

T I M O N I E R

Wealth Beyond Financial™

From the Engine Room

2nd Quarter 2017



Quarterly Market Review

Second Quarter 2017

This report features world capital market performance and a timeline of events for the last 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.

*"The best way to predict the future...
is to create it!"*

Overview

Summer Reflections

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

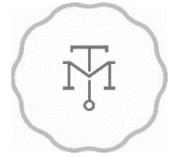
Fixed Income

Impact of Diversification

Economic Chart of the Quarter

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

Summer Reflections



*"Sweet are the uses of adversity,
Which, like the toad, ugly and venomous,
Wears yet a precious Jewel in its head;
And this our life, exempt from public haunt,
Finds tongues in trees, books in the running brooks,
Sermons in stones, and good in everything."*

from *As You Like It*, by William Shakespeare

I feel inspired to take advantage of the calm and ever plodding improvement of global economies that are moving in unique synchronization. I would like to share an article of perspective about the nature of wealth, by Madisyn Taylor, author and curator of the **DailyOM**. It is a perfect reflection of my own views. I have said often in my client conferences that all energy is neutral. Nuclear power is neither good or bad. You can heat homes with it or destroy mass humanity with it. It is the character(s) revealed through their use of it, that makes it good or bad, not the tool itself. We have business systems, political systems, security systems, family systems that in this period of time could render an observation of broken-ness. But, it is not the systems that are broken, it is the characters within these systems that are broken. Once humankind introspects that we are all connected and that each affects the other, you will see these systems begin to function in a more co-operative productive way. In the meantime, the work begins with each of us. Worry not how long it will take our world to change. Focus on what you can control...and it begins with your next thought!

Wealth is Neutral

An Instrument of Change

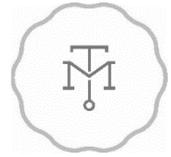
by Madisyn Taylor

At its most basic, money is a tool that enables us to meet our individual needs. As a form of potential energy that empowers us to generate change, it is neither good or bad. Yet many people react emotionally to issues concerning finances, unconsciously condemning currency itself, the manner in which money is spent, and people who live lives of financial abundance. Individuals who are rich in gifts such as high intelligence are acknowledged for their positive traits while those who have acquired material riches or aspire to become wealthy are frequently judged harshly. However, wealth is not a trait upon which judgement can be legitimately passed. It tells us nothing about how a person lives, what they believe in, whom they care for, or the scope of their values. Like any blessing, wealth is merely an instrument of purpose that can be used both constructively and destructively.

From an early age, people learn to court wealth while simultaneously associating money with greed, selfishness, and unethical behavior. Consequently, this idea becomes entrenched in their hearts as envy. To attain a balanced and rational comprehension of money, as well as a fairer perspective of wealth, we need to recognize that outward manifestations of wealth tell us little about the individuals enjoying those blessings. When we feel the finger of jealousy prompting us to draw unflattering conclusions about people whose lives seem more financially secure than our own, we should remind ourselves that there are many elements of their circumstances we cannot see. Their wealth may be the result of long hours of taxing labor, they may donate a large

"If you can't control your MIND, everything & everyone else WILL!"

Dr. Joe Dispenza, Neuroscientist, Lecturer, & Author



percentage of their resources to charitable causes, or their bounty may be an incidental aspect of life spent doing what they love. Ultimately, we can heal our hurtful associations with money by turning a blind eye toward both wealth and poverty when interacting with others and instead focusing on the individual before us.

If you take a moment to consider your own feelings regarding money and wealth, you may discover that you equate financial prosperity with happiness, power, security, independence, or self-indulgence. Money itself however, is none of these things.

You can begin developing a healthier view of wealth by simply accepting that while some possess great wealth and others do not, we all have the potential to create lives of beauty, substance, and wisdom using the resources we have been granted.

For more transformational insights for wealth and well-being, I would encourage you to visit Madisyn's website at www.dailyom.com.

by Madisyn Taylor

I offered this article for you to digest as a way of putting money in its proper role in our lives. As a culture of people in the United States, we have created 50% of the world's wealth while representing just 4.5% of the world's population. And yet, as a society we stress about money every day. Even the wealthy feel stressed when watching the temporary declines of their portfolios over time. I know, I'm the therapist in the emergency room during these times. I also know stress...creates *dis-ease!*

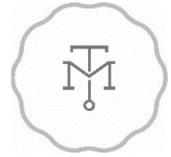
I now offer you a second message that will give you the foundation needed to heal the pains that money and life can present on a daily basis. For many, it will be a reminder of what you have already mastered. For others, it may be a prod on how to get back on the track of enJOYing your life. For all, this message will reveal the missing element of an immeasurable number of souls of which we share this planet... and is the ingredient necessary for a path to living well. The following is written by James Hughes, a sixth-generation counselor-at-law and industry icon to family governance and wealth preservation.

The excerpt is from his classic, ***"Family Wealth: How Family Members Preserve Human, Intellectual, and Financial Assets for Generations."***

"Successful long-term wealth preservation requires the creation and maintenance of a system of governance or joint decision with the ultimate goal of making slightly more positive decisions than negative ones over a period of at least one hundred years."

This book does not contain a chapter dealing with spirituality and its fundamental role in family wealth preservation. Every family I have observed that is successfully preserving its wealth embodies the five virtues of truth, beauty, goodness, community, and compassion. Transcending all of these is its reflection of love. Families who preserve their wealth successfully

"You do not have a soul...You ARE a soul. What you have is a body!"
Clive Staples Lewis, famed Irish intellectual and author



reflect these virtues in their relationships both with family members *and* with all persons outside the family. I am convinced that without this spiritual component, a family cannot succeed in preserving itself, since its value system will fail and with that failure will come its disintegration.

Why, if this spiritual component is so fundamental, is it not discussed as part of my philosophy of wealth preservation? Because it is so basic that I am not sure a family can consider itself a functioning family if it is not already reflecting, expressing, and practicing these spiritual qualities. Secondly, I feel that my skills to help a family preserve its wealth can be successfully employed only by those families whose ethic includes these spiritual components when they first approach me for advice.

To begin a journey together for the purpose of enhancing the individual pursuit of happiness of each family member without the basic spiritual grounding for such a journey is to assure failure.

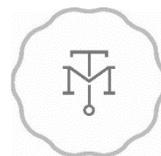
* * * *

In summary, whether one is in the wealth accumulation stage of a career, the wealth drawdown stage of retirement, or the wealth transfer phase of life...having a spiritual inner security is a required foundation to enJOYing your outer securities.

I am in gratitude each day of you allowing Timonier to be a part of this journey with you. **Remain focused on your goals...and not the passing storms and detours that arise from time to time. It's all noise.** Know that we are accountable as your fiduciaries. And our collaborative team of advisors look forward to assisting you in making conscious choices for this one great life you deserve to live. Please contact us any time, if we haven't contacted you first.

Namaste',

Tim L. Baker, CIMA, GFS

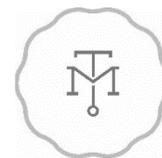


Market Summary

Index Returns

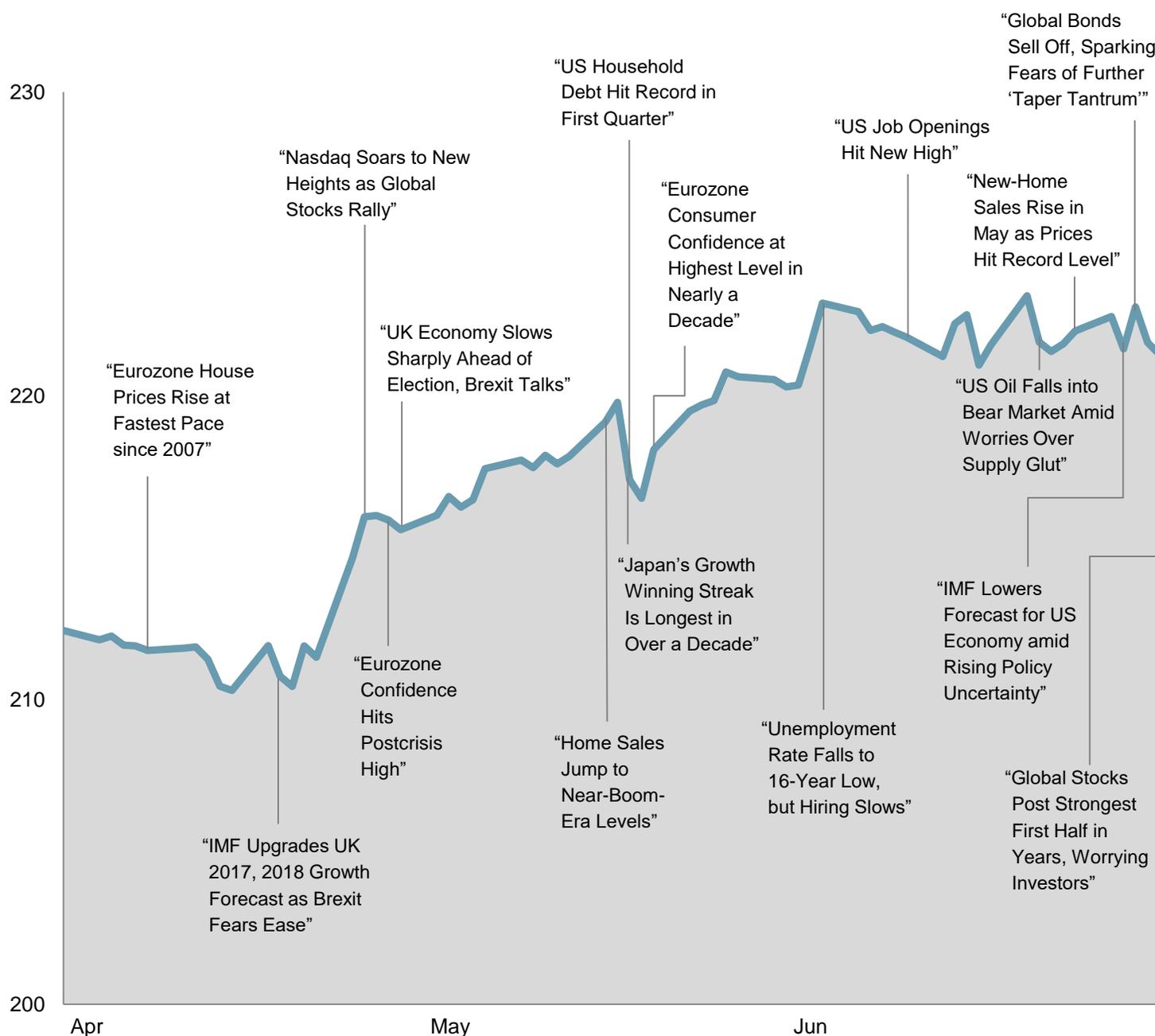
	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
Q2 2017	STOCKS				BONDS	
	3.02%	5.63%	6.27%	1.67%	1.45%	0.60%
						
Since Jan. 2001						
Avg. Quarterly Return	1.9%	1.5%	3.1%	2.7%	1.2%	1.1%
Best Quarter	16.8% Q2 2009	25.9% 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. MSCI data © MSCI 2017, all rights reserved. Bloomberg Barclays data provided by Bloomberg. Citi fixed income indices copyright 2017 by Citigroup.



World Stock Market Performance

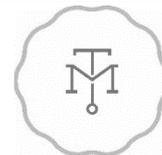
MSCI All Country World Index with selected headlines from Q2 2017



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.

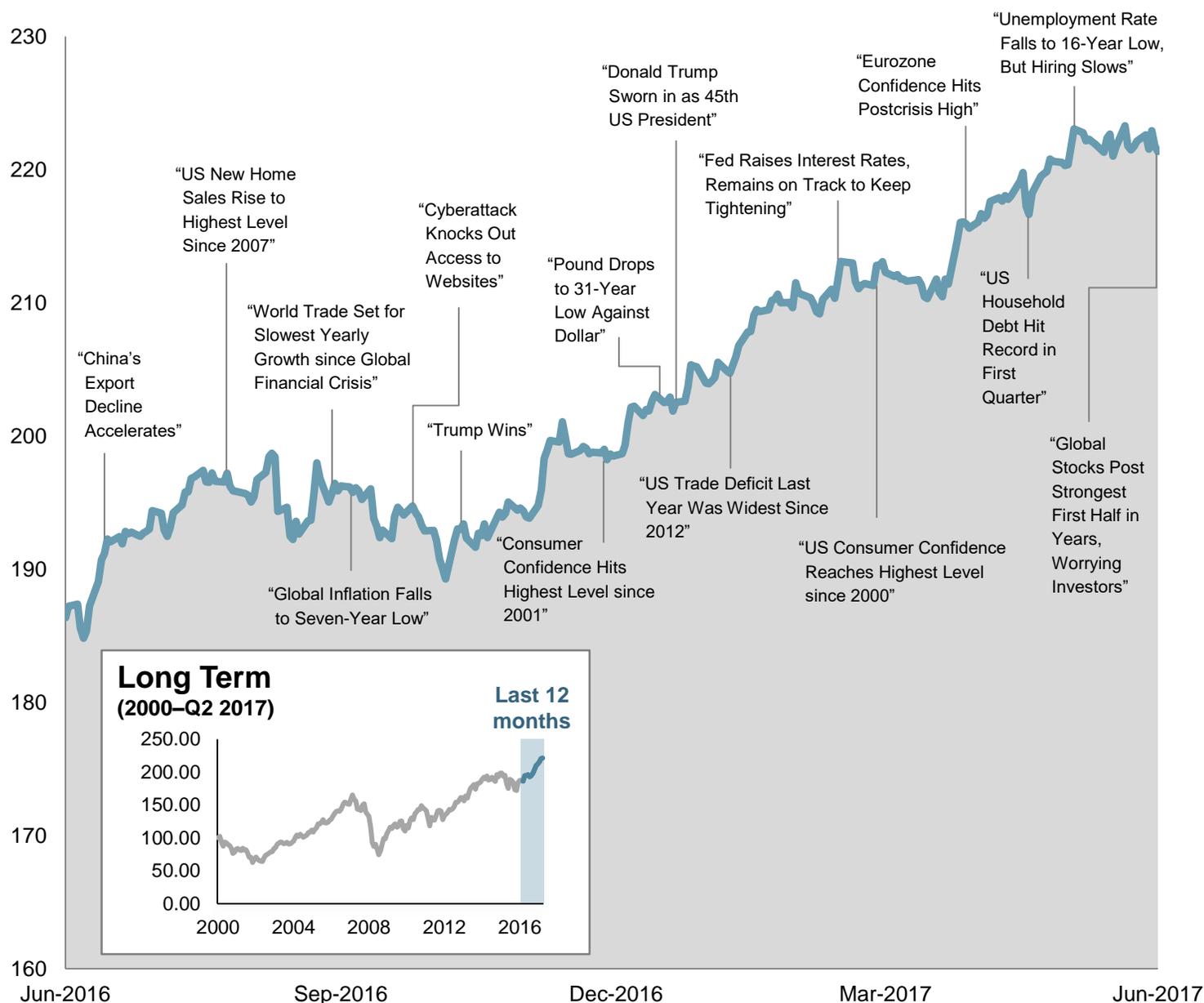
It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.



World Stock Market Performance

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

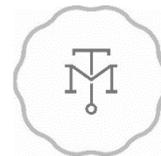
Short Term (Q3 2016–Q2 2017)



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.

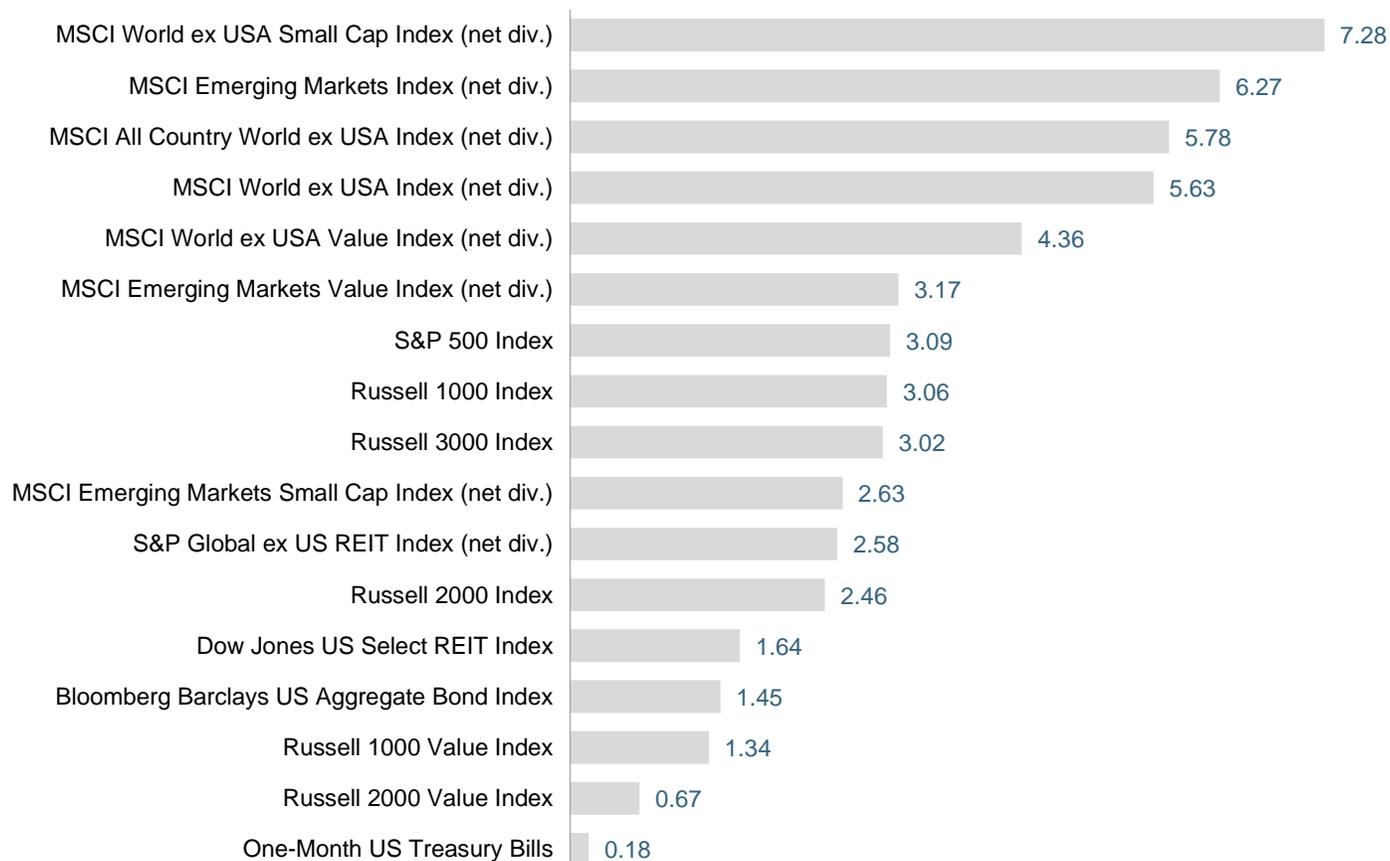


World Asset Classes

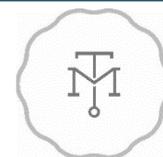
Second Quarter 2017 Index Returns (%)

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.



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. The S&P data is 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. Dow Jones data (formerly Dow Jones Wilshire) provided by Dow Jones Indices. Bloomberg Barclays data provided by Bloomberg. Treasury bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld).



US Stocks

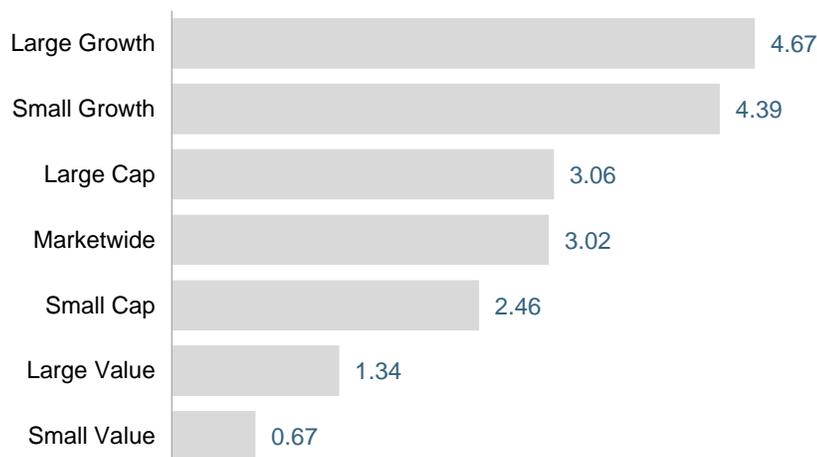
Second Quarter 2017 Index Returns

The broad US equity market posted positive returns for the quarter but underperformed both non-US developed and emerging markets.

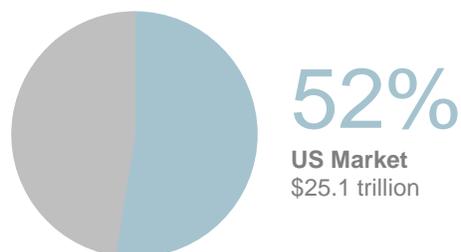
Value underperformed growth indices in the US across all size ranges.

Small caps in the US underperformed large caps.

Ranked Returns for the Quarter (%)



World Market Capitalization—US

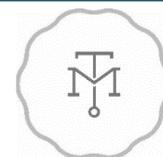


Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Marketwide	8.93	18.51	9.10	14.58	7.26
Large Cap	9.27	18.03	9.26	14.67	7.29
Large Value	4.66	15.53	7.36	13.94	5.57
Large Growth	13.99	20.42	11.11	15.30	8.91
Small Cap	4.99	24.60	7.36	13.70	6.92
Small Value	0.54	24.86	7.02	13.39	5.92
Small Growth	9.97	24.40	7.64	13.98	7.82

* Annualized

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Marketwide (Russell 3000 Index), Large Cap (Russell 1000 Index), Large Cap Value (Russell 1000 Value Index), Large Cap Growth (Russell 1000 Growth Index), Small Cap (Russell 2000 Index), Small Cap Value (Russell 2000 Value Index), and Small Cap Growth (Russell 2000 Growth Index). World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. Russell 3000 Index is used as the proxy for the US market. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2017, all rights reserved.



International Developed Stocks

Second Quarter 2017 Index Returns

In US dollar terms, developed markets outperformed the US equity market and had similar performance to emerging markets indices during the quarter.

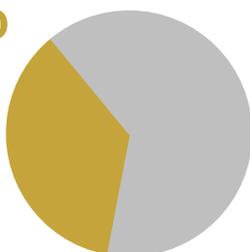
Looking at broad market indices, the value effect was negative across all size ranges in non-US developed markets.

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

World Market Capitalization— International Developed

36%

International
Developed
Market
\$17.5 trillion



Ranked Returns (%)



Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	12.82	19.49	0.67	8.15	1.00
Small Cap	15.45	21.26	4.02	11.43	2.92
Value	10.27	24.24	-0.94	7.69	0.09
Growth	15.57	14.90	2.22	8.54	1.84

* Annualized

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI World ex USA Index), Small Cap (MSCI World ex USA Small Cap Index), Value (MSCI World ex USA Value Index), and Growth (MSCI World ex USA Growth). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI World ex USA IMI Index is used as the proxy for the International Developed market. MSCI data © MSCI 2017, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.



Emerging Markets Stocks

Second Quarter 2017 Index Returns

In US dollar terms, emerging markets indices outperformed the US and recorded similar performance to developed markets outside the US.

Looking at broad market indices, the value effect was negative across all size ranges in emerging markets.

Small caps underperformed large caps in emerging markets.

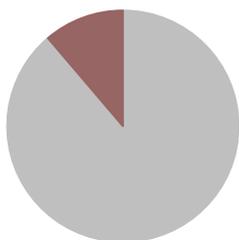
Ranked Returns (%)



World Market Capitalization— Emerging Markets

11%

Emerging Markets
\$5.4 trillion

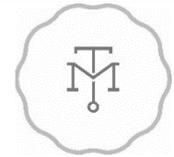


Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	18.43	23.75	1.07	3.96	1.91
Small Cap	15.99	17.03	0.81	5.15	2.17
Value	13.65	21.57	-1.33	1.67	1.53
Growth	23.45	25.99	3.42	6.18	2.22

* Annualized

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI Emerging Markets Index), Small Cap (MSCI Emerging Markets Small Cap Index), Value (MSCI Emerging Markets Value Index), and Growth (MSCI Emerging Markets Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI Emerging Markets IMI Index used as the proxy for the emerging market portion of the market. MSCI data © MSCI 2017, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

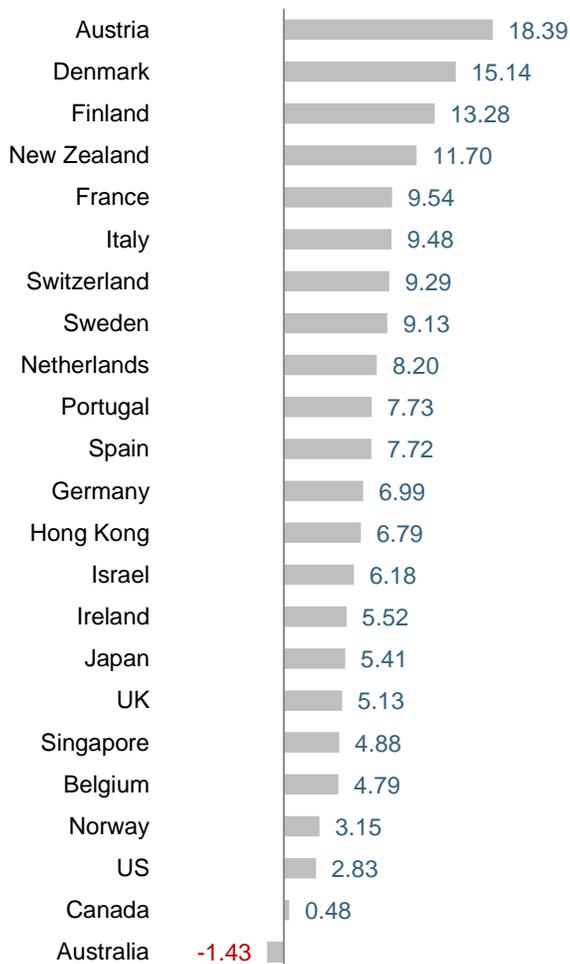


Select Country Performance

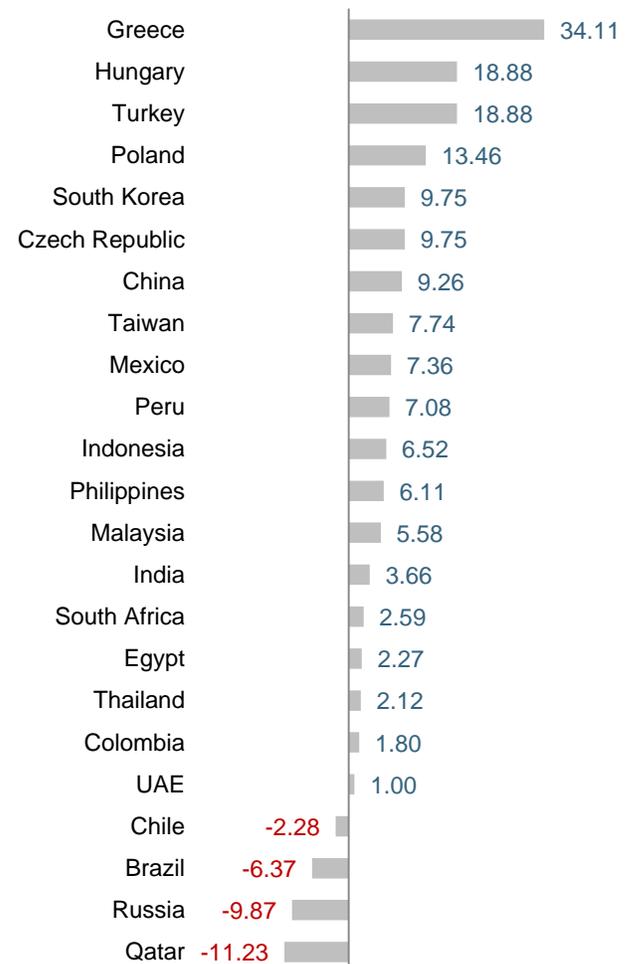
Second Quarter 2017 Index Returns

In US dollar terms, Austria and Denmark recorded the highest country performance in developed markets, while Australia and Canada posted the lowest returns for the quarter. In emerging markets, Greece, Hungary, and Turkey posted the highest country returns, while Qatar and Russia had the lowest performance.

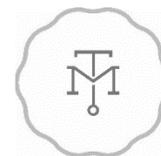
Ranked Developed Markets Returns (%)



Ranked Emerging Markets Returns (%)



Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Country performance based on respective indices in the MSCI World ex US IMI Index (for developed markets), MSCI USA IMI Index (for US), and MSCI Emerging Markets IMI Index. All returns in USD and net of withholding tax on dividends. MSCI data © MSCI 2017, all rights reserved. UAE and Qatar have been reclassified as emerging markets by MSCI, effective May 2014.

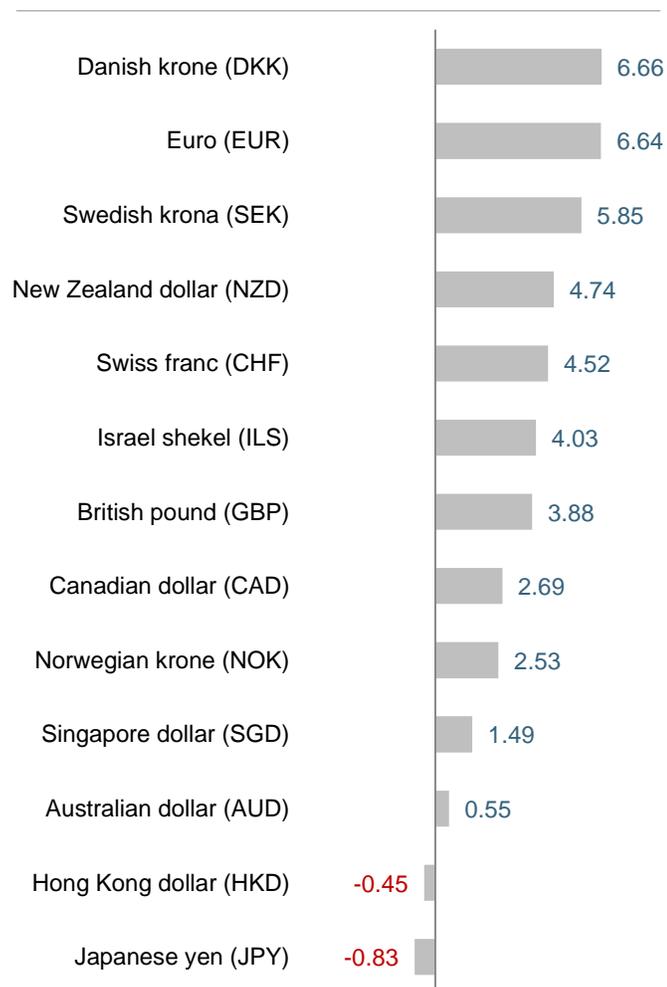


Select Currency Performance vs. US Dollar

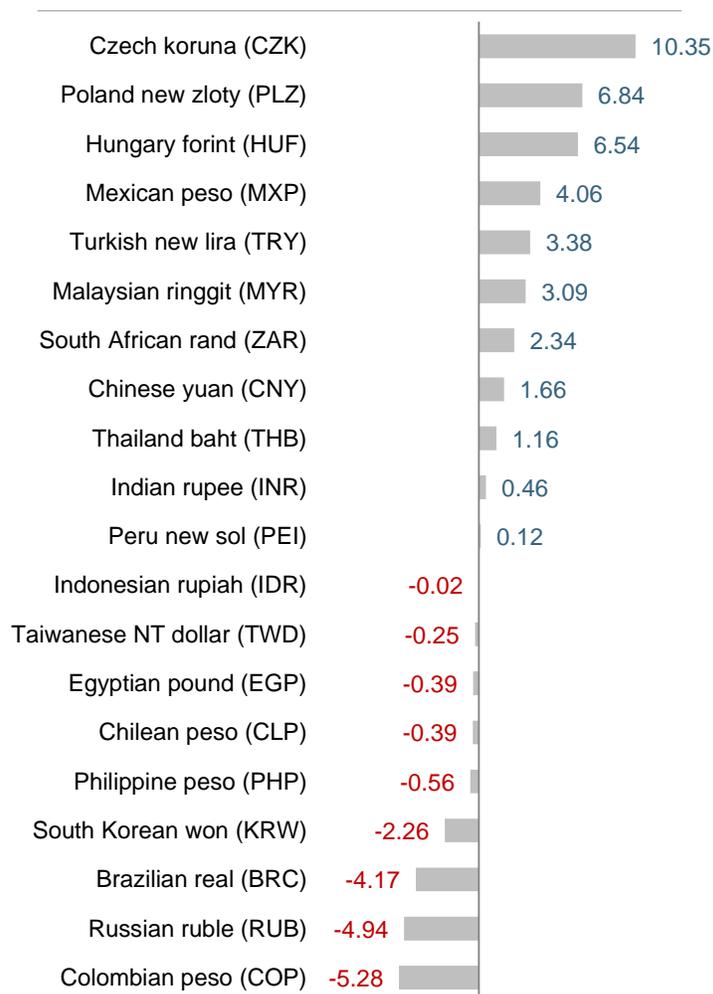
Second Quarter 2017

Most non-US developed currencies appreciated against the US dollar during the quarter, with the Danish krone and the euro experiencing the biggest gains. Emerging markets currencies were mixed vs. the US dollar. The Czech koruna appreciated by more than 10%, while the Russian ruble, Brazilian real, and Colombian peso depreciated by more than 4%.

Ranked Developed Markets Returns (%)

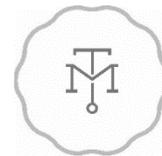


Ranked Emerging Markets Returns (%)



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.

MSCI data © MSCI 2017, all rights reserved.

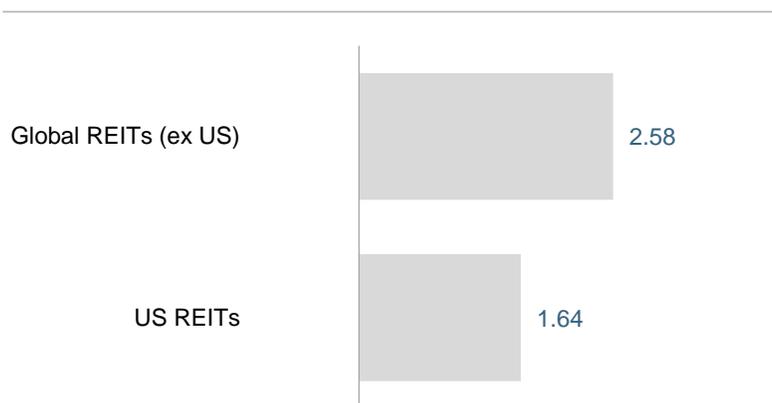


Real Estate Investment Trusts (REITs)

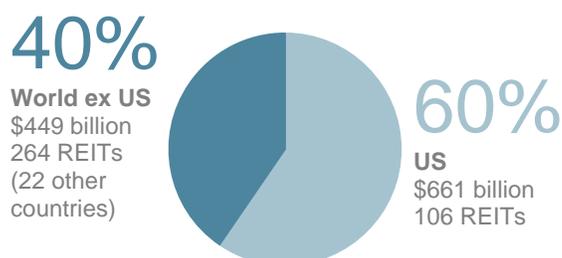
Second Quarter 2017 Index Returns

Non-US real estate investment trusts outperformed US REITs.

Ranked Returns (%)



Total Value of REIT Stocks

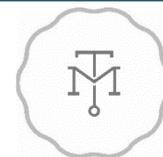


Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
US REITs	1.36	-2.43	8.04	9.00	5.42
Global REITs (ex US)	6.30	-0.37	1.13	6.86	0.20

* Annualized

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

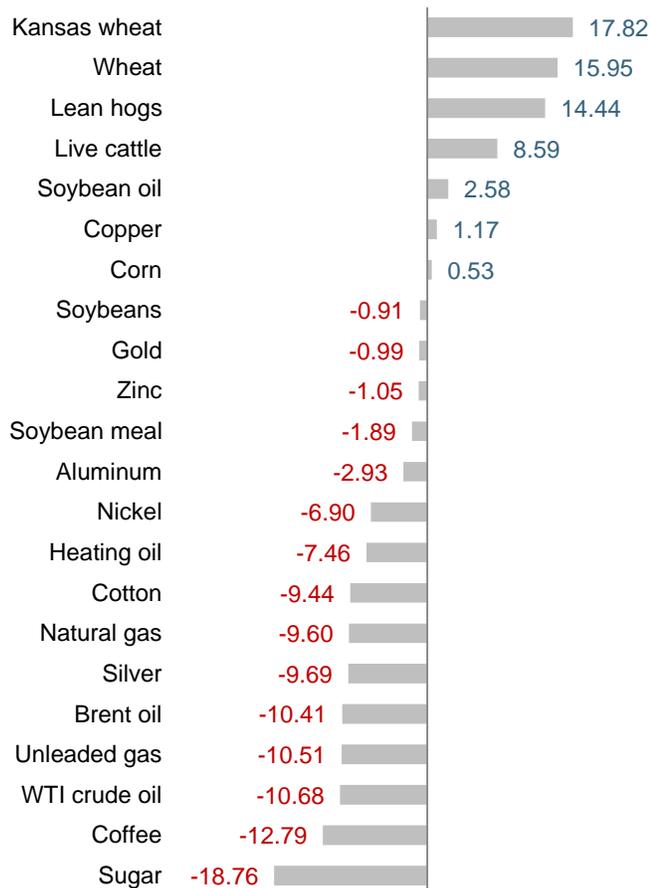
Second Quarter 2017 Index Returns

The Bloomberg Commodity Index Total Return declined 3.00% during the second quarter.

The livestock and grains complexes led quarterly performance, with lean hogs returning 14.44%, live cattle 8.59%, wheat (Chicago) 15.95%, and wheat (Kansas) 17.82%.

Softs was the worst-performing complex, with sugar and coffee declining 18.76% and 12.79%, respectively. Cotton also experienced a decline, losing 9.44%.

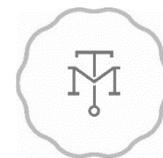
Ranked Returns for Individual Commodities (%)



Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Commodities	-5.26	-6.50	-14.81	-9.25	-6.49

* Annualized



Fixed Income

Second Quarter 2017 Index Returns

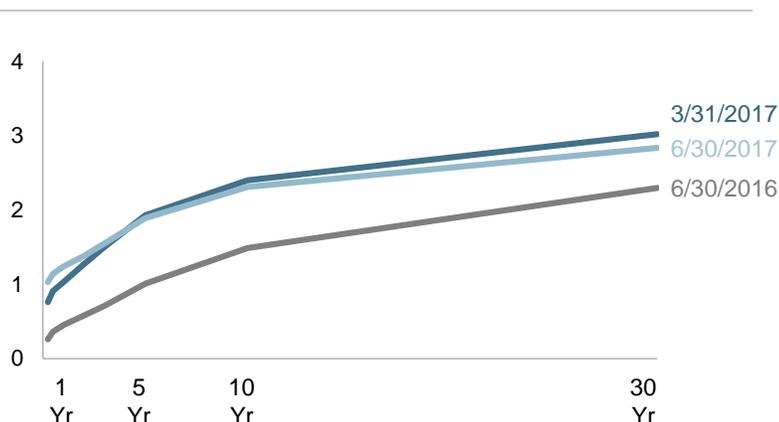
Interest rates were mixed across the US fixed income market during the second quarter. The yield on the 5-year Treasury note decreased 4 basis points (bps) to 1.89%. The yield on the 10-year Treasury note decreased 9 bps to 2.31%. The 30-year Treasury bond yield decreased 18 bps to finish at 2.84%.

The yield on the 1-year Treasury bill rose 21 bps to 1.24%, and the 2-year Treasury note yield rose 11 bps to 1.38%. The yield on the 3-month Treasury bill climbed 27 bps to 1.03%, while the 6-month Treasury bill yield increased 23 bps to 1.14%.

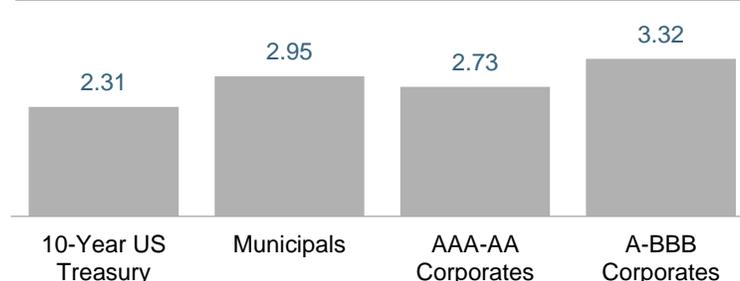
In terms of total returns, short-term corporate bonds gained 0.59% and intermediate corporates gained 1.49%.

Short-term municipal bonds gained 0.56%, while intermediate muni bonds returned 1.97%. Revenue bonds gained 2.19%, outperforming general obligation bonds by 39 bps.

US Treasury Yield Curve (%)



Bond Yields across Issuers (%)

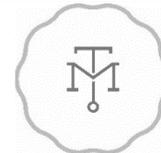


Period Returns (%)

* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Bloomberg Barclays Long US Government Bond Index	5.44	-6.96	5.54	2.82	7.27
Bloomberg Barclays Municipal Bond Index	3.57	-0.49	3.33	3.26	4.60
Bloomberg Barclays US Aggregate Bond Index	2.27	-0.31	2.48	2.21	4.48
Bloomberg Barclays US TIPS Index	0.85	-0.63	0.63	0.27	4.27
BofA Merrill Lynch 1-Year US Treasury Note Index	0.30	0.40	0.41	0.37	1.21
BofA Merrill Lynch Three-Month US Treasury Bill Index	0.31	0.49	0.23	0.17	0.58
Citi World Government Bond Index 1-5 Years (hedged to USD)	0.65	0.28	1.30	1.37	2.52

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). Citi fixed income indices copyright 2017 by Citigroup. The BofA Merrill Lynch Indices are used with permission; © 2017 Merrill Lynch, Pierce, Fenner & Smith Incorporated; all rights reserved. Merrill Lynch, Pierce, Fenner & Smith Incorporated is a wholly owned subsidiary of Bank of America Corporation. The S&P data are provided by Standard & Poor's Index Services Group.

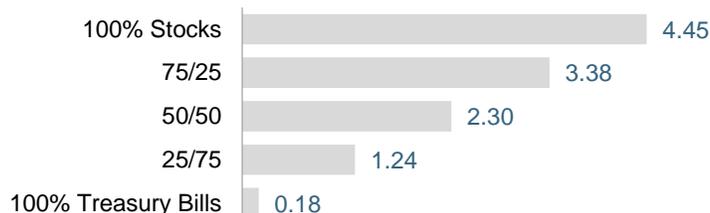


Impact of Diversification

Second Quarter 2017 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 (%)

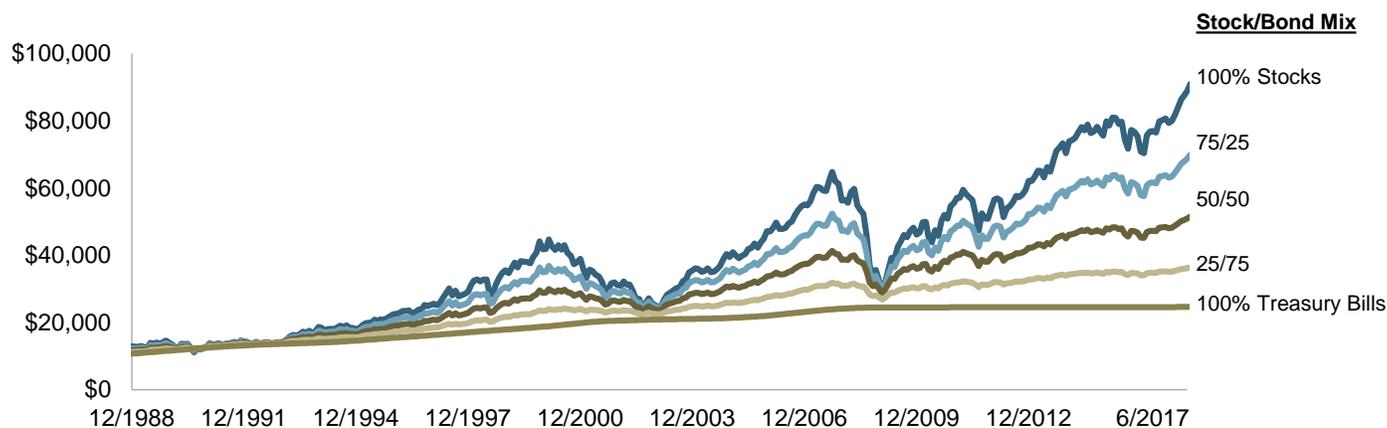


Period Returns (%)

* Annualized

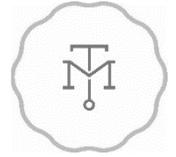
Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV ¹
100% Stocks	11.82	19.42	5.39	11.14	4.27	16.96
75/25	8.84	14.41	4.17	8.38	3.60	12.71
50/50	5.93	9.57	2.89	5.62	2.73	8.46
25/75	3.08	4.90	1.56	2.87	1.68	4.22
100% Treasury Bills	0.29	0.40	0.17	0.12	0.45	0.29

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. Sinquefeld).



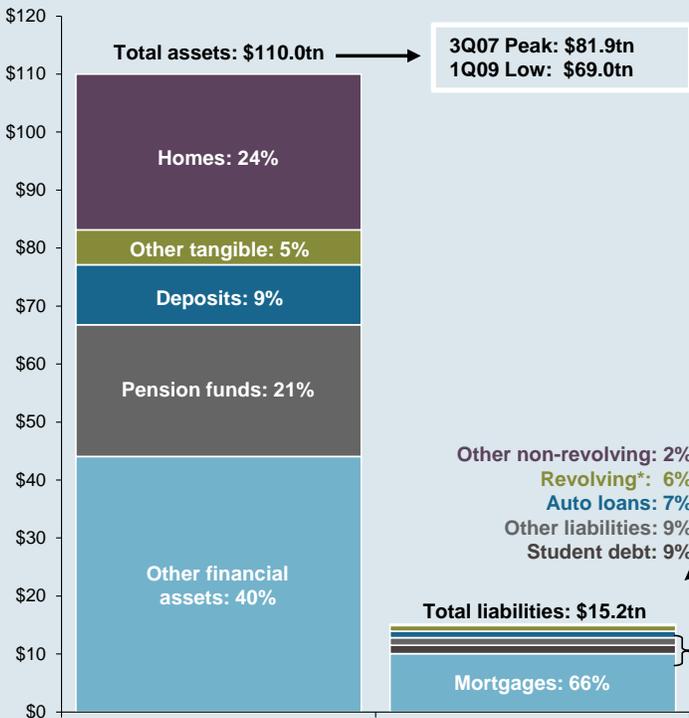
Consumer Finances

With \$12.5 trillion in Cash Deposits & Rising Wages...
the American Consumer is in good shape

Economy

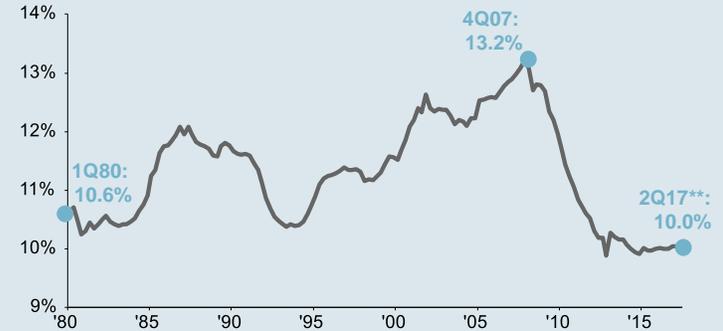
Consumer balance sheet

1Q17, trillions of dollars outstanding, not seasonally adjusted



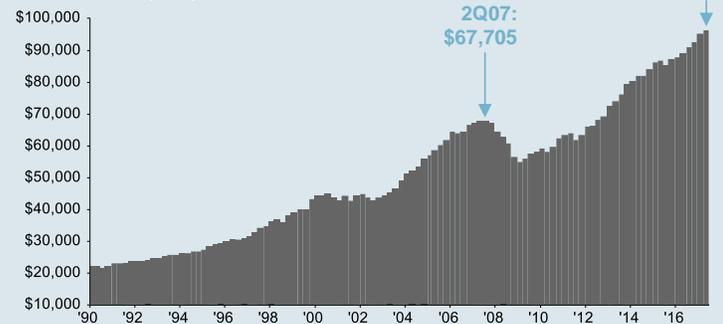
Household debt service ratio

Debt payments as % of disposable personal income, SA



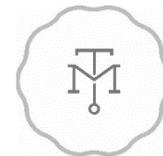
Household net worth

Not seasonally adjusted, USD billions



Source: FactSet, FRB, J.P. Morgan Asset Management; (Top and bottom right) BEA. Data include households and nonprofit organizations. SA – seasonally adjusted.

*Revolving includes credit cards. Values may not sum to 100% due to rounding. **2Q17 figures are J.P. Morgan Asset Management estimates. Guide to the Markets – U.S. Data are as of June 30, 2017.



When Rates Go Up, Do Stocks Go Down?

Second Quarter 2017

Should stock investors worry about changes in interest rates?

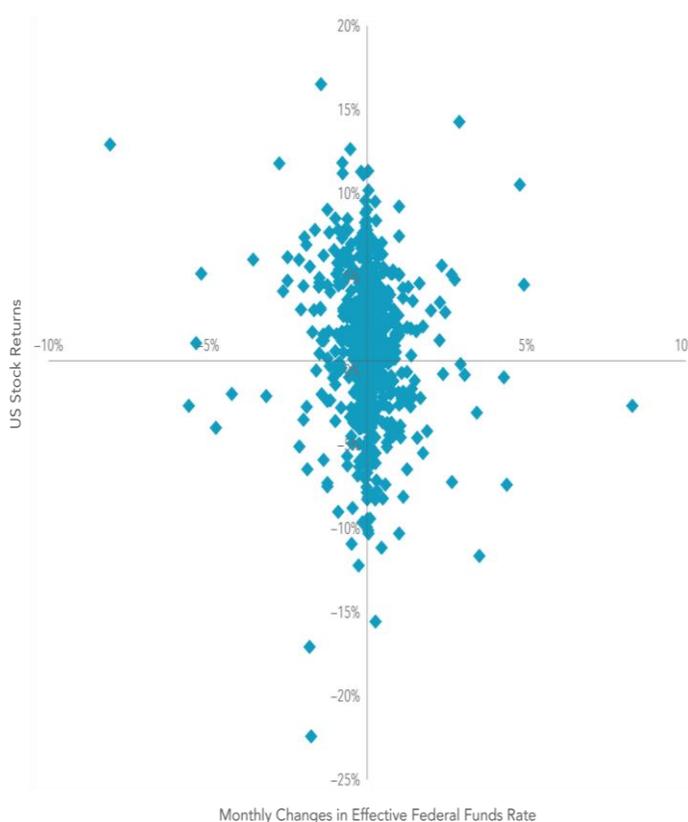
Research shows that, like stock prices, changes in interest rates and bond prices are largely unpredictable.¹ It follows that an investment strategy based upon attempting to exploit these sorts of changes isn't likely to be a fruitful endeavor. Despite the unpredictable nature of interest rate changes, 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



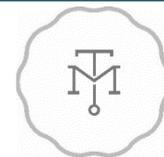
Monthly US stock returns are defined as the monthly return of the Fama/French Total US Market Index and are compared to contemporaneous monthly changes in the effective federal funds rate. Bond yield changes are obtained from the Federal Reserve Bank of St. Louis.

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.



When Rates Go Up, Do Stocks Go Down?

(continued from page 16)

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).

Source: Dimensional Fund Advisors LP.

Results shown during periods prior to each Index's index inception date do not represent actual returns of the respective index. Other periods selected may have different results, including losses. Backtested index performance is hypothetical and is provided for informational purposes only to indicate historical performance had the index been calculated over the relevant time periods. Backtested performance results assume the reinvestment of dividends and capital gains.

Eugene Fama and Ken French are members of the Board of Directors for and provide consulting services to Dimensional Fund Advisors LP.

There is no guarantee investment strategies will be successful. Investing involves risks 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.