

Q3

Quarterly Market Review
Third Quarter 2018

SDG | Financial
Planning

Quarterly Market Review

Third Quarter 2018

This report features world capital market performance and a timeline of events for the past quarter. It will cover a global overview, and 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

Quarterly Topic: Total Cost of Fund Ownership

Inflation

Fixed Income

World Asset Classes

US Stocks







International Developed Stocks

Emerging Markets Stocks

Impact of Diversification

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

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Market Summary

Continued

Positive Signals

- Solid U.S. economic growth, overall domestic outlook is bright
- Low unemployment
- Stable inflation
- Stocks often perform well when economic growth is solid and rates rise from low levels
- Even with a rise in interest rates, they are still historically low
- High consumer confidence

Reasons for Concern

- Rising trade tension could have impact on global growth (US vs. China)
- Flattening U.S. yield curve as Fed raises short term rates; other impacts to more rate hikes (e.g. higher mortgage rates)
- We are in later stages of economic cycle
- Midterm election volatility
- Strong \$ impacts EM countries

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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 (%)

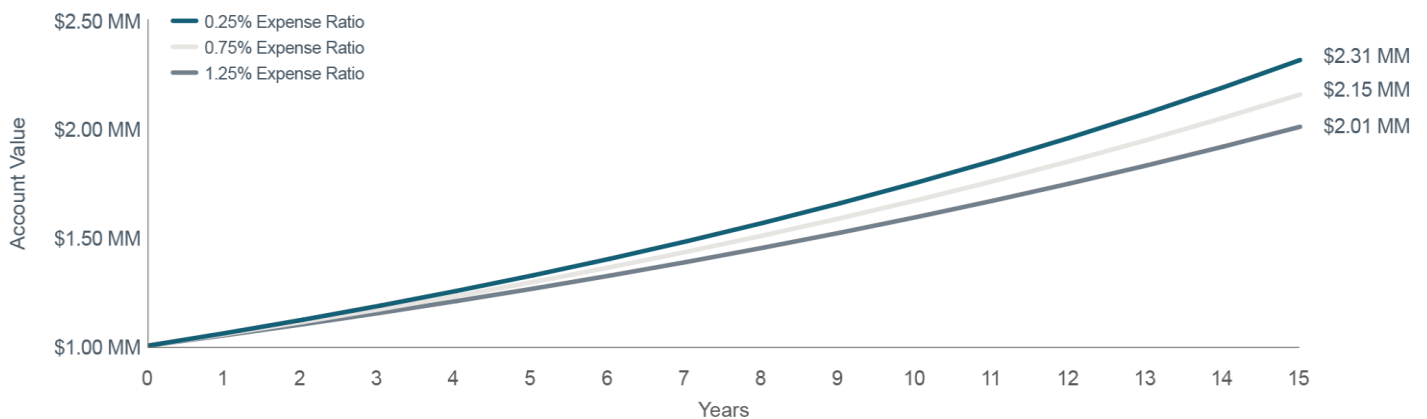


The sample includes funds at the beginning of the 15-year period ending December 31, 2017. Funds are sorted into quartiles within their category based on average expense ratio over the sample period. The chart shows the percentage of winner and loser funds by expense ratio quartile; winners are funds 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)

Exhibit 2. Hypothetical Growth of \$1 Million at 6%, Less Expenses



For illustrative purposes only and not representative of an actual investment. This hypothetical illustration is intended to show the potential impact of higher expense ratios and does not represent any investor's actual experience. Assumes a starting account balance of \$1 million and a 6% compound annual growth rate less expense ratios of 0.25%, 0.75%, and 1.25% applied over a 15-year time horizon. Performance of a hypothetical investment does not reflect transaction costs, taxes, other potential costs, or returns that any investor would have actually attained and may not reflect the true costs, including management fees, of an actual portfolio. Actual results may vary significantly. Changing the assumptions would result in different outcomes. For example, the savings and difference between the ending account balances would be lower if the starting investment amount were lower.

GOING BEYOND THE EXPENSE RATIO

The poor track record of mutual funds with high expense ratios has led many investors to select mutual funds based on expense ratio alone. However, as with a car's sticker price, an expense ratio is not an all-encompassing measure of the cost of ownership. Take, for example, index funds, which often rank near the bottom of their peers on expense ratio.

Index funds are designed to track or match the components of an index formed by an index provider, such as Russell or MSCI. Important decisions in the investment process, such as which securities to include in the index, are outsourced to an index provider and are not within the fund manager's discretion. For example, the prescribed reconstitution schedule for an index, which is the process of deleting or adding certain stocks to the index, may cause index funds to buy stocks when buy demand is high and sell stocks when buy demand is low. This price-insensitive buying and selling may be required so that the index fund can stay true to its investment mandate of

tracking an underlying index. This can result in suboptimal transaction prices for the index fund and diminished overall returns. In other words, for a given amount of trading (or turnover), the cost per unit of trading may be higher for such a strictly regimented approach to investing. Moreover, this cost will not appear explicitly to investors assessing such a fund on expense ratio alone. Further, because indices are reconstituted infrequently (typically once per year), funds seeking to track them may also be forced to buy and sell holdings based on stale eligibility criteria. For example, the characteristics of a stock considered a value stock¹ as of the last reconstitution date may change over time, but between reconstitution dates, those changes would not affect that stock's inclusion or weighting in a value index. That means incoming cash flows to a value index fund could actually be used to purchase stocks that currently look more like growth stocks² and vice versa. Metaphorically, these managers' attention may be more focused on the rear-view mirror than on the road ahead for investors.

1. A stock trading at a low price relative to a measure of fundamental value, such as book value or earnings.

2. A stock trading at a high price relative to a measure of fundamental value, such as book value or earnings.

Total Cost of Ownership

(continued)

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.

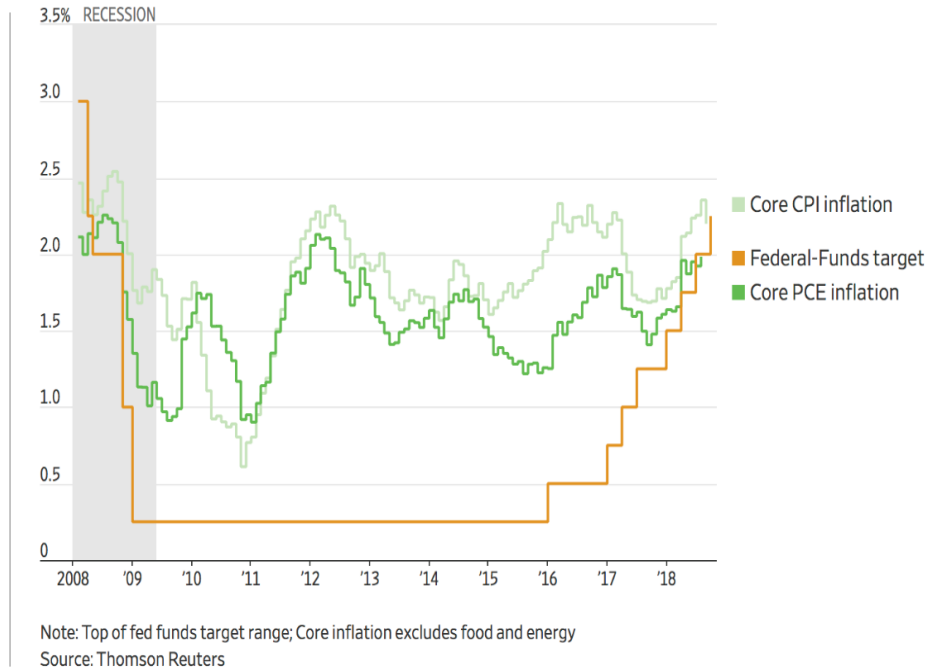
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Inflation is Stable

Third Quarter 2018 Index Returns

The Fed's preferred method of measuring inflation is Core PCE (Personal Consumption Expenditures). As the chart shows, Core PCE is running right around the Fed target of 2%, which is something the Fed is welcoming with open arms as inflation has persisted stubbornly below this mark for the last several years. Of course, inflation measures can be a fickle thing. The Fed will be watching inflation very closely and if it climbs higher and faster than they like, they risk an overheating of the economy and will be forced to raise interest rates more quickly.

With the Fed's latest increase in interest rates towards the end of September 2018, it marks the first time that US interest rates are above core inflation since 2008



Date	Increase (bps)	Level (%)
9/27/2018	25	2.00 – 2.25
6/13/2018	25	1.75 – 2.00
3/22/2018	25	1.50 – 1.75
12/14/2017	25	1.25 – 1.50
6/15/2017	25	1.00 – 1.25
3/16/2017	25	0.75 – 1.00
12/15/2016	25	0.50 – 0.75
12/17/2015	25	0.25 – 0.50

In each of the last four quarters, the Federal Reserve made the decision to increase the Fed Funds rate 25 basis points (bps), which now stands at a level of 2.00% - 2.25%. It is the third increase in 2018 and the 8th since 2015. It is expected there will be one more increase in December 2018 with an additional two increases penciled in for 2019.

Certainly, while there are other events that could change the current trajectory (e.g. inflation moves too high, too fast), the Fed is likely to keep its current course.

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&B) 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.

Fixed Income

Third Quarter 2018 Index Returns

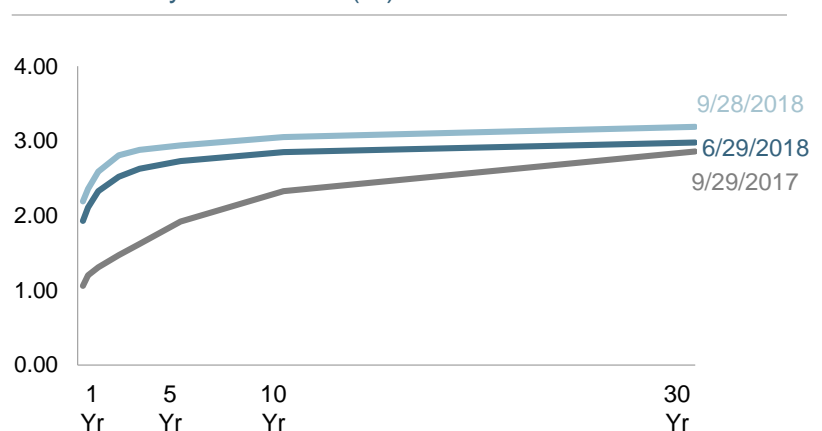
Interest rates increased in the US during the third quarter. The yield on the 5-year Treasury note rose 21 basis points (bps), ending at 2.94%. The yield on the 10-year Treasury note increased 20 bps to 3.05%. The 30-year Treasury bond yield rose 21 bps to 3.19%.

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.

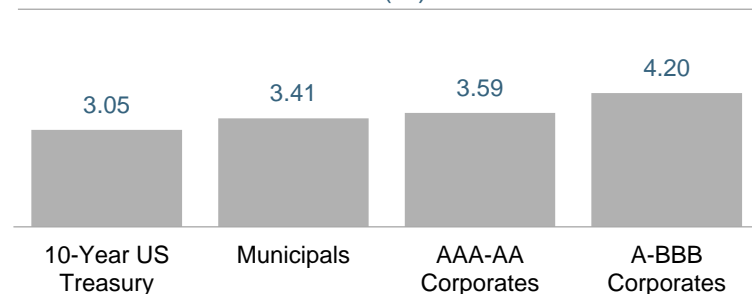
In terms of total return, short-term corporate bonds gained 0.71%, while intermediate-term corporates returned 0.80%.

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 (%)

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

* Annualized

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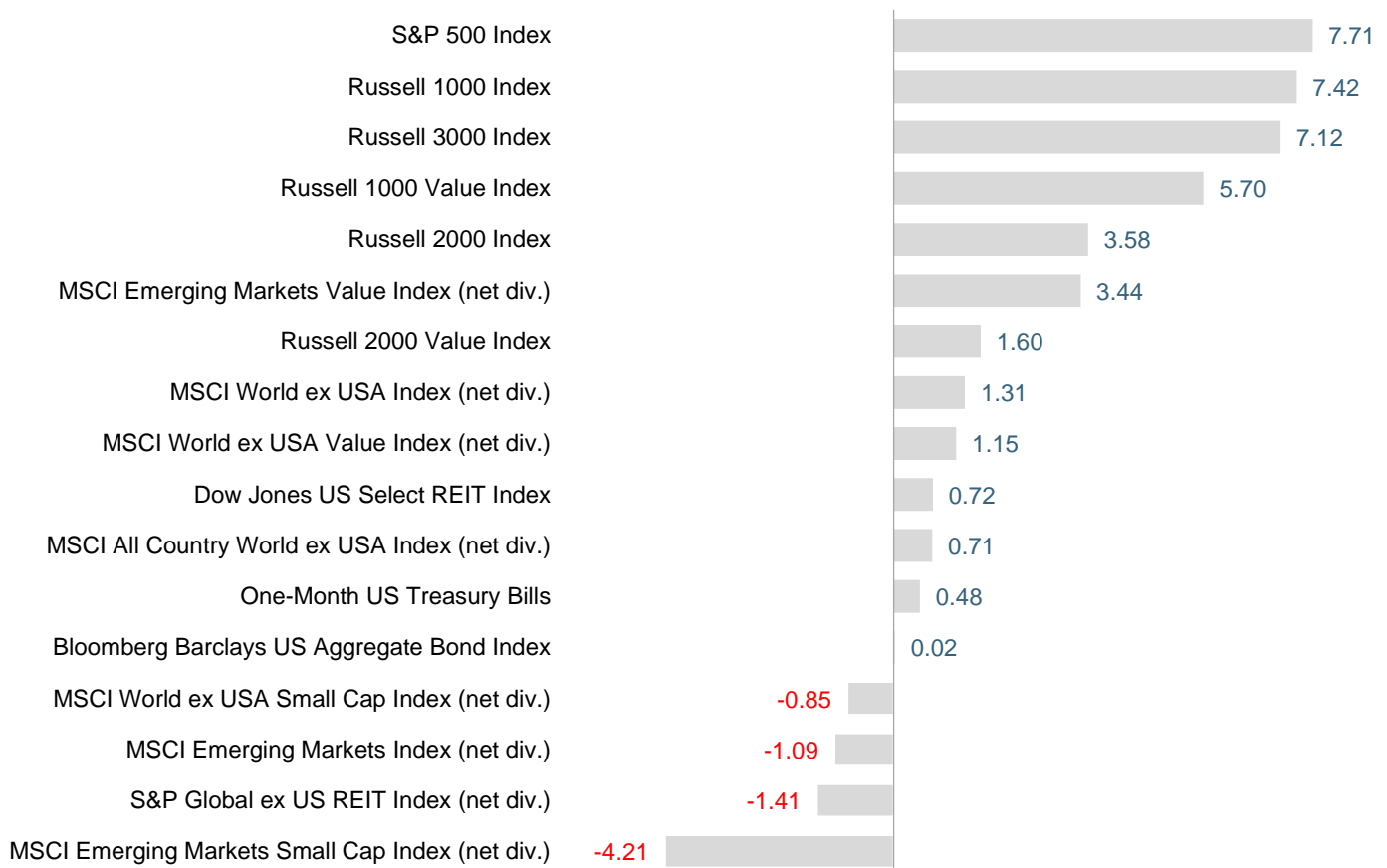
World Asset Classes

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

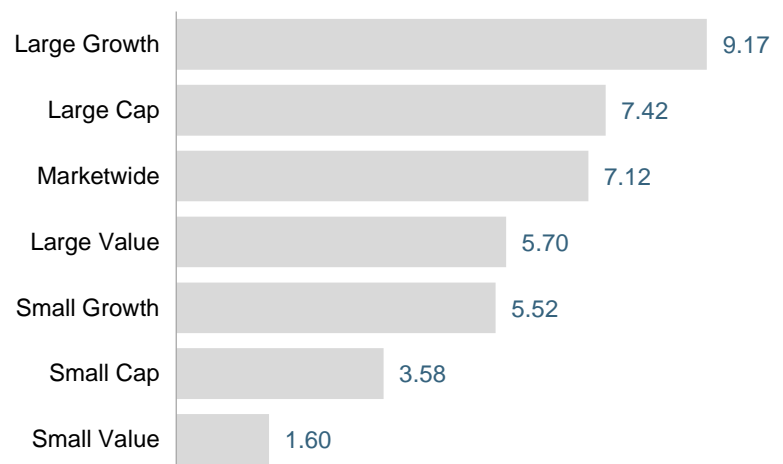
Third Quarter 2018 Index Returns

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

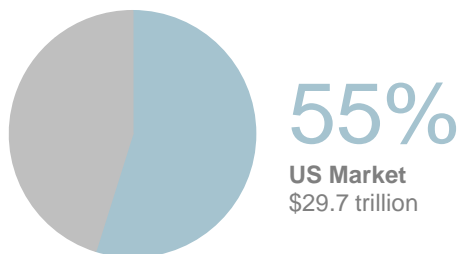
Value underperformed growth in the US across large and small cap stocks.

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

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International Developed Stocks

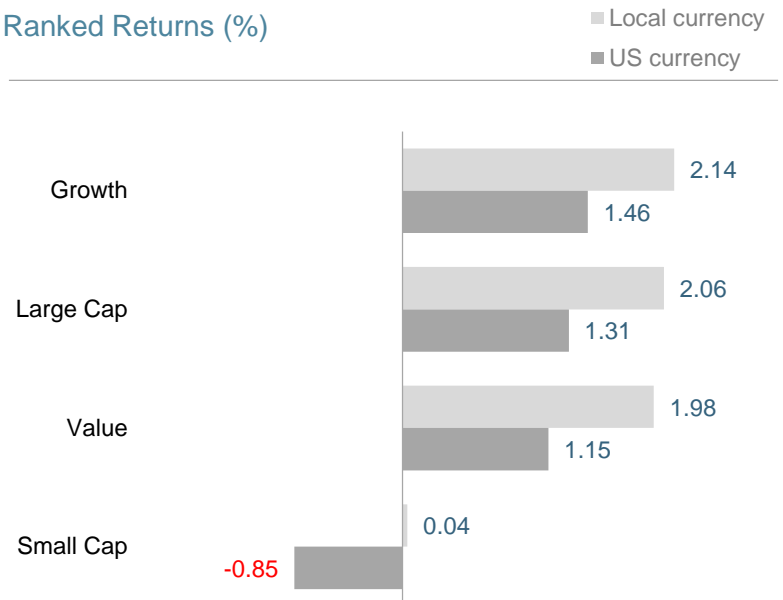
Third Quarter 2018 Index Returns

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.

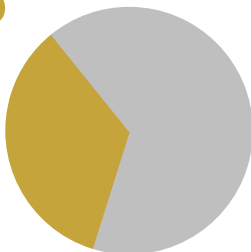
Ranked Returns (%)



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

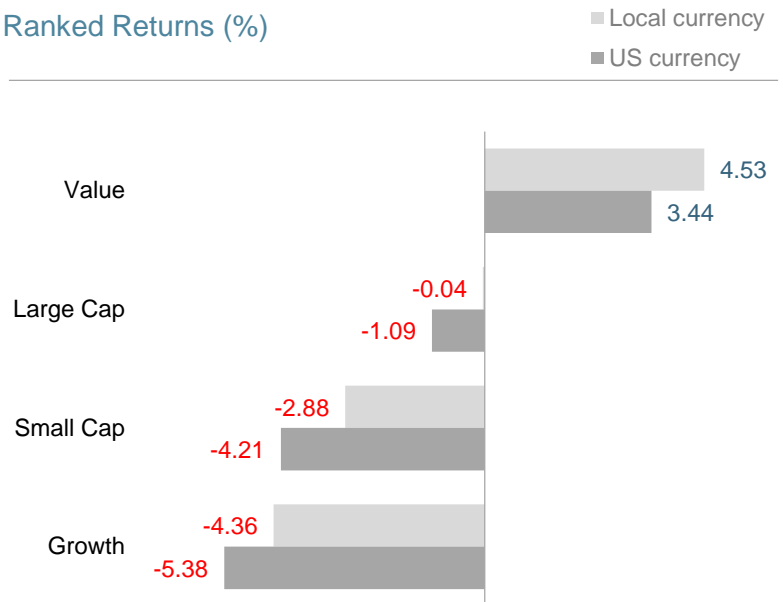
Third Quarter 2018 Index Returns

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.

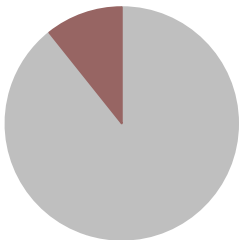
Ranked Returns (%)



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

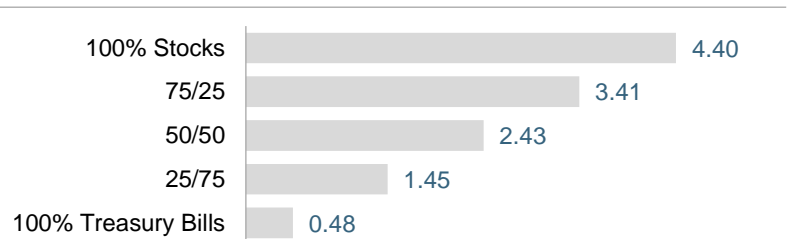
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Impact of Diversification

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 (%)

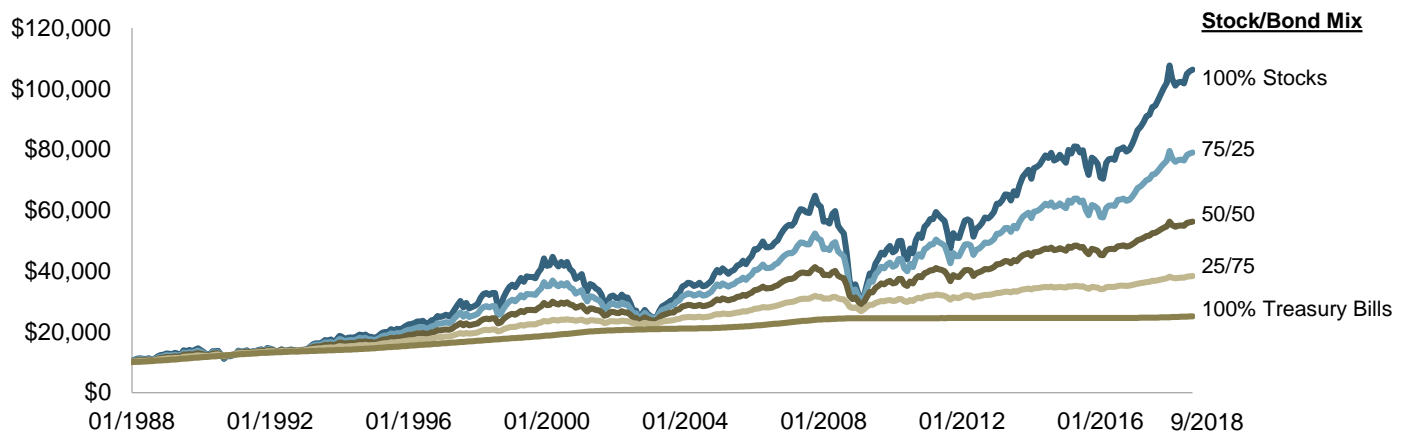


Period Returns (%)

* 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).