



# Q3

Quarterly Market Review

Third Quarter 2017

## COMMENTARY

### Focus on Online Security and Protecting Personal Data

It was certainly true before, but the recent data security breach with Equifax just highlights the importance of protecting yourself in regard to personal data. Here are a few tips and suggestions for taking what we at CSJ consider to be the basic steps in protecting your online data:

1. You should take the following steps no matter what, but first check to see if your information was possibly compromised by the data breach at Equifax by reading the info and following the instructions on this link: <https://www.consumer.ftc.gov/blog/2017/09/equifax-data-breach-what-do> (NOTE: External Link)
2. We are very surprised by how many people still do not use a passcode or TouchID to access their smart phones. First, minimize personal and sensitive information on your iPhone. Secondly, make sure that you have to have a passcode or TouchID (fingerprint authentication) to access the phone. If you have one of the newer phones absolutely enable TouchID. Otherwise, please enable access with a passcode that you will remember, and don't use variations of your birth date, SSI number, etc. If this information is compromised, then it's very easy for someone with a good computer to generate the passcode in relatively short time. Anyway, again, secure access to your phone if it's misplaced or stolen.
3. Check your bank statements, accounts and credit reports regularly for unusual activity. I (Sal) personally use LifeLock, and although, in my opinion, not a perfect solution, I have found them to be very good at alerting me to any activity on my credit reports, etc. I subscribe to LifeLock Advantage, which to me is better than the standard plan, although the "gold plated" plan is LifeLock Ultimate Plus. However,

there are also other very good alternative services that you can easily check out and compare easily on any internet browser. Check it out and if you don't check your statements regularly, I would recommend subscribing to a credit alert service like LifeLock (NOTE: CSJ has no affiliation with nor endorses LifeLock). It's not that expensive and provides additional "insurance".

4. You can do a credit freeze, although neither of us at CSJ do so. Not sure it's worth it, although something to consider. Attached is a link to an article which discusses the issue. You should read and evaluate for yourself whether you think it's worth

it: [http://www.huffingtonpost.com/entry/heres-why-you-probably-dont-want-to-freeze-your-credit\\_us\\_59b9cdd8e4b0edff97192cc9](http://www.huffingtonpost.com/entry/heres-why-you-probably-dont-want-to-freeze-your-credit_us_59b9cdd8e4b0edff97192cc9)

(NOTE: External Link)

5. Definitely set-up 2 factor authentication for all online logins, including bank/brokerage accounts, Google, Amazon, etc. For anyone who uses Charles Schwab or Fidelity, 2 factor authentication is available when logging into your accounts. Based on CSJ discussion with them, clients seeking 2 factor authentication need to contact the respective custodians directly to set it up. You can either request a hard token to be mailed to you, or use a "soft token". With many institutions, the soft token is just a text message or phone call to a personal mobile or other phone which provides a pin code that you have to enter as the second step after you login and provide your user name and PW. However, each bank/brokerage firm uses different systems. Some, like Schwab, will require that for you to access the soft token, you will need to download their app entitled "VIP Access" from the app store. The end user client can call Schwab End Client Alliance at 800-515-2157. For my (Sal's) banking account and one other online account, it was simple to just log in and then request 2 factor authentication to be enabled with text message to my mobile phone online. Each bank/brokerage firm is different, but overall it shouldn't be too time consuming. The following link is an article on 2 Factor authentication with some

instructions: <https://www.eff.org/deeplinks/2016/12/12-days-2fa-how-enable-two-factor-authentication-your-online-accounts> (NOTE: External Link).

If you're a small business owner, cybersecurity may not be top of mind since you may think that "hackers" are only interested in big businesses where the payoff is greatest, like Target and of course, more recently, Equifax. However, data shows over 40% of all cyberattack victims are small businesses because it's easier. It's important to recognize that a cyberattack can force a business owner to temporarily shut down your business, and customers may lose trust in you, damaging your reputation costing you revenue and profits in the long term. Reputation and credibility are critical to a small business. Several on-line articles address the highlights and minimal steps that small businesses can take to protect and minimize damage from a potential cyberattack. Some of the steps that can be taken are:

### 1. Develop a Password Strategy

Educate employees appropriately on creating strong passwords and create policies in regard to password resets on a regularly scheduled basis and when employee turnover occurs.

### 2. Cybersecurity Insurance

Check with your existing business insurance carrier and get cybersecurity insurance. If there is ever a security breach and your company is held liable, the potential lawsuit and associated expenses could be crippling to your company. Cybersecurity insurance can protect you for these types of expenses

### 3. Move Your Data Storage to the Cloud

At a minimum, your business should have anti-virus and anti-spyware software. Firewalls and data encryption is even better. However, consider moving your data to the Cloud/Virtual Data Rooms, it's safer than having data stored on your servers.

#### 4. Develop a Back-Up Plan

Develop a plan for responding to an attack and containing the damage.

#### 5. Internal Threats

Data suggests that more than half of data breaches come from inside the company. Develop procedures, appropriate protocols, and authorization requirements. Train employees and be careful when deciding which employees should have access to sensitive data.

#### 6. Speak with an Expert

Bottom line: paying an IT security consultant is a very good investment.

### **Please take steps to protect yourself!**

#### Market Risk: Where Are We Now?

Right now, for market participants, optimism seems to rule the day. A lot of the elements that typically form the foundation for a bull market, but also a bubble are still in play. Any good news seems to be a reason for investors to buy into equities, and any bad news is ignored or downplayed. While we at CSJ do not see any imminent signs of a major correction or downturn, we do believe that risk is high and prospective returns are low. This seems to be pushing people into taking risk that they probably shouldn't take given their specific situation.

You may want to read the following article on Bloomberg (link attached) "Wall Street Banks Warn a Downturn is Coming":

<https://www.bloomberg.com/news/articles/2017-08-22/wall-street-banks-warn-winter-is-coming-as-business-cycle-peaks> (NOTE: External Link).

Unfortunately, we at CSJ see too many people who ignore history. They fear missing out! As Mark Twain so aptly stated: "History doesn't repeat, but it does rhyme."

As Howard Marks at Oaktree has stated: "I think it's better to turn cautious too soon (and thus perhaps underperform for a while) rather than too late,

after the downside has begun, making it hard to trim risk, achieve exits and cut losses.”

Markets and the economy are not linear. There have always been cycles. Investors need to be aware of history because betting against history does not make an investment philosophy.

### Bottom Line: Risk-on or Risk-off?

“I have found that the importance of having an investment philosophy – one that is robust and that you can stick with – cannot be overstated.”

David Booth (Dimensional Fund Advisors)

As stated in one of Dimensional’s investor pieces, “While some investors might find it easy to stay the course in years with above average returns, periods of disappointing results may test an investor’s faith in the equity markets. Being aware of the range of potential outcomes can help investors remain disciplined, which in the long term can increase the odds of a successful investment experience. .... An asset allocation that aligns with personal risk tolerances and investment goals is also valuable.”

This is our passion and we take it very seriously. If you have questions regarding your financial situation and want an advisor that will work with you to review your total financial status and objectives please feel free to give us a call at 858-350-1365.

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# Quarterly Market Review

Third 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.

## 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: Stop Monkeying Around!

# Market Summary

## Index Returns

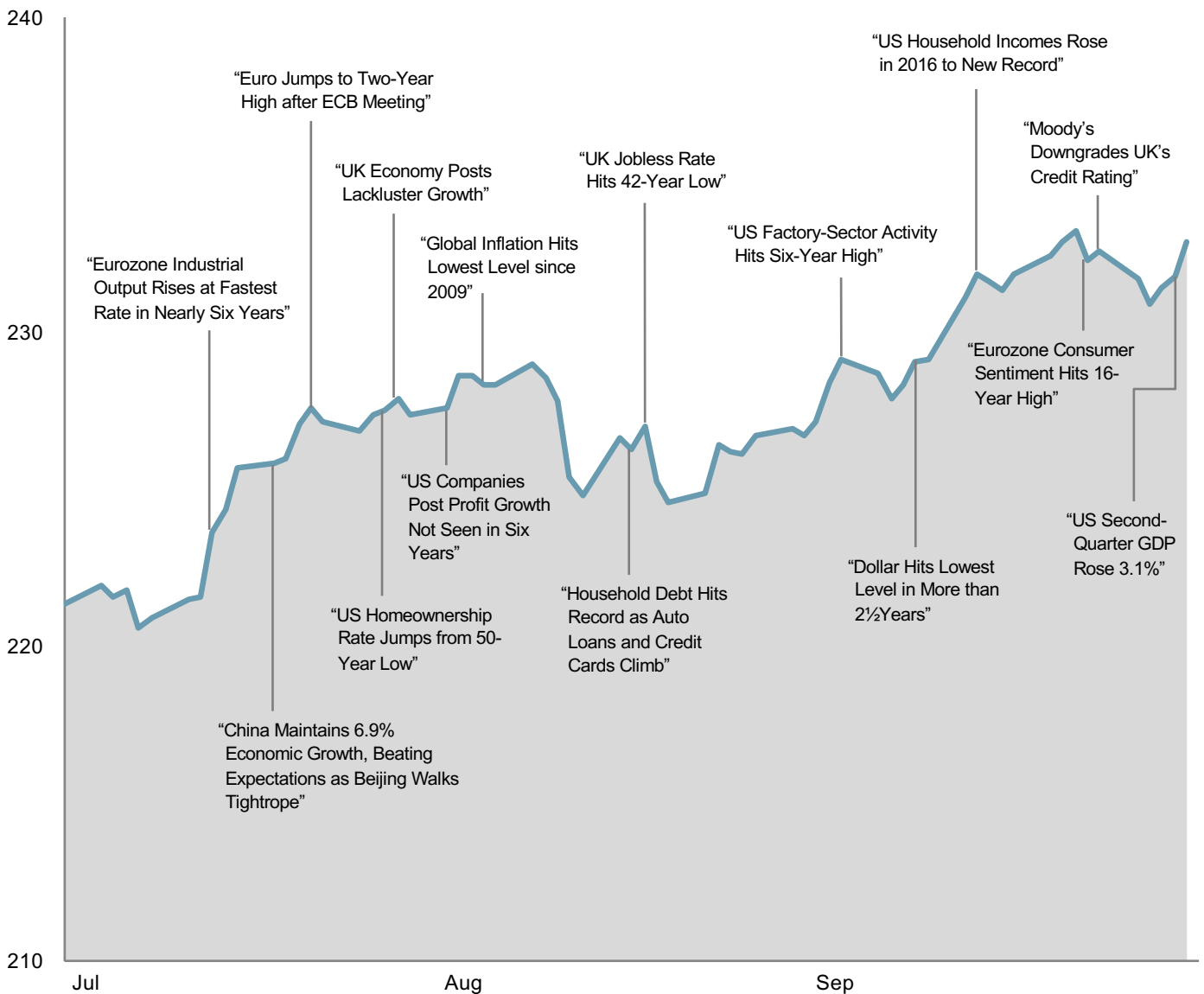
	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
<b>Q3 2017</b>	<b>STOCKS</b>				<b>BONDS</b>	
	<b>4.57%</b>	<b>5.62%</b>	<b>7.89%</b>	<b>1.13%</b>	<b>0.85%</b>	<b>0.70%</b>
						
<b>Since Jan. 2001</b>						
Avg. Quarterly Return	1.9%	1.6%	3.1%	2.7%	1.2%	1.1%
Best Quarter	16.8% <b>Q2 2009</b>	25.9% <b>Q2 2009</b>	34.7% <b>Q2 2009</b>	32.3% <b>Q3 2009</b>	4.6% <b>Q3 2001</b>	5.5% <b>Q4 2008</b>
Worst Quarter	-22.8% <b>Q4 2008</b>	-21.2% <b>Q4 2008</b>	-27.6% <b>Q4 2008</b>	-36.1% <b>Q4 2008</b>	-3.0% <b>Q4 2016</b>	-3.2% <b>Q2 2015</b>

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 WGBl 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 Q3 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.

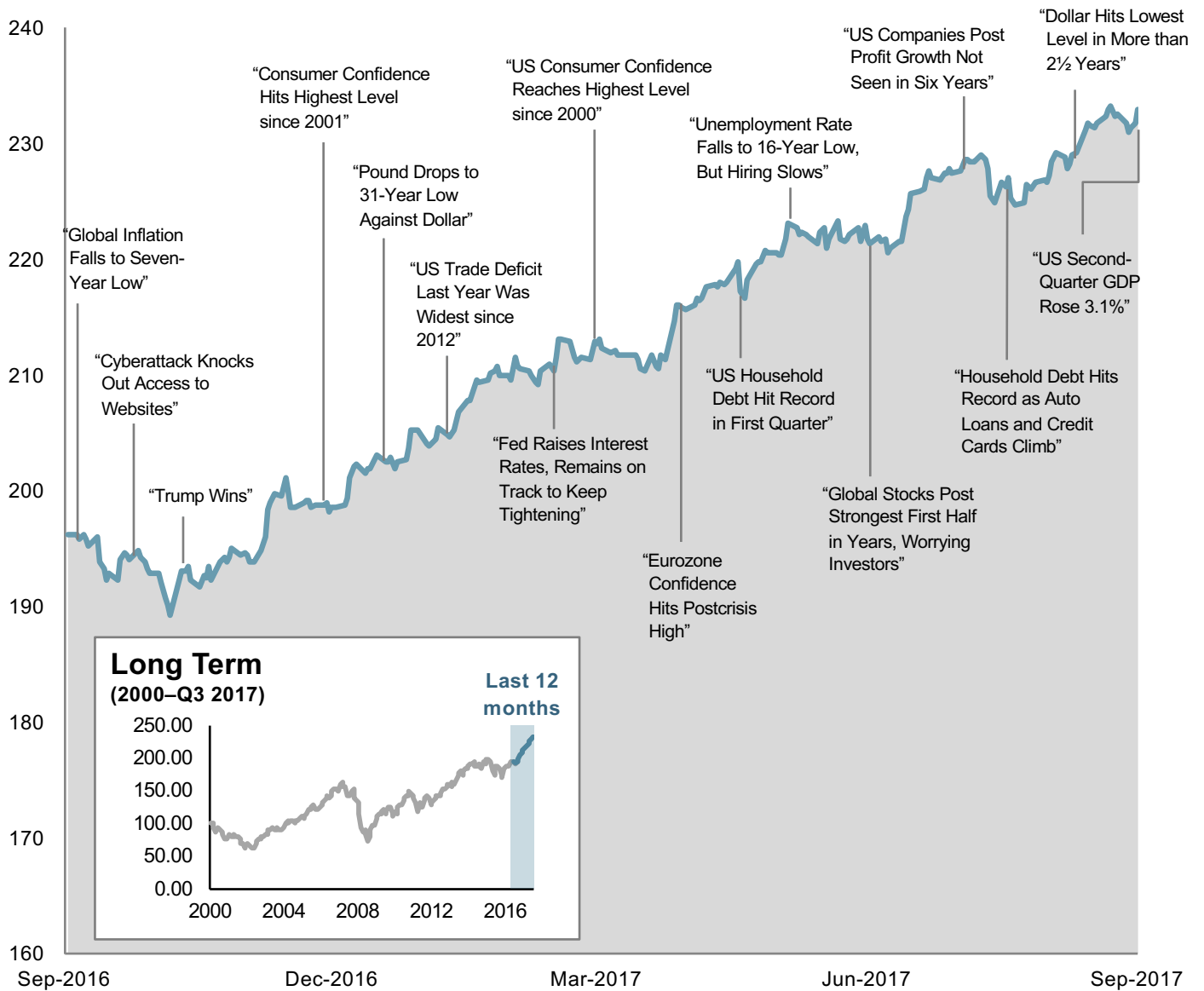
Graph Source: MSCI ACWI Index [net div.]. MSCI data © MSCI 2017, all rights reserved.

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 (Q4 2016–Q3 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.

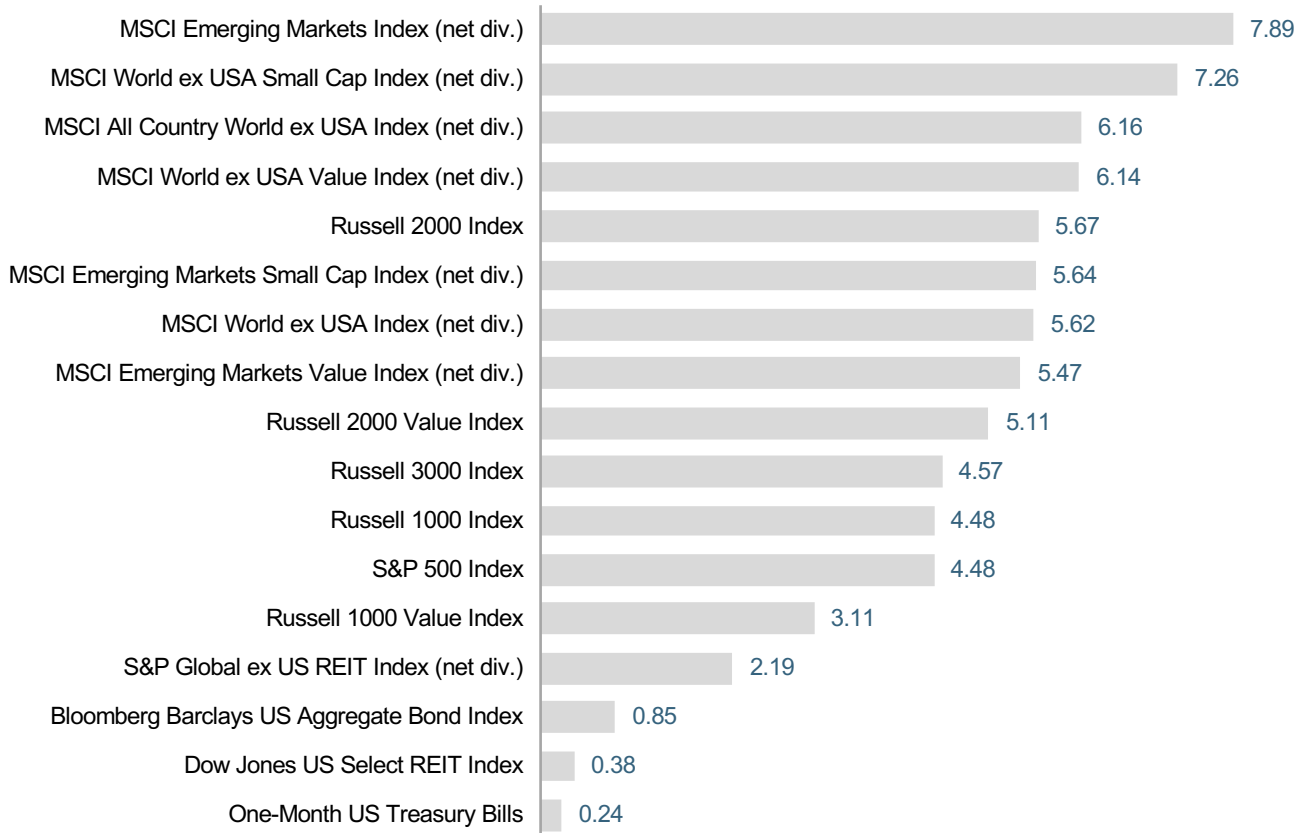
It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.

# World Asset Classes

## Third Quarter 2017 Index Returns (%)

With broad market indices used as proxies, emerging markets outperformed developed markets, including the US, during the quarter.

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



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# US Stocks

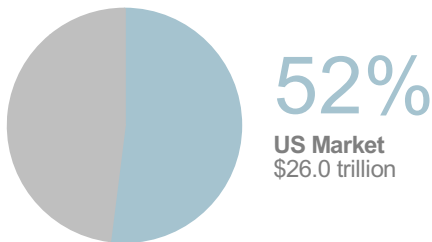
## Third Quarter 2017 Index Returns

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

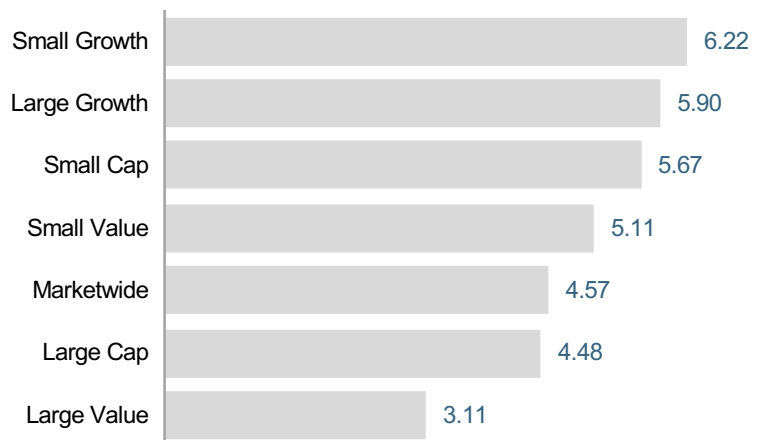
Value underperformed growth indices in the US across all size ranges.

Small caps in the US outperformed large caps.

### World Market Capitalization—US



### Ranked Returns for the Quarter (%)



### Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Marketwide	13.91	18.71	10.74	14.23	7.57
Large Cap	14.17	18.54	10.63	14.27	7.55
Large Value	7.92	15.12	8.53	13.20	5.92
Large Growth	20.72	21.94	12.69	15.26	9.08
Small Cap	10.94	20.74	12.18	13.79	7.85
Small Value	5.68	20.55	12.12	13.27	7.14
Small Growth	16.81	20.98	12.17	14.28	8.47

\* 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

## Third Quarter 2017 Index Returns

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

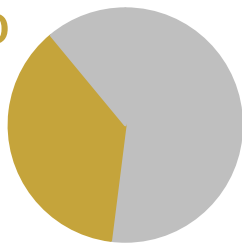
With broad market indices used as proxies, the value effect was positive. The value effect was positive in large caps but negative in mid and small caps.

Overall, small caps outperformed large caps in non-US developed markets.

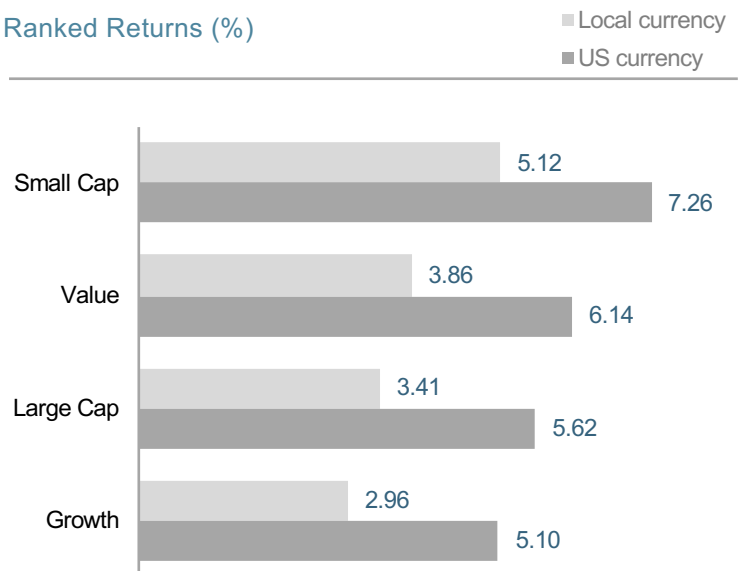
### World Market Capitalization— International Developed

37%

International  
Developed  
Market  
\$18.5 trillion



### Ranked Returns (%)



### Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	19.17	18.73	4.57	7.81	1.28
Small Cap	23.82	20.42	9.59	11.16	4.04
Value	17.05	22.46	3.24	7.36	0.64
Growth	21.47	15.04	5.82	8.19	1.86

\* Annualized

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# Emerging Markets Stocks

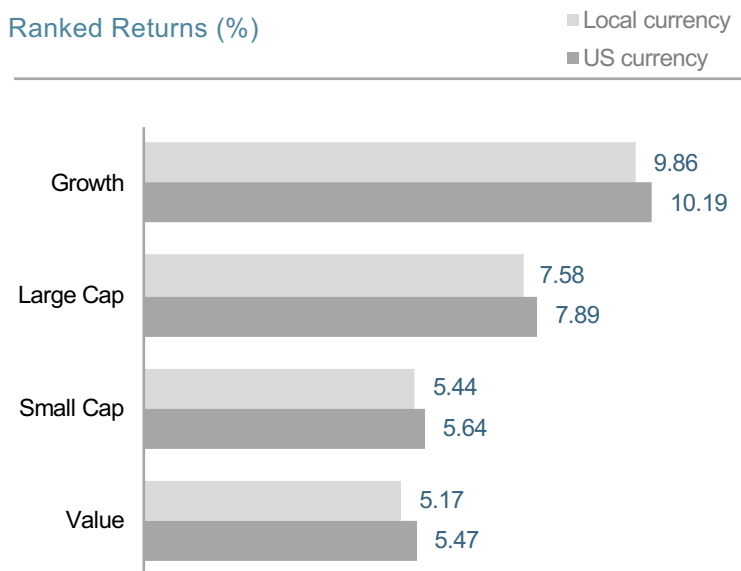
## Third Quarter 2017 Index Returns

In US dollar terms, emerging markets indices outperformed developed market indices, including the US, during the quarter.

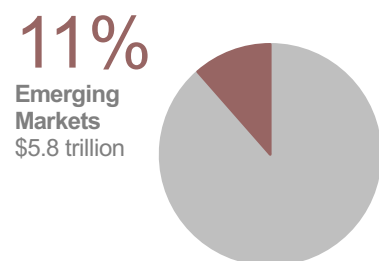
With broad market indices used as proxies, the value effect was negative. Across the size spectrum in the large and mid cap space, the value effect was negative; however, in the small cap space, the effect was positive.

Overall, small caps underperformed large caps in emerging markets.

### Ranked Returns (%)



### World Market Capitalization— Emerging Markets



### Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Large Cap	27.78	22.46	4.90	3.99	1.32
Small Cap	22.53	14.89	3.14	4.60	1.74
Value	19.87	18.55	1.62	1.34	0.67
Growth	36.03	26.35	8.12	6.55	1.88

\* Annualized

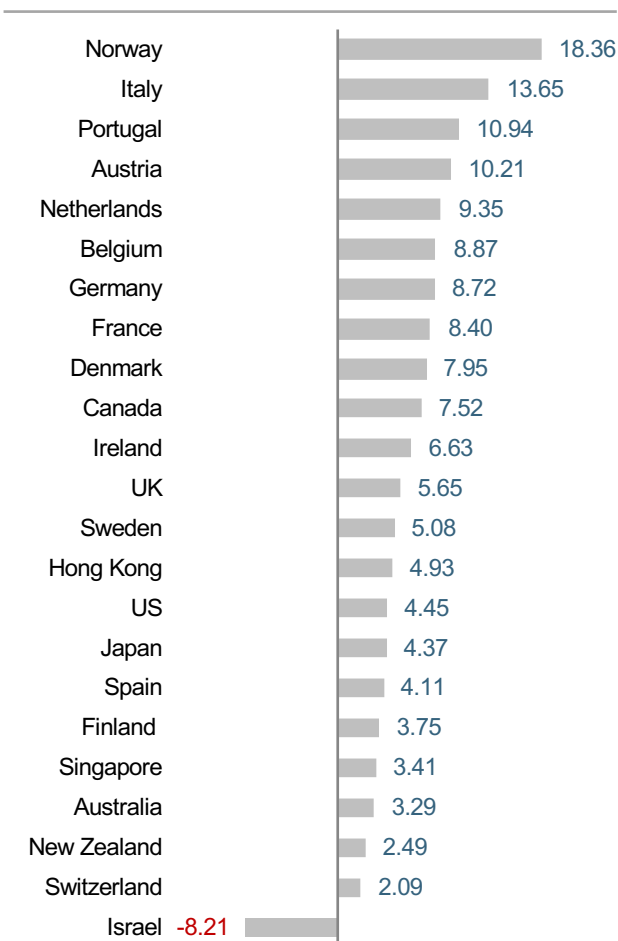
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI Emerging Markets Index), Small 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

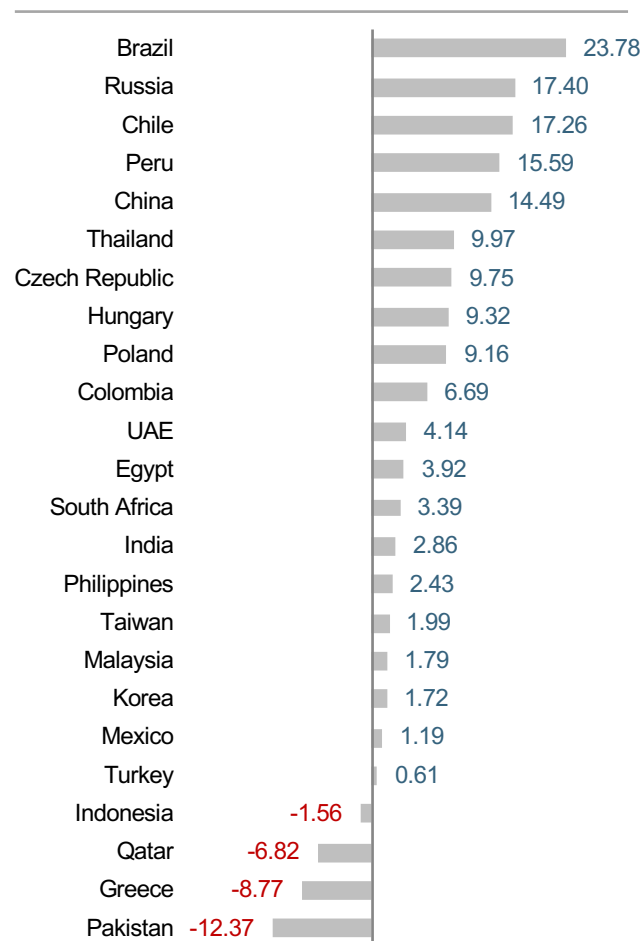
## Third Quarter 2017 Index Returns

In US dollar terms, Norway and Italy recorded the highest country performance in developed markets, while Israel posted the lowest—and only negative—return in developed markets. In emerging markets, Brazil, Russia, and Chile posted the highest returns, while Pakistan and Greece had the lowest performance.

Ranked Developed Markets Returns (%)



Ranked Emerging Markets Returns (%)



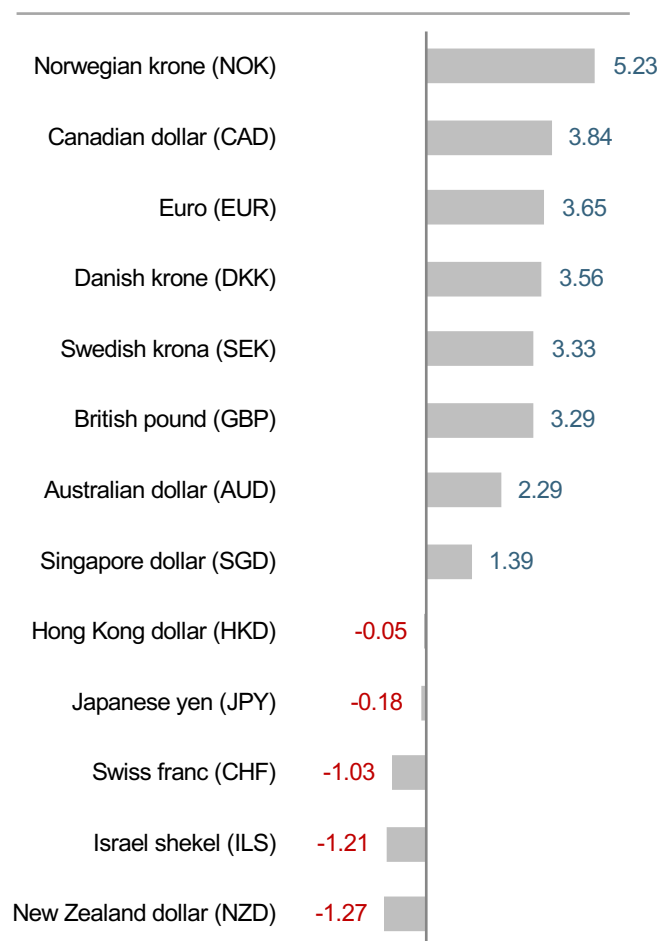
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Country performance based on respective indices in the MSCI World ex US IMI Index (for developed 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

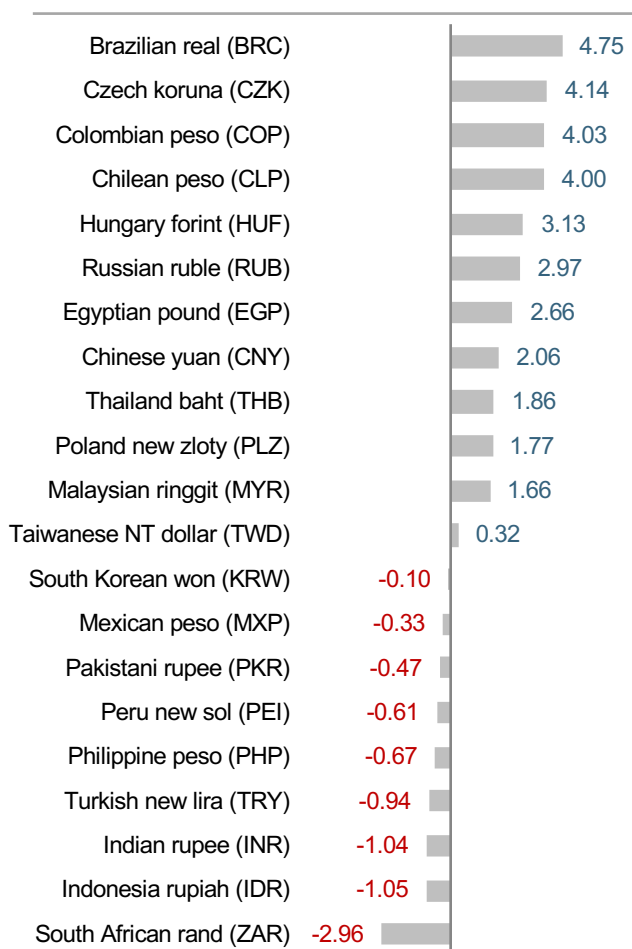
Third Quarter 2017

Currency performance was mixed in both developed and emerging markets. Among developed markets currencies, the Norwegian krone appreciated by 5%, while the Israeli shekel and the New Zealand dollar depreciated by approximately 1%. In emerging markets, the Brazilian real appreciated by almost 5%, while the South African rand depreciated by almost 3%.

## Ranked Developed Markets Returns (%)



## Ranked Emerging Markets Returns (%)



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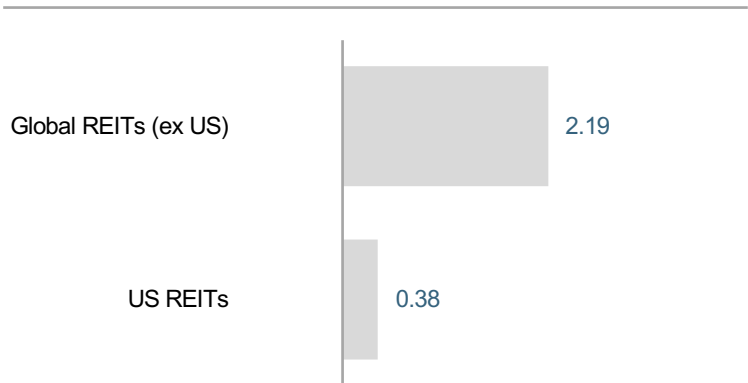


# Real Estate Investment Trusts (REITs)

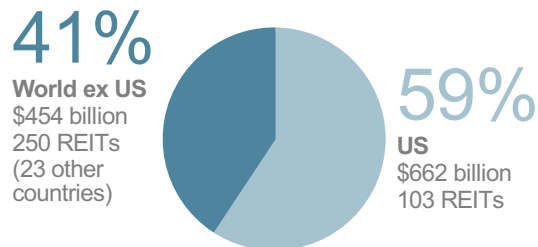
## Third Quarter 2017 Index Returns

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	1.75	-0.83	9.28	9.16	5.31
Global REITs (ex US)	8.63	-0.45	3.63	5.44	0.27

\* 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

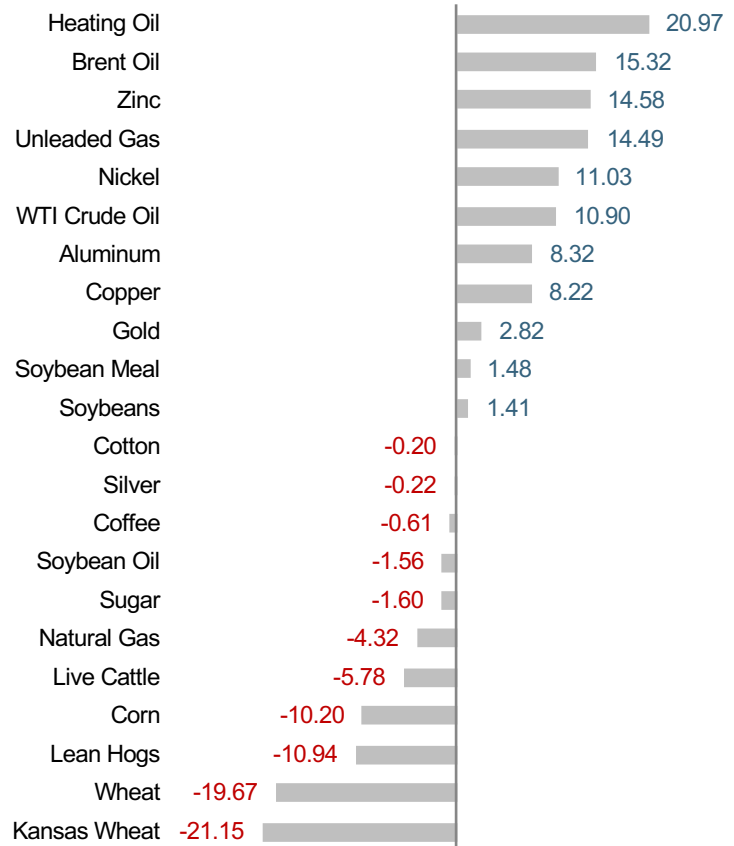
## Third Quarter 2017 Index Returns

The Bloomberg Commodity Index Total Return gained 2.52% during the third quarter.

The energy complex led advancing commodities, with heating oil returning 20.97%, Brent crude oil 15.32%, unleaded gas 14.49%, and WTI crude oil 10.90%.

Grains was the worst-performing complex, with Kansas wheat and Chicago wheat declining 21.15% and 19.67%, respectively. Lean hogs also experienced a decline, decreasing by 10.94%.

### Ranked Returns for Individual Commodities (%)



### Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*
Commodities	-2.87	-0.29	-10.41	-10.47	-6.83

\* Annualized

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# Fixed Income

## Third Quarter 2017 Index Returns

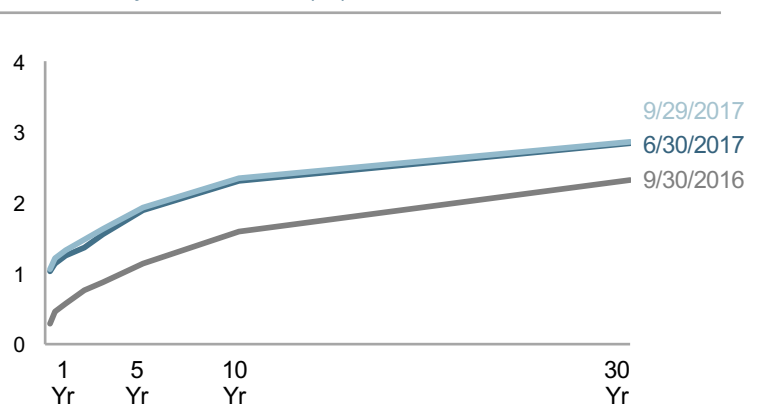
Interest rates increased across the US fixed income market for the quarter. The yield on the 5-year Treasury note increased by 3 basis points (bps) to 1.92%. The yield on the 10-year Treasury note increased by 2 bps to 2.33%. The 30-year Treasury bond yield increased by 2 bps to finish at 2.86%.

The yield on the 1-year Treasury bill rose 7 bps to 1.31%, and the 2-year Treasury note yield rose 9 bps to 1.47%. The yield on the 3-month Treasury bill increased 3 bps to 1.06%, while the 6-month Treasury bill yield increased 6 bps to 1.20%.

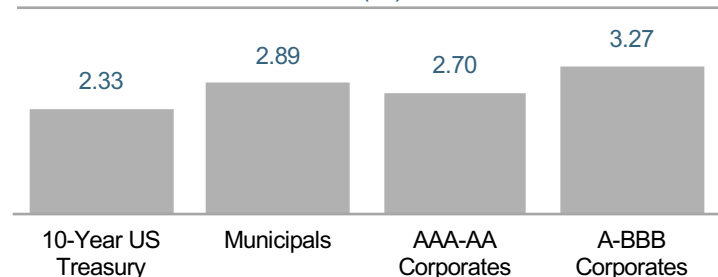
In terms of total returns, short-term corporate bonds gained 0.59%, and intermediate-term corporates gained 1.05%.

Short-term municipal bonds generated a total return of 0.49%, while intermediate-term municipal bonds returned 0.83%. General obligation bonds gained 1.14%, outperforming revenue bonds by 4 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	6.06	-6.14	4.84	2.87	6.83
Bloomberg Barclays Municipal Bond Index	4.66	0.87	3.19	3.01	4.52
Bloomberg Barclays US Aggregate Bond Index	3.14	0.07	2.71	2.06	4.27
Bloomberg Barclays US Corporate High Yield Index	7.00	8.88	5.83	6.36	7.84
Bloomberg Barclays US TIPS Index	1.72	-0.73	1.62	0.02	3.90
BofA Merrill Lynch 1-Year US Treasury Note Index	0.55	0.60	0.46	0.39	1.05
BofA Merrill Lynch Three-Month US Treasury Bill Index	0.57	0.66	0.32	0.22	0.47
Citi World Government Bond Index 1-5 Years (hedged to USD)	1.07	0.59	1.35	1.30	2.32

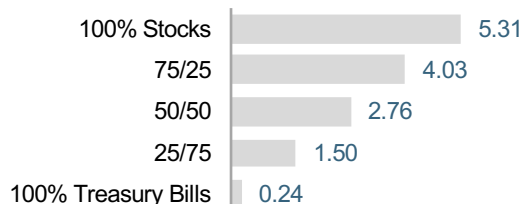
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Yield curve data from Federal Reserve. State and local bonds are from the S&P National AMT-Free 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 (SBBBI) 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

## Third 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 (%)

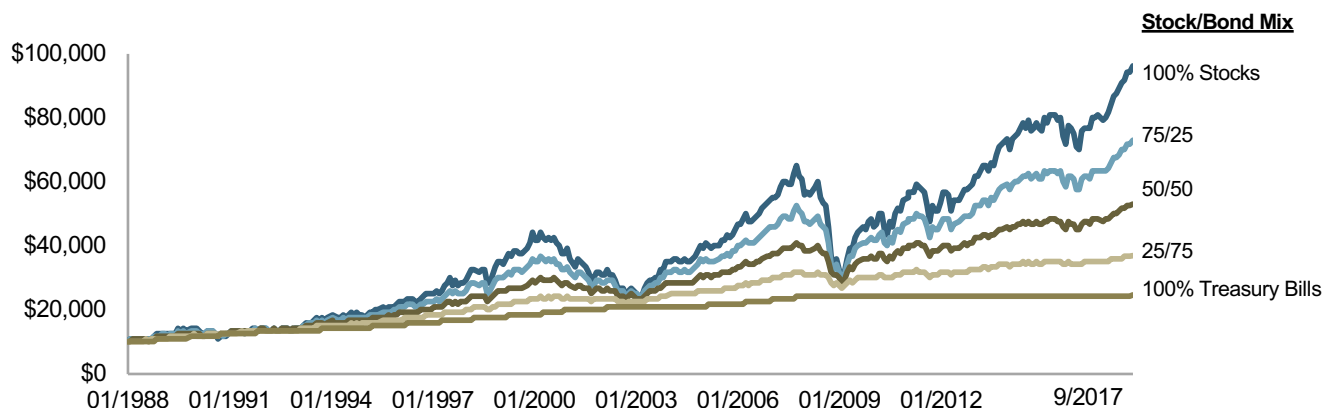


### Period Returns (%)

\* Annualized

Asset Class	YTD	1 Year	3 Years*	5 Years*	10 Years*	10-Year STDEV <sup>1</sup>
100% Stocks	17.75	19.29	8.02	10.79	4.45	16.90
75/25	13.22	14.35	6.13	8.14	3.70	12.66
50/50	8.85	9.60	4.21	5.48	2.76	8.43
25/75	4.62	5.01	2.25	2.82	1.65	4.20
100% Treasury Bills	0.53	0.58	0.25	0.16	0.36	0.22

## 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).

# Quit Monkeying Around!

Third Quarter 2017

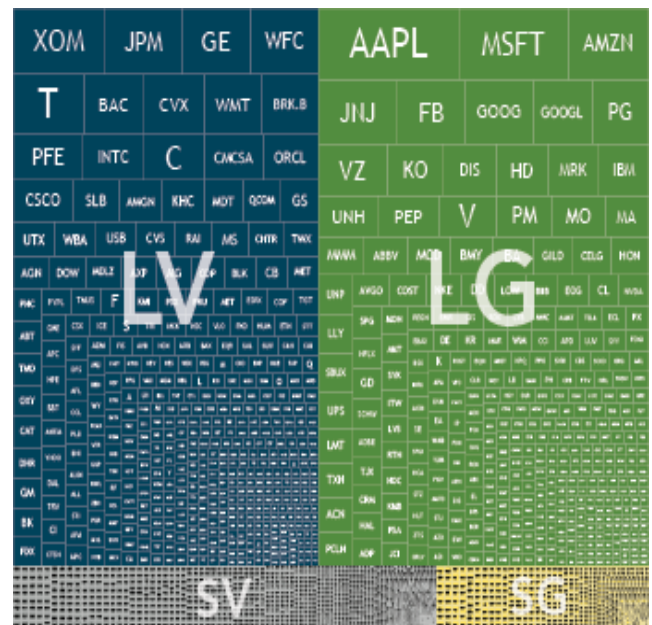
In the world of investment management there is an oft-discussed idea that blindfolded monkeys throwing darts at pages of stock listings can select portfolios that will do just as well, if not better, than both the market and the average portfolio constructed by professional money managers. If this is true, why might it be the case?

## The Dart Board

**Exhibit 1** shows the components of the Russell 3000 Index (regarded as a good proxy for the US stock market) as of December 31, 2016. Each stock in the index is represented by a box, and the size of each box represents the stock's market capitalization (share price multiplied by shares outstanding) or "market cap" in the index. For example, Apple (AAPL) is the largest box since it has the largest market cap in the index. The boxes get smaller as you move from the top to the bottom of the exhibit, from larger stocks to smaller stocks. The boxes are also color coded based on their market cap and whether they are value or growth stocks. Value stocks have lower relative prices (as measured by, for instance the price-to-book ratio) and growth stocks tend to have higher relative prices. In the exhibit, blue represents large cap value stocks (LV), green is large cap growth stocks (LG), gray is small cap value stocks (SV), and yellow is small cap growth stocks (SG).

For the purposes of this analogy you can think of Exhibit 1 as a proxy for the overall stock market and therefore similar to a portfolio that, in aggregate, professional money managers hold in their competition with their simian challengers. Because for every investor holding an overweight to a stock (relative to its market cap weighting) there must also be an investor underweight that same stock, this means that, in aggregate, the average dollar invested holds a portfolio that looks like the overall market.<sup>1</sup>

**Exhibit 1. US Stocks Sized by Market Capitalization**



For illustrative purposes only. Illustration includes constituents of the Russell 3000 Index as of December 31, 2016, on a market-cap weighted basis segmented into Large Value, Large Growth, Small Value, and Small Growth. Source: Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. Please see Appendix for additional information.

1. For more on this concept, please see "The Arithmetic of Active Management" by William Sharpe.

# Quit Monkeying Around!

(continued from page 16)

**Exhibit 2**, on the other hand, represents the dart board the monkeys are using to play their game. Here, the boxes represent the same stocks shown in Exhibit 1, but instead of weighting each company by market cap, the companies are weighted equally. For example, in this case, Apple's box is the same size as every other company in the index regardless of its market cap. If one were to pin up pages of newspaper stock listings to throw darts at, Exhibit 2 would be much more representative of what the target would look like.

When looking at Exhibits 1 and 2, the significant differences between the two are clear. In Exhibit 1, the surface area is dominated by large value and large growth (blue and green) stocks. In Exhibit 2, however, small cap value stocks dominate (gray). Why does this matter? Research has shown that, historically over time, small company stocks have had excess returns relative to large company stocks. Research has also shown that, historically over time, value (or low relative price) stocks have had excess returns relative to growth (or high relative price) stocks. Because Exhibit 2 has a greater proportion of its surface area dedicated to small cap value stocks, it is more likely that a portfolio of stocks selected at random by throwing darts would end up being tilted towards stocks which research has shown to have had higher returns when compared to the market.

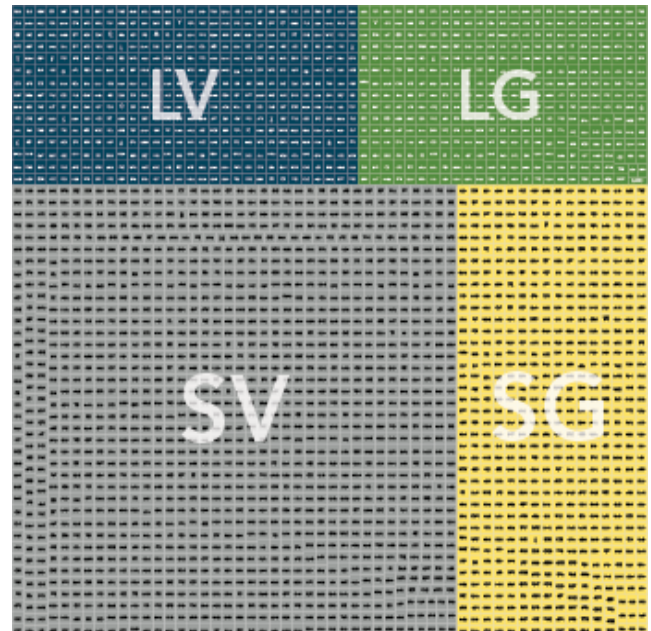
## So...Throw Away?

This does not mean, however, that haphazardly selecting stocks by the toss of a dart is an efficient or reliable way to invest. For one thing, it ignores the complexities that arise in competitive markets.

Consider as an example something seemingly as straightforward as a strategy that holds every stock in the Russell 3000 Index at an equal weight (the equivalent of buying the whole dart board in Exhibit 2). In order to

maintain an equal weight in all 3,000 securities, an investor would have to rebalance frequently, buying shares of companies that have gone down in price and selling shares that have gone up. This is because as prices change, so will each individual holding's respective weight in the portfolio. By not considering whether or not these frequent trades add value over and above the costs they generate, investors are opening themselves up to a potentially less than desirable outcome.

**Exhibit 2. US Stocks Sized Equally**



For illustrative purposes only. Illustration includes the constituents of the Russell 3000 Index as of December 31, 2016 on an equal-weighted basis segmented into Large Value, Large Growth, Small Value, and Small Growth. Source: Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. Please see Appendix for additional information.

# Quit Monkeying Around!

(continued from page 22)

Instead, if there are well-known relationships that explain differences in expected returns across stocks, using a systematic and purposeful approach that takes into consideration real-world constraints is more likely to increase your chances for investment success.

Considerations for such an approach include things like: understanding the drivers of returns and how to best design a portfolio to capture them, what a sufficient level of diversification is, how to appropriately rebalance, and last but not least, how to manage the costs associated with pursuing such a strategy.

## The Long Game

Finally, the importance of having an asset allocation well suited for your objectives and risk tolerance, as well as being able to remain focused on the long term, cannot be overemphasized. Even well-constructed portfolios pursuing higher expected returns will have periods of disappointing results. A financial advisor can help an investor decide on an appropriate asset allocation, stay the course during periods of disappointing results, and carefully weigh the considerations mentioned above to help investors decide if a given investment strategy is the right one for them.

## Conclusion

So what insights can investors glean from this analysis? First, by tilting a portfolio towards sources of higher expected returns, investors can potentially outperform the market without needing to outguess market prices. Second, implementation and patience are paramount. If one is going to pursue higher expected returns, it is important to do so in a cost-effective manner and to stay focused on the long term.

## Appendix

Large cap is defined as the top 90% of market cap (small cap is the bottom 10%), while value is defined as the 50% of market cap of the lowest relative price stocks (growth is the 50% of market cap of the highest relative price stocks). For educational and informational purposes only and does not constitute a recommendation of any security. The determinations of Large Value, Large Growth, Small Value, and Small Growth do not represent any determinations Dimensional Fund Advisors may make in assessing any of the securities shown.

Source: Dimensional Fund Advisors LP.

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