



WEALTH  
ADVISORS  
GROUP

# Q4

Quarterly Market Review  
Fourth Quarter 2017

# Quarterly Market Review

Fourth Quarter 2017

This report features world capital market performance and a timeline of events for the past quarter. It begins with a global overview, then features the returns of stock and bond asset classes in the US and international markets.

The report also illustrates the impact of globally diversified portfolios and features a quarterly topic.

## Overview:

Market Summary

World Stock Market Performance

World Asset Classes

US Stocks

International Developed Stocks

Emerging Markets Stocks

Select Country Performance

Select Currency Performance vs. US Dollar

Real Estate Investment Trusts (REITs)

Commodities







Fixed Income

Impact of Diversification

Quarterly Topic: What Should Investors Make of Bitcoin Mania?

# Market Summary

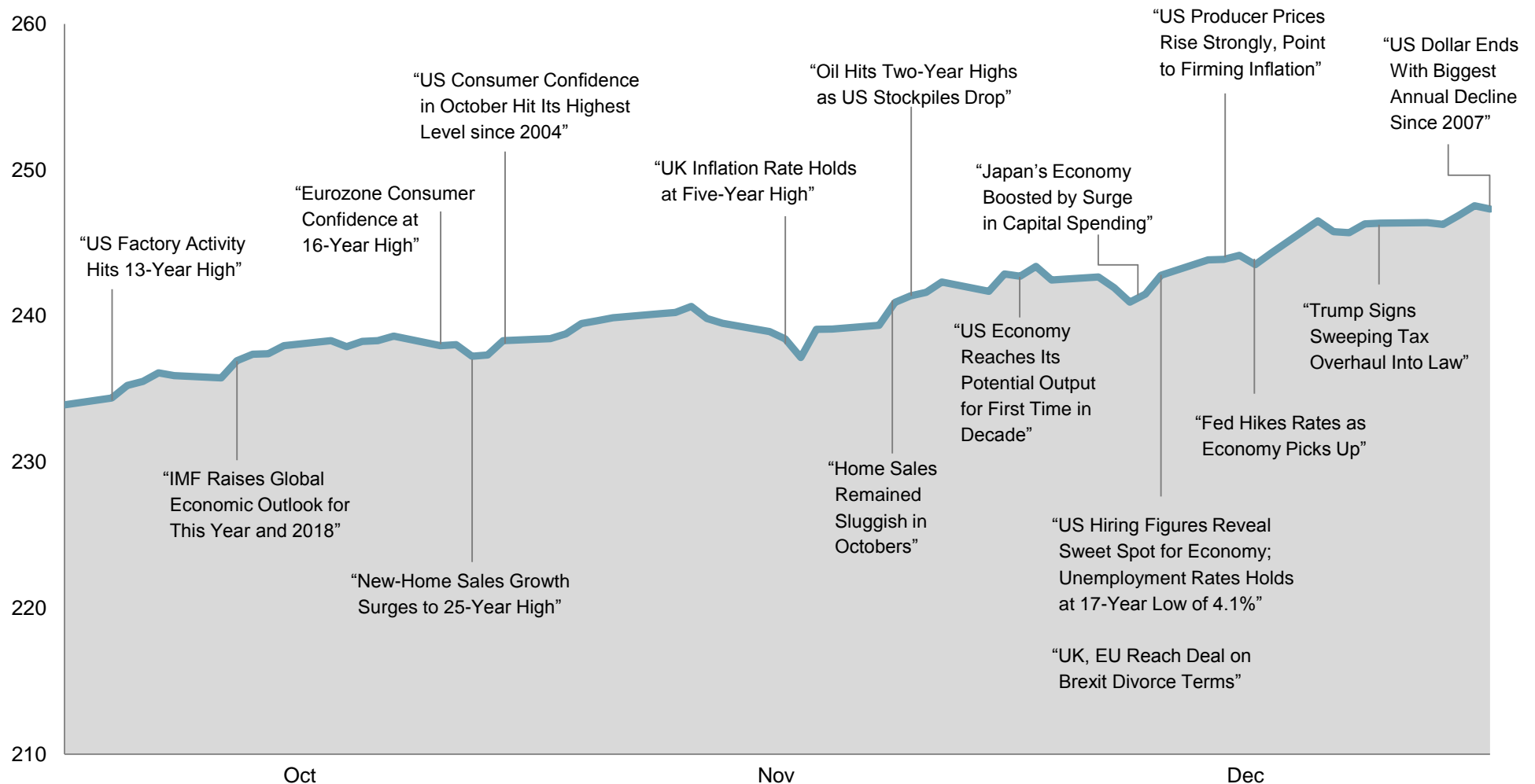
## Index Returns

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
<b>Q4 2017</b>	<b>STOCKS</b>				<b>BONDS</b>	
	<b>6.34%</b> 	<b>4.23%</b> 	<b>7.44%</b> 	<b>2.97%</b> 	<b>0.39%</b> 	<b>1.10%</b> 
<b>Since Jan. 2001</b>						
Avg. Quarterly Return	2.0%	1.6%	3.2%	2.7%	1.2%	1.1%
Best Quarter	16.8%	25.9%	34.7%	32.3%	4.6%	5.5%
	Q2 2009	Q2 2009	Q2 2009	Q3 2009	Q3 2001	Q4 2008
Worst Quarter	-22.8%	-21.2%	-27.6%	-36.1%	-3.0%	-3.2%
	Q4 2008	Q4 2008	Q4 2008	Q4 2008	Q4 2016	Q2 2015

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International Developed Stocks (MSCI World ex USA Index [net div.]), Emerging Markets (MSCI Emerging Markets Index [net div.]), Global Real Estate (S&P Global REIT Index [net div.]), US Bond Market (Bloomberg Barclays US Aggregate Bond Index), and Global Bond ex US Market (Citi WGBI ex USA 1-30 Years [Hedged to USD]). The S&P data are provided by Standard & Poor's Index Services Group. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2018, all rights reserved. Bloomberg Barclays data provided by Bloomberg. Citi fixed income indices © 2018 by Citigroup.

# World Stock Market Performance

MSCI All Country World Index with selected headlines from Q4 2017



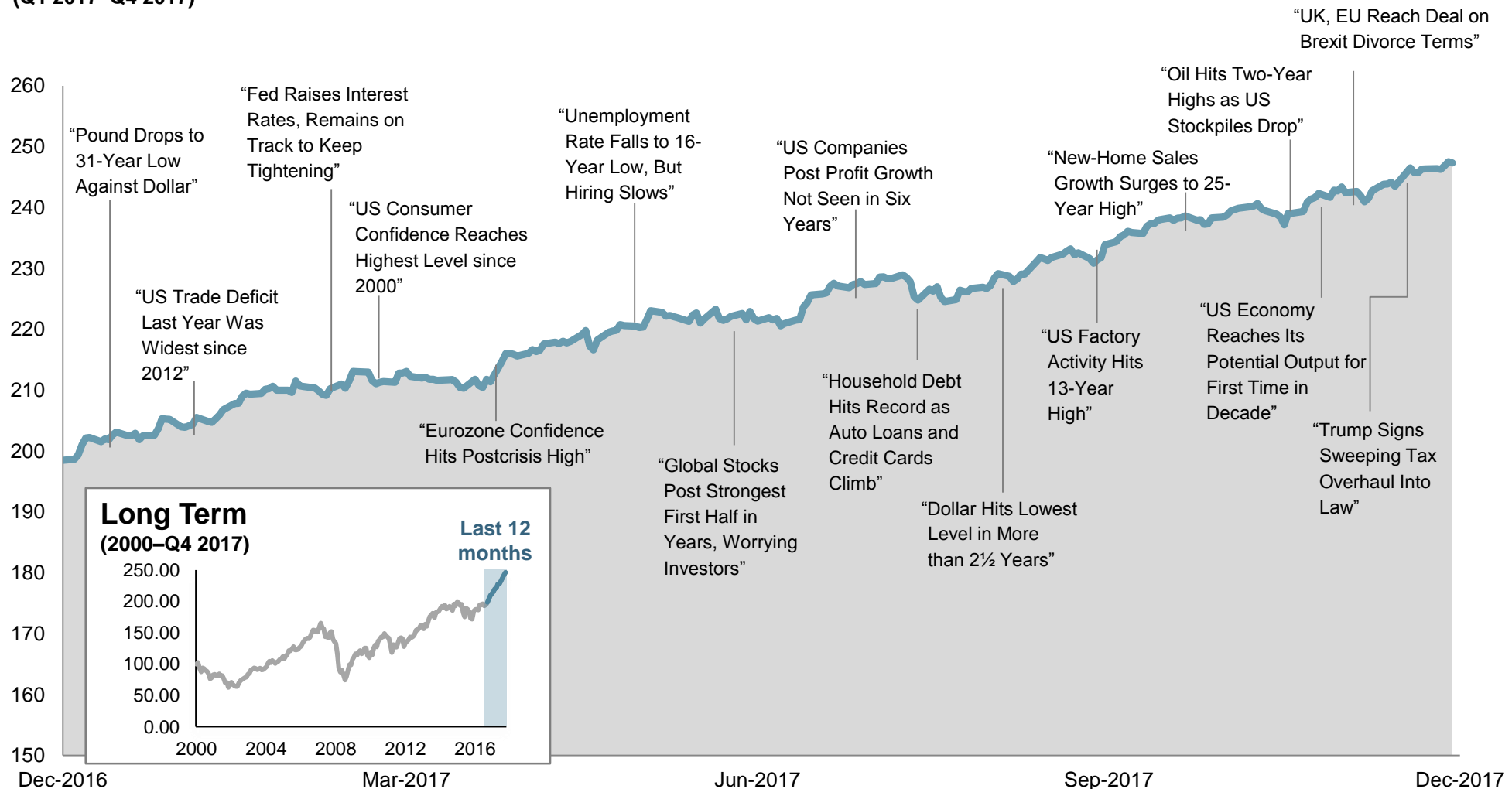
These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.

Graph Source: MSCI ACWI Index [net div.], MSCI data © MSCI 2018, all rights reserved. It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.

# World Stock Market Performance

MSCI All Country World Index with selected headlines from past 12 months

## Short Term (Q1 2017–Q4 2017)



These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.

Graph Source: MSCI ACWI Index [net div.]. MSCI data © MSCI 2018, all rights reserved.

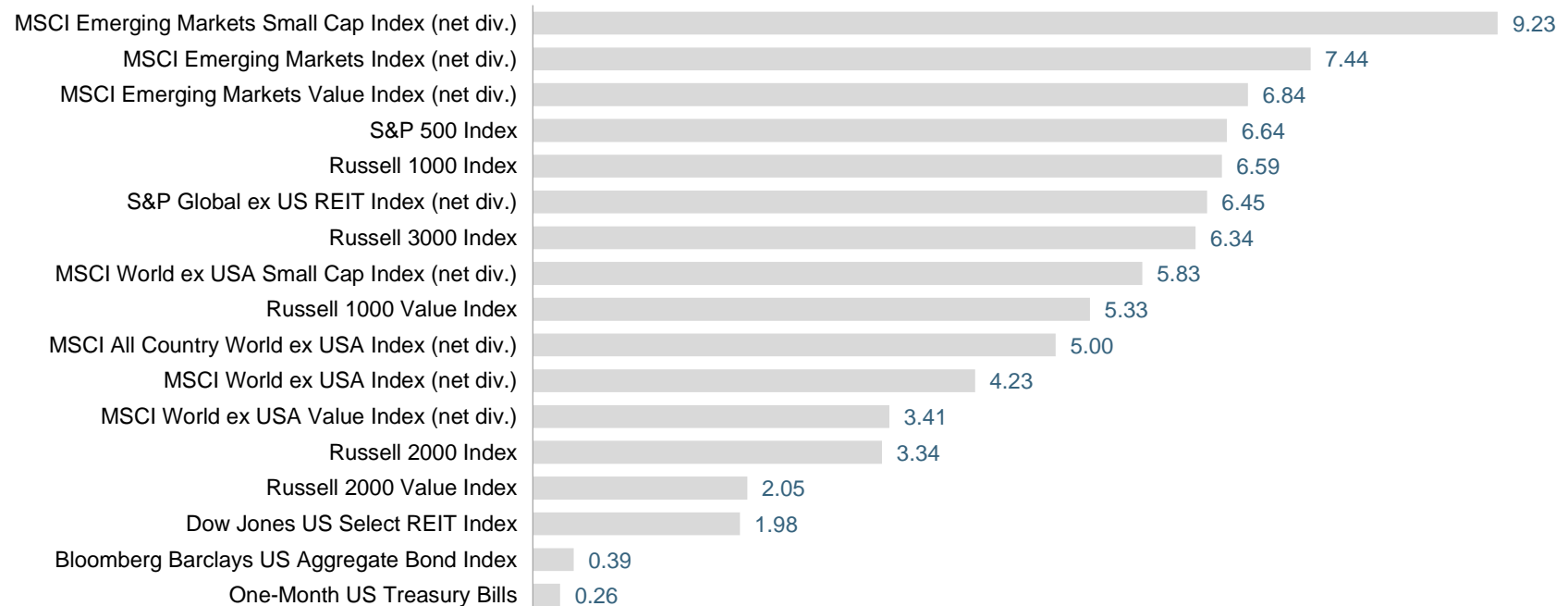
It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. **Past performance is not a guarantee of future results.**

# World Asset Classes

## Fourth Quarter 2017 Index Returns (%)

Looking at broad market indices, emerging markets outperformed US and non-US developed markets during the quarter.

The value effect was negative in the US, non-US developed markets, and emerging markets. Small caps outperformed large caps in non-US developed markets and emerging markets but underperformed in the US.



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# US Stocks

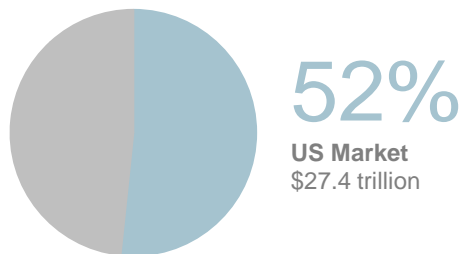
## Fourth Quarter 2017 Index Returns

The US equity market posted a positive return for the quarter, outperforming non-US developed markets but underperforming emerging markets.

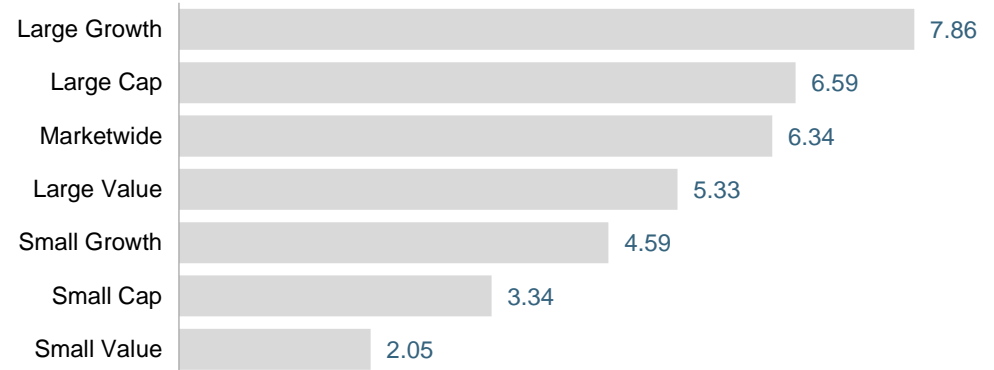
Value underperformed growth in the US across large and small cap indices.

Overall, small caps in the US underperformed large caps.

### World Market Capitalization—US



### Ranked Returns for the Quarter (%)



### Period Returns (%)

\* Annualized

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Large Growth	30.21	13.79	17.33	10.00
Small Growth	22.17	10.28	15.21	9.19
Large Cap	21.69	11.23	15.71	8.59
Marketwide	21.13	11.12	15.58	8.60
Small Cap	14.65	9.96	14.12	8.71
Large Value	13.66	8.65	14.04	7.10
Small Value	7.84	9.55	13.01	8.17

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Marketwide (Russell 3000 Index), Large Cap (Russell 1000 Index), Large Cap Value (Russell 1000 Value Index), Large Cap Growth (Russell 1000 Growth Index), Small Cap (Russell 2000 Index), Small Cap Value (Russell 2000 Value Index), and Small Cap Growth (Russell 2000 Growth Index). World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. Russell 3000 Index is used as the proxy for the US market. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2018, all rights reserved.

# International Developed Stocks

## Fourth Quarter 2017 Index Returns

In US dollar terms, developed markets underperformed the US and emerging markets during the quarter.

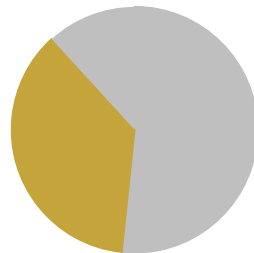
Looking at market indices, the value effect was negative.

Small caps outperformed large caps in non-US developed markets.

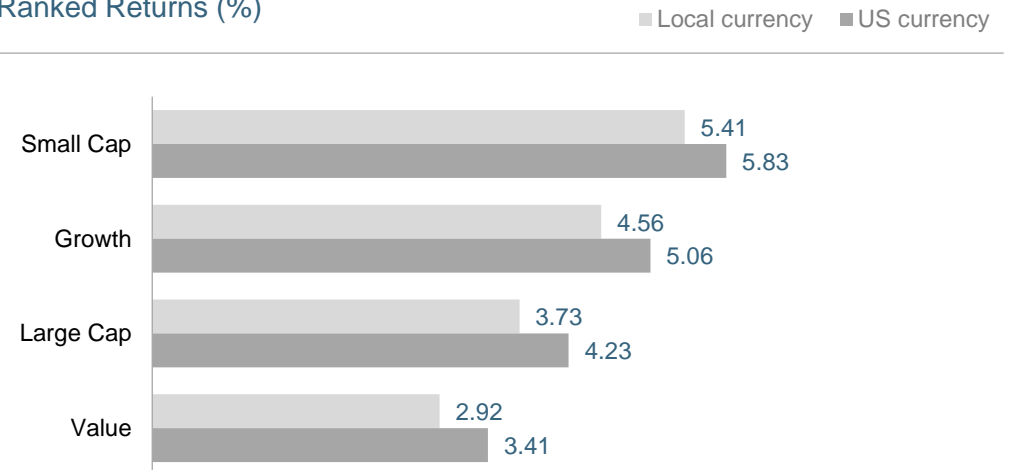
### World Market Capitalization—International Developed

**37%**

International  
Developed  
Market  
\$19.4 trillion



### Ranked Returns (%)



### Period Returns (%)

\* Annualized

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Small Cap	31.04	12.96	11.37	5.16
Growth	27.61	8.38	8.22	2.36
Large Cap	24.21	7.36	7.46	1.87
Value	21.04	6.26	6.64	1.32

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.

Market segment (index representation) as follows: Large Cap (MSCI World ex USA Index), Small Cap (MSCI World ex USA Small Cap Index), Value (MSCI World ex USA Value Index), and Growth (MSCI World ex USA Growth). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI World ex USA IMI Index is used as the proxy for the International Developed market. MSCI data © MSCI 2018, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.



# Emerging Markets Stocks

## Fourth Quarter 2017 Index Returns

In US dollar terms, emerging markets outperformed the US and non-US developed markets during the quarter.

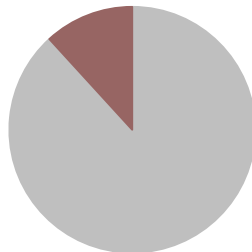
Looking at broad market indices, the value effect was negative.

Small caps outperformed large caps in emerging markets.

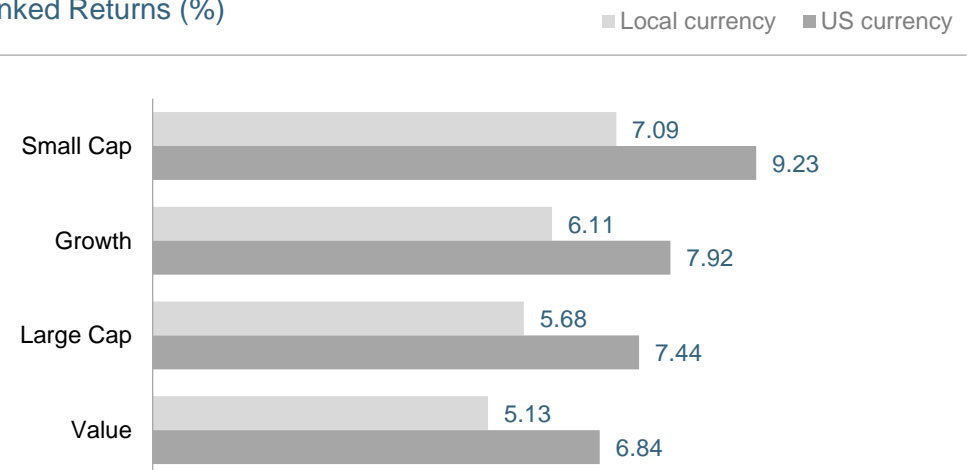
### World Market Capitalization—Emerging Markets

**12%**

Emerging Markets  
\$6.2 trillion



### Ranked Returns (%)



### Period Returns (%)

\* Annualized

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Growth	46.80	11.88	6.85	2.35
Large Cap	37.28	9.10	4.35	1.68
Small Cap	33.84	8.44	5.41	2.78
Value	28.07	6.21	1.75	0.91

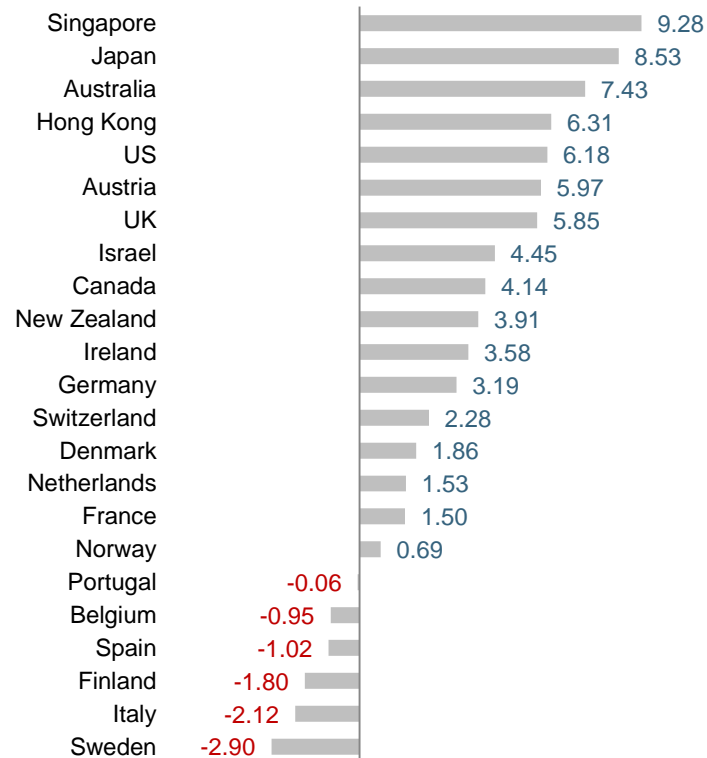
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI Emerging Markets Index), Small Cap (MSCI Emerging Markets Small Cap Index), Value (MSCI Emerging Markets Value Index), and Growth (MSCI Emerging Markets Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI Emerging Markets IMI Index used as the proxy for the emerging market portion of the market. MSCI data © MSCI 2018, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

# Select Country Performance

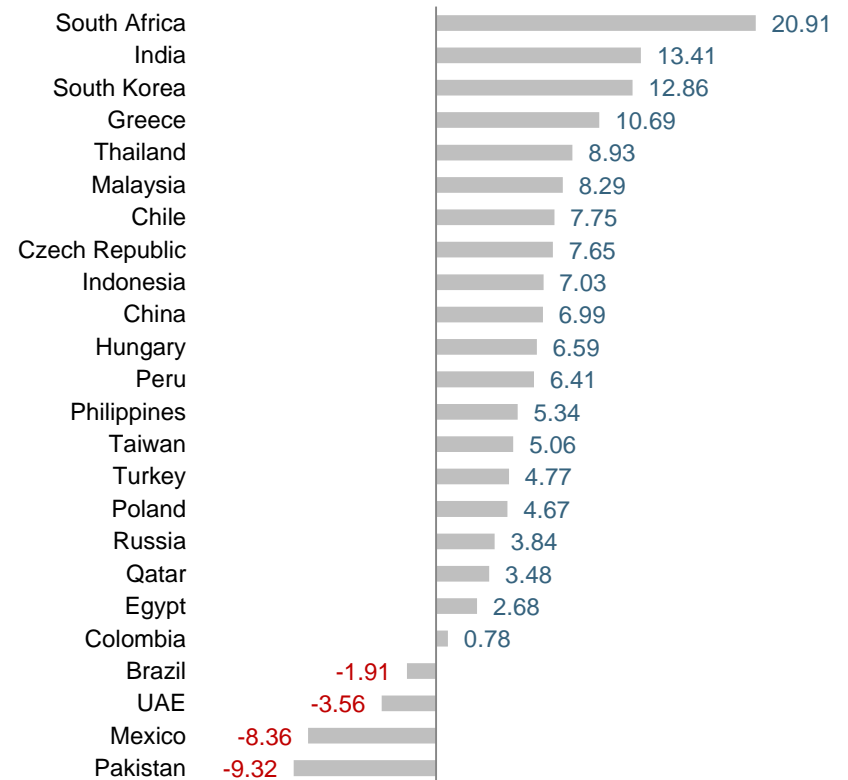
## Fourth Quarter 2017 Index Returns

In US dollar terms, Singapore and Japan recorded the highest country performance in developed markets, while Sweden and Italy posted the lowest returns for the quarter. In emerging markets, South Africa and India posted the highest country returns, while Pakistan and Mexico had the lowest performance.

Ranked Developed Markets Returns (%)



Ranked Emerging Markets Returns (%)



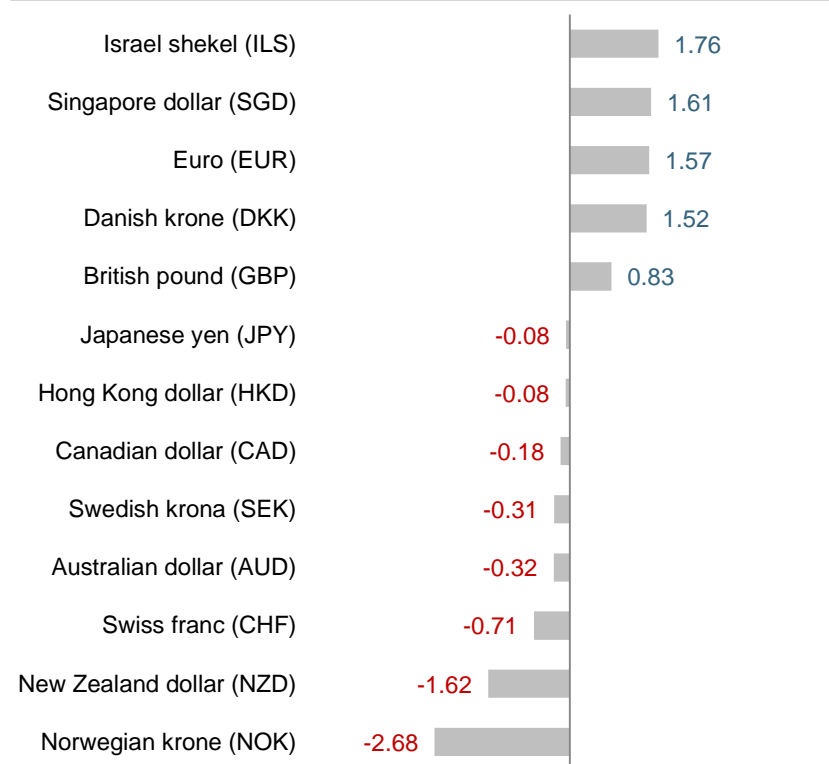
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Country performance based on respective indices in the MSCI World ex US IMI Index (for developed markets), MSCI USA IMI Index (for US), and MSCI Emerging Markets IMI Index. All returns in USD and net of withholding tax on dividends. MSCI data © MSCI 2018, all rights reserved. UAE and Qatar have been reclassified as emerging markets by MSCI, effective May 2014.

# Select Currency Performance vs. US Dollar

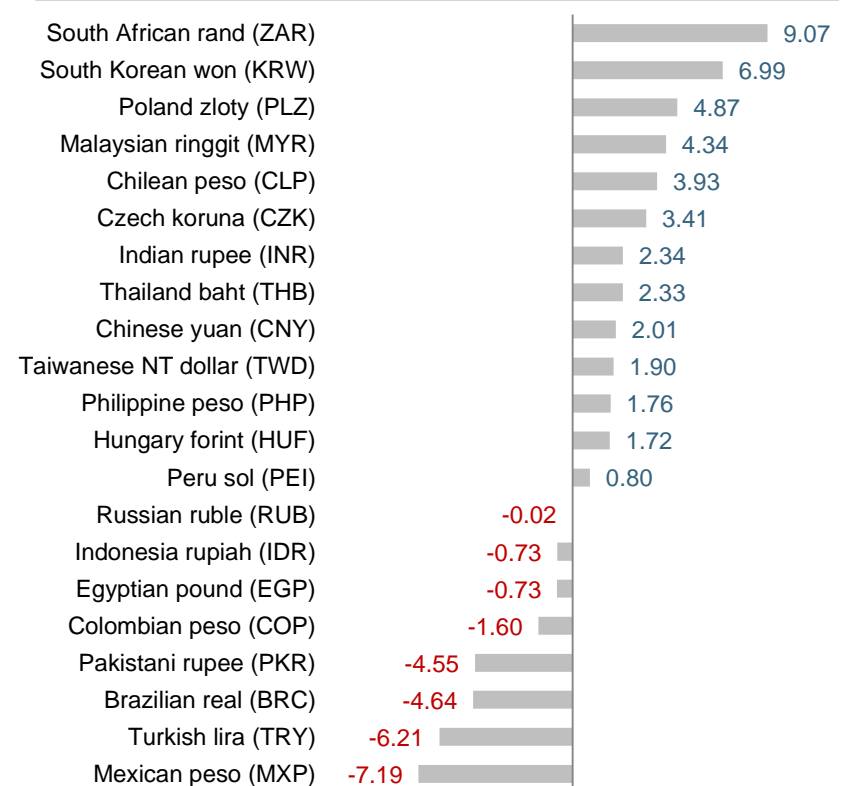
Fourth Quarter 2017

In developed markets, the Israeli shekel and the Singapore dollar both appreciated over 1.6%, while the Norwegian krone depreciated approximately 3% during the quarter. In emerging markets, the South African rand appreciated more than 9%, while the Mexican peso depreciated over 7%.

## Ranked Developed Markets (%)



## Ranked Emerging Markets (%)

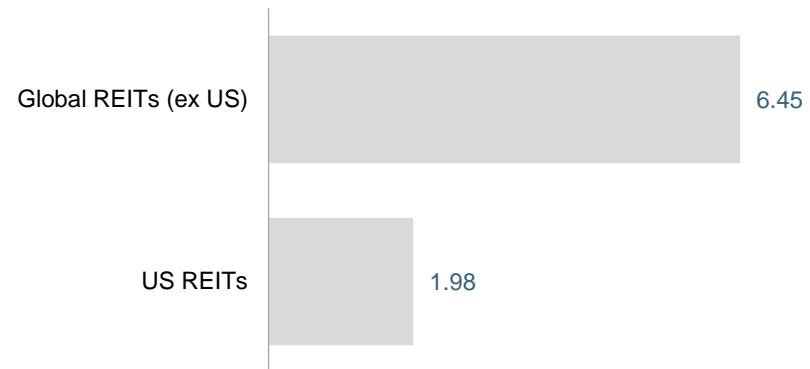


# Real Estate Investment Trusts (REITs)

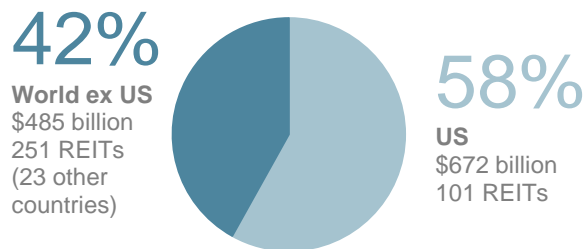
## Fourth Quarter 2017 Index Returns

Non-US real estate investment trusts outperformed US REITs.

### Ranked Returns (%)



### Total Value of REIT Stocks



### Period Returns (%)

Asset Class	* Annualized			
	1 Year	3 Years*	5 Years*	10 Years*
Global REITs (ex US)	15.64	4.78	5.49	2.05
US REITs	3.76	4.97	9.09	7.07

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Number of REIT stocks and total value based on the two indices. All index returns are net of withholding tax on dividends. Total value of REIT stocks represented by Dow Jones US Select REIT Index and the S&P Global ex US REIT Index. Dow Jones US Select REIT Index used as proxy for the US market, and S&P Global ex US REIT Index used as proxy for the World ex US market. Dow Jones US Select REIT Index data provided by Dow Jones ©. S&P Global ex US REIT Index data provided by Standard and Poor's Index Services Group © 2018.

# Commodities

## Fourth Quarter 2017 Index Returns

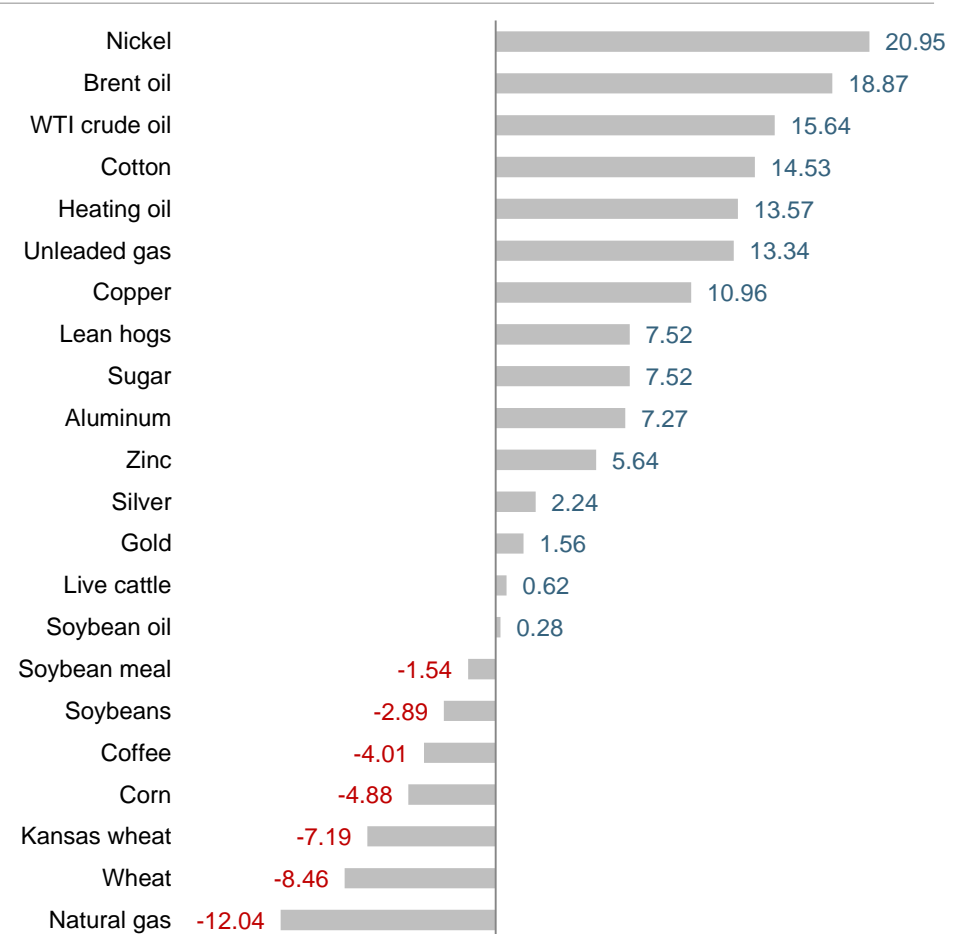
The Bloomberg Commodity Index Total Return gained 4.71% in the fourth quarter, bringing the 2017 total annual return to 1.70%.

Petroleum led quarterly performance. Brent crude oil returned 18.87%, and WTI crude oil gained 15.64%. Grains was the worst-performing complex, with Chicago wheat and Kansas wheat declining by 8.46% and 7.19%, respectively.

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Commodities	1.70	-5.03	-8.45	-6.83

\* Annualized

### Ranked Returns for Individual Commodities (%)



# Fixed Income

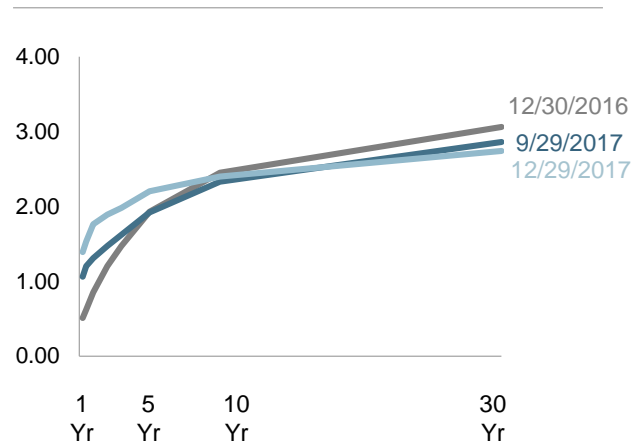
## Fourth Quarter 2017 Index Returns

Interest rate changes across the US fixed income market were mixed during the fourth quarter. The yield on the 5-year Treasury note rose 28 basis points (bps), ending at 2.20%. The yield on the 10-year Treasury note increased 7 bps to 2.40%. The 30-year Treasury bond yield decreased 12 bps to finish at 2.74%.

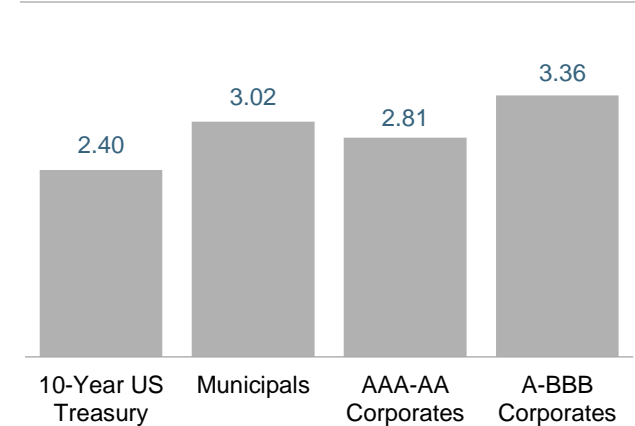
In terms of total returns, short-term corporate bonds declined 0.04% during the quarter but increased 1.85% for the year. Intermediate-term corporate bonds gained 0.17% for the quarter and 3.92% for the year.

The total returns for short-term municipal bonds were -0.65% for the quarter and 1.61% for the year. Intermediate-term municipal bonds fell 0.09% for the quarter but gained 4.70% for the year. Revenue bonds outperformed general obligation bonds for the year.

US Treasury Yield Curve (%)



Bond Yields across Issuers (%)



Period Returns (%)

Asset Class	* Annualized			
	1 Year	3 Years*	5 Years*	10 Years*
Bloomberg Barclays Long US Government Bond Index	8.53	2.85	3.49	6.49
Bloomberg Barclays US Corporate High Yield Index	7.50	6.35	5.78	8.03
Bloomberg Barclays Municipal Bond Index	5.45	2.98	3.02	4.46
Bloomberg Barclays US Aggregate Bond Index	3.54	2.24	2.10	4.01
Bloomberg Barclays US TIPS Index	3.01	2.05	0.13	3.53
Citi World Government Bond Index 1-5 Years (hedged to USD)	1.13	1.21	1.23	2.13
ICE BofAML 3-Month US Treasury Bill Index	0.86	0.41	0.27	0.39
ICE BofAML 1-Year US Treasury Note Index	0.57	0.49	0.38	0.90

One basis point equals 0.01%. Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Yield curve data from Federal Reserve. State and local bonds are from the S&P National AMT-Free Municipal Bond Index. AAA-AA Corporates represent the Bank of America Merrill Lynch US Corporates, AA-AAA rated. A-BBB Corporates represent the Bank of America Merrill Lynch US Corporates, BBB-A rated. Bloomberg Barclays data provided by Bloomberg. US long-term bonds, bills, inflation, and fixed income factor data © Stocks, Bonds, Bills, and Inflation (SBBBI) Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Citi fixed income indices © 2018 by Citigroup. ICE BofAML index data © 2018 ICE Data Indices, LLC. The S&P data are provided by Standard & Poor's Index Services Group.

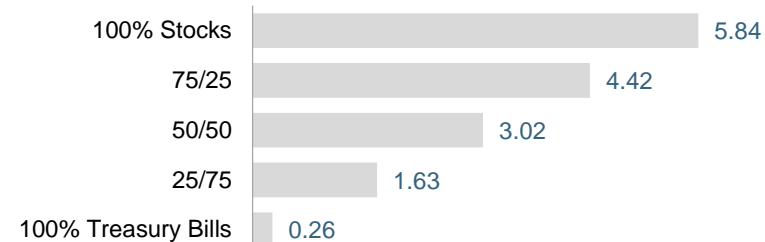
# Impact of Diversification

## Fourth Quarter 2017 Index Returns

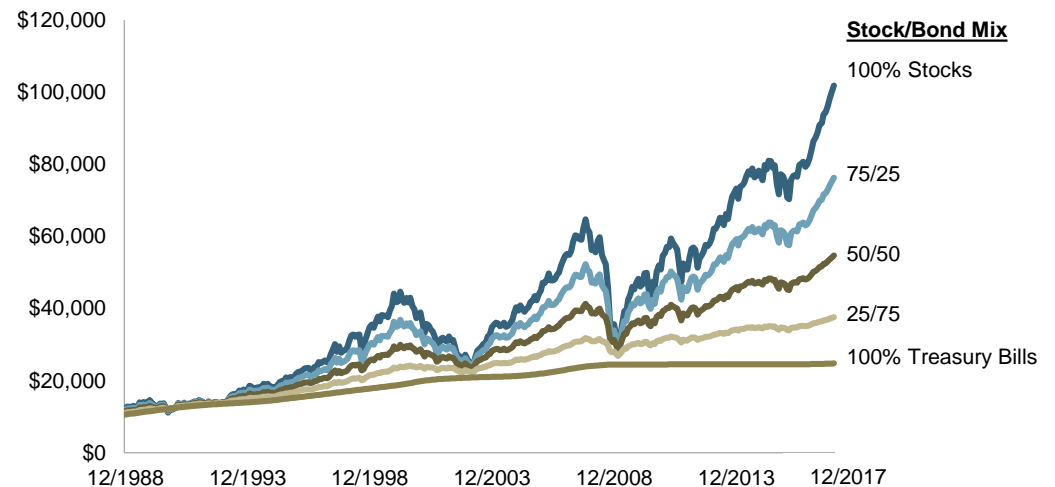
These portfolios illustrate the performance of different global stock/bond mixes. Mixes with larger allocations to stocks are considered riskier but have higher expected returns over time.

Asset Class	Period Returns (%)				* Annualized
	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV <sup>1</sup>
100% Stocks	24.62	9.89	11.40	5.22	16.80
75/25	18.23	7.54	8.59	4.26	12.59
50/50	12.14	5.15	5.79	3.11	8.38
25/75	6.33	2.75	3.00	1.78	4.18
100% Treasury Bills	0.80	0.34	0.21	0.30	0.16

### Ranked Returns (%)



### Growth of Wealth: The Relationship between Risk and Return



1. STDEV (standard deviation) is a measure of the variation or dispersion of a set of data points. Standard deviations are often used to quantify the historical return volatility of a security or portfolio. Diversification does not eliminate the risk of market loss. **Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect expenses associated with the management of an actual portfolio.** Asset allocations and the hypothetical index portfolio returns are for illustrative purposes only and do not represent actual performance. Global Stocks represented by MSCI All Country World Index (gross div.) and Treasury Bills represented by US One-Month Treasury Bills. Globally diversified allocations rebalanced monthly, no withdrawals. Data © MSCI 2018, all rights reserved. Treasury bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld).

# To Bit or Not to Bit: What Should Investors Make of Bitcoin Mania?

Fourth Quarter 2017

Bitcoin and other cryptocurrencies are receiving intense media coverage, prompting many investors to wonder whether these new types of electronic money deserve a place in their portfolios.

Cryptocurrencies such as bitcoin emerged only in the past decade. Unlike traditional money, no paper notes or metal coins are involved. No central bank issues the currency, and no regulator or nation state stands behind it.

Instead, cryptocurrencies are a form of code made by computers and stored in a digital wallet. In the case of bitcoin, there is a finite supply of 21 million<sup>1</sup>, of which more than 16 million are in circulation<sup>2</sup>. Transactions are recorded on a public ledger called blockchain.

People can earn bitcoins in several ways, including buying them using traditional fiat currencies<sup>3</sup> or by “mining” them—receiving newly created bitcoins for the service of using powerful computers to compile recent transactions into new blocks of the transaction chain through solving a highly complex mathematical puzzle.

For much of the past decade, cryptocurrencies were the preserve of digital enthusiasts and people who believe the age of fiat currencies is coming to an end. This niche appeal is reflected in their market value. For example, at a market value of \$16,000 per bitcoin<sup>4</sup>, the total value of bitcoin in circulation is less than one tenth of 1% of the aggregate value of global stocks and bonds. Despite this, the sharp rise in the market value of

bitcoins over the past weeks and months have contributed to intense media attention.

What are investors to make of all this media attention? What place, if any, should bitcoin play in a diversified portfolio? Recently, the value of bitcoin has risen sharply, but that is the past. What about its future value?

You can approach these questions in several ways. A good place to begin is by examining the roles that stocks, bonds, and cash play in your portfolio.

## EXPECTED RETURNS

Companies often seek external sources of capital to finance projects they believe will generate profits in the future. When a company issues stock, it offers investors a residual claim on its future profits. When a company issues a bond, it offers investors a promised stream of future cash flows, including the repayment of principal when the bond matures. The price of a stock or bond reflects the return investors demand to exchange their cash today for an uncertain but greater amount of expected cash in the future. One important role these securities play in a portfolio is to provide positive expected returns by allowing investors to share in the future profits earned by corporations globally. By investing in stocks and bonds today, you expect to grow your wealth and enable greater consumption tomorrow.

Government bonds often provide a more certain repayment of promised cash flows than corporate bonds. Thus, besides the potential for providing positive expected returns, another reason to hold government bonds is to reduce the uncertainty of future wealth. And inflation-linked government bonds reduce the uncertainty of future inflation-adjusted wealth.

1. Source: [Bitcoin.org](http://Bitcoin.org).

2. As of December 14, 2017. Source: [Coinmarketcap.com](http://Coinmarketcap.com).

3. A currency declared by a government to be legal tender.

4. Per Bloomberg, the end-of-day market value of a bitcoin exceeded \$16,000 USD for the first time on December 7, 2017.



# To Bit or Not to Bit

(continued from page 16)

Holding cash does not provide an expected stream of future cash flow. One US dollar in your wallet today does not entitle you to more dollars in the future. The same logic applies to holding other fiat currencies — and holding bitcoins in a digital wallet. So we should not expect a positive return from holding cash in one or more currencies unless we can predict when one currency will appreciate or depreciate relative to others.

The academic literature overwhelmingly suggests that short-term currency movements are unpredictable, implying there is no reliable and systematic way to earn a positive return just by holding cash, regardless of its currency. So why should investors hold cash in one or more currencies? One reason is because it provides a store of value that can be used to manage near-term known expenditures in those currencies.

With this framework in mind, it might be argued that holding bitcoins is like holding cash; it can be used to pay for some goods and services. However, most goods and services are not priced in bitcoins.

A lot of volatility has occurred in the exchange rates between bitcoins and traditional currencies. That volatility implies uncertainty, even in the near term, in the amount of future goods and services your bitcoins can purchase. This uncertainty, combined with possibly high transaction costs to convert bitcoins into usable currency, suggests that the cryptocurrency currently falls short as a store of value to manage near-term known expenses. Of course, that may change in the future if it becomes common practice to pay for all goods and services using bitcoins.

If bitcoin is not currently practical as a substitute for cash, should we expect its value to appreciate?

## SUPPLY AND DEMAND

The price of a bitcoin is tied to supply and demand. Although the supply of bitcoins is slowly rising, it may reach an upper limit, which might imply limited future supply. The future supply of cryptocurrencies, however, may be very flexible as new types are developed and innovation in technology makes many cryptocurrencies close substitutes for one another, implying the quantity of future supply might be unlimited.

Regarding future demand for bitcoins, there is a non-zero probability<sup>5</sup> that nothing will come of it (no future demand) and a non-zero probability that it will be widely adopted (high future demand).

Future regulation adds to this uncertainty. While recent media attention has ensured bitcoin is more widely discussed today than in years past, it is still largely unused by most financial institutions. It has also been the subject of scrutiny by regulators. For example, in a note to investors in 2014, the US Securities and Exchange Commission warned that any new investment appearing to be exciting and cutting-edge has the potential to give rise to fraud and false “guarantees” of high investment returns<sup>6</sup>. Other entities around the world have issued similar warnings. It is unclear what impact future laws and regulations may have on bitcoin’s future supply and demand (or even its existence). This uncertainty is common with young investments.

All of these factors suggest that future supply and demand are highly uncertain. But the probabilities of high or low future supply or demand are an input in the price of bitcoins today. That price is fair, in that investors willingly transact at that price. One investor does not have an unfair advantage over another in determining if the true probability of future demand will be different from what is reflected in bitcoin’s price today.

5. Describes an outcome that is possible (or not impossible) to occur.

6. “Investor Alert: Bitcoin and Other Virtual Currency-Related Investments,” SEC, 7 May 2014.

# To Bit or Not to Bit

(continued from page 17)

## WHAT TO EXPECT

So, should we expect the value of bitcoins to appreciate? Maybe. But just as with traditional currencies, there is no reliable way to predict by how much and when that appreciation will occur. We know, however, that we should not expect to receive more bitcoins in the future just by holding one bitcoin today. They don't entitle holders to an expected stream of future bitcoins, and they don't entitle the holder to a residual claim on the future profits of global corporations.

None of this is to deny the exciting potential of the underlying blockchain technology that enables the trading of bitcoins. It is an open, distributed ledger that can record transactions efficiently and in a verifiable and permanent way, which has significant implications for banking and other industries, although these effects may take some years to emerge.

When it comes to designing a portfolio, a good place to begin is with one's goals. This approach, combined with an understanding of the characteristics of each eligible security type, provides a good framework to decide which securities deserve a place in a portfolio. For the securities that make the cut, their weight in the total market of all investable securities provides a baseline for deciding how much of a portfolio should be allocated to that security.

Unlike stocks or corporate bonds, it is not clear that bitcoins offer investors positive expected returns. Unlike government bonds, they don't provide clarity about future wealth. And, unlike holding cash in fiat currencies, they don't provide the means to plan for a wide range of near-term known expenditures. Because bitcoin does not help achieve these investment goals, we believe that it does not warrant a place in a portfolio designed to meet one or more of such goals.

If, however, one has a goal not contemplated herein, and you believe bitcoin is well suited to meet that goal, keep in mind the final piece of our asset allocation framework: What percentage of all eligible investments do the value of all bitcoins represent? When compared to global stocks, bonds, and traditional currency, their market value is tiny. So, if for some reason an investor decides bitcoins are a good investment, we believe their weight in a well-diversified portfolio should generally be tiny<sup>7</sup>.

Because bitcoin is being sold in some quarters as a paradigm shift in financial markets, this does not mean investors should rush to include it in their portfolios. When digesting the latest article on bitcoin, keep in mind that a goals-based approach based on stocks, bonds, and traditional currencies, as well as sensible and robust dimensions of expected returns, has been helping investors effectively pursue their goals for decades.

7. Investors should discuss the risks and other attributes of any security or currency with their advisor prior to making any investment.

Source: Dimensional Fund Advisors LP.

The opinions expressed are those of the author and are subject to change. The commentary above pertains to bitcoin cryptocurrency. Certain bitcoin offerings may be considered a security and may have different attributes than those described in this paper. Dimensional does not offer bitcoin.

This material is not to be construed as investment advice or a recommendation to buy or sell any security or currency. Investing involves risks including possible loss of principal. Stocks are subject to market fluctuation and other risks. Bonds are subject to increased risk of loss of principal during periods of rising interest rates and other risks. There is no assurance that any investment strategy will be successful. Diversification does not assure a profit or protect against loss.

# Disclosures

A **basis point** is the smallest measure used in quoting yields or interest rates. One basis point is equal to one one-hundredth of one percentage point (0.01%).

There is no guarantee that a **diversified portfolio** will enhance overall returns or outperform a non-diversified portfolio. Diversification does not protect against market risk.

**Bonds** are subject to market and interest rate risk if sold prior to maturity. Bond values will decline as interest rates rise and bonds are subject to availability and change in price. Bond yields are subject to change. Certain call or special redemption features may exist which could impact yield.

The price of **equity** securities may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

Investments in **emerging markets** can be more volatile. As mentioned above, the normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

**Real estate** investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower. Investing in Real Estate Investment Trusts (REITs) involves special risks such as potential illiquidity and may not be suitable for all investors. There is no assurance that the investment objectives of this program will be attained.

**International** investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Also, some overseas markets may not be as politically and economically stable as the United States and other nations.

**Treasury inflation-protected securities (TIPS)** help eliminate inflation risk to your portfolio as the principal is adjusted semiannually for inflation based on the Consumer Price Index – while providing a real rate of return guaranteed by the U.S. Government. Treasury Inflation-Protected Securities, or TIPS, are subject to market risk and significant interest rate risk as their longer duration makes them more sensitive to price declines associated with higher interest rates.

# Disclosures

**All indexes are unmanaged and an individual cannot invest directly in an index. Unmanaged index returns do not reflect fees, expenses, or sales charges. Index performance is not indicative of the performance of any investment. Past performance is no guarantee of future results.**

The **Russell 3000 Index**® measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The **Russell 1000 Index** consists of the 1,000 largest securities in the Russell 3000 Index, which represents approximately 90% of the total market capitalization of the Russell 3000 Index. It is a large-cap, market-oriented index and is highly correlated with the S&P 500 Index.

The **Russell 2000 Index** ® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **Russell 2000 Value Index** ® measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The **MSCI World ex USA Index** captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries\*--excluding the United States. With 1,005 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The **MSCI World ex USA Small Cap Index** captures small cap representation across 22 of 23 Developed Markets (DM) countries\* (excluding the United States). With 2,437 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country.

The **MSCI Emerging Markets Small Cap Index** includes small cap representation across 23 Emerging Markets countries\*. With 1,792 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country. The small cap segment tends to capture more local economic and sector characteristics relative to larger Emerging Markets capitalization segments.

The **MSCI World ex USA Value Index** captures large and mid cap securities exhibiting overall value style characteristics across 22 of 23 Developed Markets countries\*. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield. With 540 constituents, the index targets 50% coverage of the free float-adjusted market capitalization of the MSCI World ex USA Index.

The **MSCI Emerging Markets Value Index** captures large and mid cap securities exhibiting overall value style characteristics across 23 Emerging Markets (EM) countries\*. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield. With 484 constituents, the index targets 50% coverage of the free float-adjusted market capitalization of the MSCI EM Index.

# Disclosures

The **MSCI Emerging Markets IndexSM** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of June 2007, the MSCI Emerging Markets Index consisted of the following 25 emerging market country indices: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The **MSCI ACWI (All Country World Index) Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of June 2009 the **MSCI ACWI** consisted of 45 country indices comprising 23 developed and 22 emerging market country indices.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. This world renowned index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the S&P 500 Index focuses on the large-cap segment of the market, with approximately 75% coverage of U.S. equities, it is also an ideal proxy for the total market. An investor cannot invest directly in an index.

A member of the S&P Global Property Index Series, **the S&P Global REIT Index** serves as a comprehensive benchmark of publicly traded equity REITs listed in both developed and emerging markets.

The **S&P Global ex-U.S. Property Index** defines and measures the investable universe of publicly traded property companies domiciled in developed and emerging markets excluding the U.S. The companies included are engaged in real estate related activities such as property ownership, management, development, rental and investment.

**The Barclays US Aggregate Bond Index** is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency). Provided the necessary inclusion rules are met, US Aggregate eligible securities also contribute to the multi-currency Global Aggregate Index and the US Universal Index, which includes high yield and emerging markets debt. The US Aggregate Index was created in 1986 with history backfilled to January 1, 1976.

The **S&P/Citigroup International Treasury Bond Ex-U.S. 1-3 Years Index** is designed to reflect the performance of bonds issues by non-U.S. developed market countries maturing in 1-3 years.

The **Dow Jones U.S. Select REIT Index** intends to measure the performance of publicly traded REITs and REIT-like securities. The index is a subset of the Dow Jones U.S. Select Real Estate Securities Index (RESI), which represents equity real estate investment trusts (REITs) and real estate operating companies (REOCs) traded in the U.S. The indices are designed to serve as proxies for direct real estate investment, in part by excluding companies whose performance may be driven by factors other than the value of real estate.

# Disclosures

The **Bloomberg Commodity Index** is composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

This **U.S. Treasury Index** is a component of the U.S. Government index.

The **BofA Merrill Lynch Three-Month US Treasury Bill Index** is an unmanaged market index of U.S. Treasury securities maturing in 90 days that assumes reinvestment of all income.

The **BofA Merrill Lynch 1-3 US Year Treasury Index** is an unmanaged index that tracks the performance of the direct sovereign debt of the U.S. Government having a maturity of at least one year and less than three years. It is not possible to invest directly in an unmanaged index

The **Citigroup WGBI 1-5 Years Index** measures the performance of the short-term global government bond market.

The **Barclays U.S. Government Index** is comprised of the U.S. Treasury and U.S. Agency Indices. The U.S. Government Index includes Treasuries (public obligations of the U.S. Treasury that have remaining maturities of more than one year) and U.S. agency debentures (publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government). The U.S. Government Index is a component of the U.S. Government/Credit Index and the U.S. Aggregate Index.

The **Barclays US Corporate High Yield Bond Index** measures the USD-denominated, high yield, fixed-rate 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. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded. The US Corporate High Yield Index is a component of the US Universal and Global High Yield Indices. The index was created in 1986, with history backfilled to July 1, 1983.

The **Barclays U.S. Municipal Index** covers the USD-denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and prerefunded bonds. Many of the subindices of the Municipal Index have historical data to January 1980. In addition, several subindices based on maturity and revenue source have been created, some with inception dates after January 1980 but no later than July 1, 1993. In January 1996, Barclays Capital also began publishing a noninvestment grade municipal bond index and "enhanced" state-specific indices for Arizona, Connecticut, Maryland, Massachusetts, Minnesota, and Ohio. These indices are published separately from the Barclays Capital Municipal Bond Index. In 2005, Barclays Capital began publishing Managed Money Municipal Indices and Insurance Mandate Municipal Indices.

The **Barclays US Treasury Index** measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. STRIPS are excluded from the index because their inclusion would result in double-counting. The US Treasury Index is a component of the US Aggregate, US Universal, Global Aggregate and Global Treasury Indices. The US Treasury Index was launched on January 1, 1973.