



VERTEX PLANNING PARTNERS
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Q3

Quarterly Market Review

Third Quarter 2018



Quarterly Market Review

Third Quarter 2018

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: Total Cost of Fund Ownership



Vertex Planning Partners Q3'18 Review

The Third Quarter of 2018 saw a continuation of climbing US interest rates, rising domestic stock prices, positive corporate earnings, and an escalating trade war with China.

With the third rate hike by the Federal Reserve of 2018, short term interest rates (dependent on Fed Policy), have been rising steadily throughout the year. This increase has had an effect both on bond prices (prices decline with an increase in rates), as well as consumer rates such as car loans and mortgages. Of note, the spread (or difference) between long term rates and short term rates have remained tight, keeping a lid on long term rates (10+ years). We have seen similar tightness between high and low grade corporate debt. These observances are providing mixed signals as to what lies ahead (low spreads between corporate bonds are generally positive, since economic prospects are improving, while low spreads on short term versus long term bonds generally indicate skepticism on medium term economic prospects).

In light of rising rates, US companies have continued their strong earnings. Domestic growth has been strong, leading to unemployment rates at decade long lows. In fact, job movement has become more robust as people have felt more comfortable switching employers.

The main detractors in global markets have been focused in industries impacted by the US trade dispute with China, including agricultural exports, basic materials, as well as overseas markets suffering from trade uncertainty, a rising dollar, and a reversal in risk appetite originating in the first quarter.

We feel that some of these impacts have been temporary in nature, and have seen some reversion in price movements particularly within the commodity complex. With rising interest rates we would expect greater price fluctuations as investors grapple with future earnings potential.

The impact of our outlook is expressed in the following themes carried through to our portfolios:

- *Broad global diversification utilizing low-cost investments*
- *Active management to focus on the quality of the underlying business and management with the ability to hedge currency fluctuations*
- *Exposure to Real Estate / Infrastructure / Commodities Sectors that historically have been an effective hedge against rising prices and declining currency values*
- *Alternative strategies that aim to take advantage of increased volatility in rates, currencies and public equity and bond markets*
- *Quantitative managers who seek to profit from momentum created by uncertainty*
- *Pursue high risk/reward performance through actively managed fixed income investing in credit instruments with lower rate risk*

The opinions voiced in this material are for general information only and are not intended to provide specific advice or recommendations for any individual. All performance referenced is historical and is no guarantee of future results. All indices are unmanaged and may not be invested into directly. The economic forecasts set forth may not develop as predicted.

No strategy assures success or protects against loss and there is no guarantee that their objectives will be met. Alternative investments may not be suitable for all investors and should be considered as an investment for the risk capital portion of the investor's portfolio. The strategies employed in the management of alternative investments may accelerate the velocity of potential losses

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Market Summary

Index Returns

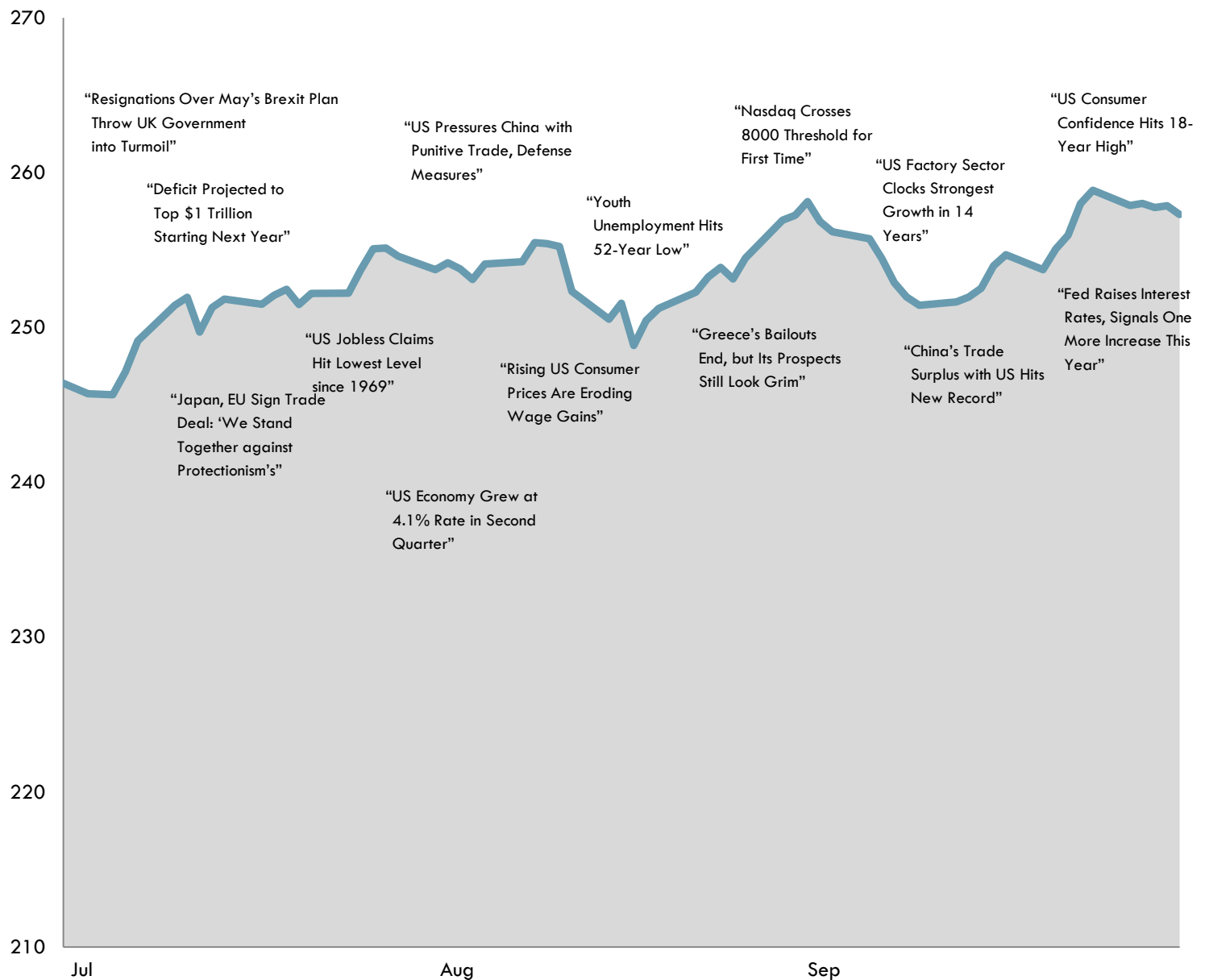
	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate		US Bond Market	Global Bond Market ex US
Q3 2018	STOCKS					BONDS	
	7.12%	1.31%	-1.09%	-0.03%		0.02%	-0.17%
Since Jan. 2001							
Avg. Quarterly Return	2.0%	1.5%	2.9%	2.6%		1.1%	1.1%
Best Quarter	16.8% 2009 Q2	25.9% 2009 Q2	34.7% 2009 Q2	32.3% 2009 Q3		4.6% 2001 Q3	4.6% 2008 Q4
Worst Quarter	-22.8% 2008 Q4	-21.2% 2008 Q4	-27.6% 2008 Q4	-36.1% 2008 Q4		-3.0% 2016 Q4	-2.7% 2015 Q2

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 Market ex US (Bloomberg Barclays Global Aggregate ex-USD Bond Index [hedged to USD]). S&P data © 2018 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. 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. FTSE fixed income © 2018 FTSE Fixed Income LLC, all rights reserved.



World Stock Market Performance

MSCI All Country World Index with selected headlines from Q3 2018



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.

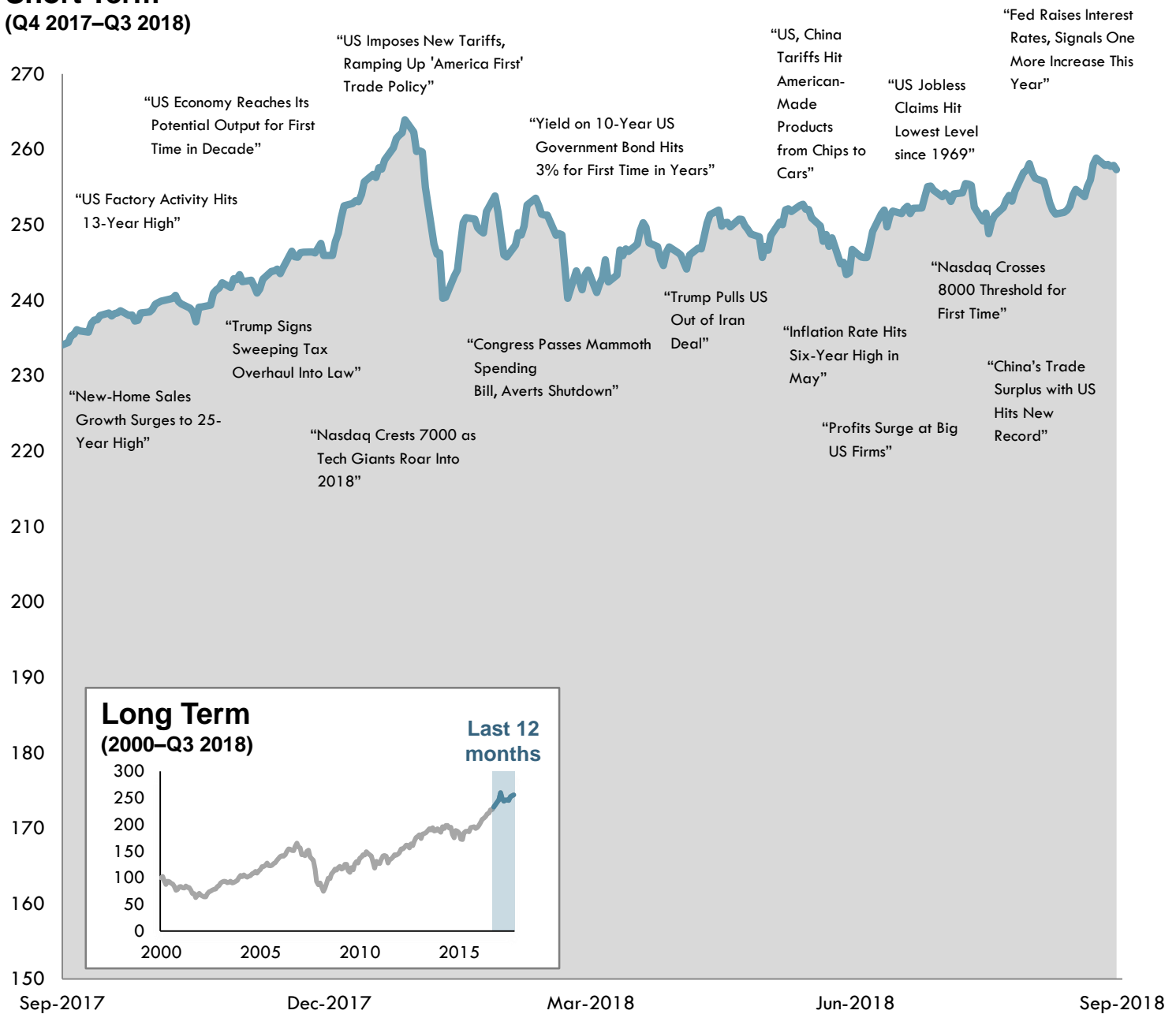
Graph Source: MSCI ACWI Index [net div.]. MSCI data © MSCI 2018, all rights reserved.
It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.



World Stock Market Performance

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

Short Term (Q4 2017–Q3 2018)



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.**



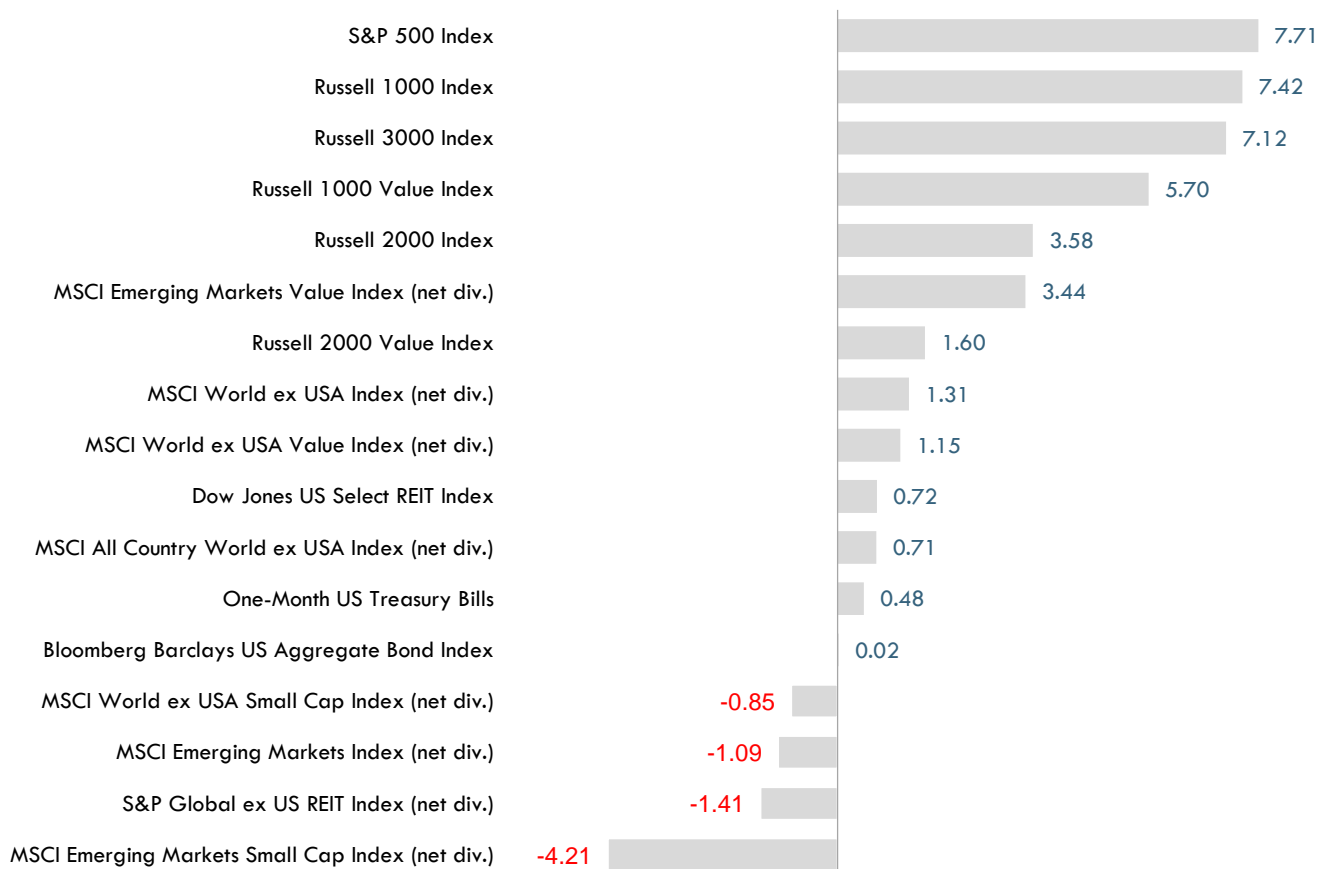
World Asset Classes

Third Quarter 2018 Index Returns (%)

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

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

REIT indices underperformed equity market indices in both the US and non-US developed markets.



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US Stocks

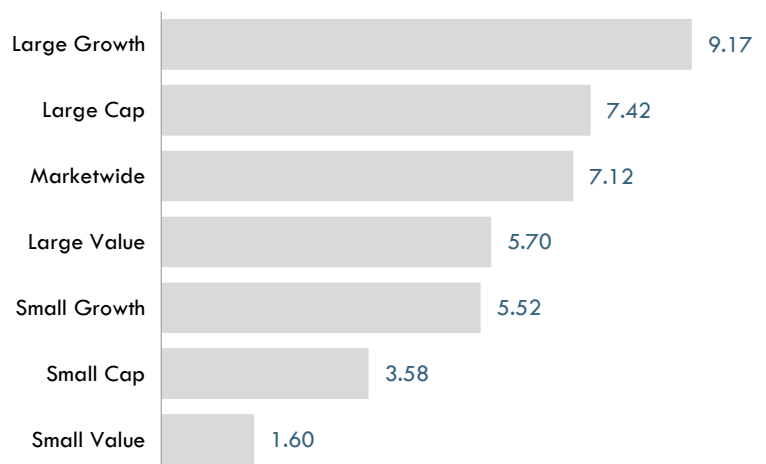
Third Quarter 2018 Index Returns

The US equity market posted a positive return, outperforming both non-US developed and emerging markets.

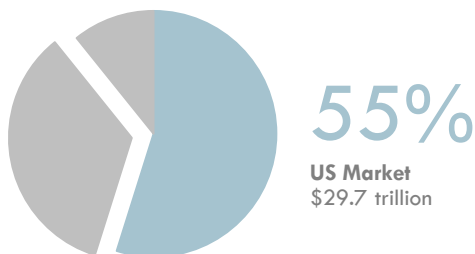
Value underperformed growth in the US across large and small cap stocks.

Small caps underperformed large caps in the US.

Ranked Returns for the Quarter (%)



World Market Capitalization—US



Period Returns (%)

* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Large Growth	17.09	26.30	20.55	16.58	14.31
Small Growth	15.76	21.06	17.98	12.14	12.65
Small Cap	11.51	15.24	17.12	11.07	11.11
Marketwide	10.57	17.58	17.07	13.46	12.01
Large Cap	10.49	17.76	17.07	13.67	12.09
Small Value	7.14	9.33	16.12	9.91	9.52
Large Value	3.92	9.45	13.55	10.72	9.79

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 source and owner of trademarks, service marks, and copyrights related to Russell Indexes. MSCI data © MSCI 2018, all rights reserved.



International Developed Stocks

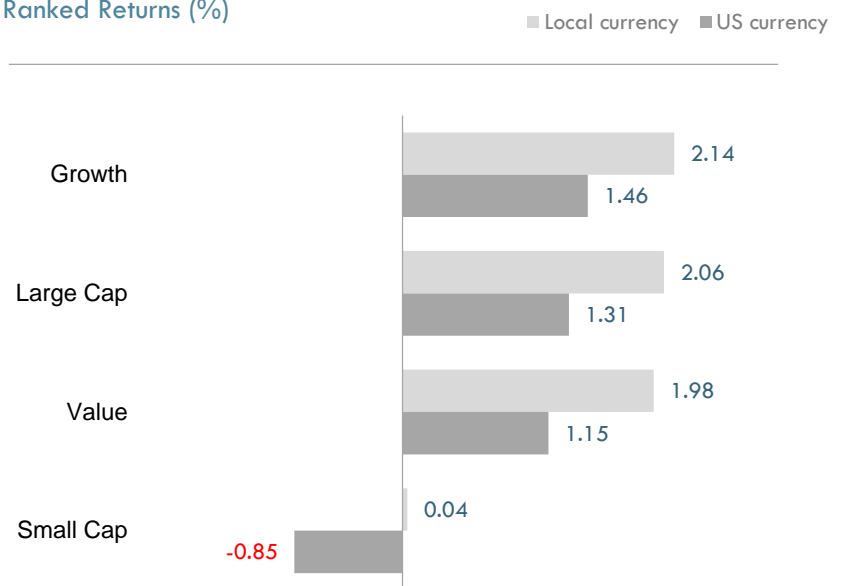
Third Quarter 2018 Index Returns

In US dollar terms, developed markets outside the US underperformed the US but outperformed emerging markets during the quarter.

Large cap value stocks underperformed large cap growth stocks in non-US developed markets; however, small cap value outperformed small cap growth.

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

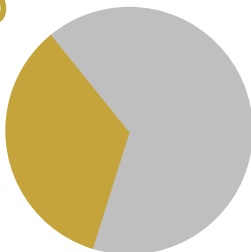
Ranked Returns (%)



World Market Capitalization— International Developed

34%

International
Developed
Market
\$18.6 trillion



Period Returns (%)

* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Growth	0.39	5.47	9.91	5.37	5.78
Large Cap	-1.50	2.67	9.32	4.24	5.18
Small Cap	-2.28	3.42	12.23	7.07	9.04
Value	-3.43	-0.13	8.65	3.05	4.51

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Emerging Markets Stocks

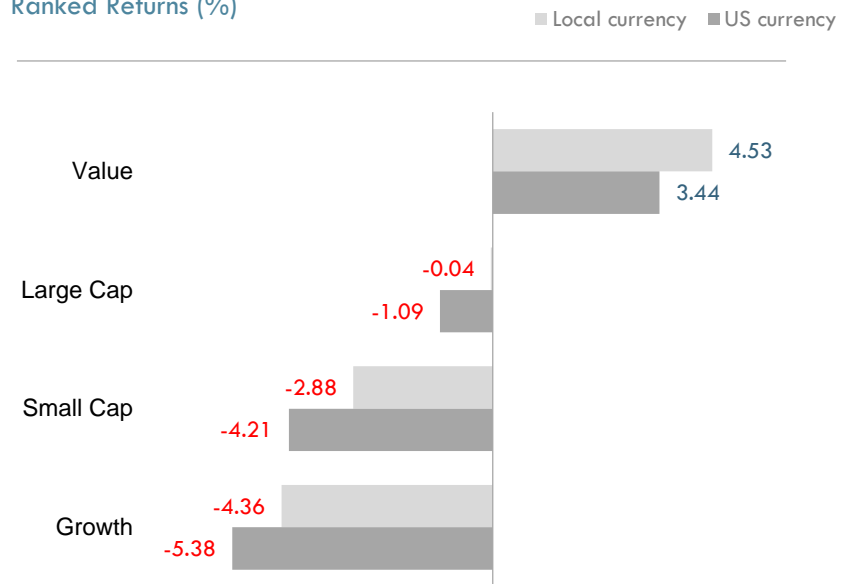
Third Quarter 2018 Index Returns

In US dollar terms, emerging markets posted negative returns for the quarter, underperforming developed markets including the US.

The value effect was positive, particularly in large caps in emerging markets.

Small caps underperformed large caps.

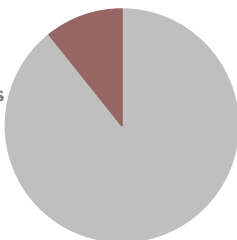
Ranked Returns (%)



World Market Capitalization— Emerging Markets

11%

Emerging Markets
\$5.8 trillion



Period Returns (%)

* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Value	-4.28	2.27	11.55	2.04	4.53
Large Cap	-7.68	-0.81	12.36	3.61	5.40
Growth	-10.94	-3.89	13.03	5.08	6.18
Small Cap	-12.30	-4.20	7.43	2.72	7.43

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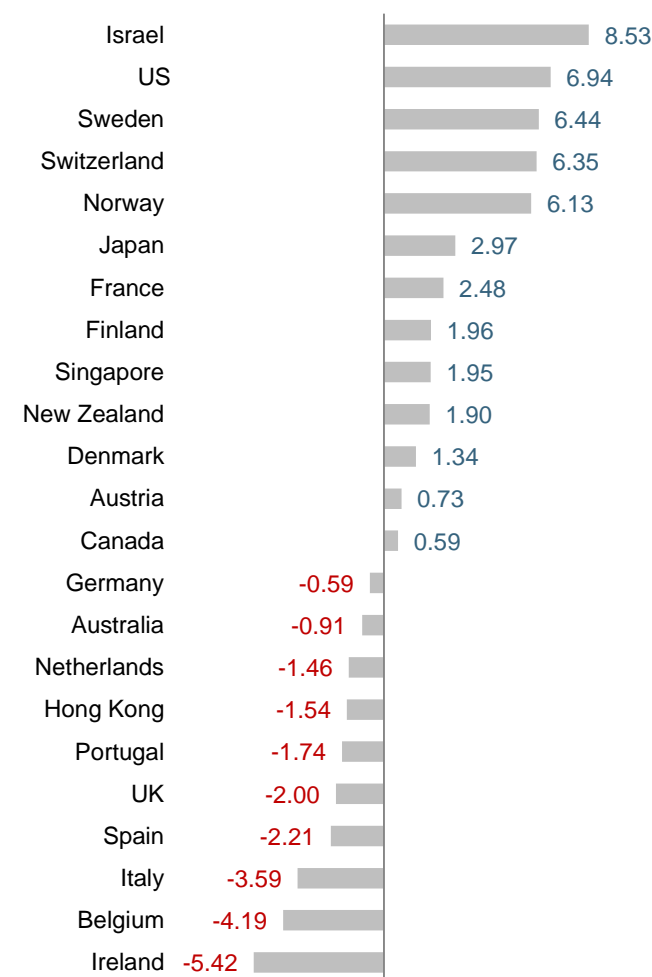


Select Country Performance

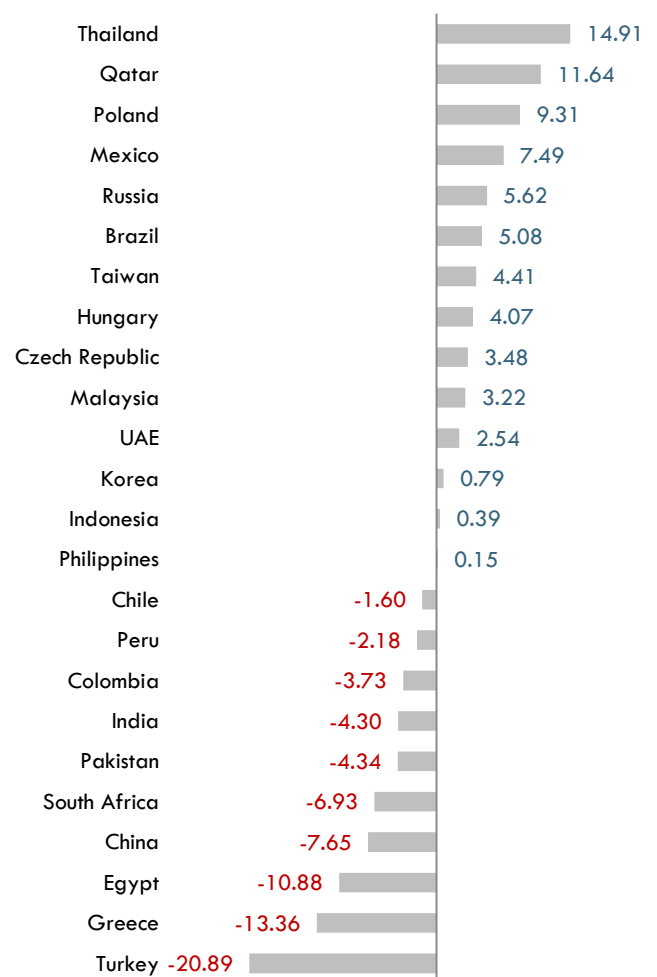
Third Quarter 2018 Index Returns

In US dollar terms, Israel, the US, and Sweden recorded the highest country performance in developed markets, while Ireland and Belgium posted the lowest returns for the quarter. In emerging markets, Thailand and Qatar recorded the highest country performance, while Turkey, Greece, Egypt, and China posted 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.

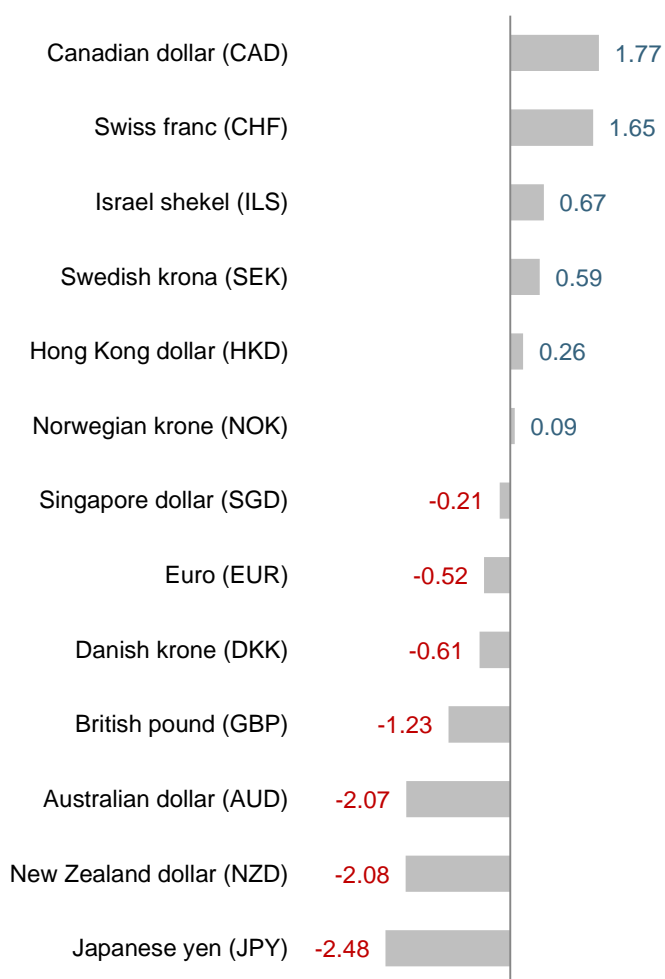


Select Currency Performance vs. US Dollar

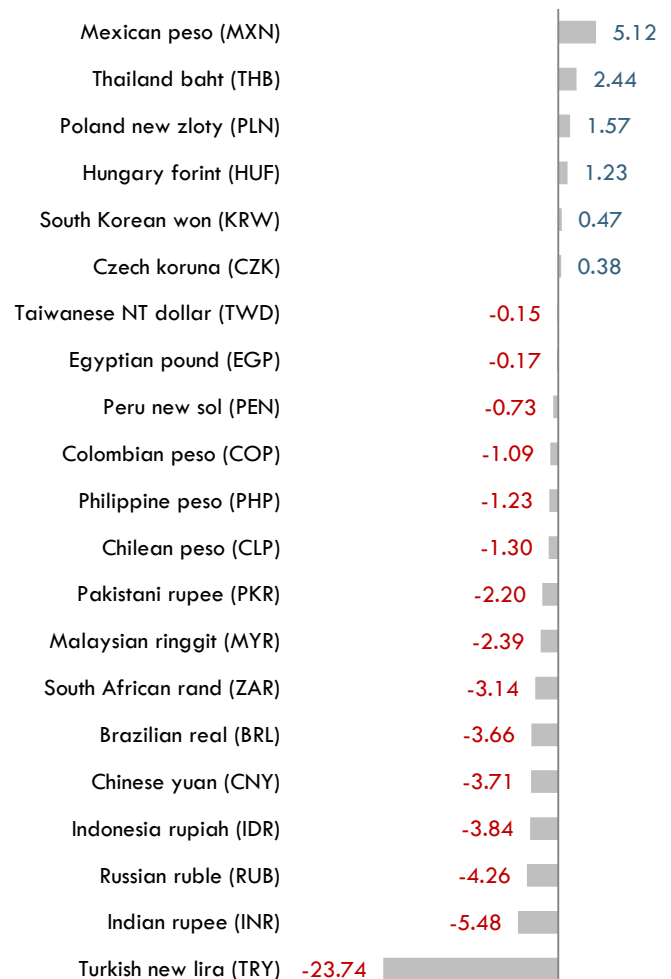
Third Quarter 2018

In developed markets, currencies recorded mixed results vs. the US dollar. The Canadian dollar and the Swiss franc appreciated over 1.5% vs. the US dollar, but the Japanese yen and Australian and New Zealand dollars all each depreciated more than 2%. In emerging markets, most currencies depreciated against the US dollar. The Turkish lira fell over 20%, but the Mexican peso appreciated more than 5%.

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.

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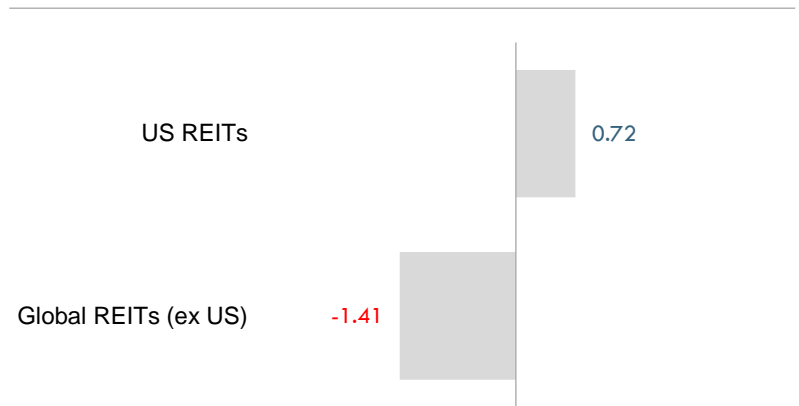


Real Estate Investment Trusts (REITs)

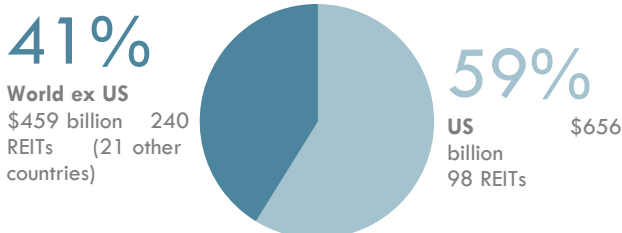
Third Quarter 2018 Index Returns

US real estate investment trusts outperformed non-US REITs in US dollar terms.

Ranked Returns (%)



Total Value of REIT Stocks



Period Returns (%)

Asset Class	YTD	1 Year	* Annualized		
			3 Years*	5 Years*	10 Years*
US REITs	2.56	4.59	6.88	9.14	7.21
Global REITs (ex US)	-2.88	3.39	5.66	4.18	5.40

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 data © 2018 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. S&P data © 2018 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.



Commodities

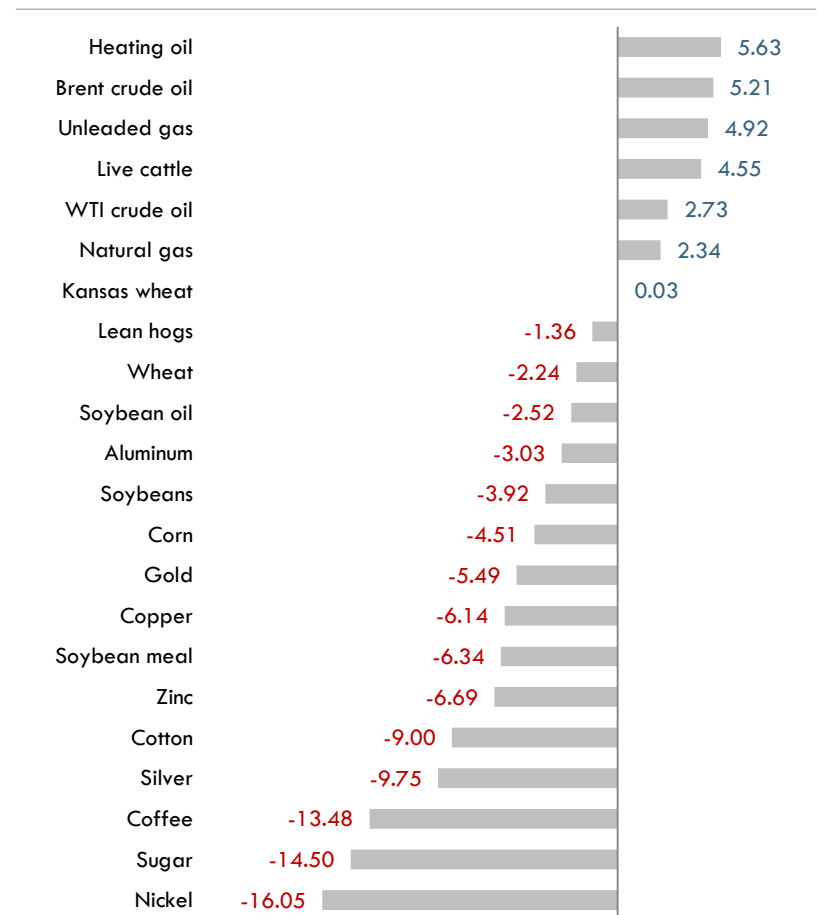
Third Quarter 2018 Index Returns

The Bloomberg Commodity Index Total Return declined 2.02% in the third quarter.

The energy complex led performance. Heating oil gained 5.63%, and Brent oil returned 5.21%.

Nickel, the worst-performing commodity, declined 16.05%. Sugar lost 14.50%, and coffee fell 13.48%.

Ranked Returns for Individual Commodities (%)



Period Returns (%)

* Annualized

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Commodities	-2.02	-2.03	2.59	-0.11	-7.18	-6.24

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. Commodities returns represent the return of the Bloomberg Commodity Total Return Index. Individual commodities are sub-index values of the Bloomberg Commodity Total Return Index. Data provided by Bloomberg.



Fixed Income

Third Quarter 2018 Index Returns

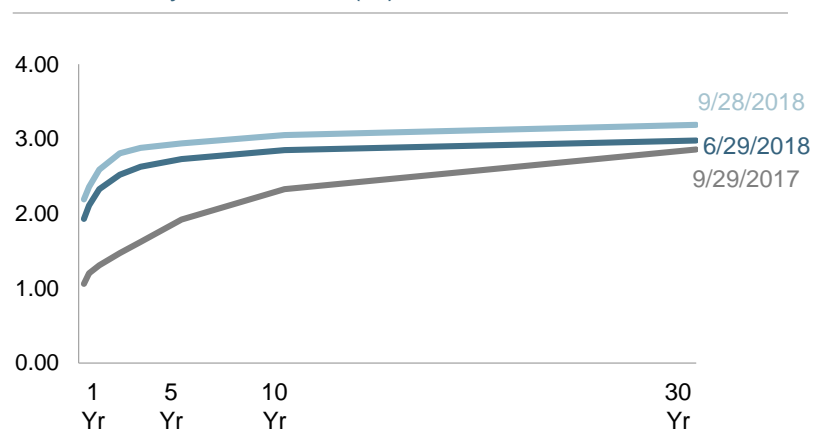
Interest rates increased in the US during the third quarter. The yield on the 5-year Treasury note rose 21 basis points (bps), ending at 2.94%. The yield on the 10-year Treasury note increased 20 bps to 3.05%. The 30-year Treasury bond yield rose 21 bps to 3.19%.

On the short end of the yield curve, the 1-month Treasury bill yield increased 35 bps to 2.12%, while the 1-year Treasury bill yield rose 26 bps to 2.59%. The 2-year Treasury note yield finished at 2.81% after an increase of 29 bps.

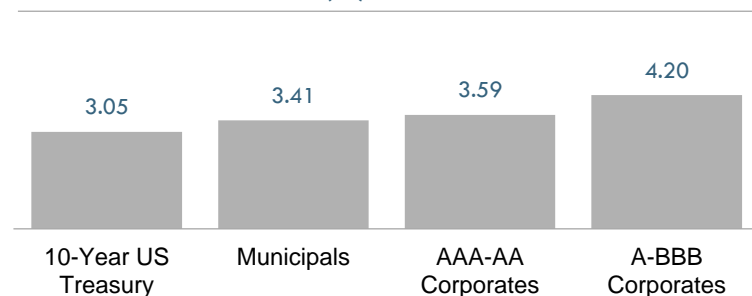
In terms of total return, short-term corporate bonds gained 0.71%, while intermediate-term corporates returned 0.80%.

Short-term municipal bonds declined 0.11%, while intermediate-term munis dipped 0.06%. Revenue bonds (-0.16%) performed in line with general obligation bonds (-0.14%).

US Treasury Yield Curve (%)



Bond Yields across Issuers (%)



Period Returns (%)

* Annualized

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Bloomberg Barclays US High Yield Corporate Bond Index	2.40	2.57	3.05	8.15	5.54	9.46
ICE BofAML US 3-Month Treasury Bill Index	0.49	1.30	1.59	0.84	0.52	0.34
ICE BofAML 1-Year US Treasury Note Index	0.41	1.07	1.08	0.74	0.55	0.71
FTSE World Government Bond Index 1-5 Years (hedged to USD)	0.17	0.58	0.64	1.04	1.26	1.90
Bloomberg Barclays US Aggregate Bond Index	0.02	-1.60	-1.22	1.31	2.16	3.77
Bloomberg Barclays Municipal Bond Index	-0.15	-0.40	0.35	2.24	3.54	4.75
FTSE World Government Bond Index 1-5 Years	-0.63	-1.68	-1.39	0.84	-1.16	0.88
Bloomberg Barclays US TIPS Index	-0.82	-0.84	0.41	2.04	1.37	3.32
Bloomberg Barclays US Government Bond Index Long	-2.82	-5.71	-3.50	0.78	4.41	5.45

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 (S&BBI) Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). FTSE fixed income indices © 2018 FTSE Fixed Income LLC, all rights reserved. ICE BofAML index data © 2018 ICE Data Indices, LLC.

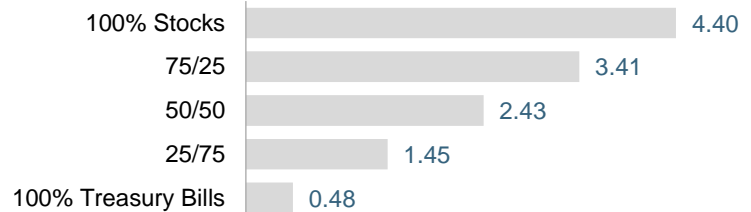


Impact of Diversification

Third Quarter 2018 Index Returns

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

Ranked Returns (%)

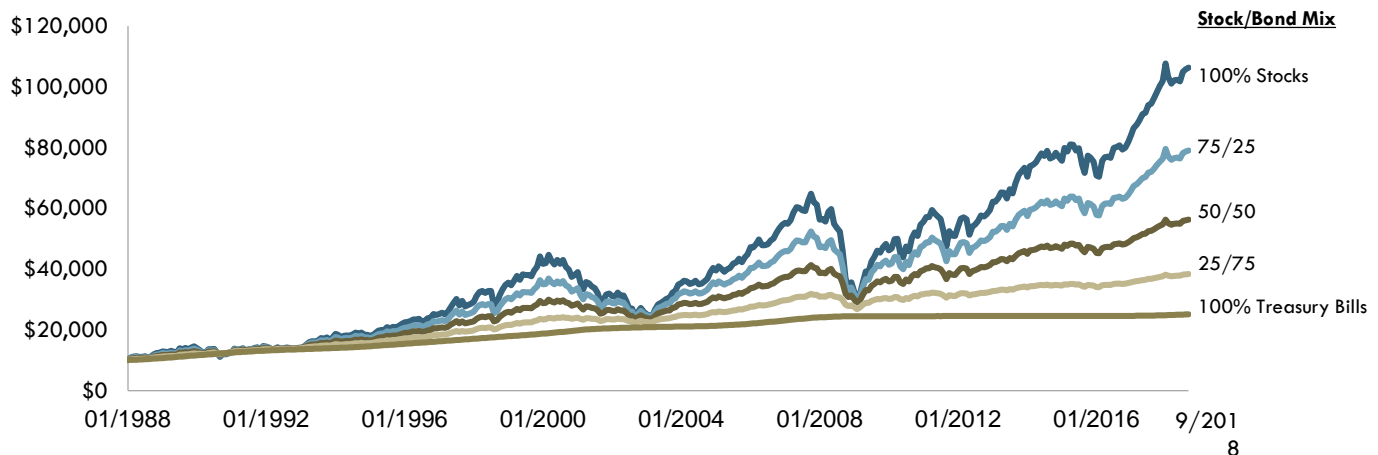


Period Returns (%)

* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV ¹
100% Stocks	4.26	10.35	14.02	9.25	8.77	15.83
75/25	3.56	8.14	10.64	7.08	6.85	11.87
50/50	2.82	5.93	7.31	4.89	4.78	7.91
25/75	2.05	3.71	4.01	2.68	2.58	3.95
100% Treasury Bills	1.24	1.50	0.75	0.45	0.27	0.14

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).



Total Cost of Ownership

Third Quarter 2018

Costs matter. Whether you're buying a car or selecting an investment strategy, the costs you expect to pay are likely to be an important factor in making any major financial decision.

People rely on a lot of different information about costs to help inform these decisions. When you buy a car, for example, the sticker price indicates approximately how much you can expect to pay for the car itself. But the costs of car ownership do not end there. Taxes, insurance, fuel, routine maintenance, and unexpected repairs are also important considerations in the overall cost of a car. Some of these costs are easily observed, while others are more difficult to assess. Similarly, when investing in mutual funds, different variables need to be considered to evaluate how cost-effective a strategy may be for a particular investor.

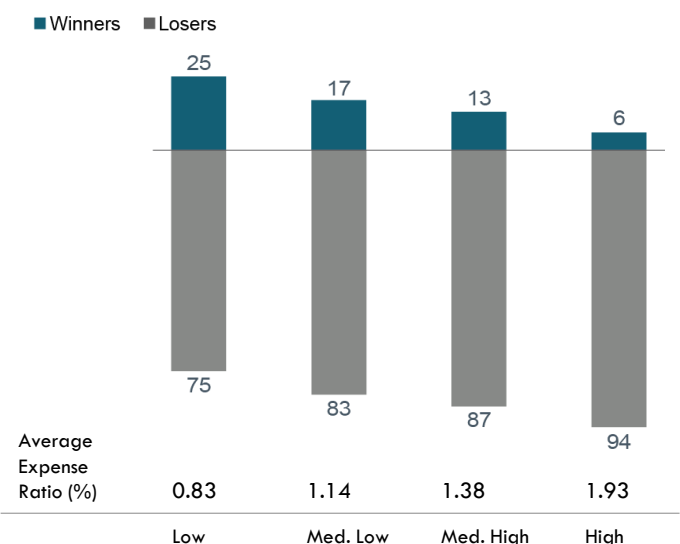
EXPENSE RATIOS

Mutual funds have many costs, all of which affect the net return to investors. One easily observable cost is the expense ratio. Like the sticker price of a car, the expense ratio tells you a lot about what you can expect to pay for an investment strategy. Expense ratios strongly influence fund selection for many investors, and it's easy to see why.

Exhibit 1 illustrates the outperformance rate, or the percentage of funds that beat their category index, for active equity mutual funds over the 15-year period ending December 31, 2017. To see the link between expense ratio and performance, outperformance rates are shown for quartiles of funds sorted by their expense ratio. As the chart shows, while active funds have mostly lagged indices across the board, the outperformance rate has been inversely related to expense ratio. Just 6% of funds in the highest expense ratio quartile beat their index, compared to 25% for the lowest expense ratio group.

This data indicates that a high expense ratio presents a challenging hurdle for funds to overcome, especially over longer time horizons. From the investor's point of view, an expense ratio of 0.25% vs. 1.25% means savings of \$10,000 per year on every \$1 million invested. As **Exhibit 2** helps to illustrate, those dollars can really add up over time.

Exhibit 1. High Costs Can Reduce Performance, Equity Fund Winners and Losers Based on Expense Ratios (%)



The sample includes funds at the beginning of the 15-year period ending December 31, 2017. Funds are sorted into quartiles within their category based on average expense ratio over the sample period. The chart shows the percentage of winner and loser funds by expense ratio quartile; winners are funds that survived and outperformed their respective Morningstar category benchmark, and losers are funds that either did not survive or did not outperform their respective Morningstar category benchmark. US-domiciled open-end mutual fund data is from Morningstar and Center for Research in Security Prices (CRSP) from the University of Chicago. Equity fund sample includes the Morningstar historical categories: Diversified Emerging Markets, Europe Stock, Foreign Large Blend, Foreign Large Growth, Foreign Large Value, Foreign Small/Mid Blend, Foreign Small/Mid Growth, Foreign Small/Mid Value, Japan Stock, Large Blend, Large Growth, Large Value, Mid-Cap Blend, Mid-Cap Value, Miscellaneous Region, Pacific/Asia ex-Japan Stock, Small Blend, Small Growth, Small Value, and World Stock. For additional information regarding the Morningstar historical categories, please see "The Morningstar Category Classifications" at morningstardirect.morningstar.com/clientcomm/Morningstar_Categories_US_April_2016.pdf. Index funds and fund-of-funds are excluded from the sample. The return, expense ratio, and turnover for funds with multiple share classes are taken as the asset-weighted average of the individual share class observations. For additional methodology, please refer to Dimensional Fund Advisors' brochure, *Mutual Fund Landscape 2018*. Past performance is no guarantee of future results.



Total Cost of Ownership

(continued from page 21)

For active approaches like stock picking, both the total amount of trading and the cost per trade may be high. If a manager trades excessively or inefficiently, costs like commissions and price impact from trading can eat away at returns. Viewed through the lens of our car analogy, this impact is like the toll on your vehicle from incessantly jamming the brakes or accelerating quickly. Subjecting the car to such treatment may result in added wear and tear and greater fuel consumption, increasing your total cost of ownership. Similarly, excessive trading can lead to negative tax consequences for a fund, which can increase the cost of ownership for investors holding funds in taxable accounts. Such trading costs can be reduced by avoiding unnecessary turnover and seeking to minimize the cost per trade.

In contrast to both highly regimented indexing and high-turnover active strategies, employing a flexible investment approach that reduces the need for immediacy, and thus enables opportunistic execution, is one way to potentially reduce implicit costs. Keeping turnover low, remaining flexible, and transacting only when the potential benefits of a trade outweigh the costs can help keep overall trading costs down and help reduce the total cost of ownership.

CONCLUSION

The total cost of ownership of a mutual fund can be difficult to assess

and requires a thorough understanding of costs beyond what an expense ratio can tell investors on its own. We believe investors should look beyond any one cost metric and instead evaluate the total cost of ownership of an investment solution.

Source: Dimensional Fund Advisors LP.

There is no guarantee investment strategies will be successful. Diversification does not eliminate the risk of market loss. Mutual fund investment values will fluctuate and shares, when redeemed, may be worth more or less than original cost. The types of fees and expenses will vary based on investment vehicle. Investments are subject to risk including possible loss of principal.

All expressions of opinion are subject to change. This article is distributed for informational purposes, and it is not to be construed as an offer, solicitation, recommendation, or endorsement of any particular security, products, or services.

Important Risk Disclosures

The fast price swings in commodities and currencies will result in significant volatility in an investor's holdings. Currency Risk -because the security invests in stocks denominated in foreign currencies, changes in currency exchange rates may negatively impact the securities return. The values of the foreign currencies may be subject to a high degree of fluctuation due to changes in interest rates, the TS-8 effects of monetary policies issued by the United States, foreign governments, central banks or supranational entities, the imposition of currency controls or other national or global political or economic developments. International and emerging market investing involves special risks such as currency fluctuation and political instability and may not be suitable for all investors. 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. Small Cap stocks may be subject to a higher degree of risk than more established companies' securities. The illiquidity of the Small Cap market may adversely affect the value of these investments. Value investments can perform differently from the market as a whole. They can remain undervalued by the market for long periods of time. Municipal bonds are subject to availability, price, and to market and interest rate risk if sold prior to maturity. Bond values will decline as interest rate rise. Interest income may be subject to the alternative minimum tax. Federally tax-free but other state and local taxes may apply. Government bonds and Treasury Bills are guaranteed by the U.S. government as to the timely payment of principal and interest and, if held to maturity, offer a fixed rate of return and fixed principal value. 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. Credit Quality is one of the principal criteria for judging the investment quality of a bond or bond mutual fund. As the term implies, credit quality informs investors of a bond or bond portfolio's credit worthiness, or risk of default. There is no guarantee that a diversified portfolio will enhance overall returns or outperform a non-diversified portfolio. Diversification does not ensure against market risk. This market information has been prepared by Dimensional Fund Advisors (DFA). DFA is not affiliated with LPL Financial.

Index Definition:

An index is a statistical measure that shows changes in the economy or financial markets and serves as a benchmark against which economic and financial performance is measured. Indices are not available for direct investment; its performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is no guarantee of future results.

Bank of America Merrill Lynch US Corporate Bond Index

Tracks the performance of US dollar denominated investment grade rated corporate debt publically issued in the US domestic market.

Bloomberg Barclays U.S. Aggregate Bond Index

The Bloomberg Barclays U.S. Aggregate Bond Index is an index of the U.S. investment-grade fixed-rate bond market, including both government and corporate bonds.

Bloomberg Barclays U.S Corporate High-Yield Bond Index

The Bloomberg Barclays U.S Corporate High-Yield Bond Index is an unmanaged market value weighted index composed of fixed-rate, publicly issued, non-investment grade debt.

Citi World Government Bond Index (WGBI) ex US

Measures the performance of fixed-rate, local currency, investment-grade sovereign bonds, not including those of the United States.

Dow Jones US Select REIT Index

Is comprised of all publicly traded real estate investment trusts in the Dow Jones U.S. stock universe (i.e. real estate investment trusts (REITs) and real estate operating companies (REOCs) traded in the U.S). The indexes 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. Date of introduction Total Return: January 30, 1987; Price Return: December 31, 1998

The MSCI ACWI (All Country World Index)

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. The MSCI All Country World Index includes 48 markets. The index has been calculated since 1995

MSCI ACWI Ex USA Growth Index

The MSCI ACWI ex USA Growth Index captures large and mid cap securities exhibiting overall growth style characteristics across 22 Developed Markets (DM) countries and 23 Emerging Markets (EM) countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

MSCI World Ex USA Index

Captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries--excluding the United States. With 1,024 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

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.

MSCI World Ex USA Small Cap Index

Captures small cap representation across 22 of 23 Developed Markets (DM) countries (excluding the United States). With 2,454 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country.

MSCI US Broad Market Index

The MSCI US Broad Market Index captures broad US equity coverage. The index includes 3,204 constituents across large, mid, small and micro capitalizations, representing about 99% of the US equity universe.

MSCI Emerging Markets Index

The MSCI Emerging Markets Index has a base date of December 31, 1987. It is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

MSCI Emerging Markets Growth Index

Captures large and mid cap securities exhibiting overall growth style characteristics across 23 Emerging Markets (EM) countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

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.

MSCI Emerging Markets Small Cap Index

Includes small cap representation across 23 Emerging Markets countries. With 1,840 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country.

Russell 1000 Index

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.

Russell 1000 Value Index

The Russell 1000 Value Index measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values. . The index is a subset of the much larger Russell 3000 Index It is reconstituted annually.

Russell 2000 Index

The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 Index is a subset of the Russell 3000® Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership. It is reconstituted annually and was launched in 1984.

Russell 2000 Growth Index

Measures the performance of those Russell 2000 companies with higher price-to book ratios and higher forecasted growth values.

Russell 2000 Value Index

Measures the performance of those Russell 2000 companies with lower price-to book ratios and lower forecasted growth values.

Russell 3000 Index

The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. The U.S.-based requirement disqualifies many large international firms from inclusion into the index. It is reconstituted annually and was started in 1984. The Russell indices are owned and maintained by Russell Investments.

Standard & Poor's 500 Index

The Standard & Poor's 500 Index is a capitalization weighted index of 500 stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

S&P Global REIT Index

The index consists of all real estate investment trusts in both developed and emerging markets. S&P Global REIT ex-US Index The index consists of all real estate investment trusts in both developed and emerging markets, not including the United States.

S&P National AMT-Free Municipal Bond Index

The S&P National AMT-Free Municipal Bond Index is a broad, comprehensive, market value-weighted index designed to measure the performance of the investment-grade tax-exempt U.S. municipal bond market.