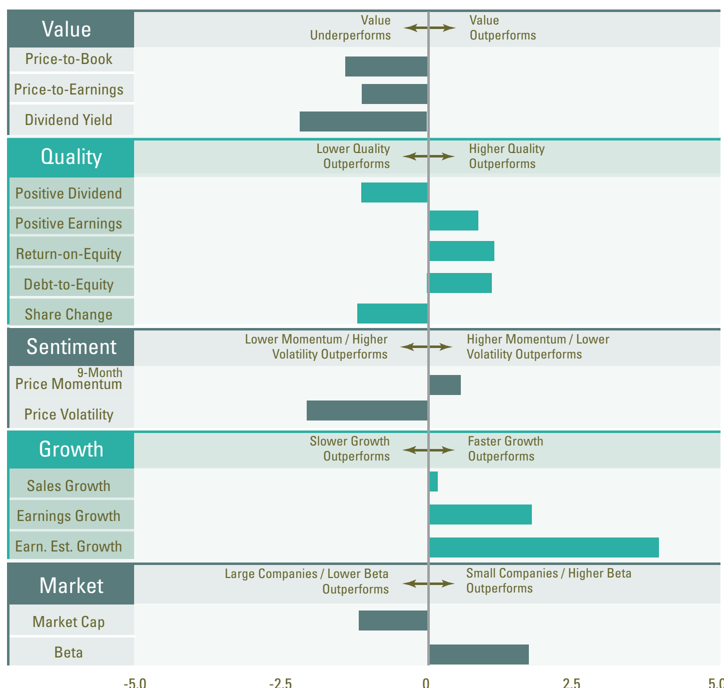
Quantitative Review of U.S. Equities

Third Quarter 2017

- U.S. equity indices again moved higher in the third quarter, adding to the stock market rally that began last November, or by some measures, in February 2016. The S&P 500 Index has gained over 42% since its lows in February 2016 and over 23% since the November bottom. Large-cap stocks outperformed small caps, and growth stocks were well ahead of value stocks through August. However, just as in the second quarter, these patterns reversed in the last month of the third quarter, with small cap and value outpacing the rest of the U.S. market in September. For the year through the third quarter, the Russell 1000 Growth Index is up 20.7%, but the Russell 2000 Value Index rose only 5.7%; in September's reversal, the small-cap value index gained 7.1% for the month while the Russell large-cap growth benchmark produced only a 1.3% increase. The small-cap rally during September was strong enough to turn the Russell indices in favor of smaller stocks for the quarter.
- This September factor reversal generally did not change the overall underperformance by value stocks for the quarter and the year. The exceptions to poor value returns were the outperformance within the Russell 1000 Value Index by low price-to-earnings stocks for the year and by low price-to-book stocks in the third quarter. The growth factors did very well for the year to date, but the weaker returns recently led to more mixed results in the quarter. Stocks with strong earnings estimate growth, on the other hand, did well throughout the year.
- The rebound by smaller-cap and higher-beta stocks in September heavily impacted their quarter and year-to-date relative returns. Despite clearly trailing the U.S. market through August, these factors now have outperformed in a few market segments for both the quarter and year.
- Quality factors and high price momentum also experienced a performance reversal in September after generally outperforming previously in the year. Only low debt-to-equity has performed consistently. Most quality factors are ahead year to date. The main exception to strong quality returns was their weaker performance in the Russell 2000 Index.
- Rates on the U.S. 10-year Treasury were nearly flat in the third quarter and in 2017, but higher dividend-yielding stocks have lagged this year, including in September when other measures of value outperformed.

Figure 1 Broad Market U.S. Equity Factor Returns
QTD; % Return Difference between Factor's[1] High and Low Quartile; Russell 1000 Index



As of 9/30/2017; Source: Brandywine Global, FactSet, FTSE Russell

A NOTE FROM BRANDYWINE GLOBAL'S DIVERSIFIED EQUITY TEAM

This paper is the quarterly report by Brandywine Global's Diversified Equity team on quantitative factors impacting the U.S. equity markets. In each publication, we will provide a standardized report on factor behavior for the quarterly and year-to-date periods. In addition, we will provide brief comments highlighting important and interesting trends in factor behavior and discuss recent work we are engaged in to better understand these trends. Understanding market performance through the unique lens of factor returns often brings early illumination to equity opportunities as well as areas of risk concentration. We use a longer-term perspective on the behavior of various factor returns to develop Diversified Equity strategies at Brandywine Global.

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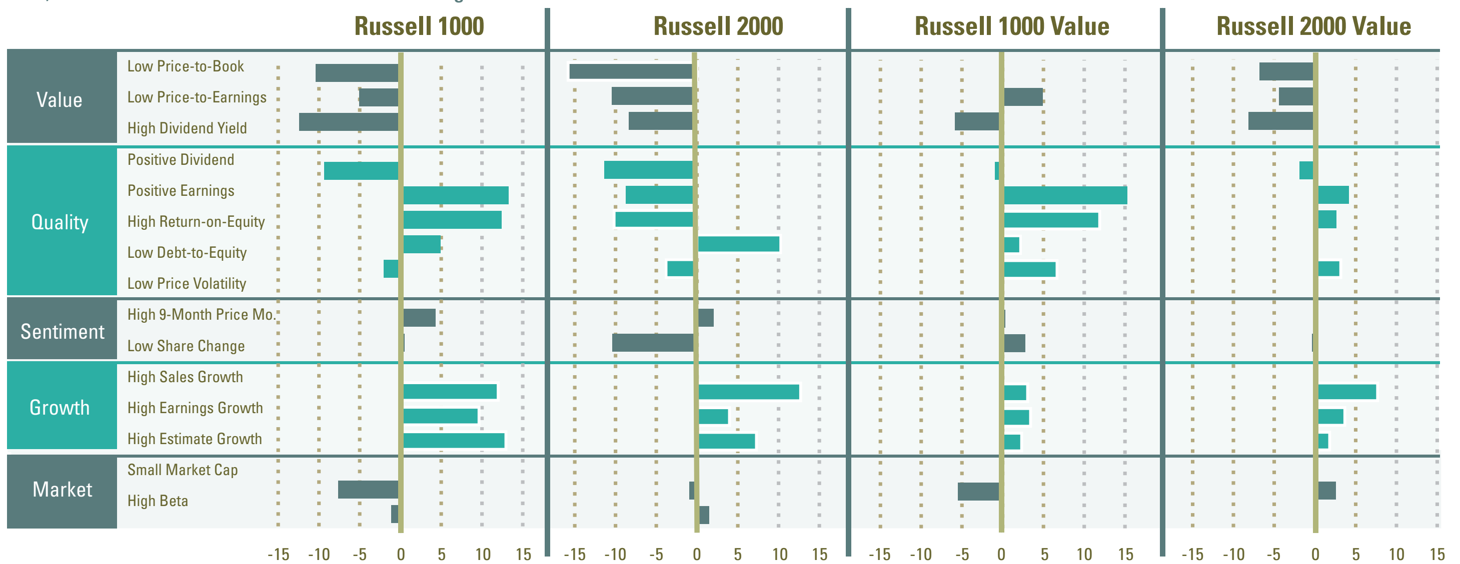
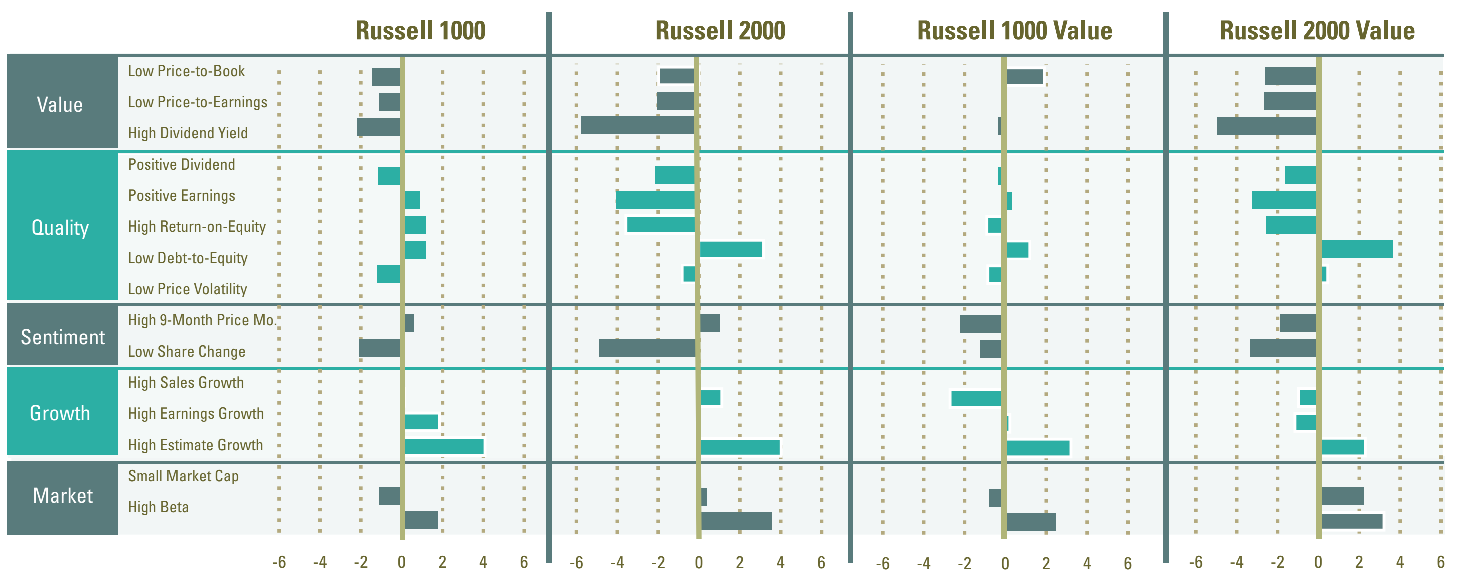
Figure 2 U.S. Equity Factor Returns
YTD; % Return Difference between Factor's[1] High and Low Quartile



Last 3 Months; % Return Difference between Factor's[1] High and Low Quartile



As of 9/30/2017; Source: Brandywine Global, FactSet, FTSE Russell

THIRD QUARTER 2017 FACTOR RETURNS

The U.S. equity markets have defied political turbulence, international tensions, natural disasters, and a lack of major positive economic surprises as they moved higher over the last year and a half. The market's climb showed relatively little volatility since February 2016, other than a small decline last autumn. Even though the market's rise has been remarkably consistent, the factor returns behind the increase have experienced several pronounced reversals, usually with little indication of why the factors shifted direction.

One of the few clear signals related to factor changes was the November U.S. election. Following the election, the market rallied strongly from its autumn decline, presumably in anticipation of greater economic growth boosted by the new administration's policies. With the renewed market rally came better returns for value stocks, with the exception of high dividend names, as well as for smaller and higher-beta stocks, lower-quality, and low-momentum stocks. These sets of factors often do well in the early stages of accelerating economic growth.

Coming into 2017, the U.S. equity markets continued to rise, yet factor returns shifted abruptly. Growth and larger-cap names that had dominated prior to the election again took the performance lead, which they then held through most of the second quarter. In June, smaller caps and value again had a short burst of performance but lagged through most of the third quarter only to lead again in September. No change in market direction or notable economic or political events seemed to trigger these switches, and all the while stocks maintained their steady move higher. The market's strength remained even as prospects appeared diminished for the legislative changes that might have been expected to stimulate faster economic growth.

Despite the various directional swings, the overall result year to date for the growth and value factors is significant outperformance for growth stocks, led by the FANG group of Facebook, Amazon, Netflix, and Google, and a few similarly popular growth names, over the weaker gains from value stocks. These results are clear in both **Figure 2** factor returns and in **Figure 3** Russell index returns. In **Figure 3**, the growth index in each market cap category easily beat the corresponding value index for both the quarter and the year. The value and growth factors results have been as consistent for 2017 overall with the exception of positive returns for low price-to-earnings stocks within the Russell 1000 Value Index for the year.

Figure 3
As of 9/30/2017

	Third Quarter		2017 YTD	
	GROWTH	VALUE	GROWTH	VALUE
Russell 1000 Index	5.9%	3.1%	20.7%	7.9%
Russell Midcap Index	5.3%	2.1%	17.3%	7.4%
Russell 2000 Index	6.2%	5.1%	16.8%	5.7%
Russell Microcap Index	7.0%	6.4%	15.6%	8.5%

Source: FTSE Russell

For the third quarter, results were less consistent than for the year to date. The September factor reversal generally did not significantly impact the overall underperformance by value stocks this quarter as low price-to-earnings, low price-to-book, and high dividend yield all trailed the market. The exception was the positive performance for low price-to-book in the Russell 1000 Value Index this quarter. For growth factors, however, the weak returns among high sales growth and high earnings growth stocks led to more mixed returns in the quarter. Stocks with strong earnings estimate growth, on the other hand, had good returns in September, the quarter, and the year to date.

Rates on the U.S. 10-year Treasury were nearly flat in the third quarter and are down modestly for 2017, to 2.33% from 2.45%. Nevertheless, higher dividend-yielding stocks have lagged this year, including in September when other measures of value performed better. The Federal Reserve Board held its short-term rate steady after June's quarter-point increase but signaled that rate increases would continue in the near future, which may have had a negative impact on higher-yielding stocks.

For the year, smaller-cap stocks also lagged despite their occasional turns at leading the market. In both **Figure 3** for the Russell style indices and **Figure 4** with the broad Russell indices, the larger the index, the better the returns in 2017. For the quarter, with September's small-cap surge, the index results have switched and small cap outperformed in the quarter. The Russell 2000 gained 5.7% compared to 4.5% for the Russell 1000.

Figure 4
As of 9/30/2017

	Third Quarter	2017 YTD
Russell 1000 Index	4.5%	14.2%
Russell Midcap Index	3.5%	11.7%
Russell 2000 Index	5.7%	10.9%
Russell Microcap Index	6.7%	11.2%

Source: FTSE Russell

Returns for quality factors, price volatility, and beta were generally correlated with size returns. When large-cap stocks did better, higher quality, lower volatility, and lower beta outperformed while the opposite held true when smaller caps dominated. For quality factors, high return-on-equity and positive earnings had the biggest negative performance in September, driving down quarterly returns as well. Low debt-to-equity has performed consistently well in 2017. As with other factors, despite the variability, most of the quality and price volatility factors are ahead for the year to date. The main exception for 2017's positive quality returns is in the Russell 2000 Index where higher quality has lagged throughout the year.

Higher price momentum did well earlier in the year when factor returns were less variable. With the sharp factor reversals in September, price momentum underperformed. For the year, higher price momentum still is ahead. However, for the quarter, the direction is mixed within the various Russell indices.

FANG VERSUS NIFTY FIFTY

No discussion of market excess involving the FANG stocks is complete without a reference to the Nifty Fifty, the widely popular 50 blue-chip stocks that dominated the U.S. equity market in the late 1960s through the market collapse of 1973. Several recent articles have mentioned the Nifty Fifty event as an item of historical reference, but we wanted to look at the behavior of the actual stocks as they ran up to excess levels before collapsing when investors realized they were far too highly priced for their fundamental valuation levels.

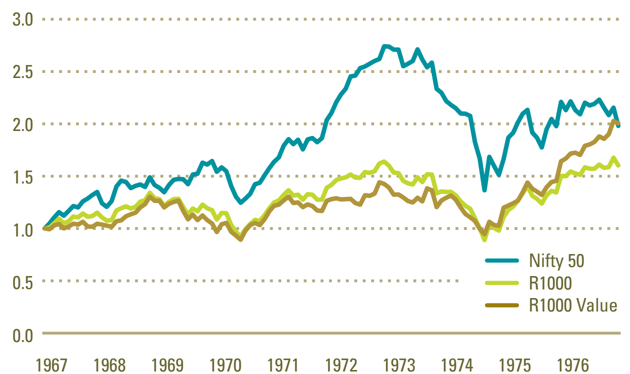
THE NIFTY FIFTY

We started with the Nifty Fifty list published by Jeremy Siegel in his book *Stocks for the Long Run*.[2] This list was a group of "trust quality" stocks that were believed to be almost mandatory holdings in any investment portfolio of the time. Investors were conditioned to disregard the valuation and past performance as these stocks were bid up to excessive levels. To demonstrate the rise and fall of this group of stocks, we formed a Nifty Fifty portfolio using market capitalization weighting. Performance is calculated monthly and compared with the Russell 1000 and Russell 1000 Value benchmarks or a top 1000 and 1000 value proxy[3] in the years prior to the benchmarks' creation. These charts show the relative excess return of the Nifty Fifty over both the broad and value markets followed by a material decline (see **Figure 5**).

The Nifty Fifty line shows the dramatic outperformance compared to the other lines representing the Russell 1000 (proxy) and the Russell 1000 Value (proxy), both of which significantly lagged through late 1972. After the equity market bubble deflated, the Nifty Fifty fell precipitously. The rest of the market declined but not to the same extent as the Nifty Fifty. By the end of August 1974, the Nifty Fifty had lost -49.6% of its collective peak value. The Russell 1000 was down -41.8%, and the Russell 1000 Value (proxy) was down only -28.6%, or 21 full percentage points of defensive return preservation compared with the Nifty Fifty (see **Figure 6**).

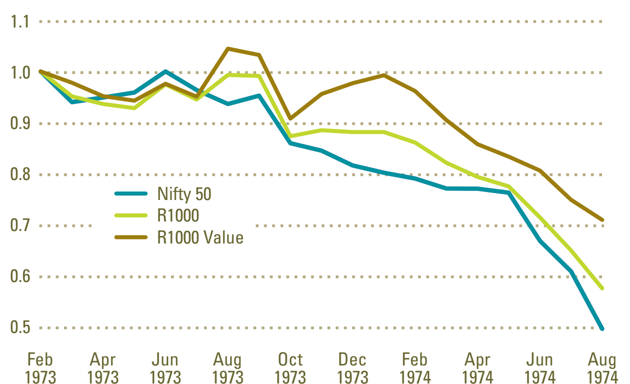
As with any equity market decline to date, the market found a bottom and began the recovery in August of 1974. The Nifty Fifty participated in the rebound over the next two and a half years, gaining a respectable 36.2%. However, the Russell 1000 gained 75.4% while the Russell 1000 Value gained 111.9% over the same period (see **Figure 7**).

Figure 5 Nifty Fifty 1967-1976



Source: FactSet

Figure 6 Nifty Fifty Crash Growth of Dollar Compounded



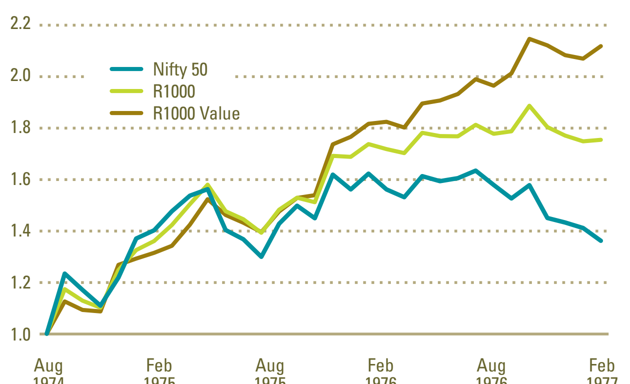
Source: FactSet

PASSIVE INVESTING AND FANG STOCKS

A similar situation today involves the four prevailing market favorites – Facebook, Amazon, Netflix, and Google – as well as other stocks with similar high growth expectations. This select group of stocks has been driving broad market returns for several years, resulting in excessive valuation ratios and extended performance trends. **Figure 8** demonstrates the significant performance of the cap-weighted FANG[4] portfolio.

While no two market events are identical in their duration, peak level, industry composition, or stock concentration, we do see certain reoccurring patterns of irrational investment in a group of stocks that becomes significantly overvalued

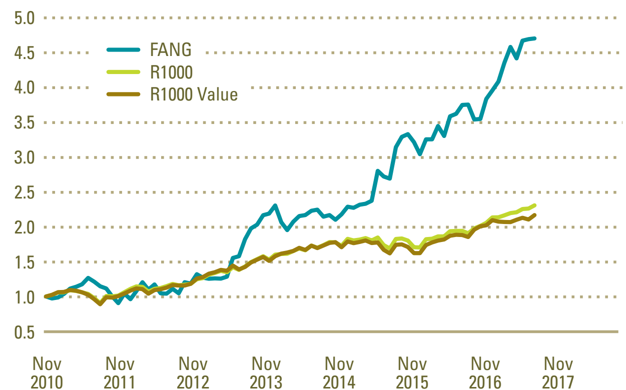
Figure 7 Nifty Fifty Recovery Growth of Dollar Compounded



Source: FactSet

yet continues to receive new monies. An insightful quote often attributed to Mark Twain states, "History doesn't repeat itself, but it often rhymes."[5] Investor behavior seems to fit this pattern. The Nifty Fifty ended with material losses to those who held that group of stocks widely perceived to be safe. The recovery time was extended for investors in the Nifty Fifty, who did not recoup their lost value from the November 1972 peak level until July 1980, almost 8 years later. The opportunity cost of holding those stocks was even more impactful when compared to the other opportunities in the market. For example, in the time it took for the Nifty Fifty to recover, exceeding the November 1972 level by only 2%, the Russell 1000 Value (proxy) gained 125% for the same timeframe. These dates are chosen for their extreme peak to trough to recovery time, but they demonstrate the financial risk of passively holding overvalued stocks when more favorable opportunities are available.

Figure 8 FANG Stocks Growth of Dollar Compounded



Source: FactSet

Stocks comprising the Nifty Fifty of 1972, the tech bubble of 1999-2000, or the current FANG group all have the common characteristics of excessive valuation levels and the proclivity to inspire trend-follower investing without compelling fundamental characteristics. In our view, disciplined investing in attractively priced value stocks, either quantitatively or fundamentally determined, can provide a safer and more rewarding alternative to passive investing in stocks that may be building the next investment bubble.

[1]Factor returns represent return differences between top quartile (75%) and low quartile (25%) equities by each characteristic. **Market**: Market Capitalization and Market Beta (*Market Sensitivity Coefficient*); **Value**: Price-to-Earnings *(PE based on trailing 12-month operating earnings)*, Price-to-Book, Dividend Yield *(Among dividend-paying stocks)*; **Quality**: Positive Earnings *(Positive earnings stocks - Stocks with no earnings)*, Positive Dividend (Dividend-paying stocks - Stocks with no dividend), Share Change *(12-month change in shares outstanding)*, Return-on-Equity, Debt-to-Equity; **Sentiment**: Price Momentum *(9-month price change)*, Price Volatility, and **Growth**: Earnings Growth *(1-year earnings growth)*, Sales Growth *(1-year sales growth)*.

[2]Siegel, Jeremy, *Stocks for the Long Run* (McGraw-Hill, second edition, 1998), pp. 105-114.

[3]Russell 1000 Index proxy formed by identifying the largest 1000 stocks (or the stocks in same relative capitalization ranking range as determined by the NYSE capitalization deciles) for periods prior to the inception of the Russell indices. Russell 1000 Value Index proxy created by sorting the Russell 1000 proxy into top half (growth) and bottom half (value), based on price-to-book value ratios.

[4]FANG Stocks – Facebook, Amazon, Netflix, Google – tracked in a portfolio that is weighted by their market capitalization.

[5]The quote is often attributed to the author Mark Twain, but there is no evidence that he actually made the statement. Regardless of the source, the concept remains insightful.

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