HEMINGTON
WEALTH MANAGEMENT

QUARTERLY MARKETS REVIEW

Q2

SECOND QUARTER 2017

Quarterly Topic: When Rates Go Up, Do Stocks Go Down?

SECOND QUARTER 2017

Should stock investors worry about changes in interest rates?

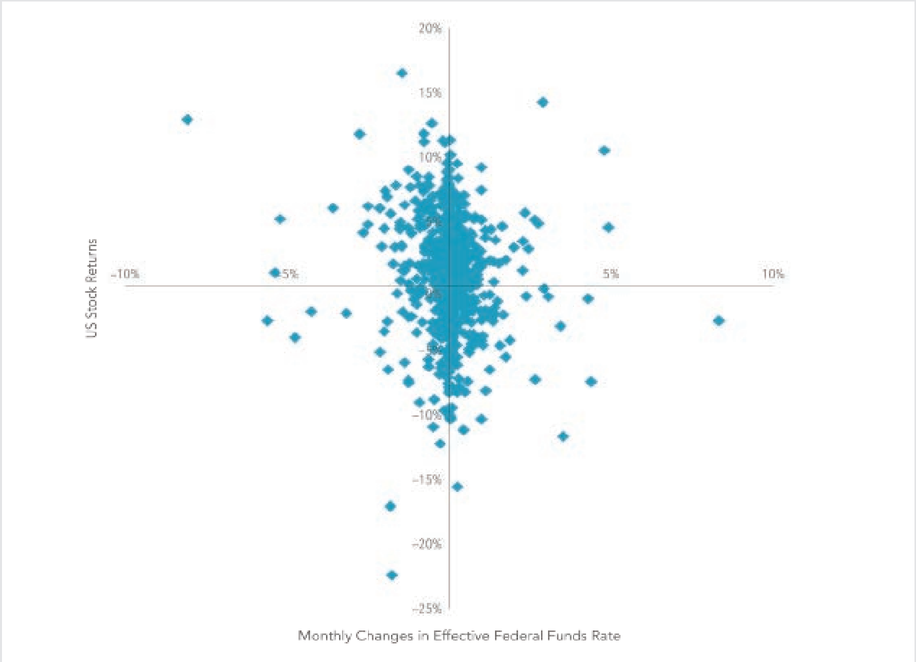
Research shows that, like stock prices, changes in interest rates and bond prices are largely unpredictable.[1] It follows that an investment strategy based upon attempting to exploit these sorts of changes isn't likely to be a fruitful endeavor. Despite the unpredictable nature of interest rate changes, investors may still be curious about what might happen to stocks if interest rates go up.

Unlike bond prices, which tend to go down when yields go up, stock prices might rise or fall with changes in interest rates. For stocks, it can go either way because a stock's price depends on both future cash flows to investors and the discount rate they apply to those expected cash flows. When interest rates rise, the discount rate may increase, which in turn could cause the price of the stock to fall. However, it is also possible that when interest rates change, expectations about future cash flows expected from holding a stock also change. So, if theory doesn't tell us what the overall effect should be, the next question is what does the data say?

Recent Research

Recent research performed by Dimensional Fund Advisors helps provide insight into this question.[2] The research examines the correlation between monthly US stock returns and changes in interest rates.[3] **Exhibit 1** shows that while there is a lot of noise in stock returns and no clear pattern, not much of that variation appears to be related to changes in the effective federal funds rate.[4]

Exhibit 1. Monthly US Stock Returns against Monthly Changes in Effective Federal Funds Rate, August 1954–December 2016



Monthly US stock returns are defined as the monthly return of the Fama/French Total US Market Index and are compared to contemporaneous monthly changes in the effective federal funds rate. Bond yield changes are obtained from the Federal Reserve Bank of St. Louis.

1. See, for example, Fama 1976, Fama 1984, Fama and Bliss 1987, Campbell and Shiller 1991, and Duffee 2002.
2. Wei Dai, "Interest Rates and Equity Returns" (Dimensional Fund Advisors, April 2017).
3. US stock market defined as Fama/French Total US Market Index.
4. The federal funds rate is the interest rate at which depository institutions lend funds maintained at the Federal Reserve to another depository institution overnight.

Quarterly Topic: When Rates Go Up, Do Stocks Go Down? Continued

For example, in months when the federal funds rate rose, stock returns were as low as –15.56% and as high as 14.27%. In months when rates fell, returns ranged from –22.41% to 16.52%. Given that there are many other interest rates besides just the federal funds rate, Dai also examined longer-term interest rates and found similar results.

So to address our initial question: when rates go up, do stock prices go down? The answer is yes, but only about 40% of the time. In the remaining 60% of months, stock returns were positive. This split between positive and negative returns was about the same when examining all months, not just those in which rates went up. In other words, there is not a clear link between stock returns and interest rate changes.

Conclusion

There's no evidence that investors can reliably predict changes in interest rates. Even with perfect knowledge of what will happen with future interest rate changes, this information provides little guidance about subsequent stock returns. Instead, staying invested and avoiding the temptation to make changes based on short-term predictions may increase the likelihood of consistently capturing what the stock market has to offer.

Glossary

Discount Rate: Also known as the "required rate of return," this is the expected return investors demand for holding a stock.

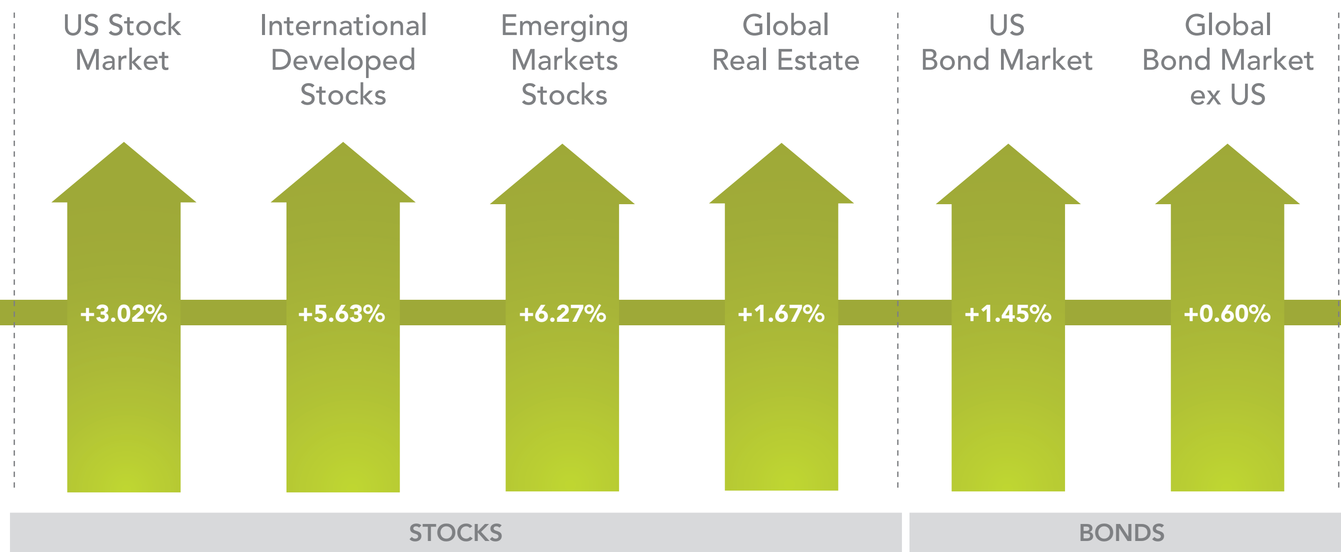
Correlation: A statistical measure that indicates the extent to which two variables are related or move together. Correlation is positive when two variables tend to move in the same direction and negative when they tend to move in opposite directions.

Index Descriptions

Fama/French Total US Market Index: Provided by Fama/French from CRSP securities data. Includes all US operating companies trading on the NYSE, AMEX, or Nasdaq NMS. Excludes ADRs, investment companies, tracking stocks, non-US incorporated companies, closed-end funds, certificates, shares of beneficial interests, and Berkshire Hathaway Inc. (Permco 540).

Market Summary: Index Returns

SECOND QUARTER 2017



Since Jan. 2001	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
Avg. Quarterly Return	1.9%	1.5%	3.1%	2.7%	1.2%	1.1%
Best Quarter	16.8% Q2 2009	25.9% Q2 2009	34.7% Q2 2009	32.3% Q3 2009	4.6% Q3 2001	5.5% Q4 2008
Worst Quarter	-22.8% Q4 2008	-21.2% Q4 2008	-27.6% Q4 2008	-36.1% Q4 2008	-3.0% Q4 2016	-3.2% 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. Bloomberg Barclays data provided by Bloomberg. Citi fixed income indices copyright 2017 by Citigroup.

Impact of Diversification: Index Returns

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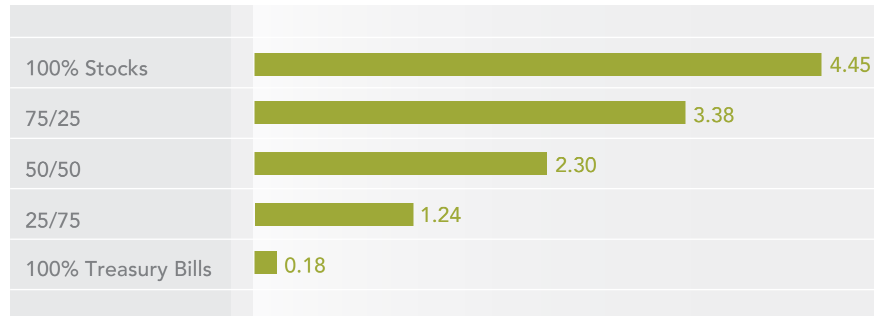
These portfolios illustrate the performance of different global stock/bond mixes. Mixes with larger allocations to stocks are considered riskier but have higher expected returns over time.

Ranked Returns for the Quarter (%)



Growth of Wealth: The Relationship Between Risk and Return

Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV[1]
100% Stocks	11.82	19.42	5.39	11.14	4.27	16.96
75/25	8.84	14.41	4.17	8.38	3.60	12.71
50/50	5.93	9.57	2.89	5.62	2.73	8.46
25/75	3.08	4.90	1.56	2.87	1.68	4.22
100% Treasury Bills	0.29	0.40	0.17	0.12	0.45	0.29

* Annualized

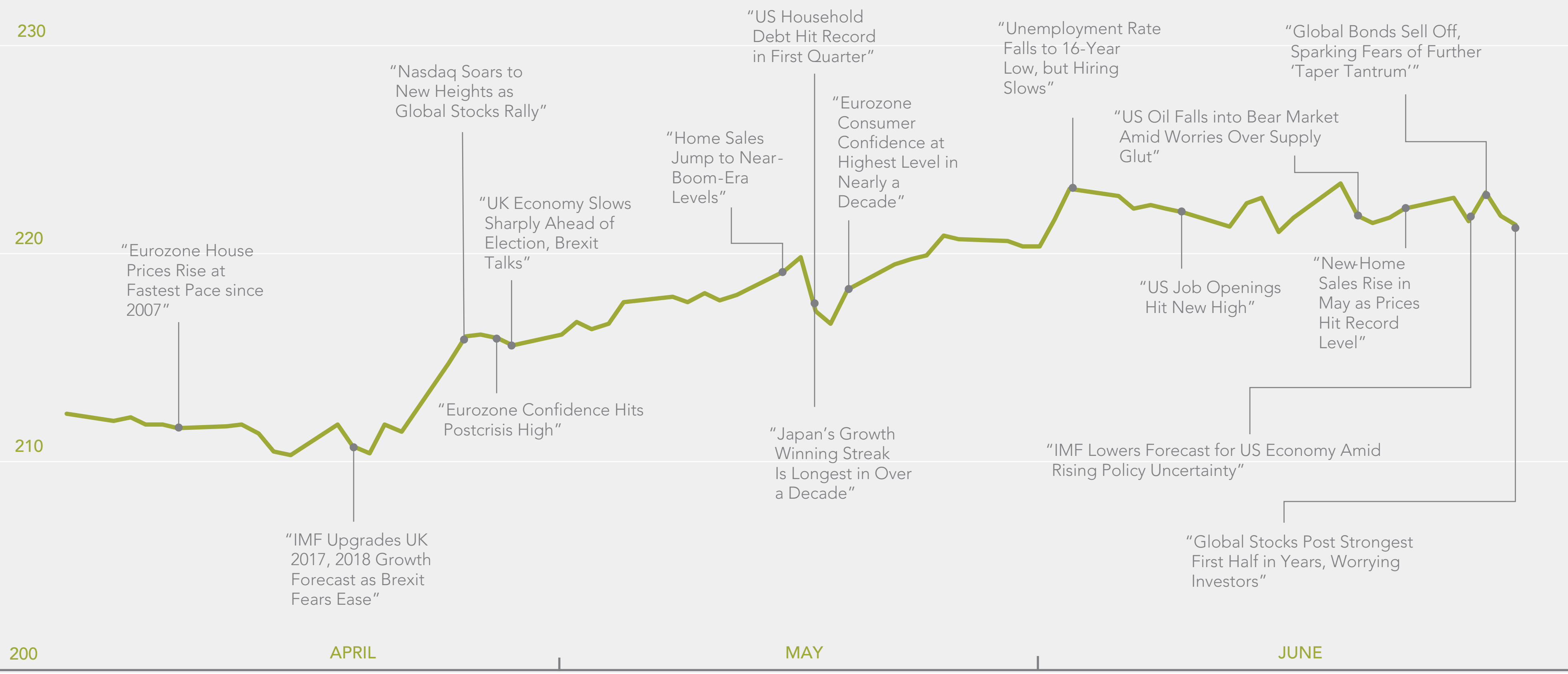
1. STDEV (standard deviation) is a measure of the variation or dispersion of a set of data points. Standard deviations are often used to quantify the historical return volatility of a security or portfolio.

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).

World Stock Market Performance: Selected Headlines

SECOND QUARTER 2017

MSCI All Country World Index with Selected Headlines from Q2 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 2017, 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: Selected Headlines

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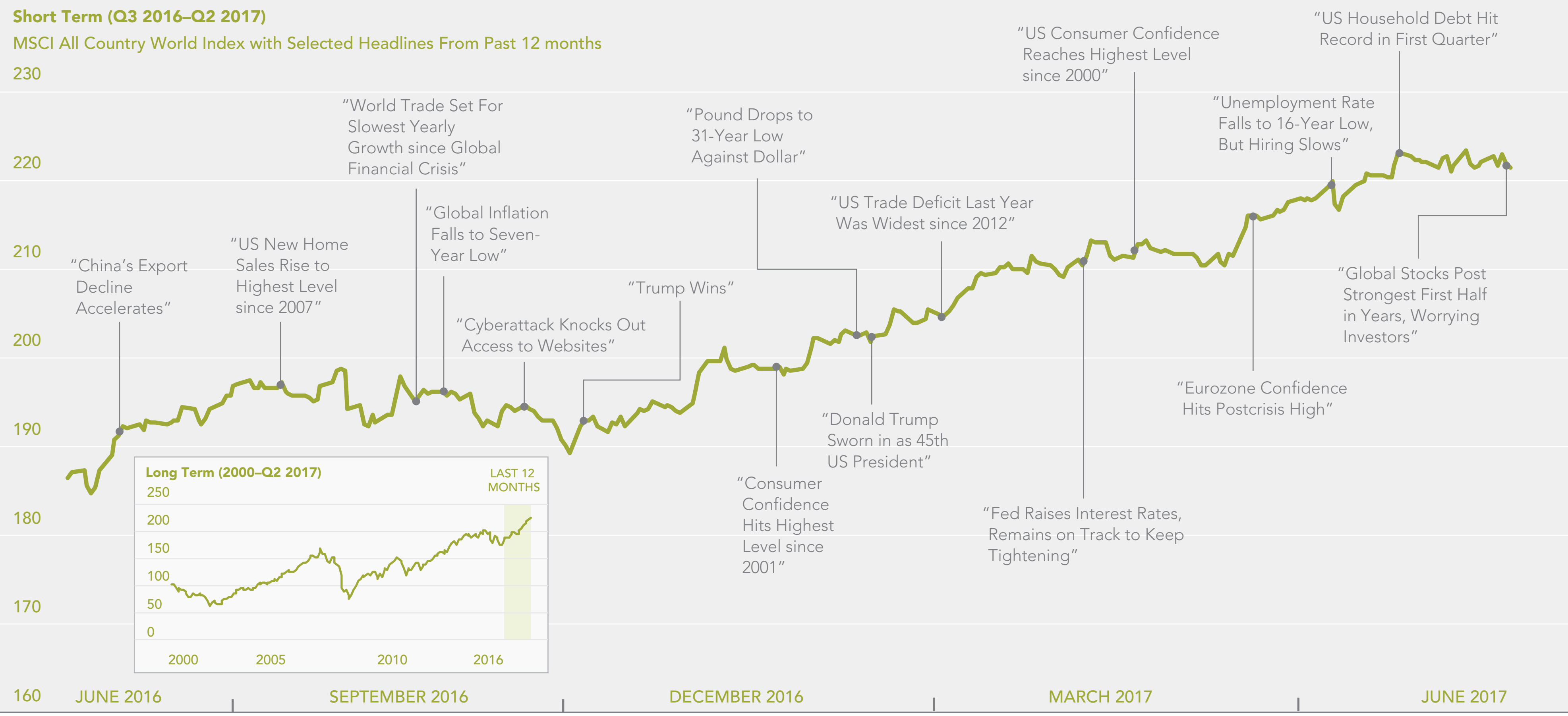

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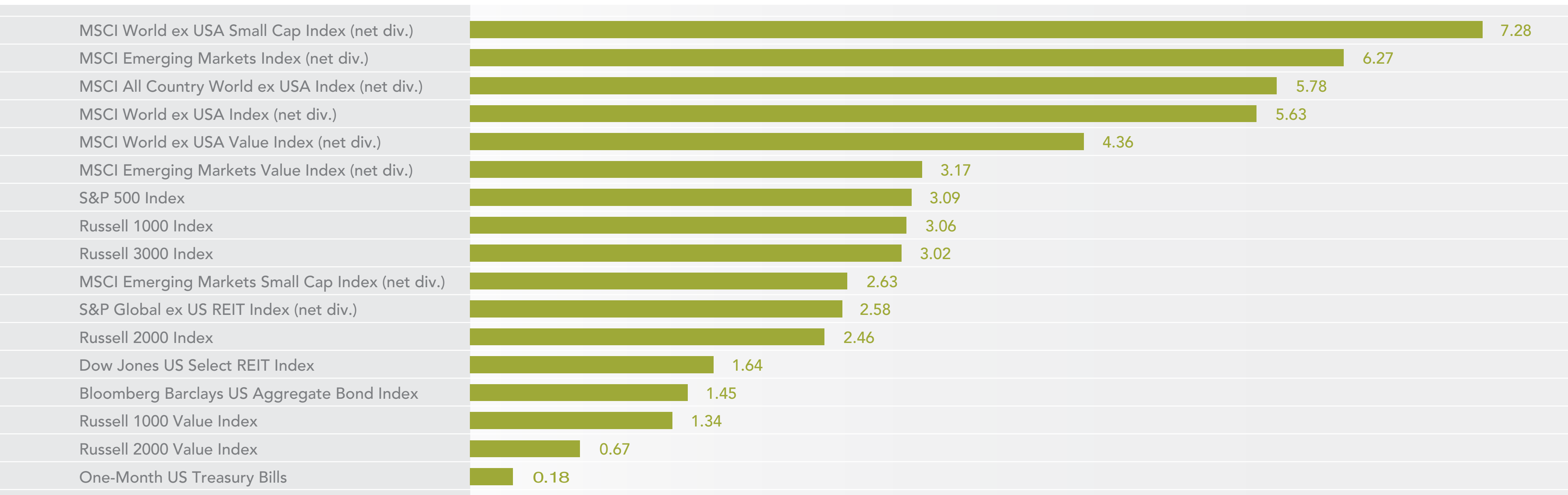
World Asset Classes: Index Returns (%)

SECOND QUARTER 2017

Looking at broad market indices, non-US developed markets and emerging markets recorded similar returns, outperforming the US during the quarter.

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



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About Hemington Wealth Management

Hemington Wealth Management provides high net worth individuals and families with a broad range of wealth management services including portfolio management. We are collaborative, accessible and responsive, making it easy for clients to work with our team.

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