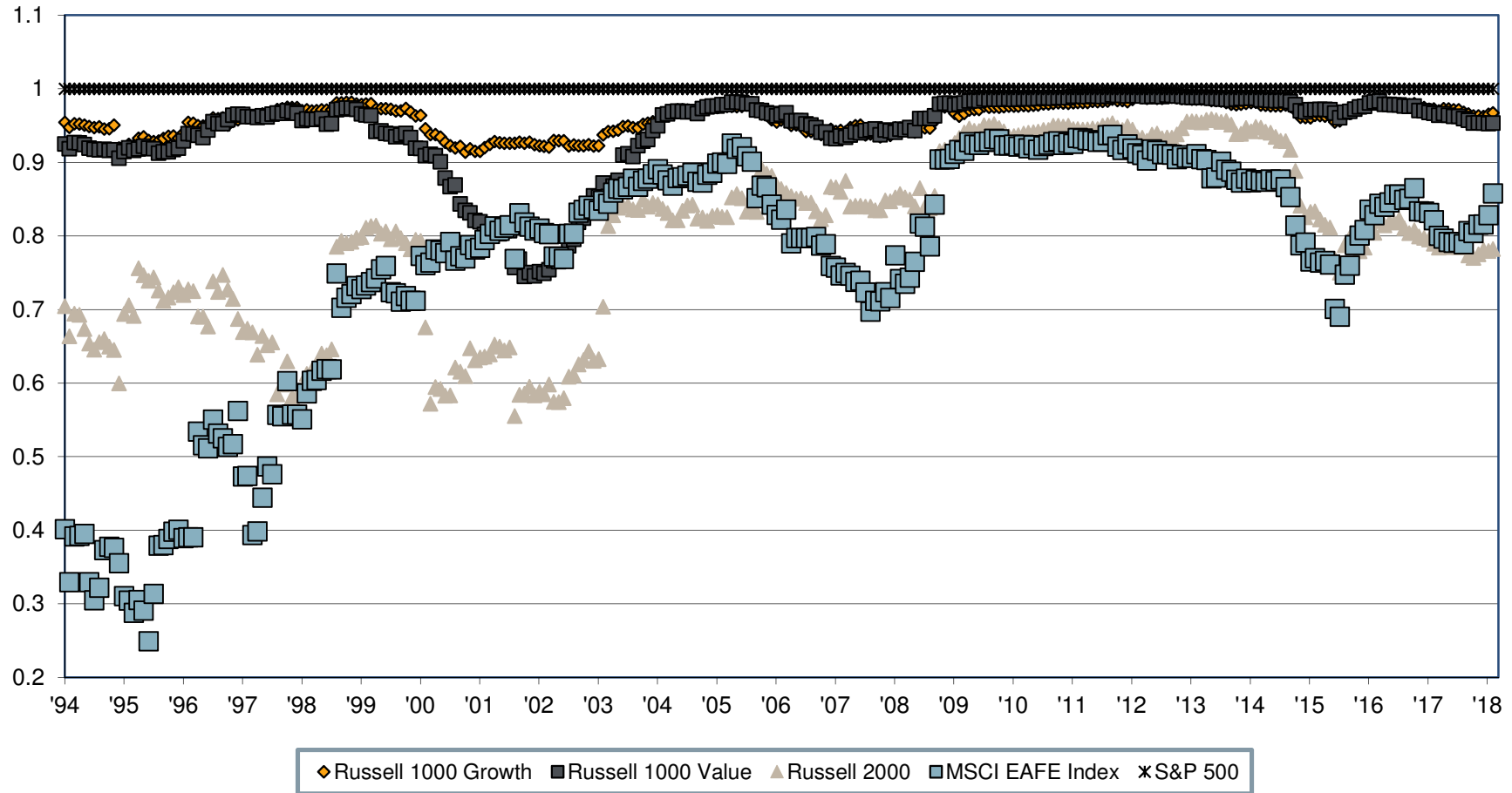
Returns 36-month moving window, computed monthly through 03/31/2018
Data Source: FactSet Research Systems.

Alternative Index Correlations

Alternative Index Correlations to the S&P 500
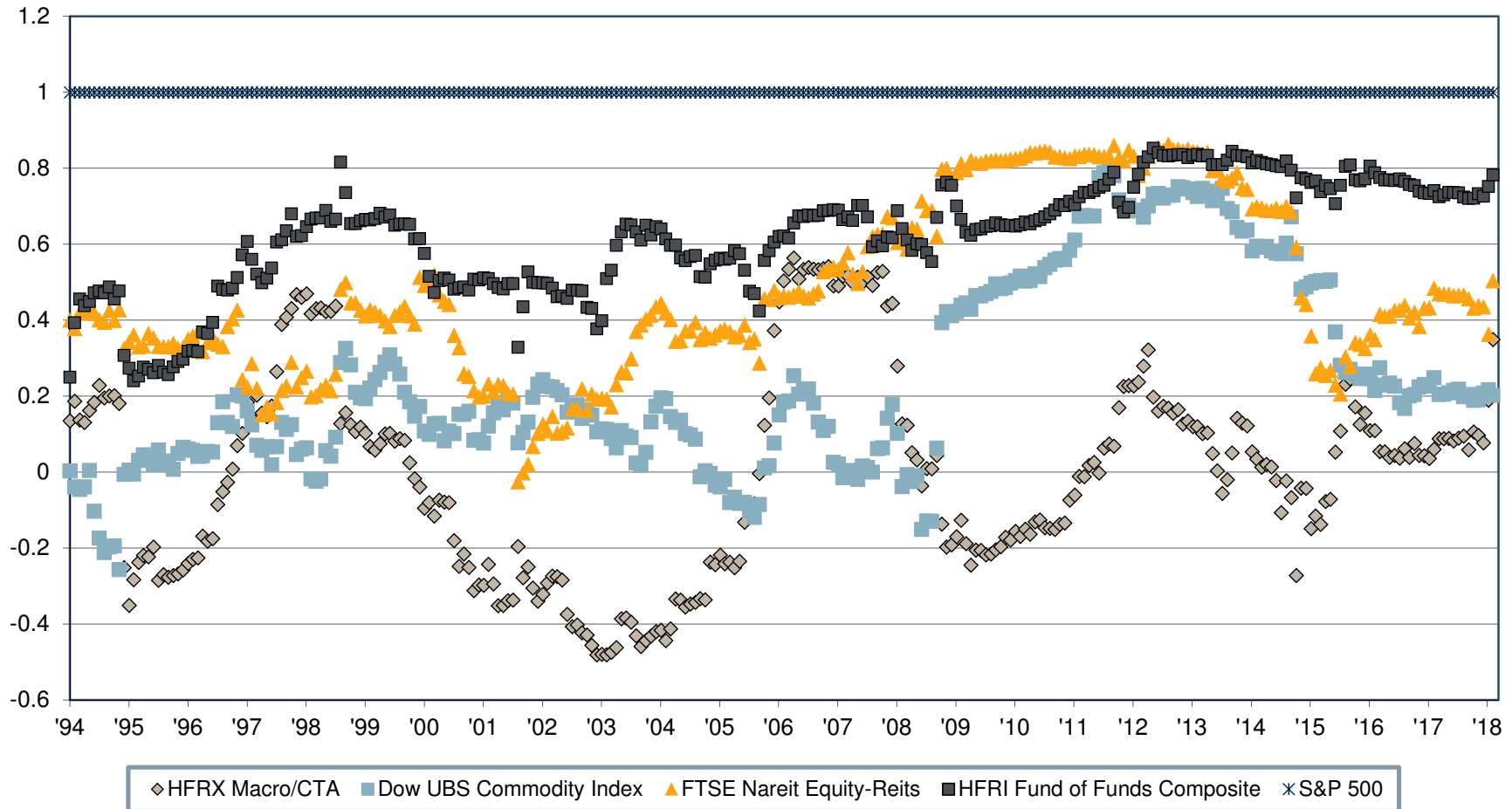
Returns 36-month moving window, computed monthly through 03/31/2018.
Data Source: FactSet Research Systems.

Fixed Income Index Correlations

Fixed Income Index Correlations to the S&P 500
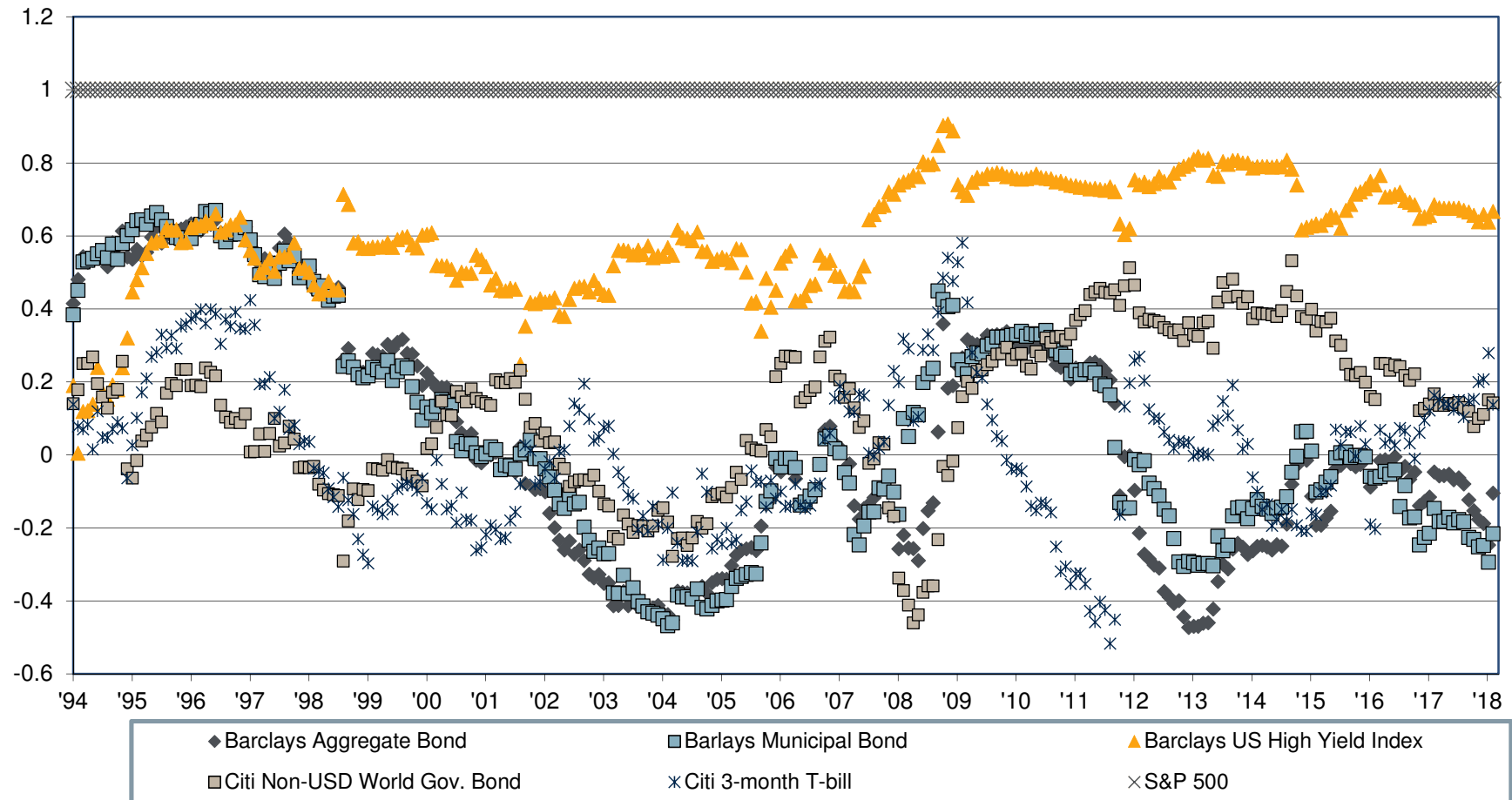
Returns 36-month moving window, computed monthly through 03/31/2018.
Data Source: FactSet Research Systems.

U.S. Equity Risk vs. Return

Risk vs Return: U.S. Stocks
Since January 1980

Large Cap is represented by the Russell 1000 Index
Mid Cap is represented by the Russell Mid Cap Index
Small Cap is represented by the Russell 2000 Index
Large Growth is represented by the Russell 1000 Growth Index
Large Value is represented by the Russell 1000 Value Index
Data Source: FactSet Research Systems. Data through 3/31/2018.

Growth is represented by the Russell 3000 Growth Index
Blend is represented by the Russell 3000 Index
Value is represented by the Russell 3000 Value Index
Small Growth is represented by the Russell 2000 Growth Index
Small Value is represented by the Russell 2000 Index

S&P 500 Sector Risk vs. Return

Risk vs Return: U.S. Sectors
Since January 1990
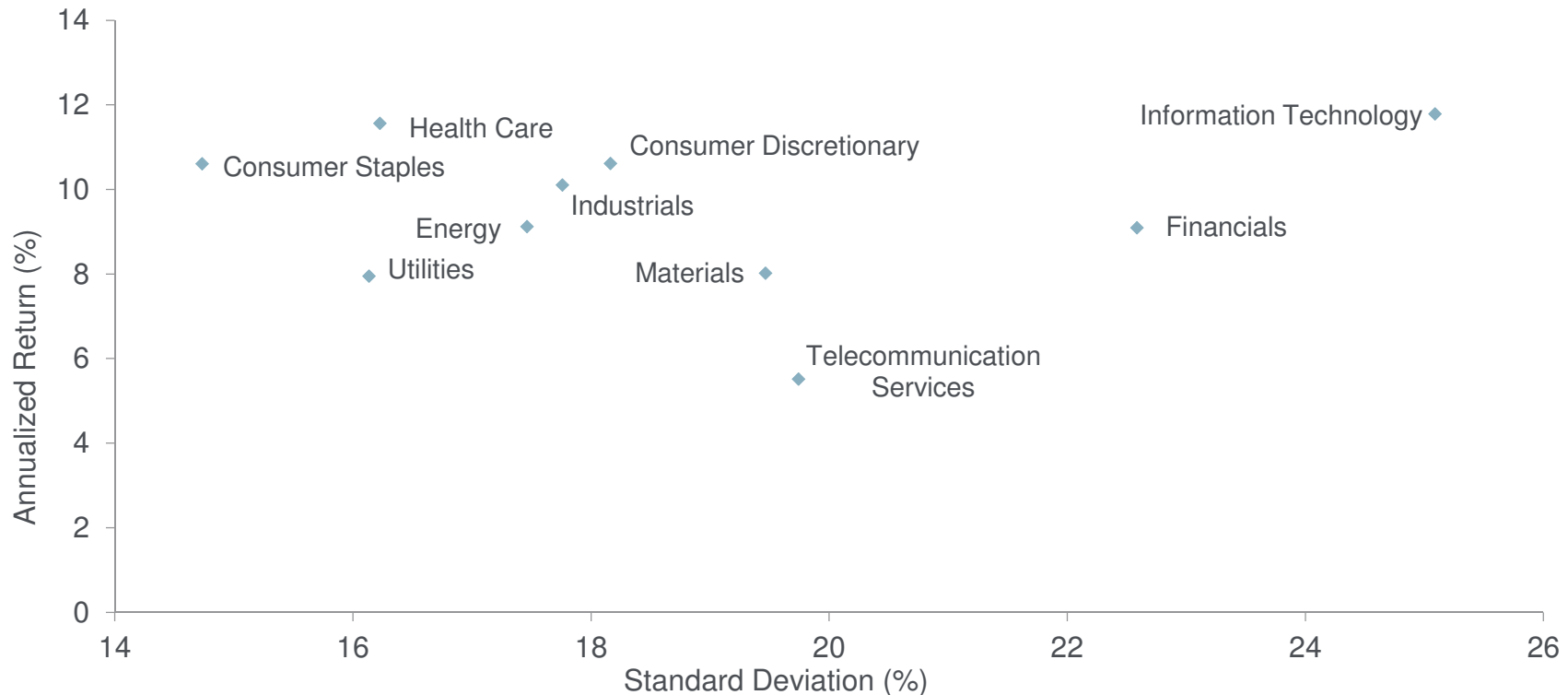
Standard & Poor's offers sector indices on the S&P 500 Index based upon the Global Industry Classification System (GICS). The GICS structure facilitates industry analysis by classifying companies at four different levels – Sectors, Industry Groups, Industries and Sub-Industries. Due to the global nature and flexibility of the GICS structure, its classifications have become widely used throughout the financial community. For a detailed description of the classification standard, please visit the Standard & Poor's web site at www.gics.standardandpoors.com.

Data Source: FactSet Research Systems. Data through 3/31/2018.

U.S. Dollar Exchange Rates

Exchange Rate: Price of $1 U.S. Dollar to Canadian Dollar

USD/CAD — 10 Year Average

Exchange Rate: Price of $1 U.S. Dollar to Euro

USD/EUR — 10 Year Average

Exchange Rate: Price of $1 U.S. Dollar to British Pound

USD/GBP — 10 Year Average

Exchange Rate: Price of $1 U.S. Dollar to Japanese Yen

USD/JPY — 10 Year Average
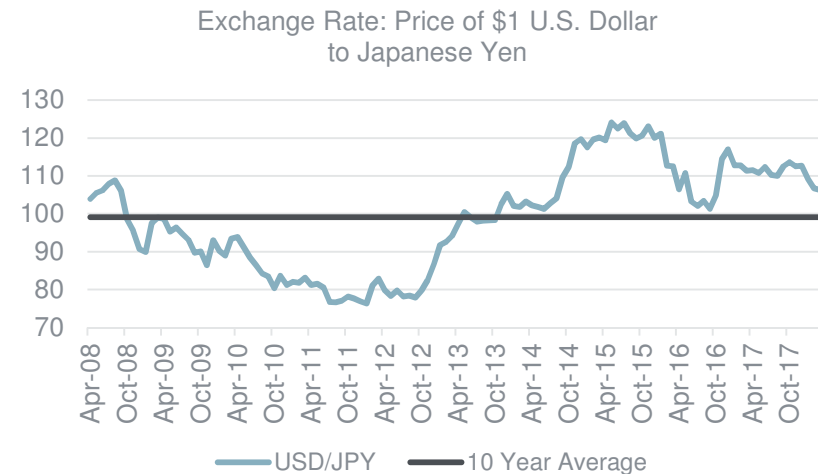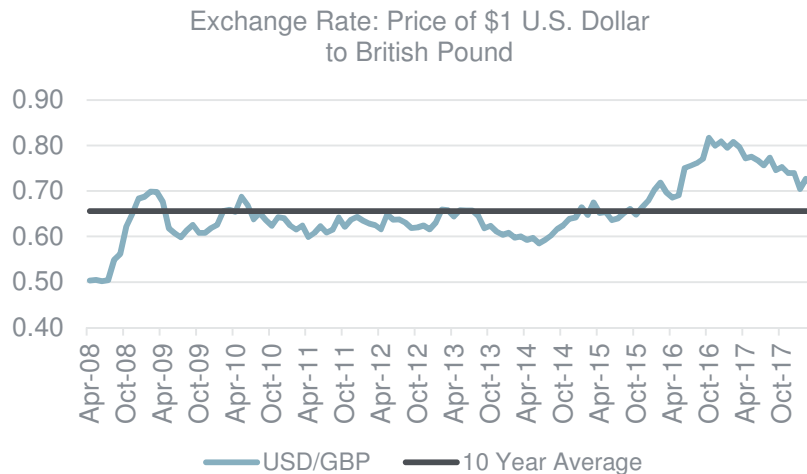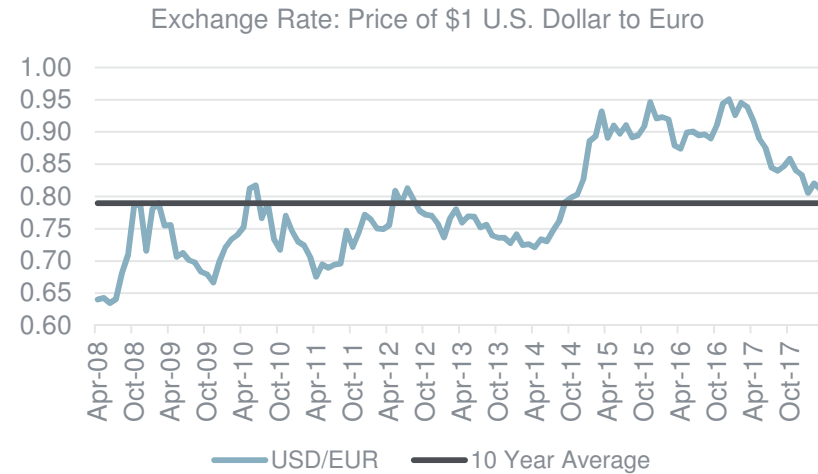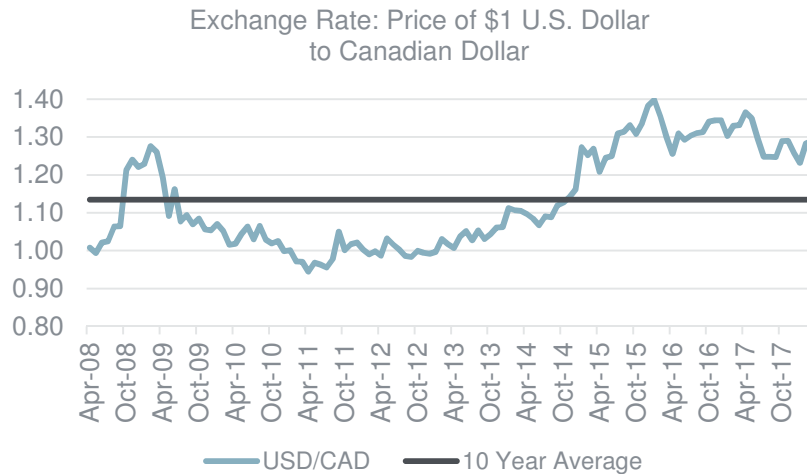
Exchange Rates through 3/31/2018.
Data Source: Bloomberg.

RBC Wealth Management

Currency Effect
Select Countries

Legend: ■ U.S. Investor Return ■ Local Currency Return ■ Currency Effect

Returns through 03/31/2018 are based on 22 MSCI Developed Market Indices. Returns greater than one year are annualized.
International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign tax, political instability and different accounting standards.
Data Source: Morgan Stanley Capital International and Bloomberg.

Global Manufacturing PMI

Twelve Month Change
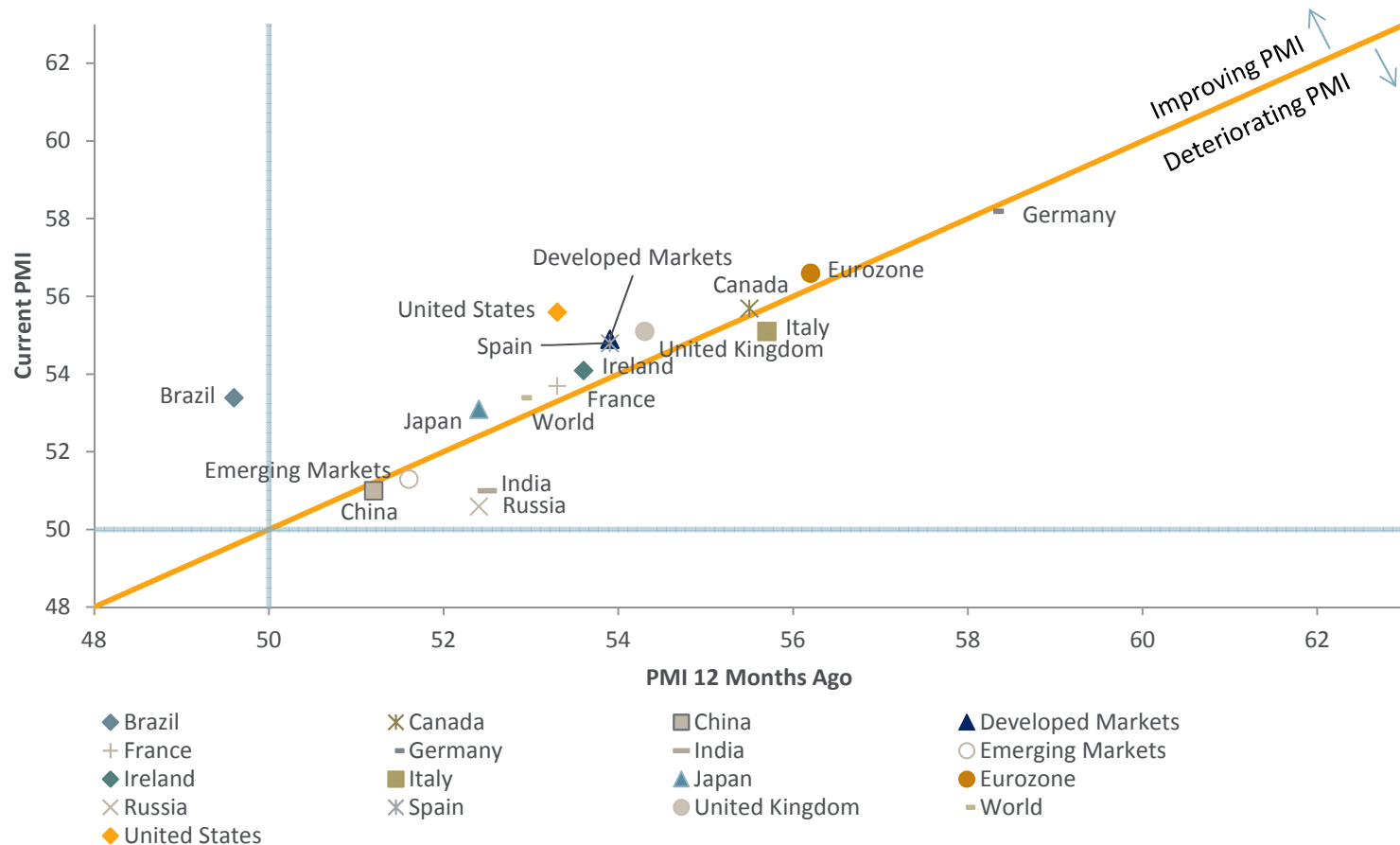
Purchasing Managers' Index (PMI) surveys have been developed in many countries to provide purchasing professionals, business decision-makers and economic analysts with an accurate and timely set of data to help better understand industry conditions. PMI data are based on monthly surveys of carefully selected companies. These provide an advance indication of what is really happening in the private sector economy by tracking variables such as output, new orders, stock levels, employment and prices across the manufacturing sector. An index reading above 50 indicates an increase in the variables since the previous reading.

Data Source: Bloomberg. Period ending 3/31/2018

Disclosures and Definitions

This information is not intended to be used as the primary basis of investment decisions. Because of individual client requirements, it should not be construed as advice designed to meet the particular investment needs of any investor. The figures presented have been obtained from sources we believe to be reliable and current as of March 31, 2018, but cannot be guaranteed as to accuracy and do not purport to be complete.

Index information provided has been calculated on a total return basis with dividends reinvested. The effects of taxes and/or expenses and fees normally associated with an investment account have not been considered. Returns are based on past performance which may or may not be similar to future returns, and are not meant to be representative of any specific investment. Although used as benchmarks for informational purposes, individual indices are not available for direct investment

Sources of Information:
Bloomberg: Bloomberg is a leading provider of data, analytics, electronic trading and financial news.
Ibbotson Associates: Ibbotson Associates is a leading authority on asset allocation, providing products and services to help investment professionals obtain, manage and retain assets.
Morningstar: Morningstar is provider of performance analysis and analytical software.
MSCI: Morgan Stanley Capital International indices are the most widely used benchmarks by global portfolio managers.
Russell: Russell Indices are some of the most widely used benchmarks for domestic portfolio managers.
Standard & Poor's: Standard & Poor's is a provider of independent financial information and analytical services
St. Louis Federal Reserve: The Federal Reserve Bank of St. Louis disseminates economic, financial, and monetary data through its FRED website.
FactSet Research Systems: FactSet is a leading provider of global financial and economic information. FactSet also provides the tools to download, combine, and manipulate financial data for investment analysis.
U.S. Department of Labor: Bureau of Labor Statistics: The BLS is the principle fact-finding agency for the United States Government in the field of labor and economic statistics.

General Information:
CAPE: Cyclically Adjusted Price to Earnings. Calculated as the current market price over a 10 year average of real earnings.
Correlation: Correlation describes the strength of the relationship between two variables. Correlation can be any value between +1 and -1. A value of +1 indicates perfect positive correlation (meaning the variables move together in perfect unison) and –1 indicates perfect negative correlation (meaning the variables move together in perfect negative unison). Generally, combining assets that have low correlations with increase diversification.
Dividend Yield: Multiplies the DPS over the last year then divides the resulting figure by the price.
Fed Funds Rate: The interest rate at which banks lend to each other overnight.
Federal Open Market Committee (FOMC): The branch of the Federal Reserve Board that determines the direction of monetary policy.
Fed Tightening Campaign: Describes a period in which the FOMC raises the fed funds rate in an attempt to tighten the money supply, or decrease the amount of money available in the banking system.
EPS Growth: Historical annual EPS growth for the past five fiscal years as of the report date.
Housing Starts: Annualized number of privately owned housing units that have started construction. Start of construction occurs when excavation begins for the footings or foundations of a building.
Market Cap: Multiplies the price as of the ending day by the shares as of the ending month.
NTM P/PE: Price to Next Twelve Months Earnings. Calculated as the current market price over the estimated earnings for the next twelve months for the index.
Price/Book: Displays the book value per share for the ending month divided by share price.
Price/Earnings: Reflects the closing price for the company at fiscal quarter end divided by earnings per share before extraordinary items for last twelve months.
P/PE: Price to Peak Earnings. Calculated as the current market price over the prior peak earnings of the index.
Recession Shading: Recession dates are provided by the NBER
Sharpe Ratio: A measure of the risk-adjusted return of an investment. It is calculated using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe Ratio, the better the historical risk-adjusted performance of the investment.
Standard Deviation: A statistical measure of dispersion about and average, which, depicts how widely the returns varied over a certain period of time.

Index Descriptions:
Citigroup 3-Month Treasury Bill: Represents the average yield of the most recent 3-month Treasury Bill issues.
Citigroup Treasury 10+ Year Index: The Treasury Index computes returns for the current 10-year and 30-year on-the-run Treasury that has been in existence for the entire month.
Consumer Price Index – All Urban Consumers (CPI-U): Measures the weighted average change in prices of a fixed basket of goods and services purchased by households defined as All Urban Consumers, a population group that represents around 87 percent of the total population in the United States. The cost-of-living or inflation indicator is computed from data collected by the U.S. Department of Labor's Bureau of Labor Statistics. Not seasonally-adjusted.
Credit Suisse High Yield: Contains tradable below-investment-grade fixed-rate debt obligations, including cash-pay, deferred-interest, step-up, payment-in-kind and defaulted bonds chosen based on market size, liquidity and diversification criteria.

RBC | Wealth Management

Disclosures and Definitions (cont.)

DJIA: Dow Jones Industrial Average is a price-weighted arithmetic average which covers 30 major NYSE industrial companies representing about 25 percent of the NYSE total market capitalization.

Dow Jones UBS Commodity Index: Composed of futures contracts on 19 physical commodities. Component weightings are primarily determined by liquidity. No related group of commodities (e.g., energy, precious metals, livestock and grains) may constitute more than 33% of the index.

HRFI Fund of Funds: Composite Index represents an equally-weighted index of more than 600 fund of hedge funds.

Barclay CTA Index: an industry benchmark of representative performance of commodity trading advisors. There were 533 programs included in the calculation of the Index for the year 2010. The Index is unweighted and rebalanced at the beginning of each year.

Bloomberg Barclays US Aggregate: A market-capitalization weighted index of investment-grade fixed-rate debt issues, including government, corporate, asset-backed and mortgage-backed securities, with maturities of at least one year.

Bloomberg Barclays Intermediate Government/Credit: A market value weighted performance benchmark for government and corporate fixed-rate debt issues with maturities between one and 10 years.

Bloomberg Barclays Municipal: A market capitalization-weighted index of investment grade municipal bonds with maturities of at least one year.

Headline Unemployment: Number of unemployed persons as a percentage of the labor force.

ML 10+ Yr Municipal Index: Consists of a subset of The Merrill Lynch US Municipal Securities Index including all securities with a remaining term to final maturity greater than or equal to 10 years.

ML 10+ Yr US Corporate Index: Consists of a subset of The Merrill Lynch US Corporate Index including all securities with a remaining term to final maturity greater than or equal to 10 years.

ML 10+ Yr US Treasury Index: Consists of a subset of The Merrill Lynch US Treasury Index Including all securities with remaining term to final maturity greater than or equal to 10 years.

BAML 7-10 Year French Government Index: Consists of EUR denominated sovereign debt publicly issued by the French government in the French domestic or eurobond market: with maturity greater than 7 years but less than 10.

BAML 7-10 Year German Government Index: Consists of EUR denominated sovereign debt publicly issued by the German government in the German domestic or eurobond market: with maturity greater than 7 years but less than 10.

BAML 7-10 Year Italian Government Index: Consists of EUR denominated sovereign debt publicly issued by the Italian government in the Italian domestic or eurobond market: with maturity greater than 7 years but less than 10.

BAML 7-10 Year Japan Government Index: Consists of JPY denominated sovereign debt publicly issued by the Japan government in the Japan domestic market with maturity greater than 7 years but less than 10.

BAML 7-10 Year Spanish Government Index: Consists of EUR denominated sovereign debt publicly issued by the Spain government in the Spain domestic or eurobond market: with maturity greater than 7 years but less than 10.

BAML 7-10 Year US Government Index: Consists of USD denominated sovereign debt publicly issued by the USD government in the US domestic market with maturity greater than 7 years but less than 10.

MSCI EAFE: Morgan Stanley Capital International Europe, Australasia and Far East Index. An arithmetic, market value-weighted average of the performance of several securities listed on the stock exchanges of several developed markets around the world, excluding the United States.

MSCI Emerging Markets Free: A Capitalization-weighted index representing emerging markets in the free (open to non-local investors) world.

MSCI World: An arithmetic, market value-weighted average of the performance of approximately 1700 securities listed on the stock exchanges of several developed markets around the world, including the United States.

FTSE NAREIT Equity Real Estate Investment Trusts (REITs) Contains all tax qualified Equity Real Estate Investment Trusts (REITs) with common shares traded on the New York Stock Exchange, American Stock Exchange or NASDAQ National Market List. A company is classified as an Equity REIT if at least 75 percent of its gross invested book assets are invested in real properties. Preferred stocks, convertible preferred stocks, participating preferred stocks, convertible debentures, warrants, rights and operating partnership units are excluded. Free float-adjusted, market capitalization-weighted.

NASDAQ: A capitalization-weighted index that measures all Nasdaq listed domestic and foreign stocks.

Not in Labor Force, Want Job Now: Number of persons not currently in the labor force (i.e. have given up looking for employment) currently desiring employment.

PMI: A national survey of purchasing managers representative of the state of the manufacturing sector. A PMI above 50 indicates that the manufacturing economy is generally expanding; below 50 that it is generally contracting.

Russell 3000: Composed of the 3000 largest U.S. securities, as determined by total market capitalization. This index represents approximately 98 percent of the investable U.S. equity markets.

Russell 3000 Growth: Measures the performance of those Russell 3000 Index companies with higher price-to-book ratios and higher forecasted growth values.

Russell 3000 Value: Measures the performance of those Russell 3000 Index companies with lower price-to-book ratios and lower forecasted growth values.

Russell 2000: Consists of the smallest 2000 securities in the Russell 3000 Index, representing approximately 8 percent of the Russell 3000 total market capitalization. Returns prior to 1979 represented by the lowest quintile of stocks on the New York Stock Exchange, as provided by Ibbotson Associates.

Russell 1000: Consists of the 1000 largest securities in the Russell 3000 Index, representing approximately 92 percent of the Russell 3000 total market capitalization.

Russell 1000 Growth: Contains those securities in the Russell 1000 Index with greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-to-earnings ratios, lower dividend yields, and higher forecasted growth rates than the Value universe.

Russell 1000 Value: Contains those securities in the Russell 1000 Index with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-to-earnings ratios, higher dividend yields and lower forecasted growth rates than the Growth universe.

Russell Midcap: Consists of the smallest 800 securities in the Russell 1000 Index, as ranked by total market capitalization.

S&P 500: Capitalization-weighted benchmark that tracks broad-based changes in the U.S. stock market. The index is calculated on a total return basis with dividends reinvested. Long-term performance is represented by the S&P 90 Index from 1926 through 1956, as provided by Ibbotson Associates, and the S&P 500 Index from 1957 to present.

U6 Unemployment: Total unemployed persons plus all marginally attached workers plus total employed part time for economic reasons

Thank you