2016

Annual Market Review

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208-345-0174

2016 Annual Market Review

ASPEN CAPITAL MANAGEMENT

This report features world capital market performance for the past year.

Overview:

Market Summary

Index Returns

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	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
2016	**STOCKS**				**BONDS**	
	12.74%	**2.75%**	**11.19%**	**5.77%**	**2.65%**	**5.13%**
Since Jan. 2001						
Avg. Annual Return	7.6%	5.9%	13.3%	11.2%	4.9%	4.6%
Best Year	33.6% **2013**	39.4% **2003**	78.5% **2009**	37.4% **2006**	10.3% **2002**	9.8% **2014**
Worst Year	-37.3% **2008**	-43.6% **2008**	-53.3% **2008**	-45.7% **2008**	-2.0% **2013**	1.4% **2013**

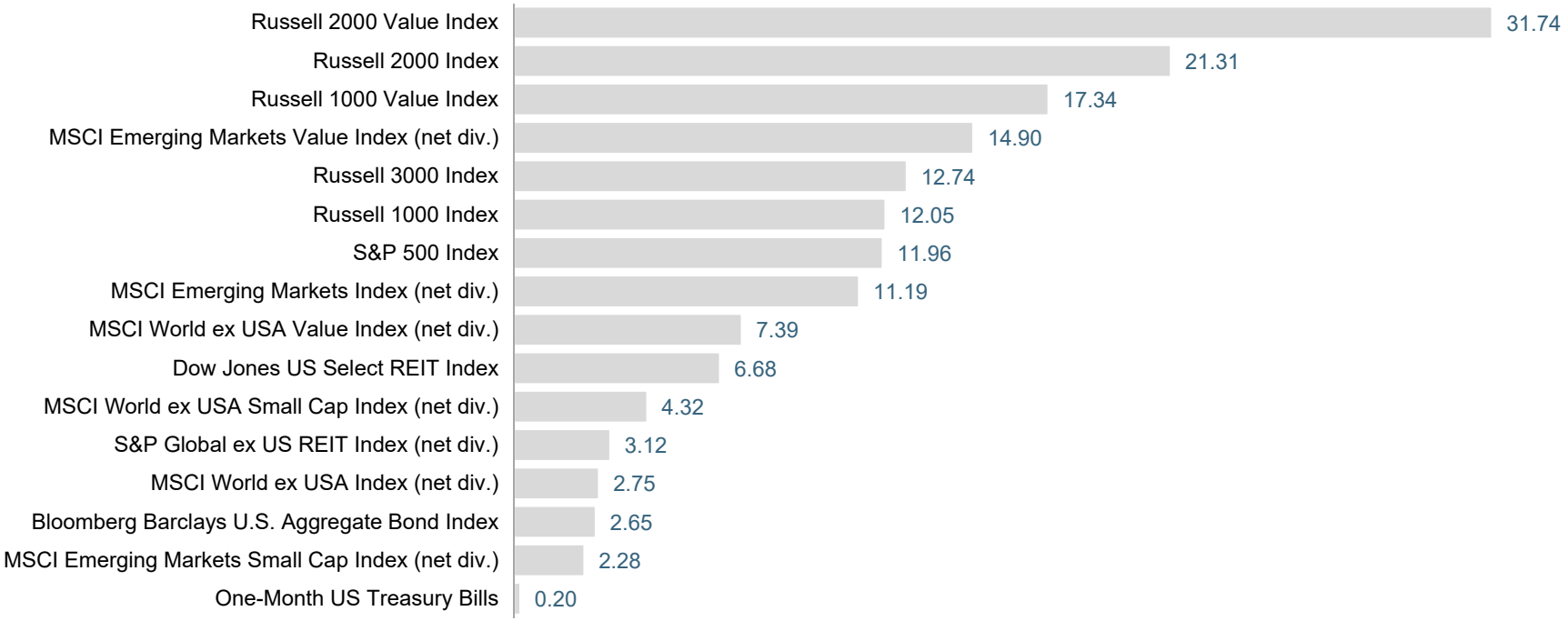
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International 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 2017, all rights reserved. Bloomberg Barclays data provided by Bloomberg. Citi fixed income indices copyright 2017 by Citigroup.

World Asset Classes

2016 Index Returns (%)

Looking at broad market indices, the US outperformed both non-US developed and emerging markets for the year. US and non-US real estate investment trusts (REITs) recorded positive returns but lagged the US and non-US equity markets.

The value effect was positive in the US, non-US, and emerging markets across all size ranges. Small caps outperformed large caps in the US and developed markets outside the US but underperformed in emerging markets.



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US Stocks

2016 Index Returns

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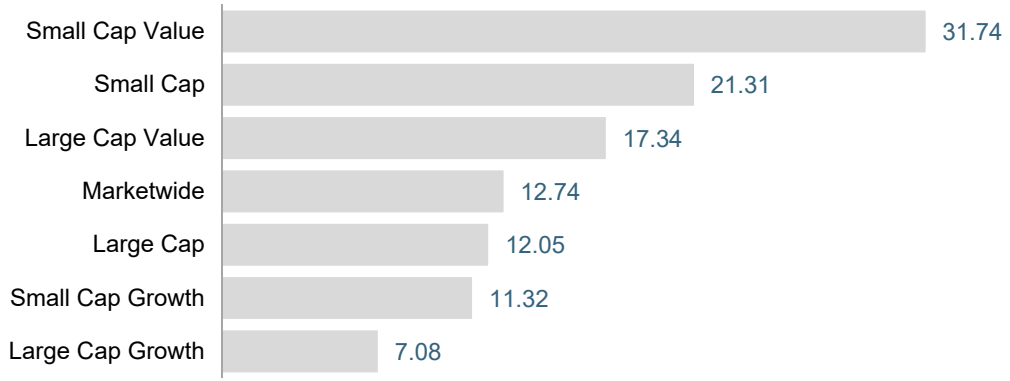
The broad US equity market recorded positive performance for the year.

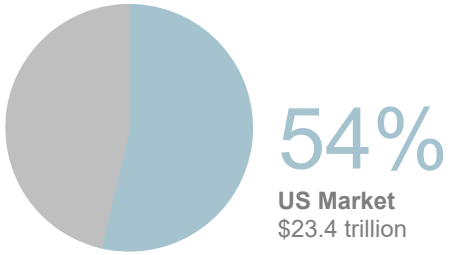
Value indices significantly outperformed growth indices in the US across all size ranges.

Small caps in the US outperformed large caps.

Ranked Returns (%)



World Market Capitalization—US



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Marketwide	12.74	8.43	14.67	7.07
Large Cap	12.05	8.59	14.69	7.08
Large Cap Value	17.34	8.59	14.80	5.72
Large Cap Growth	7.08	8.55	14.50	8.33
Small Cap	21.31	6.74	14.46	7.07
Small Cap Value	31.74	8.31	15.07	6.26
Small Cap Growth	11.32	5.05	13.74	7.76

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International Developed Stocks

2016 Index Returns

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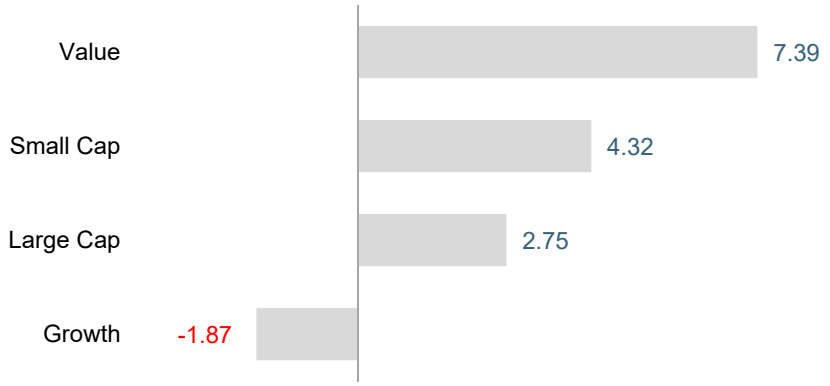
In US dollar terms, developed markets outside the US lagged both the US equity market and emerging markets indices for the year.

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

Looking at broad market indices, the value effect was positive across all size ranges.

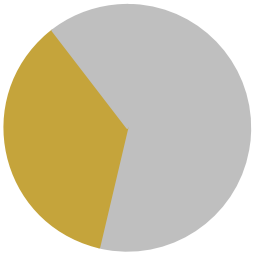
Ranked Returns (%)



World Market Capitalization—International Developed

36%

International Developed Market
$15.6 trillion



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	2.75	-1.59	6.07	0.86
Small Cap	4.32	1.36	8.96	2.69
Value	7.39	-2.12	5.96	0.08
Growth	-1.87	-1.18	6.08	1.56

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Emerging Markets Stocks

2016 Index Returns

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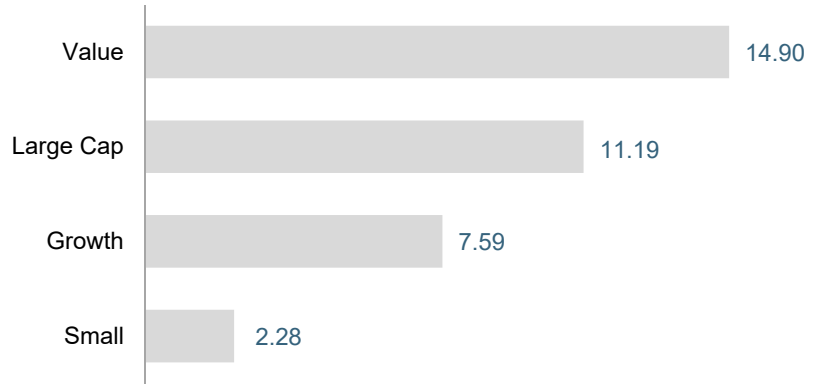
In US dollar terms, emerging markets indices underperformed the US but outperformed developed markets outside the US for the year.

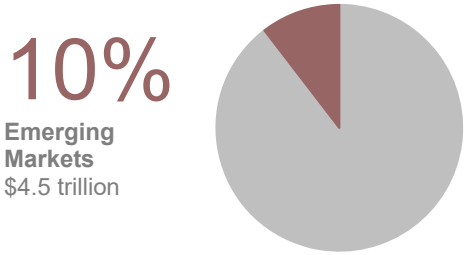
Looking at broad market indices, the value effect was positive across all size ranges.

Small caps underperformed large caps in emerging markets.

Ranked Returns for 2016 (%)



World Market Capitalization—Emerging Markets



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	11.19	-2.55	1.28	1.84
Small Cap	2.28	-1.27	3.51	3.41
Value	14.90	-3.54	-0.27	1.97
Growth	7.59	-1.67	2.73	1.63

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Select Country Performance

2016 Index Returns

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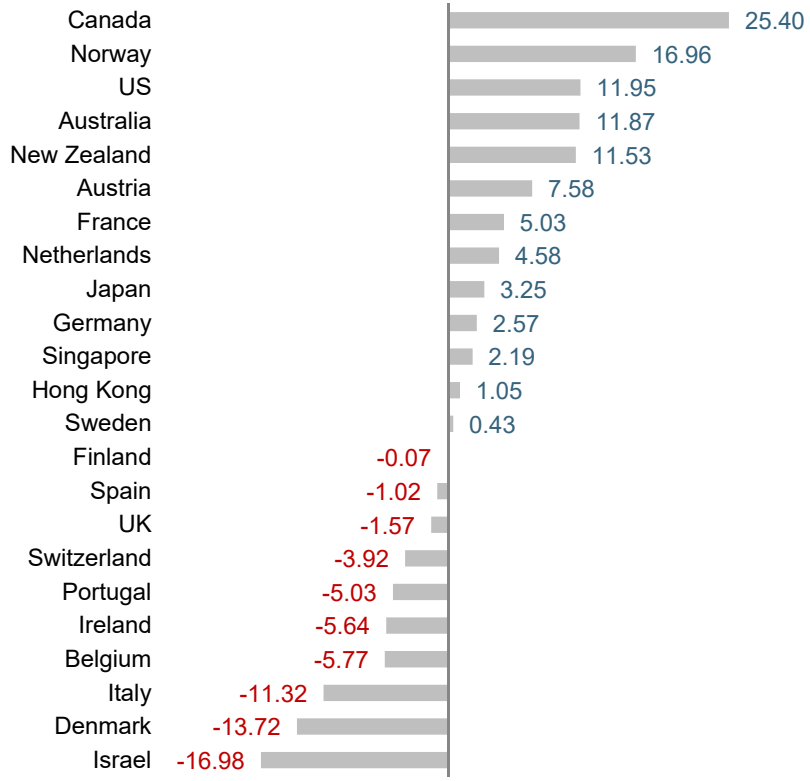
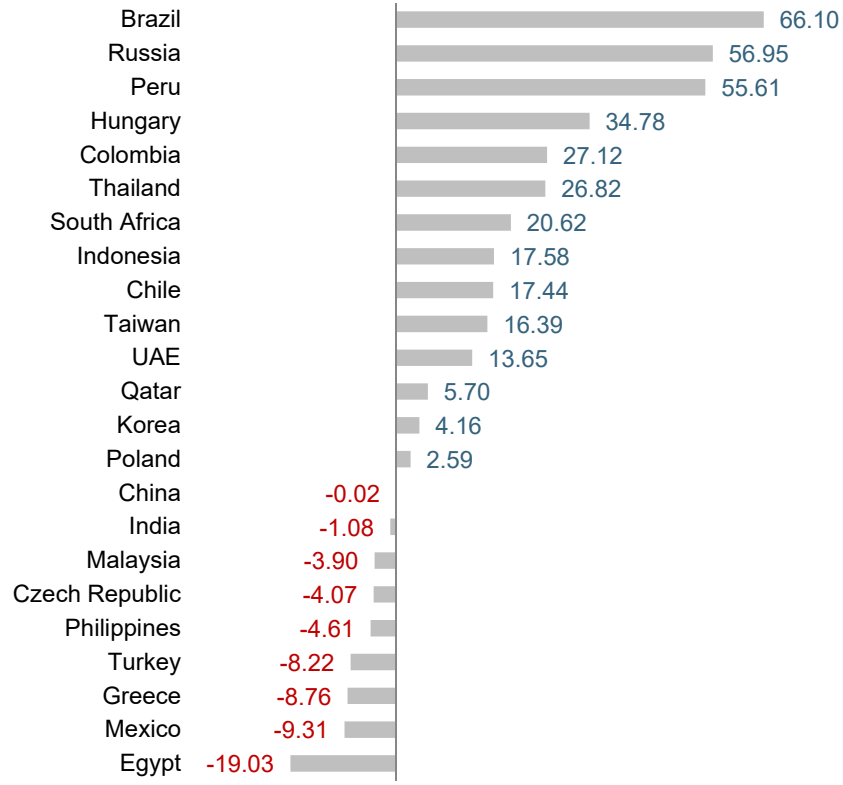
Canada and Norway recorded the highest country performance in developed markets, while Israel and Denmark posted the lowest returns for the year. In emerging markets, Brazil and Russia posted the highest country returns, while Egypt and Mexico recorded the lowest performance.

Ranked Developed Markets Returns (%)



Ranked Emerging Markets Returns (%)

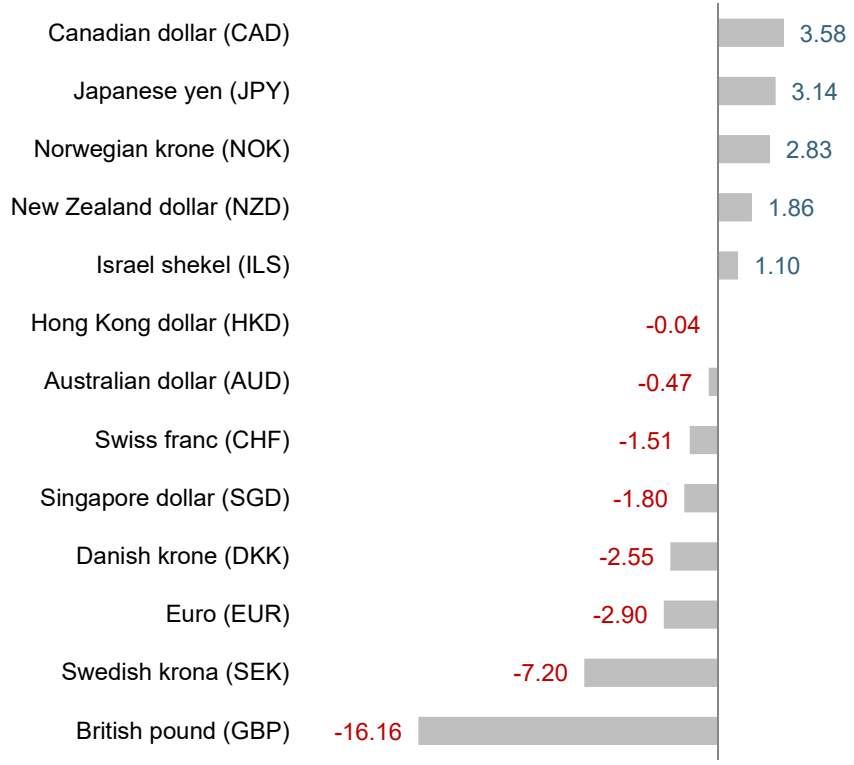


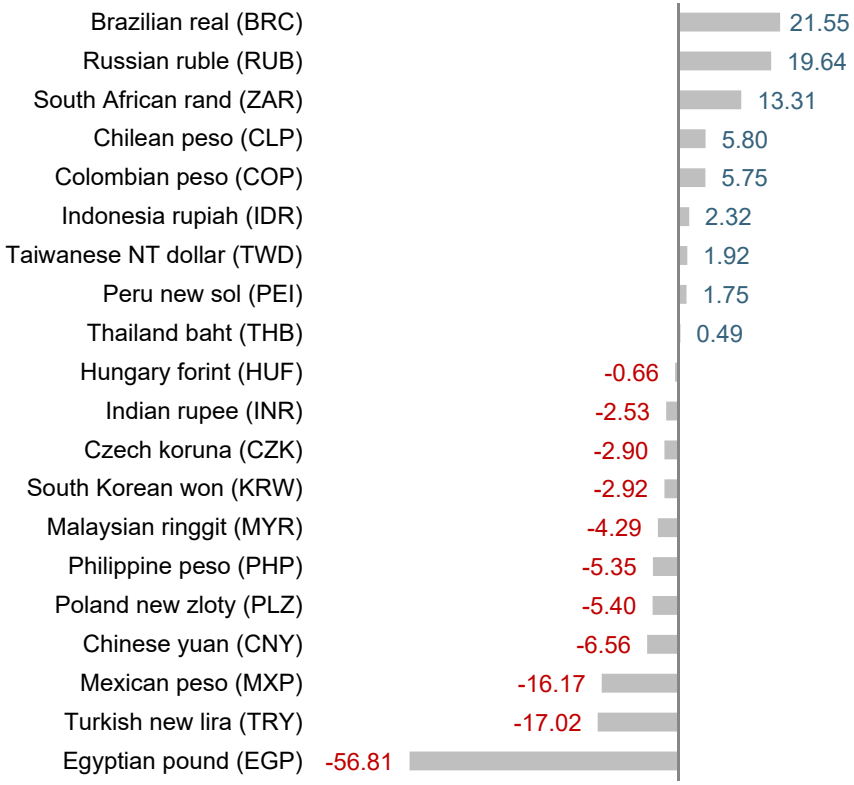
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Country performance based on respective indices in the MSCI World ex US IMI Index (for developed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

Select Currency Performance vs. US Dollar

2016

Relative to the US dollar, currency returns were mixed for both the non-US developed and emerging markets. The best-performing currency in non-US developed markets was the Canadian dollar, while the British pound recorded the lowest performance. In emerging markets, the Brazilian real and the Russian ruble appreciated the most vs. the US dollar. The Egyptian pound lost more than half its value vs. the US dollar.





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Real Estate Investment Trusts (REITs)

2016 Index Returns

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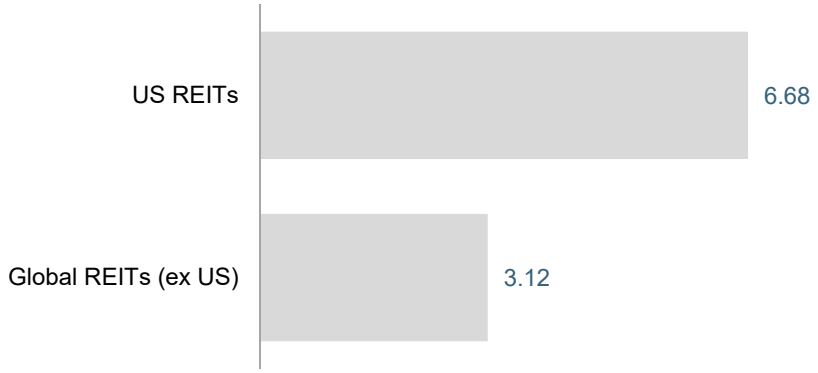
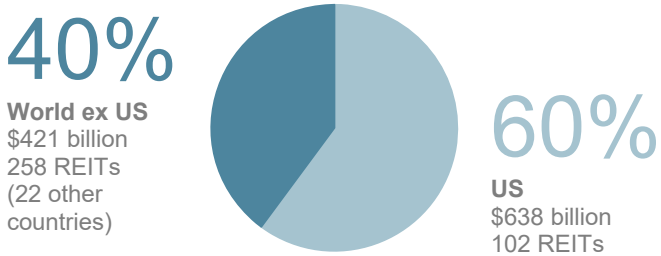
US and non-US REITs had positive performance for the year but lagged the broad equity market in both regions.

Ranked Returns (%)



Total Value of REIT Stocks



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
US REITs	6.68	13.73	11.77	4.63
Global REITs (ex US)	3.12	3.34	8.30	0.00

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 © 2017.

Commodities

2016 Returns

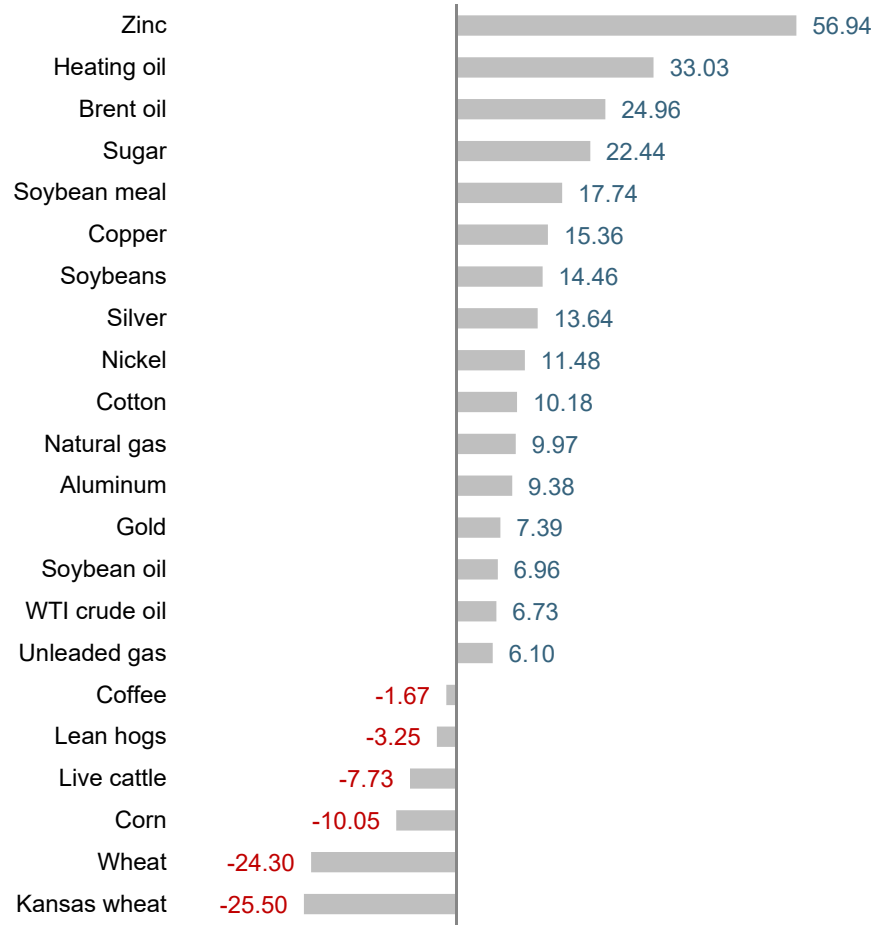
The Bloomberg Commodity Index Total Return gained 11.77% in 2016.

Zinc was the strongest performer, posting a return of 56.94%. Heating oil and Brent oil followed with respective returns of 33.03% and 24.96%. Kansas wheat was the weakest performer for the year, falling 25.50%.

Period Returns (%) ** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*
Commodities	11.77	-11.26	-8.95	-5.58

Ranked Returns for Individual Commodities (%)



Past performance is not a guarantee of future results. Index is not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. All index returns are net of withholding tax on dividends. Securities and commodities data provided by Bloomberg.

Impact of Diversification

2016 Index Returns

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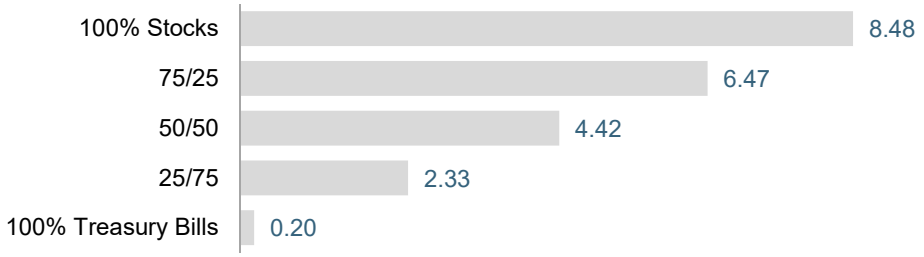
These portfolios illustrate the performance of different global stock/bond mixes. Mixes with larger allocations to stocks are considered riskier but have higher expected returns over time.

These portfolios include the returns of the indexes and do not include mutual fund or ETF expense ratios. An investor's actual return would be lower than the numbers listed on this page by the amount of the mutual fund expense ratios - likely about 0.30% for a broadly diversified global portfolio of index funds.

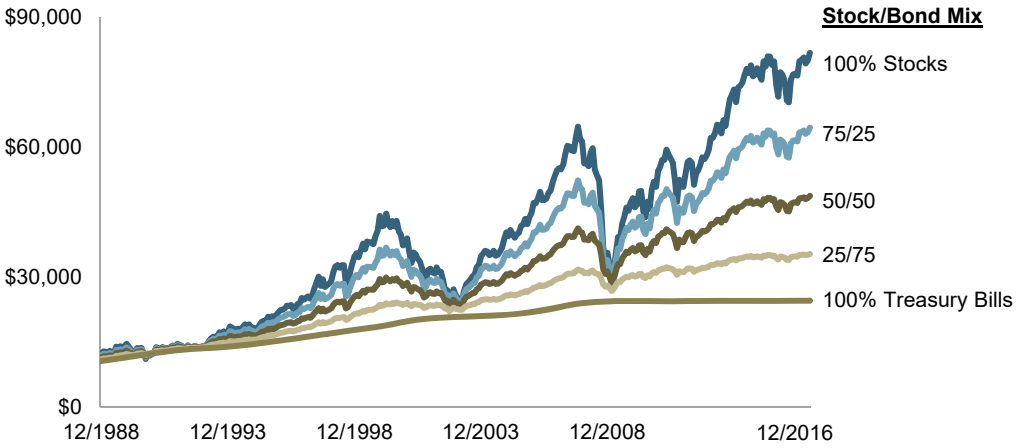
Period Returns (%) ** Annualized*

Asset Class	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV[1]
100% Stocks	8.48	3.69	9.96	4.12	16.99
75/25	6.47	2.90	7.53	3.54	12.74
50/50	4.42	2.03	5.07	2.77	8.49
25/75	2.33	1.09	2.58	1.81	4.24
100% Treasury Bills	0.20	0.08	0.06	0.67	0.41

Ranked Returns for 2016 (%)



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 2017, all rights reserved. Treasury bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefield).

The Power of Markets

November 2016

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In 1958, economist Leonard Read published an essay entitled "I, Pencil: My Family Tree as Told to Leonard E. Read."

The essay, narrated from the point of view of a pencil, describes the "complex combination of miracles" necessary to create and bring to market the common writing tool that has been used for generations. The narrator argues that no one individual possesses enough ability or know-how to create a pencil on their own. Rather, the mundane pencil—and the ability to buy it for a "trifling" sum—is the result of an extraordinary process driven by the knowledge of market participants and the power of market prices.

The Importance of Price

Upon observing a pencil, it is tempting to think a single individual could easily make one. After all, it is made up of common items such as wood, paint, graphite, metal, and a rubber eraser. By delving deeper into how these seemingly ordinary components are produced, however, we begin to understand the extraordinary backstory of their synthesis. Take the wood as an example: To produce wood requires a saw, to make the saw requires steel, to make steel requires iron. That iron must be mined, smelted, and shaped. A truck, train, or boat is needed to transport the wood from the forest to a factory where numerous machines convert it into lumber. The lumber is then transported to another factory where more machines assemble the pencil. Each of the components mentioned above and each step in the process have similarly complex backstories. All require materials that are sourced from far-flung locations, and countless processes are involved in refining them. While the multitude of inputs and processes necessary to create a pencil is impressive, even more impressive are the coordinated actions required by millions of people around the world to bring everything together. There is the direct involvement of farmers, loggers, miners, factory workers, and the providers of capital. There is also the indirect involvement of millions of others—the makers of rails, railroad cars, ships, and so on. Market prices are the unifying force that enables these millions of people to coordinate their actions efficiently.

Workers with specific knowledge about their costs, constraints, and efforts use market prices to leverage the knowledge of others to decide how to direct their own resources and make a living. Consider the farmer, the logger, and the price of a tree. The farmer will have a deep understanding of the costs, constraints, and efforts required to grow trees. To increase profit, the farmer will seek out the highest price when selling trees to a logger. After purchasing the trees, the logger will convert them to wood and sell that wood to a factory. The logger understands the costs, constraints, and efforts required to do this, so to increase profit, the logger seeks to pay the lowest price possible when buying trees from the farmer. When the farmer and the logger agree to transact, the agreed upon price reflects their combined knowledge of the costs and constraints of both growing and harvesting trees. That knowledge allows them to decide how to efficiently allocate their resources in seeking a profit. Ultimately, it is price that enables this coordination. On a much larger scale, price formation is facilitated by competition between the many farmers that sell trees to loggers and between the many loggers that buy trees from farmers. This market price of trees is observable and can be used by others in the production chain (e.g., the lumber factory mentioned above) to inform how much they can expect to pay for wood and to plan how to allocate their resources accordingly.

(continues on page 17)

The Power of Markets

(continued from page 16)

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The Power of Financial Markets

There is a corollary that can be drawn between this narrative about the market for goods and the financial markets. Generally, markets do a remarkable job of allocating resources, and financial markets allocate a specific resource: financial capital. Financial markets are also made up of millions of participants, and these participants voluntarily agree to buy and sell securities all over the world based upon their own needs and desires. Each day, millions of trades take place, and the vast collective knowledge of all of these participants is pooled together to set security prices. **Exhibit 1** shows the staggering magnitude of participation in the world equity markets on an average day in 2015.

Any individual trying to outguess the market is competing against the extraordinary collective wisdom of all of these buyers and sellers. Viewed through the lens of Read's allegory, attempting to outguess the market is like trying to create a pencil from scratch rather than going to the store and reaping the fruits of others' willingly supplied labor. In the end, trying to outguess the market is incredibly difficult and expensive, and over the long run, the result will almost assuredly be inferior when compared to a market-based approach. Professor Kenneth French has been quoted as saying, "The market is smarter than we are and no matter how smart we get, the market will always be smarter than we are." One doesn't have to look far for data that supports this. **Exhibit 2** shows that only 17% of US equity mutual funds have survived and outperformed their benchmarks over the past 15 years. *(continues on page 18)*

Exhibit 1. Embrace Market Pricing

World Equity Trading in 2015

	Number of Trades	Dollar Volume
Daily Average	98.6 million	$447.3 billion

In US dollars. Global electronic order book (largest 60 exchanges). Source: World Federation of Exchanges.

Exhibit 2. Don't Try to Outguess the Market

US Equity Mutual Fund Performance

Beginning sample includes funds as of the beginning of the 15-year period ending December 31, 2015. Past performance is no guarantee of future results. Source: Dimensional Fund Advisors, "The US Mutual Fund Landscape." See disclosures for more information.

The Power of Markets

(continued from page 17)

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Conclusion

The beauty of Leonard Read's story is that it provides a glimpse of the incredibly complex tapestry of markets and how prices are formed, what types of information they contain, and how they are used. The story makes it clear that no single individual possesses enough ability or know-how to create a pencil on their own but rather that the pencil's miraculous production is the result of the collective input and effort of countless motivated human beings. In the end, the power of markets benefits all of us. The market allows us to exchange the time we require to earn money for a few milliseconds of each person's time involved in making a pencil. For an investor, we believe the lesson here is that instead of fighting the market, one should pursue an investment strategy that efficiently and effectively harnesses the extraordinary collective power of market prices. That is, an investment strategy that uses market prices and the information they contain in its design and day-to-day management. In doing so, an investor has access to the rewards that financial markets make available to providers of capital.

Leonard Read's essay can be found here: http://econlib.org/library/Essays/rdPncl1.html.
Source: Dimensional Fund Advisors LP.
There is no guarantee investment strategies will be successful.
US-domiciled mutual fund data is from the CRSP Survivor-Bias-Free US Mutual Fund Database, provided by the Center for Research in Security Prices, University of Chicago. Certain types of equity funds were excluded from the performance study. Index funds, sector funds, and funds with a narrow investment focus, such as real estate and gold, were excluded.
Funds are identified using Lipper fund classification codes. Correlation coefficients are computed for each fund with respect to diversified benchmark indices using all return data available between January 1, 2001, and December 31, 2015. The index most highly correlated with a fund is assigned as its benchmark. Winner funds are those whose cumulative return over the period exceeded that of their respective benchmark. Loser funds are funds that did not survive the period or whose cumulative return did not exceed their respective benchmark.
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Ken French is a member of the Board of Directors for and provides consulting services to Dimensional Fund Advisors LP.