



...But were too afraid to ask

With a market that has recently seemed less driven by fundamentals and more driven by risk attributes (or “factors”) and themes, our primer may be particularly relevant today. In this, our seventh edition of the US Quantitative Primer, we outline the proprietary framework that is critical to our portfolio strategy work, as well as trends in the industry. We ultimately provide a guide as to how to better incorporate quantitative tools into security selection. We believe there is something for everyone in this book – asset allocators, generalist PMs, sector specialists and systematic investors alike.

What's new? Smart beta, positioning, new alpha signals

The lowdown on smart beta: With smart beta ETFs quadrupling in assets over the last six years, flows into "factor-based" strategies are important to assess, and have driven big valuation discrepancies. We here discuss the genesis of smart beta, how much money is invested, and where the action is from a flow perspective; we also assess whether smart beta funds are really that smart. **Positioning:** Investor positioning has dominated performance for the past several years, and this trend is very likely to continue according to our work. We highlight the best ways to incorporate positioning into the investment process. **How to make money from corporate guidance:** Corporate guidance is an oft-quoted, but rarely used quantitative signal. We provide insight into how to formally track and extract alpha from management commentary.

The problem with backtests

Backtests are helpful in making investment decisions, but should be taken with many grains of salt – especially today. Stock-level data extending further back than 30 years is scant. And the last 30 years were characterized by falling interest rates and accommodative fiscal and monetary policy, culminating in an unprecedented wave of liquidity in the 2000s and 2010s. Levered companies, credit-sensitive sectors, low quality stocks and small caps—all of which thrive on access to cheap capital — outperformed for most of the last three decades. The next regime could look very different. We offer guidelines for investors to avoid conflating alpha with credit sensitivity (Exhibit 5).

Different strokes for different sectors

The best methods for evaluating companies vary by sector. Using low Price to Book Value to screen bank stocks is actually inferior to low Price to Earnings (P/E). But low P/E screens for Media stocks may be ill advised, as low P/E Media stocks have routinely *underperformed* their high P/E counterparts. Media stocks' cash flow yield has been a better predictor. For Consumer Staples, leverage may matter more than for other sectors, as a long-short strategy based on Return on Equity would have lost money, but one based on Return on Capital would have generated strong returns. See Section III: Strategies within Industries.

There is no Holy Grail

Fundamentally driven stock selection has generally offered attractive risk/reward characteristics over time, but the predictive strength of models varies depending on the macro environment. At inflection points in the economic cycle, fundamentals may take a backseat to risk. To navigate these rotations, we highlight macroeconomic indicators that have been the most predictive of style rotation. See Exhibit 3.

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Refer to important disclosures on page 238 to 239.

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What's inside:

- **For Quants:** What's the crowded trade? We include the most and least popular quantitative strategies and trends in factor popularity over time.
- **For sector analysts:** Different fundamental signals work better within different groups, and we highlight the most predictive stock selection attributes within sectors.
- **For equity long-short investors:** Certain attributes may matter more for long-only investors, whereas others may be better long-short signals, so we include performance of factors on the long and short side.
- **For Growth & Value managers:** We include factor performance within the style benchmarks, and also assess the fundamental attributes and attractiveness of the benchmarks themselves over time.
- **For macro investors:** We include market timing and sector rotation models, as well as an analysis of factor performance vis a vis macro environments. We also include industry attributes over time.

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Dear Reader,

Each year since 2010, we have published our annual Quantitative Primer which highlights various aspects of our quantitative work, and is backed up by almost 100 proprietary stock screens that we regularly update and publish. We have found these to be helpful to clients as performance attribution benchmarks, as risk models and as analytical tools for devising style and sector rotation models. Ultimately these tools provide empirical evidence to support or refute the idea that particular stock attributes drive future returns.

The 2016 Quantitative Primer contains all of these models under one cover. We also include risk/reward characteristics for each factor, as well as changes in sector composition over time.

How to use this book

- **Factor performance:** We highlight the performance of various stock screens, spanning valuation to growth to technical to miscellaneous factors, to determine both long-term efficacy and cyclicalities of different investment styles.
- **Risk/reward characteristics:** We highlight the reward and risk characteristics of each screen versus market benchmarks to indicate how well and how consistently these have performed since inception. We measure risk by both volatility of returns and by probability of loss. For top vs. bottom ranked screens, we also assess consistency of top decile versus bottom decile spreads.
- **Sector composition:** We highlight the changes in sector composition of style screens. Since we calculate each screen without sector constraints, we have found that there is useful information in assessing changes in sector exposures both to determine a) whether particular sectors are driving returns, and b) how sectors have changed their characteristics over time.
- **Long-short performance:** Long-only *and* long-short investors may benefit from knowing not just how the top-ranked stocks have behaved, but also how the bottom-ranked stocks have behaved over time. This is useful in determining which screens to use as overweight or “buy” signals, and which screens to use as underweight or “sell” signals.
- **Sector specific models:** Given that certain screens may be more effective in some sectors than in others, we believe that determining drivers of returns *within* specific industry groups can add significant value to a screening process.
- **Trends in the quantitative finance industry:** We provide insight from our survey of institutional investors as to what factors folks are using/not using, how smart beta strategies have changed the framework for institutional investors, and **more**. We also include historical charts on industry attributes, on the market, and on other asset classes. We discuss how we weave these signals together to determine our outlook for (and within) the US equity market.

We are consistently striving to improve the quality, breadth and scope of our proprietary models. We hope this annual report proves to be helpful, and readily welcome suggestions on how to improve next year's edition.



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Section I: Core Concepts and Methodology

What drives market performance?

Factor timing

Earnings Expectation Life Cycle

Measuring risk

Roadmap to picking stocks

Factor popularity

What drives market performance?

Overall stock market performance is largely a function of valuation, sentiment and profits. When an investor buys stocks, he/she is buying a share of the future profits of the company and must decide whether the market is valuing them correctly, which can be very heavily influenced by investor sentiment.

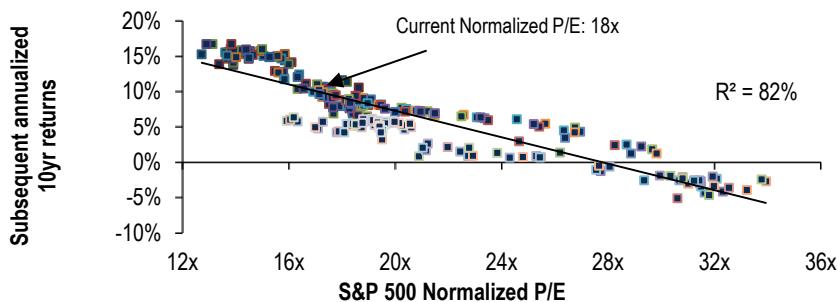
1. Valuation

Our work suggests that valuation is generally a poor market timing indicator over shorter time horizons. However, over longer time horizons it may be the most important determinant of market returns. The drawback of most single-period valuation ratios used by investors is that they implicitly assume that the single period being used – EPS over the next 12 months in the case of forward PE ratios – is representative of the trajectory of future profit growth. Our preferred valuation measures adjust for this single-period bias.

Normalized P/E Model

One way to adjust for the single-period bias is to estimate the underlying earnings power based on the historical trend, adjusting for cyclicalities. We estimate normalized earnings based on a linear log normal regression and our analysis shows that this measure of market valuation explains over 80% of the variability of equity market returns over the

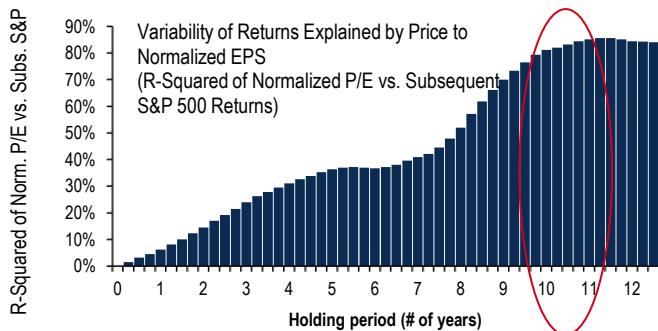
Chart 1: S&P 500 Normalized P/E vs. subsequent annualized 10yr returns



Source: BofA Merrill Lynch US Equity and US Quant Strategy

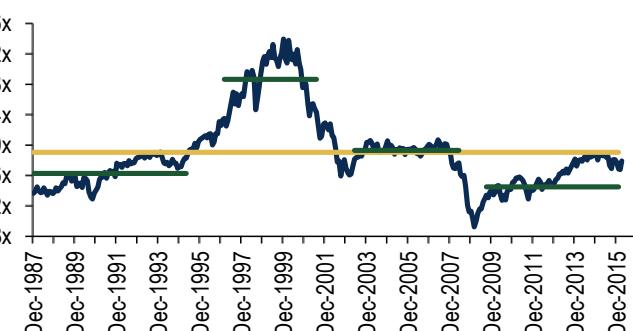
next 10 years (Chart 2). In the late-1990s, equity valuations were near peak levels, and we subsequently saw negative returns over the following decade. In contrast, valuations in the wake of the financial crisis reached extreme levels far below those seen during the 1980s and 1990s, and were similarly followed by strong equity market returns (Chart 3). Over the last two years, valuations have returned to levels in line with the history, and the S&P 500's current normalized PE ratio of 19x suggests annualized 10-year price returns of +8%, which would represent more than a doubling of the market's current levels.

Chart 2: Normalized P/E's predictive power on S&P 500 returns



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 3: Normalized PE levels over time



Source: BofA Merrill Lynch US Equity & US Quant Strategy, S&P

Equity Risk Premium Models

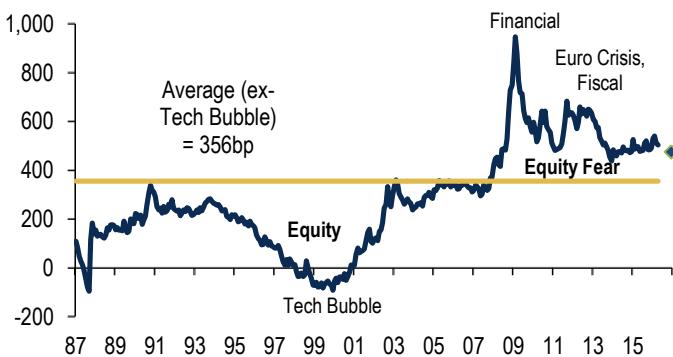
While normalized PE ratios adjust for the single-period bias, two criticisms of this valuation metric are that (1) it is backward looking and (2) does not account for changes in interest rates. The equity risk premium is the amount of additional return beyond the risk free rate that investors require as compensation for accepting the investment risks and costs associated with owning stocks. When investor fear is high, and the market perceives equities to be very risky, the equity risk premium is high to compensate for higher perceived risk, and vice versa.

Similar to volatility, when the risk premium is rising, this typically coincides with higher quality investments outperforming, and when the risk premium is falling, this typically coincides with lower quality investments outperforming. Another interpretation of this relationship is the idea that as the cost of equity capital is increasing, shorter duration (higher dividend yielding) equities generally outperform, and when the cost of capital is decreasing, longer duration, higher beta companies generally outperform.

Normalized Equity Risk Premium Model

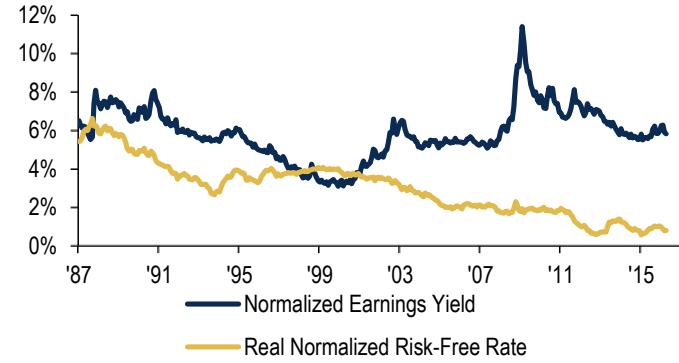
We estimate the historical ERP as the normalized EPS yield (normalized EPS ÷ current price) less the normalized real risk-free rate. In addition to the normalized EPS discussed in the previous section, we also normalize the risk-free rate. We assume that the market's interest rate and inflation expectations are a function of recent history and current market dynamics. As such, to calculate the normalized real risk-free rate, we take (1) the average of the current 30-yr Treasury yield and the rolling five-year average 10-yr Treasury yield and we subtract (2) the average of 10-yr TIPS spread and the rolling five year CPI inflation rate.

Chart 4: Normalized equity risk premium



Source: BofAML US Equity & Quant Strategy, Federal Reserve Board, Standard & Poor's, BLS

Chart 5: Normalized EPS yield & risk-free rate

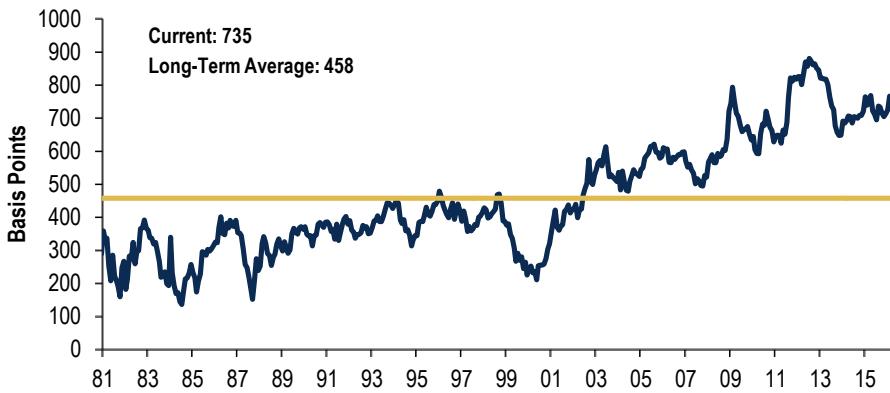


Source: BofAML US Equity & Quant Strategy, Federal Reserve Board, Standard & Poor's, BLS

Dividend Discount Based Equity Risk Premium Model

Our Market-Based Equity Risk Premium model is based on our proprietary Dividend Discount Model (DDM), making use of our analysts' forecasts for company earnings and dividends in order to estimate the expected, or required, rate of return of the equity market. For more details on our DDM, see the Appendix. Because our DDM mimics the yield-to-maturity calculation for a bond, this model essentially computes the "yield-to-maturity" of equities. The spread between the expected return of the S&P 500 and corporate bond yields (as measured by AAA Long-Term Corporate Bond Rates) estimates the risk premium demanded by the market for taking on equity-specific risk over credit risk.

Chart 6: S&P 500 Risk Premium (DDM Expected Return less AAA Corporate Bond Rate)

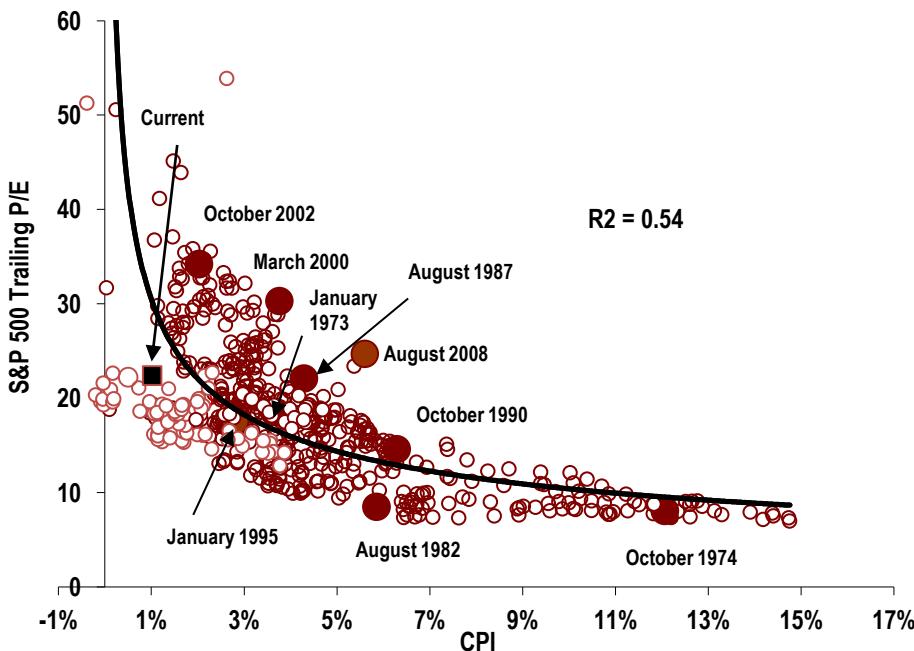


Source: BofA Merrill Lynch US Equity & Quantitative Strategy, I/B/E/S

Inflation vs. P/E Model

The inflation vs. P/E model is based on the premise behind the “Rule of 21” valuation model. The Rule of 21 model states that the combination of the S&P 500 P/E and the year-to-year inflation rate (CPI) should be equal to 21. We found that the relationship is generally true, but not at valuation and inflation extremes. Therefore, a non-linear curve better fits the model. The chart below highlights the historical relationship between inflation and P/E over time. We quantify this relationship using a least-squares regression model fitted to an equation in the form $y = cx^b$ where b and c are constants.

Chart 7: Inflation vs. P/E Model (1965 to present)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Standard & Poor's, Bureau of Labor Statistics

2. Sentiment

Returns tend to be greater where capital is scarce. As investors flock to invest in an asset, it pushes up the price and lowers the potential future returns of that asset. Thus,

there should be a direct inverse correlation between investors' willingness to invest in stocks and future equity returns.

Sell Side Indicator

The Sell Side Indicator — our proprietary model that measures Wall Street's bullishness on stocks — is based on the average recommended equity allocation of Wall Street strategists as of the last business day of each month. These equity weightings are from strategists who submit their asset allocation recommendations to us or to Bloomberg — currently there are eight. We have found that Wall Street's consensus equity allocation has historically been a reliable contrary indicator. In other words, it has historically been a bullish signal when Wall Street was extremely bearish, and vice versa.

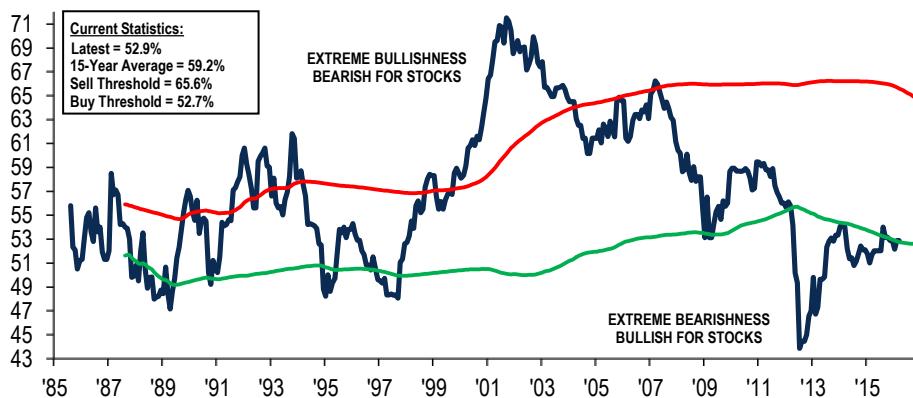
Table 1: Predictive Power of Selected Indicators Forecasting 12-Month S&P 500 Returns

Indicator	R ²
Sell Side Indicator	0.26
S&P 500 Dividend Yield	0.13
Proforma PE	0.12
Adj. Fed Model (EPS Yld - Real 10-Yr Tsy Yld)	0.04
10-Yr Treasury Yield	0.02
M2 Growth	0.02
3-Mo T-Bill Rate	0.01
Fed Model (EPS Yield - 10-Yr Treasury)	0.01
Yield Curve (10-Yr - 3-Mo)	0.00
BBB to Treasury Spread	0.00
GAAP PE	0.00
M1 Growth	0.00

Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Given secular changes in equity allocation over time, we believe comparing the recommended equity allocation to a moving average may be most effective. Wall Street sentiment appears to go through long-lasting secular phases that can last more than a decade. From the '80s to the mid-90s, the average equity allocation was anchored at a lower level and then grew more aggressive beginning in the late '90s.

Chart 8: Sell Side Consensus Indicator (as of 31 March 2016)



Source: BofAML Global Research US Equity & Quant Strategy

Note: Buy and Sell signals are based on rolling 15-year +/- 1 standard deviations from the rolling 15-year mean. A reading above the red line indicates a Sell signal and a reading below the green line indicates a Buy signal.

The Sell Side Indicator does not catch every rally or decline in the stock market, but has historically had some predictive capability with respect to subsequent 12-month S&P 500 total returns. Although the r-squared of 26% may sound low, it is significantly higher than similar statistics for typical variables used in stock market timing models. In

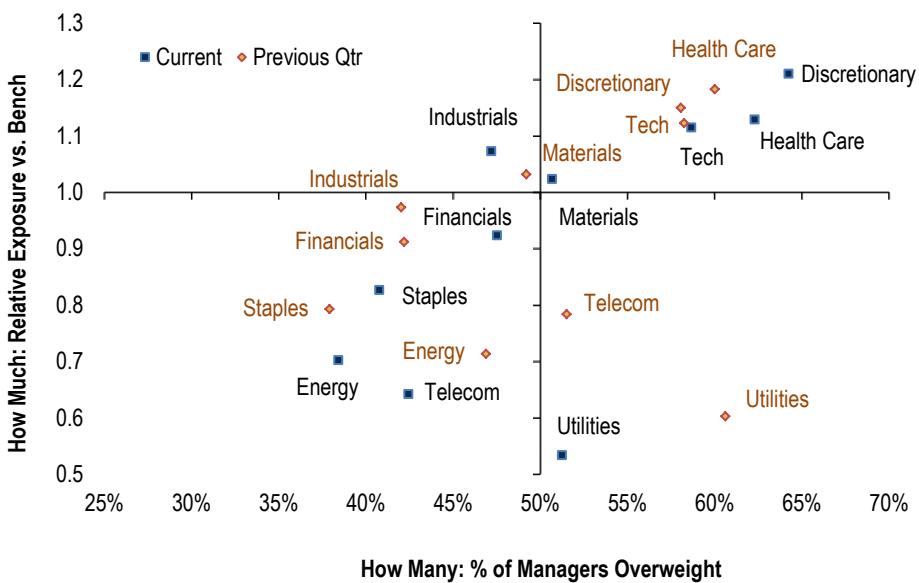
particular, note that such heralded indicators such as the “Fed Model” and money growth have relatively little predictive value.

3. Positioning

Active managers holdings

At the sector and stock level, as well as for factors, we analyze large cap active managers’ positioning on a quarterly basis. Positioning by sector for the latest quarter can be found below. Positioning data allows investors to assess, for example, what stocks are crowded vs. unloved by active managers or how managers’ sector exposure has changed from quarter to quarter.

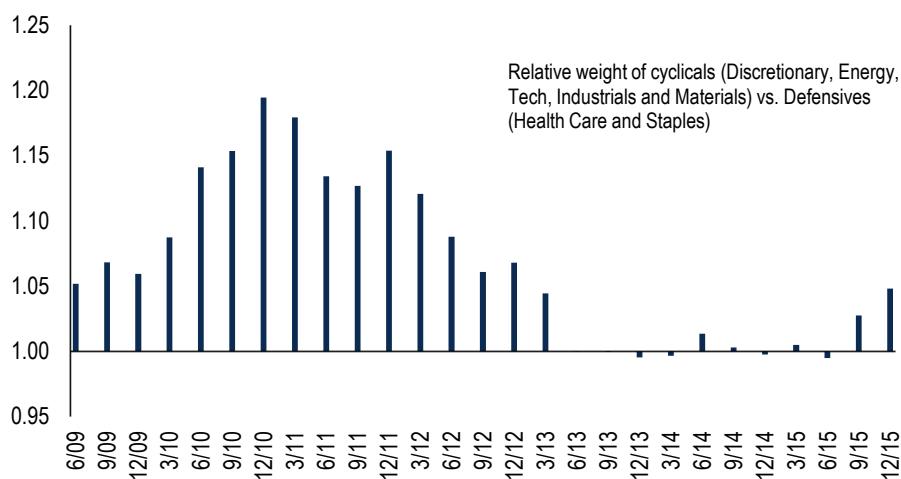
Chart 9: Active managers sector exposure today vs. Q42015



BofAML US Quantitative Strategy, Lionshares

Chart 10: Cyclicals vs. Defensives relative exposure

Large cap mutual fund exposure to cyclical vs. defensive sectors, 2009-4Q15



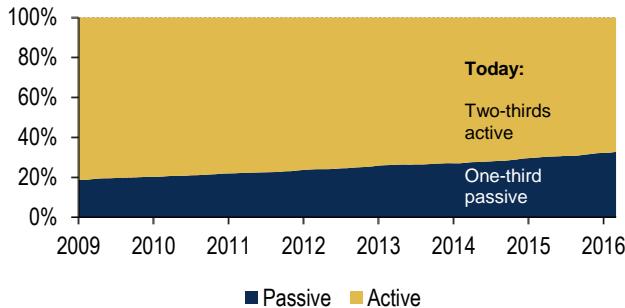
Today fund managers have increased cyclical exposure, but are more defensive than they were in the years immediately after the crisis (2010 – 2012).

Source: Lipper Analytical Services; BofA Merrill Lynch US Equity & US Quant Strategy, Lionshares

Extracting alpha from positioning

Positioning has added alpha at a stock level over the last several years. Our work suggests that over the last several years, during which active inflows were weak to negative but passive inflows were positive and strong (Chart 11), the strategy of buying the 10 most underweight stocks and selling the 10 most overweight stocks each year has generated an average of 15ppt of alpha per year (Chart 12).

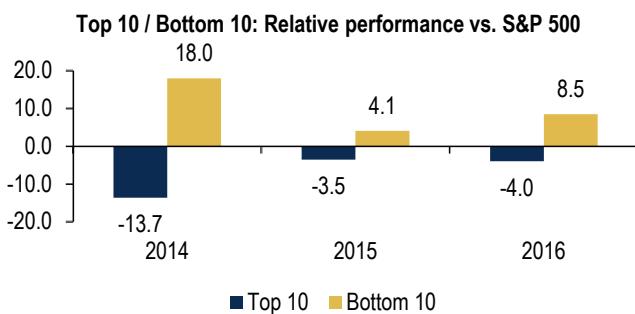
Chart 11: Active vs. passive funds assets breakdown



Note: Data through 3/31/2016

Source: BofAML US Equity & US Quant Strategy, Simfund

Chart 12: 10 stock long/short alpha performance

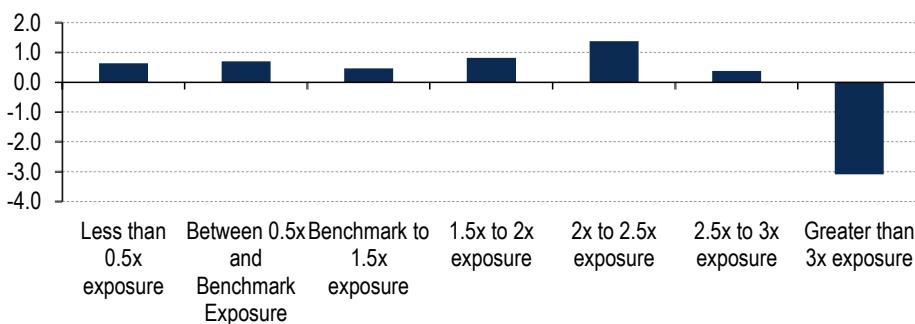


Source: BofA Merrill Lynch US Equity & US Quant Strategy.

2016 performance through 5/4/2016. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance..

Regardless of flows, crowded stocks have chronically underperformed. In our historical analysis, stocks with exposure of 3x or greater than the benchmark weight would have underperformed by 12ppt per year based on data back to 2008 (Chart 13).

Chart 13: Relative 3mth performance of stocks by buyside exposure (1Q 2008 to 3Q 2015)



Source: BofA Merrill Lynch US Equity & US Quant Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Global Fund Manager Survey cash balances

The BofAML Fund Manager Survey (FMS) is a monthly survey of 300-400 primarily long-only investors. One of the key questions in this survey asks for cash balance as % of assets under management. A low cash balance leaves investors vulnerable to negative market shocks, while a high cash balance means investors are under-invested and vulnerable to positive market shocks.

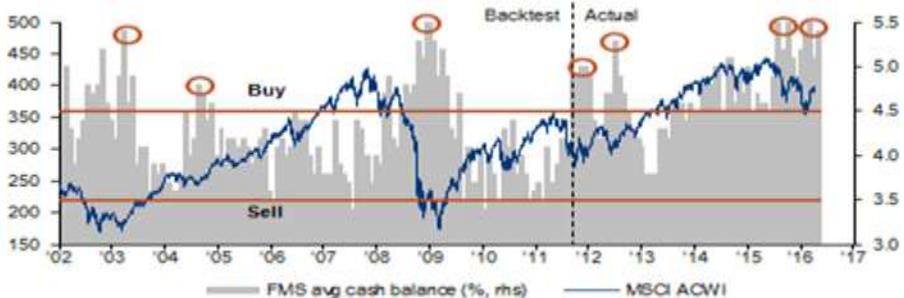
- When the cash balance falls below 3.5% a contrarian sell signal is generated.
- When the cash balance rises above 4.5% a contrarian buy signal is generated for equities.

How it works

Sell: When the cash balance falls below 3.5% a contrarian sell signal is generated.

Buy: When the FMS average cash balance rises above 4.5% a contrarian buy signal is generated for equities.

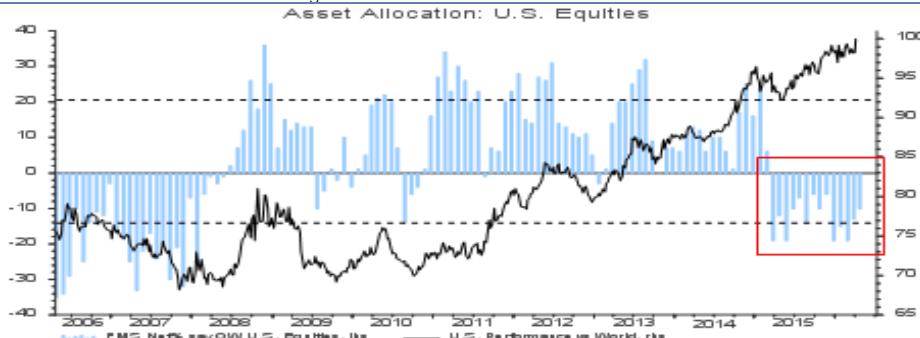
Chart 14: BofAML Global FMS Cash Indicator



Source: BofA Merrill Lynch Fund Manager Survey, DataStrea. Note: backtested results from Jan '02 to Mar '10

The BofAML Fund Manager Survey (FMS) also provides a context for global positioning of fund managers, and today highlights that global investors have been underweight US stocks for over one year, providing support that US stocks are more likely to outperform benchmarks corresponding to other regions of the world.

Exhibit 1: Investors are underweight the US

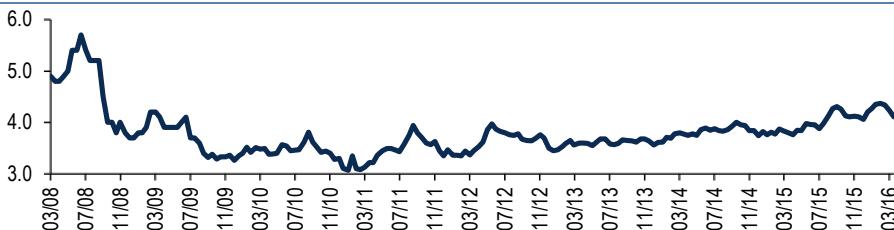


Source: Bank of America Merrill Lynch Global Manager Survey

Short Interest

While short interest is not predictive of market performance in isolation, when used in conjunction with valuation, sentiment and fundamentals, it can be a helpful in calling for upside or downside risk to the equity market.

Chart 15: Short Interest vs. Float Ratio for Total US Market

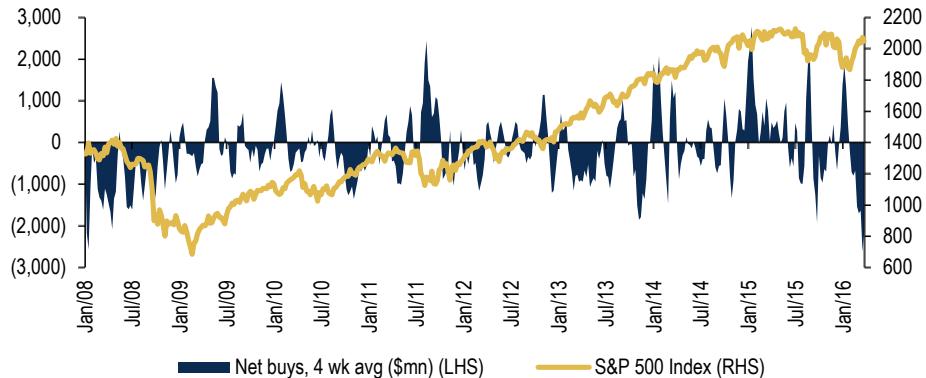


Source: BofA Merrill Lynch US Equity & US Quant Strategy, Bloomberg

Flow trends

Flows trends are often assessed as another gauge of sentiment, as they can serve as confirmation of a rally or a signal of capitulation when buying or selling activity spikes to extremes or accelerates over a period. We track BofAML client trading flows into US single stocks and ETFs which are executed by the cash equities business of the firm, and provide a weekly update on flows by sector, client type, and size segment.

Chart 16: BofAML client net buys of US equities (\$mn) and S&P 500 since 2008



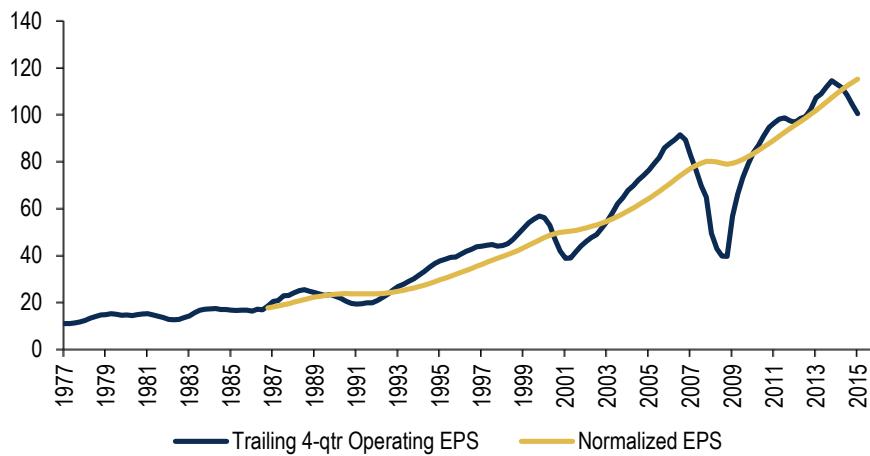
Source: Bank of America Merrill Lynch

4. Corporate Profits

Normalized earnings

Earnings are volatile over the course of a cycle, so we adjust earnings by this cyclical to estimate the underlying earnings power of the S&P 500. Without the benefit of hindsight, it is difficult to assess what stage of the cycle we are in, but our best estimate is to normalize earnings based on a trend line of earnings growth using a cumulative linear log normal regression. This normalized earnings is compared to the current price of the S&P 500 to determine the current normalized PE ratio discussed earlier.

Chart 17: S&P 500 Operating & Normalized earnings (1978 to 2015 and BofAML Estimate for 2016)



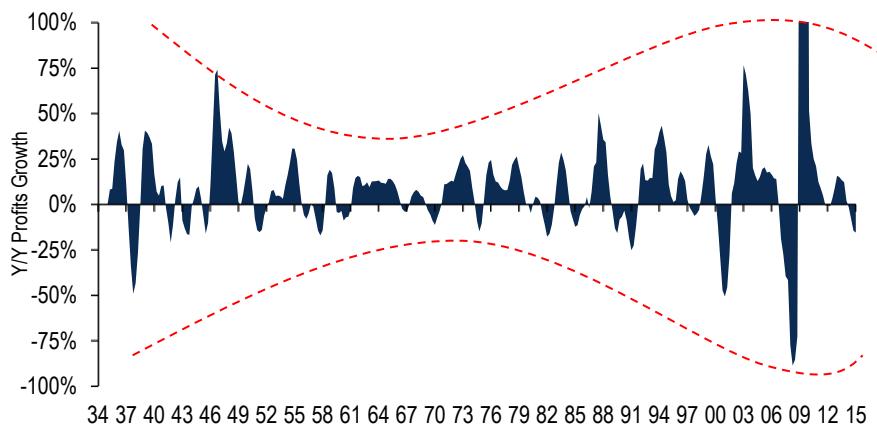
Source: BofA Merrill Lynch US Equity and US Quant Strategy

Profits cycle

The profits cycle is a core focus of our research. We feel that profitability moves equity prices (as opposed to GDP or some other macroeconomic variable) and thus we concentrate on the profits cycle when formulating our equity strategies.

We define the profits cycle as the year-to-year percentage change in S&P 500 reported earnings on a trailing 4-quarter basis. See chart below.

Chart 18: Profits cycle: YoY EPS Growth for S&P 500, 1935 to present



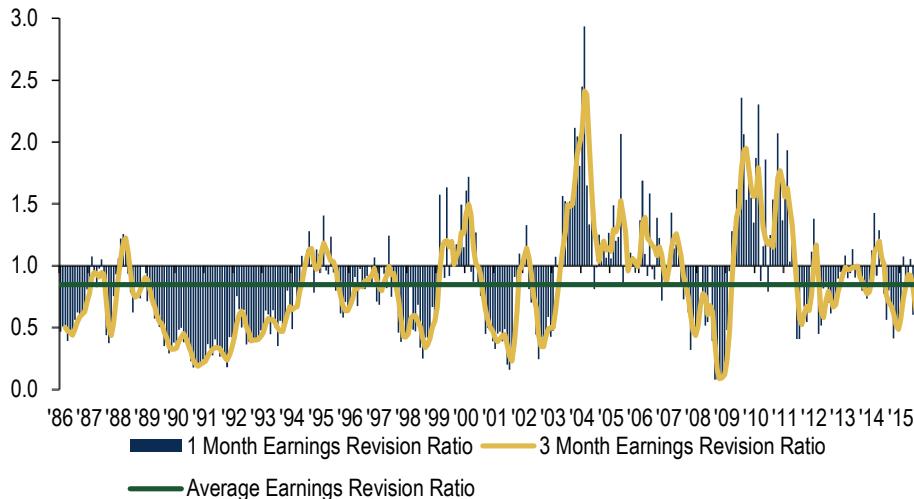
Source: BofA ML US Equity & Quant Strategy

Whereas real earnings growth is possibly a better gauge of economic cycles, nominal earnings growth is a more important factor when examining the equity market. The equity market is a nominal concept because pricing and inflation, and not simply unit growth, influence profitability.

S&P 500 earnings estimate revision ratio

The following chart shows the earnings estimate revision ratio, calculated as the ratio between the number of companies in the S&P 500 for which consensus earnings estimates have been raised versus those that have been lowered over a three month period. As a breadth ratio, the earnings revision ratio is generally an earlier indicator of changes in the profits cycle, as it is more sensitive to changes in earnings expectations than is a market capitalization weighted estimate revision model. For example, the revision ratio troughed at the end of January '09, about a month before the market recovered, whereas on a cap-weighted basis, earnings expectations troughed in the end of April '09, two months after the market's trough.

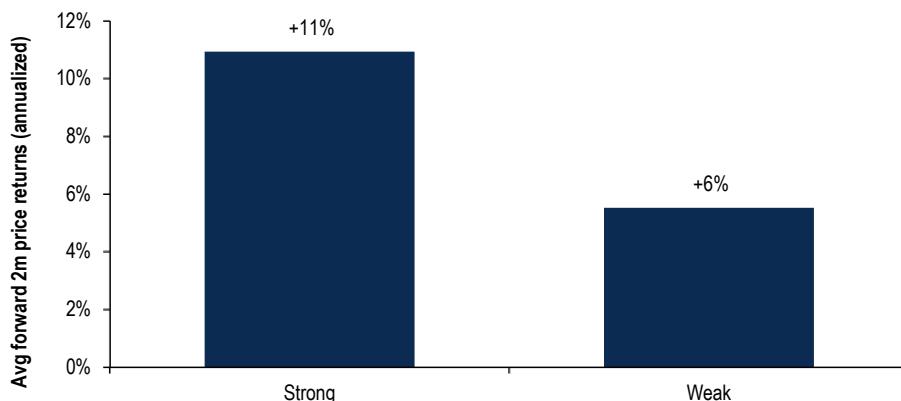
Chart 19: S&P 500 Earnings Estimate Revision Ratio – 03/2016



Source: BofA Merrill Lynch US Quantitative Strategy, I/B/E/S

The estimate revision ratio can be used as a short-term gauge of sentiment. The S&P 500 has displayed predictable patterns based on phases of the revision cycle, with the best predictive power over a forward 2-month period. The market has historically had the strongest returns when the ratio is Strong or above average (+11% annualized), and the weakest returns when the ratio is Weak or below average (+6% annualized).

Chart 20: ERR vs. annualized forward 2-month returns (1986-present)



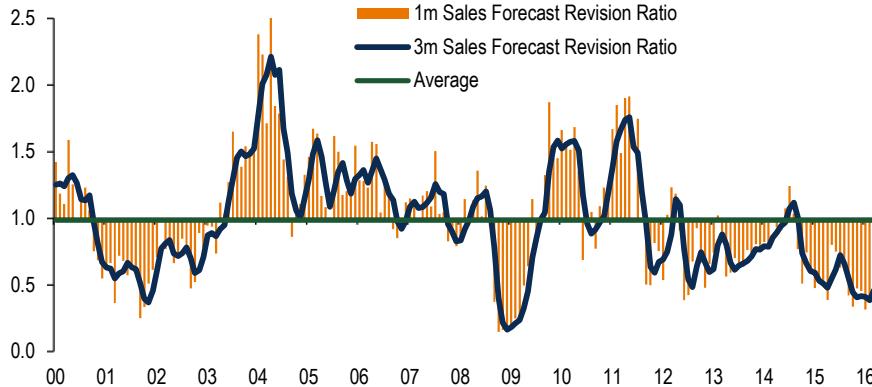
Source: BofA Merrill Lynch US Equity & US Quant Strategy

S&P 500 sales revision ratio

Sales forecast revision ratios are defined similarly to earnings estimate revision ratios, but instead of consensus earnings estimates, we use consensus sales forecasts for S&P 500 companies.

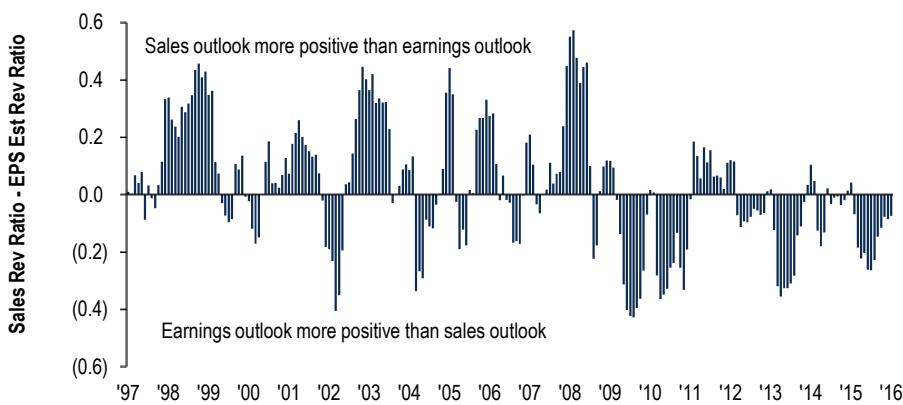
We also follow the gap between the top-line vs. bottom line revision ratio. We have found that sales based measures may be more important when the sales revision ratio is not improving as rapidly as the earnings revision ratio, and vice versa. Generally, the scarce resource is the more rewarded and important metric.

Chart 21: S&P 500 Sales Forecast Revision Ratio



Source: Bank of America Merrill Lynch US Equity & US Quant Strategy, I/B/E/S

Chart 22: Spread: 3-month sales forecast revision ratio vs. 3-month earnings estimate revision ratio

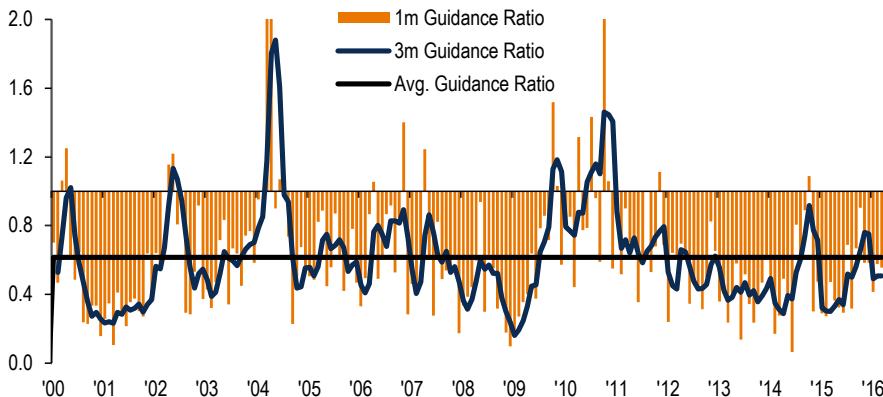


Source: BofAML US Equity & US Quant Strategy

Management guidance ratio

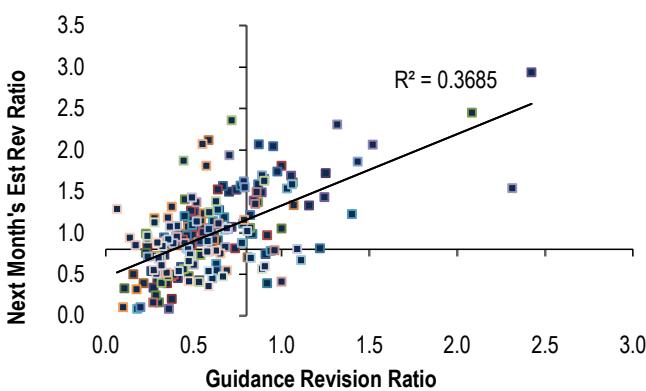
We track the ratio of total instances of above-consensus vs. below-consensus management guidance for S&P 500 companies over a one-month and three-month period, as we have found that guidance is generally a leading indicator of estimate revisions by about one month. Sustained divergences between the estimate revision ratio and management guidance ratio (for example, a rising estimate revision ratio but falling management guidance ratio) may suggest that analysts are being overly optimistic and a downward revision cycle is soon to follow, or conversely that management is being too negative in their outlook. However, the two ratios have dramatically diverged in recent years, as management has maintained a consistently cautious stance while earnings have continued to surprise to the upside.

Chart 23: S&P 500 Management Guidance Ratio (# Above vs. Below Consensus) – 03/16



Source: BofA Merrill Lynch US Quantitative Strategy

Chart 24: Guidance Ratio vs. Subsequent Estimate Revision Ratio (2000 to present)



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 25: Correlation has diverged in recent years
Rolling 3yr correlation between guidance ratio and subsequent estimate revision ratio, 2002-present



BofA Merrill Lynch US Equity & US Quant Strategy

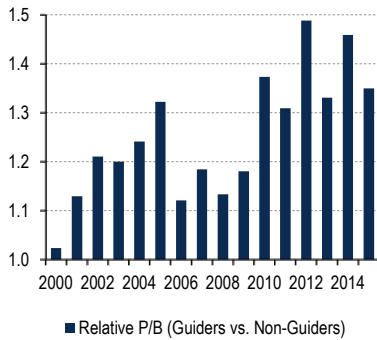
Evidence of a guidance premium

We have also found some evidence that companies who regularly issue guidance may be rewarded for their apparent transparency. History suggests that beginning in mid-2000, companies that regularly issue profits guidance have begun to trade at a premium on book value to those that do not guide at all. This premium may be granted for transparency, and we have found that it is generally most pronounced in cyclical sectors.

We have seen however, the premium for quarterly guiders have steadily been declining over the last several years, while annual guiders have generally seen their premium grow.

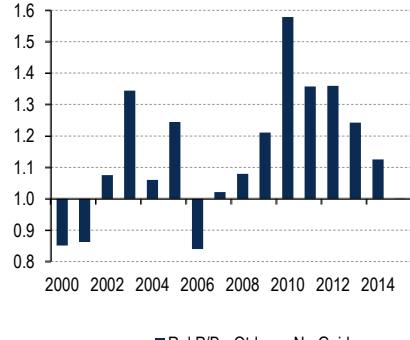
Companies who regularly issue guidance may be rewarded for their apparent transparency.

Chart 26: Premium (discount) to S&P 500 based on median P/B for companies that issue annual or qtrly guidance vs those that do not



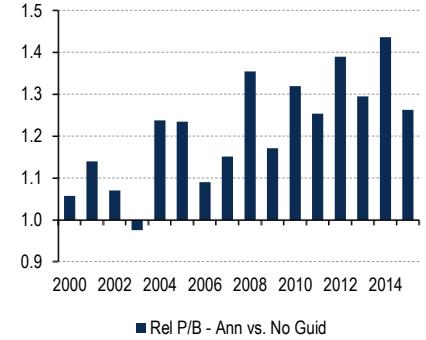
Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 27: Premium (discount) to S&P 500 based on median P/B for companies that issue qtrly guidance vs those that do not



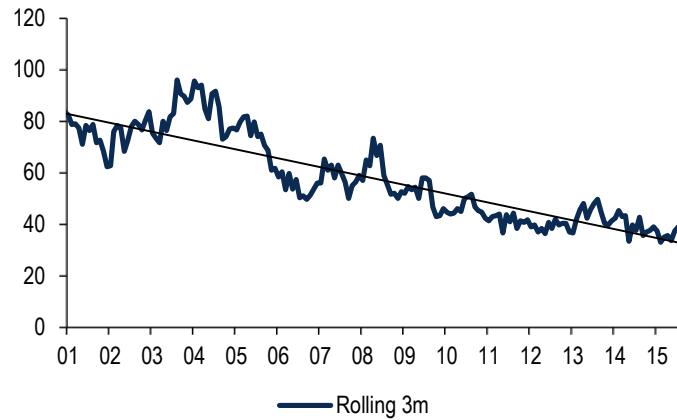
Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 28: Premium (discount) to S&P 500 based on median P/B for companies that issue annual guidance vs those that do not



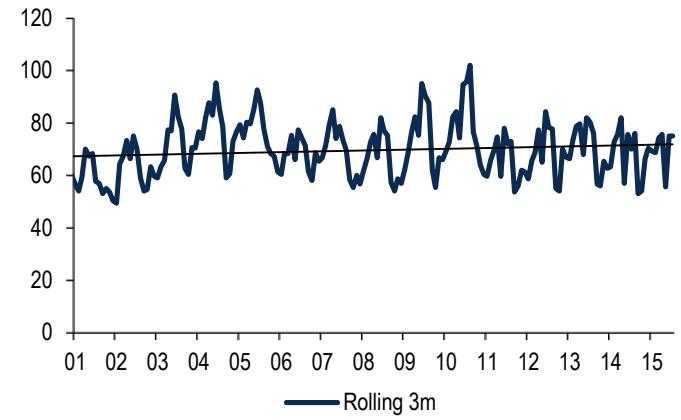
Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 29: S&P 500 quarterly earnings guidance instances



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 30: S&P 500 annual earnings guidance instances



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Corporates have shown to be less short-term focused as the number of companies issuing quarterly earnings guidance have steadily been declining over the last several years whereas the number of annual earnings guidance have remained steady.

Earnings certainty

Earnings estimate dispersion can be used to gauge the certainty or uncertainty of earnings expectations. When the average dispersion of estimates for a company in the S&P 500 is high, this can suggest earnings are less certain, whereas when dispersion is low, analysts exhibit more agreement or certainty about future earnings. However, in uncertain macroeconomic environments, a low level of dispersion can also reflect an extreme *lack* of conviction and an unwillingness of analysts to diverge from the pack. We have found that companies with low dispersion tend to outperform when dispersion is rising, and companies with high dispersion tend to outperform when dispersion is falling.

Chart 31: S&P 500 (ex. Energy) average dispersion of FY2 S&P500 Estimates (Feb 1986 to March 2016)



BofA Merrill Lynch US Quantitative Strategy

Earnings Expectation Life Cycle

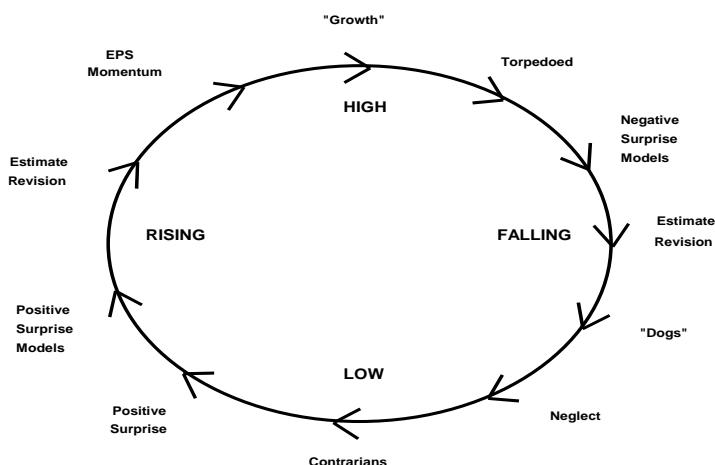
We believe that most stocks follow the pattern described by the cycle, although not every stock will stop at each point, nor will stocks reside in each phase for any regulated amount of time.

The Earnings Expectation Life Cycle is our proprietary schematic, which portrays investors' changing attitudes towards a stock over time. We believe that a successful investment process should incorporate the notion of changing expectations, because "dogs" often become "stars" and "stars" often become "dogs".

Life Cycle Phases

The Earnings Life Cycle, depicted below, contains eleven positions, with the left half of the cycle portraying the period of rising expectations, and the right half portraying the period of falling expectations.

Exhibit 2: Earnings Expectation Life Cycle



Source: BofA Merrill Lynch US Quantitative Strategy

The various stages are as follows:

Stage 1: Low Expectations

Investors commonly known as “Contrarians” typically invest in these stocks with lower earnings expectations. Most non-contrarian investors find these stocks unattractive or overly risky.

Stage 2: Positive Surprise

Eventually the low-expectations companies begin to report more optimistic information such as improved earnings significant enough so that the stocks recapture attention. Research coverage of such stocks may begin to increase although it is more likely that this will happen more towards stages 4 and 5.

Stage 3: Positive Surprise Models

Stock picking models that search for significant variations between analyst earnings expectations and actual reported earnings begin to highlight these stocks.

We have found that these models have gained a lot of popularity with investors, thus the models themselves have grown less effective.

Stage 4: Estimate Revisions

The consensus begins to raise their earnings estimates for these stocks in response to rising earnings expectations following the surprise of stage 3. Analysts’ estimate revisions often lag a surprise because analysts are generally reluctant to believe that the superior earnings will last.

Stage 5: EPS Momentum

Investors who follow earnings momentum themes begin to buy these stocks as estimates and reported earnings continue to rise and as year-to-year comparisons begin to improve.

Stage 6: “Growth”/High Expectations

Strong earnings momentum continues for a long enough period that these stocks are termed “growth” stocks by the consensus. These stocks are not “new” growth stocks, for new growth stocks are probably found during stages 4 and 5, nor are they true growth companies that alter the business environment. Rather, this is the point at which most investors agree that the stock is a terrific growth stock.

Earnings expectations are very high, which implies that there is a large risk of disappointment at this stage. Contrarian selling would optimally occur at this point in the cycle.

Stage 7: Torpedoed

Earnings disappointment occurs, stocks are “torpedoed” – i.e., their earnings expectations and prices sink.

Stage 8: Negative Earnings Surprise Models

The same models from Stage 3 above begin to highlight stocks with lower-than expected earnings as potential sell candidates.

Stage 9: Estimate Revisions

The consensus begins to lower their earnings estimates in response to the earnings disappointment. Again analysts tend to lag because they generally do not believe that the earnings shortfall is a sign of a fundamental problem with the company.

Stage 10: “Dogs”

These stocks, after continuing to report disappointing earnings for a long enough period of time, are shunned by investors. News regarding takeover, restructuring or bankruptcy

may affect the stock price temporarily; however, investors generally avoid or ignore these stocks.

Stage 11: Neglect

Investors have become so disinterested in the stocks or group that general research begins to dissipate. The lack of coverage may set the stage for a renewed cycle.

Factor timing

The underlying performance of investment styles is often just as important as the aggregate stock market performance. For instance, the S&P 500 was essentially flat in 2011, but the highest dividend yielding stocks returned 18% that year, while stocks with the highest beta fell 21%. And even as the market gained 12% in 2012, if one had invested in the stocks with the highest foreign exposure, he/she would have only made 6% versus 29% for the stocks with the lowest price to book ratios. Just as how investing in Telecom stocks requires consideration as to how dividend stocks will perform in addition to their fundamental profit outlook, investors should consider their portfolios' factor exposures and what drives the performance of those factors.

Exhibit 3: Factor Timing

Factor	Trigger(s)
Beta	Accelerating profits, declining volatility
DDM Alpha	Decelerating profits, rising volatility
Dividend Yld	Negative equity returns, rising volatility (Note that second quintile does better than top quintile)
Dividend Growth	Negative equity returns, rising volatility
Earnings Estimate Revision	Estimate Dispersion falling
Earnings Momentum	Accelerating profits, declining volatility, declining dispersion of estimates
Earnings Yld	Accelerating profits, declining volatility
Equity Duration	ERP falling, Growth expectations rising
Estimate Dispersion	Estimate Dispersion falling
EV/EBITDA	Accelerating profits, declining volatility
Five-Year ROE	Decelerating profits, rising volatility
Five-Year ROE (Adjusted BY Debt)	Decelerating profits, rising volatility
Foreign Exposure	Dollar weakening
Forward Earnings Yield	Accelerating profits, declining volatility
High Variability of Earnings	Accelerating profits, declining volatility
Most Active	Inflection points in VIX (peaks or troughs)
Neglect-Analyst Coverage	Low volatility, large inflows into equities
Neglect-Institutional Ownership	Negative equity returns
One-Year ROE	Decelerating profits, rising volatility
One-Year ROE (Adj for Debt)	Decelerating profits, rising volatility
P/E to Growth	Generally good in most environments
Positive Earnings Surprise	Low dispersion of estimates
Price	Accelerating profits, declining volatility, declining dispersion of estimates
Price/Book	Accelerating profits, declining volatility, declining dispersion of estimates
Price/Cash Flow	Accelerating profits, declining volatility
Price/Free Cash Flow	Accelerating profits, declining volatility
Price/Sales	Accelerating profits, declining volatility
Projected Five-Year EPS Growth	Decelerating profits, rising volatility
Relative Strength	VIX < 25
Return on Assets	Decelerating profits, rising volatility
Return on Capital	Decelerating profits, rising volatility
Share Repurchase	Works better for companies with low valuation
Small Size	Accelerating profits, declining volatility, declining credit spreads, senior loan officer survey net easing
High Quality (A+)	Decelerating profits, rising volatility
Low Quality (C&D)	Accelerating profits, declining volatility

Source: BofA Merrill Lynch US Quantitative Strategy

The Earnings Expectation Life Cycle and Growth and Value

The Earnings Expectations Life Cycle can be adapted to help understand investment styles or management techniques. As is indicated by the diagram, value-oriented investment strategies are more likely to fall in the bottom half of the Life Cycle because they tend to be more Contrarian in nature. Value-oriented strategists spend more time attempting to distinguish the true “dogs” – those which might not take another turn around the Life Cycle - from those stocks that are simply out of favor but will rebound.

Growth-oriented investment strategies tend to be in the top half of the Life Cycle. The success of these strategies depends on one’s ability to astutely realize that a company’s earnings momentum is secular and not simply a result of cyclical influences. Thus, the equator of the earnings expectations life cycle schematically separates the worlds of growth and value investing.

The theory behind the Life Cycle suggests that the hardest thing for a growth manager to do is to sell a stock, whereas the hardest thing for a value manager to do is to buy a stock. It seems that a good value-oriented manager is likely to be buying stocks later than his peers, whereas a good growth-oriented manager is likely to be selling stocks earlier than his peers.

Growth and Value

Our definitions of growth and value diverge from the traditional, academic definitions. We use high **Earnings Yield** (simply the inverse of P/E) to determine Value stocks and high **Projected 5-Year EPS Growth** to determine Growth stocks. Thus, our classification admits the possibility of a stock being classified as both Growth and Value.

Growth and Value and the Earnings Expectations Life Cycle

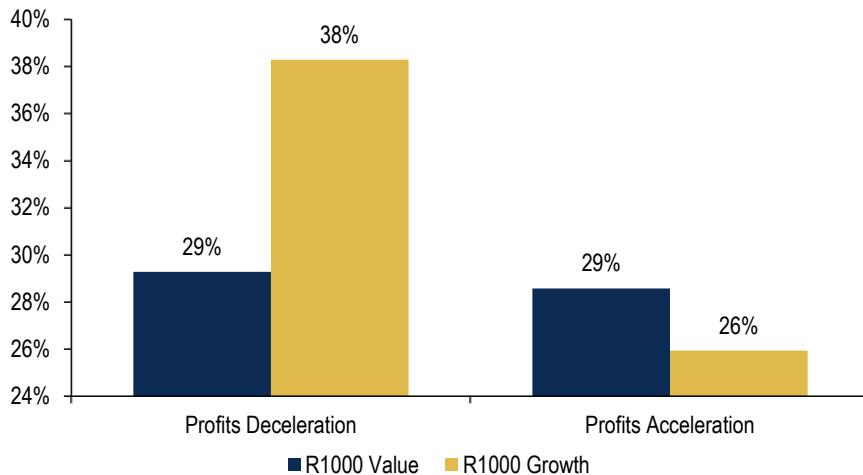
Within the context of the Earnings Expectations Life Cycle, **Value** managers are defined as investing in “low-expectations” equity since they search for out-of-favor stocks whose equity is priced at a discount. **Growth** managers are defined as investing in “high-expectations” equity since they search for stocks with a proven track record of success and which are thus priced at a premium.

Growth and Value and the Profits Cycle

Growth and Value appear to be related to the Profits Cycle. We have found that Growth and Value cycles have been historically related to the scarcity or abundance of nominal earnings growth – when nominal earnings growth is scarce, growth (as a scarce resource) outperforms value, since investors tend to bid up the prices of companies that can maintain their earnings growth. Moreover, as earnings growth becomes abundant (as the profits cycle accelerates) investors tend to comparison shop, and pay less for stable earnings growth than they might have during a dearth of earnings growth.

Performance tends to switch off between growth and value: when earnings growth is scarce and investors bid up the valuations of the few stocks that can maintain growth, value managers generally stay out of these stocks. However, growth managers invest in them, and thus can thrive during these phases. Conversely, when reported earnings growth becomes increasingly abundant, investors tend to become comparative shoppers, or value investors. Value managers tend to outperform growth managers when the profits cycle accelerates.

Chart 32: Growth vs. Value performance during the profits cycle (1982-present)



Russell Investment Group, BofA Merrill Lynch US Equity Strategy

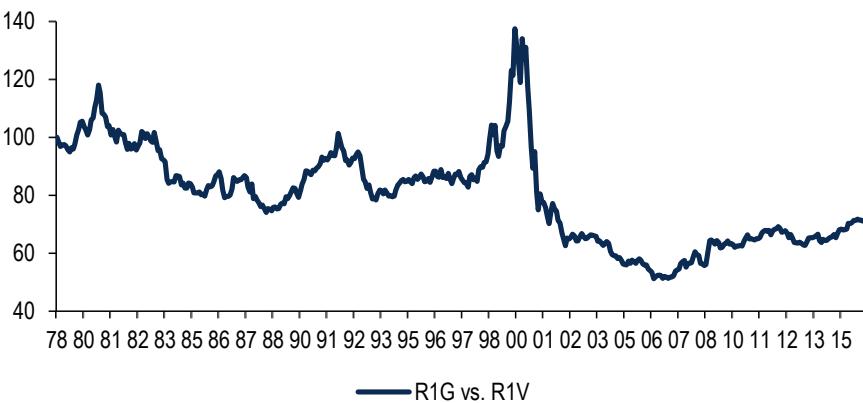
Because one of the factors influencing nominal earnings growth is inflation, we can assume that during inflationary environments, earnings growth tends to be more abundant and thus value outperforms growth. Therefore, during inflationary periods, the yield curve is steep, and future prospects are expected to be superior to current prospects, thus a value cycle is expected to ensue. Likewise, during deflationary periods when the yield curve is inverted, future prospects are thought to be dimmer than current ones, thus earnings growth is expected to be scarcer in the future, implying that a growth cycle lays ahead.

In sum, historically, value strategies tend to outperform growth strategies when earnings momentum rises, interest rates rise, the yield curve steepens, and payout ratios decline.

Growth vs. Value benchmark performance

Over the long-term (since 1978), the Russell 1000 Value index has outperformed the Russell 1000 Growth index. However, since 2007, Growth has been outperforming Value, as the Financial Crisis and its aftermath led to a period where growth became the scarce resource. On an annual basis, growth has beaten Value in five of the last seven years.

Chart 33: Large caps: Relative performance (total return) of Growth vs. Value (1978-present)



Russell Investment Group, BofA Merrill Lynch US Equity Strategy

Style differentiation has waned in recent years

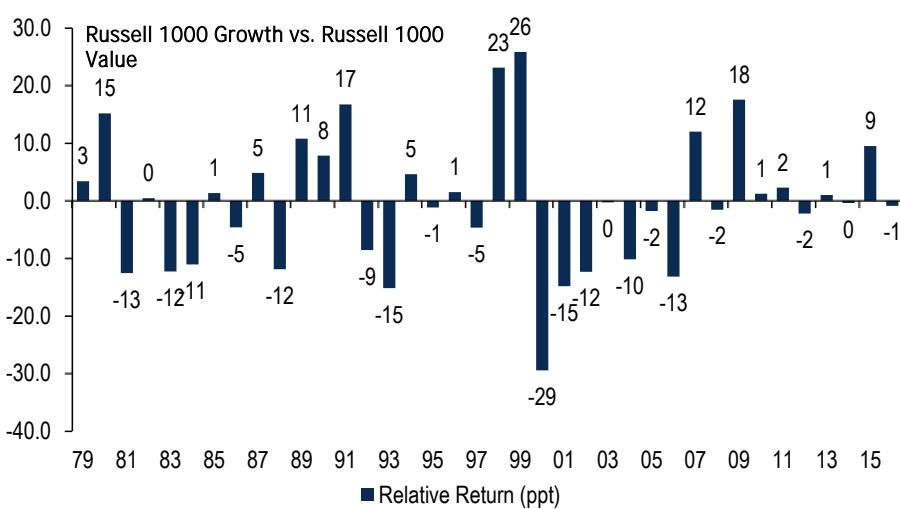
After several years of neck and neck Growth and Value performance, Growth led by a wide margin in 2015. But so far this year Value has started to work: the Russell 1000 Value index slightly beat the Russell 1000 Growth and the trend is likely to continue in our view. Performance spreads have historically been wider for small caps, suggesting that having a style benchmark view may be more important in this size segment (see Table 2).

Table 2: **Avg. rel. return of Growth vs. Value in years where Growth O/P'd, and avg. rel. return of Value vs. Growth in years where Value O/P'd**

	Russell 1000	Russell 2000
Avg. Growth Outperformance (ppt)	8.8	11.1
Avg. Value Outperformance (ppt)	8.9	12.6

Russell, BofA Merrill Lynch US Equity & Quant Strategy

Chart 34: Relative Total Return: Growth vs. Value benchmarks(1979-3/31/2016)



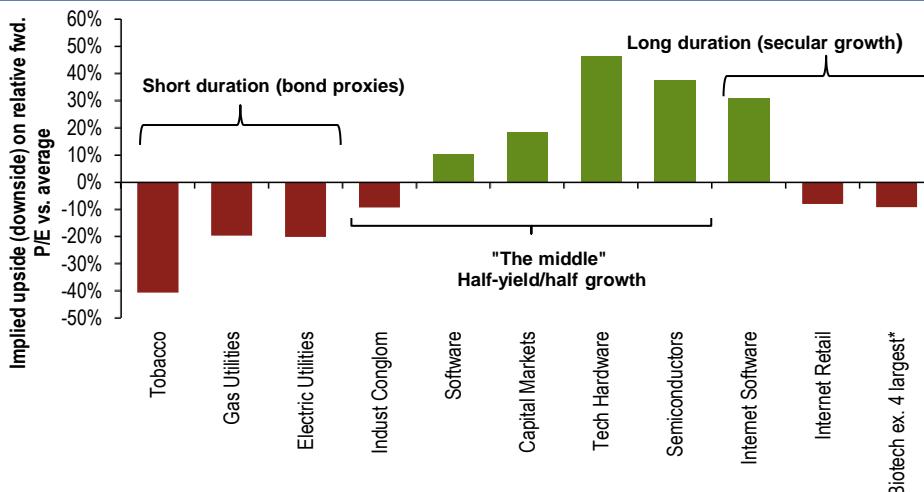
Russell, BofA Merrill Lynch US Equity & US Quant Strategy

Equity Duration

While the growth and value benchmarks have not always provided meaningfully differentiated returns over the last several years, what might be a more important way to differentiate stocks is by equity duration. We have found that since the 2008/09 credit crisis, both long duration and short duration stocks have grown expensive, where long duration companies can be seen as “delayed gratification” investments, found in younger higher growth industries like Biotechnology. These companies might not generate significant cash flow today, but offer the promise of high growth in the future. Short duration companies are the equivalent of high coupon bonds – these are “cash cows” generally found in mature, ex-growth industries like Utilities or Tobacco.

Since 2008 two attributes have been scarce: growth and yield. Thus the tails of equity duration have both done well, where short duration companies are generally more prevalent in the value benchmark, and long duration companies are generally more prevalent in the growth benchmark.

Chart 35: The “tails” (bond proxies and secular growth) are expensive vs. history on relative forward P/E, while half-growth/half-yield sectors are inexpensive vs. History



Note: Based on relative valuation data from 1986-present

Source: Factset/First Call, BofA Merrill Lynch US Equity & US Quant Strategy

Size

We have also examined stock performance according to size classes defined by market capitalization (the product of current price and shares outstanding.) BofA Merrill Lynch Small Cap Strategy publishes analyses of the market based on size. However, each month we incorporate several market capitalization-driven analyses into our research:

Nifty Fifty vs. Not-So-Nifty 450

For several years, we have split the S&P 500 index into two distinct groups: the Nifty Fifty (comprised of the top 50 stocks in the S&P 500 by market capitalization) and the Not-So-Nifty 450 (comprised of the S&P 500 excluding the Nifty Fifty stocks.) By examining the performance and characteristics of each group of stocks, we are able to take investment views based on size.

Small vs. Large Stock Performance

Each month we compare small stock versus large stock performance and risk/return characteristics by comparing the Russell 2000 (small) with the S&P 500 (large) and publish the results in the Performance Monitor.

Size Portfolio

Each month we publish a “small size” screen in Quantitative Profiles that includes the 50 smallest stocks in the S&P 500 by market capitalization.

The Profits Cycle and High Quality vs. Low Quality

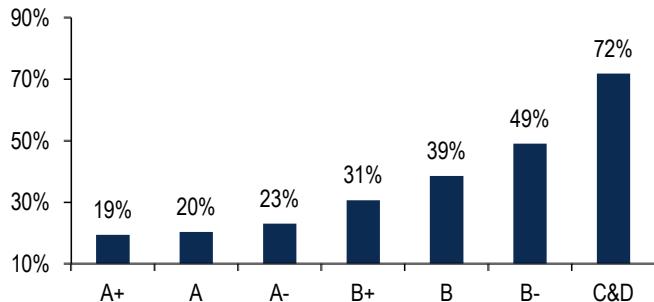
Expansions and contractions in the profits cycle are almost entirely attributable to the cyclical and profitability of lower quality stocks. We define quality using Standard & Poor's quality ranks, essentially a ranking of stocks based on earnings growth stability.

Higher quality companies are generally stable companies, and their earnings do not change dramatically enough to alter the entire profits cycle. Moreover, earnings variability is one of the main inputs into the determination of the quality rating assigned to a company. Therefore, the lower ranked stocks are more variable and, by definition, contribute more to shifts in the profits cycle.

When the profits cycle decelerates and earnings growth becomes scarce, relative earnings will begin to favor higher quality companies and high quality should outperform. Likewise, when the profits cycle accelerates and earnings growth becomes more

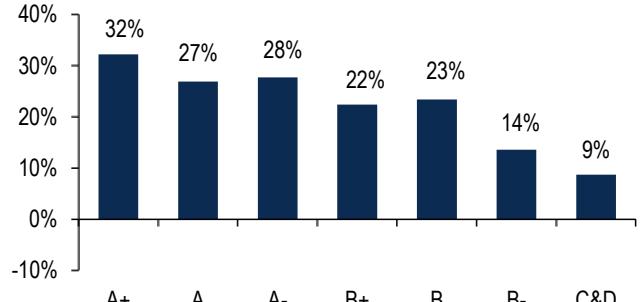
abundant, lower quality companies have better relative earnings than might higher quality issues, and thus tend to outperform.

Chart 36: Average Performance by Quality When the Profits Cycle Accelerated (Last Five Cycles, 1986-2015)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, Standard & Poor's

Chart 37: Average Performance by Quality When the Profits Cycle Decelerated (Last Four Cycles, 1986-2015)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, Standard & Poor's

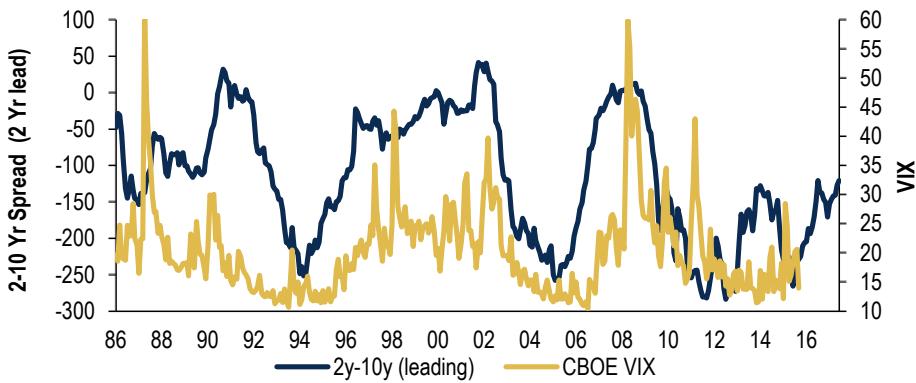
The Profits Cycle and Size

As with lower quality and value investing, small stock investing has historically correlated with levels of nominal growth within the economy. An accelerating profits cycle, therefore, tends to benefit smaller stocks' relative performances.

Volatility

A key driver for risk and quality returns is volatility. Rising volatility typically benefits higher quality, safer companies whereas falling volatility typically benefits lower quality, riskier companies. The yield curve appears to predict volatility, and the rationale for the historical relationship is that volatility may be driven by factors that the yield curve generally forecasts, including growth and risk. A steepening yield curve typically reflects increases in growth expectations and risk appetite, which have a dampening effect on volatility; a flattening yield curve typically reflects decreasing growth expectations and building risk aversion, which tend to have an amplifying effect on volatility.

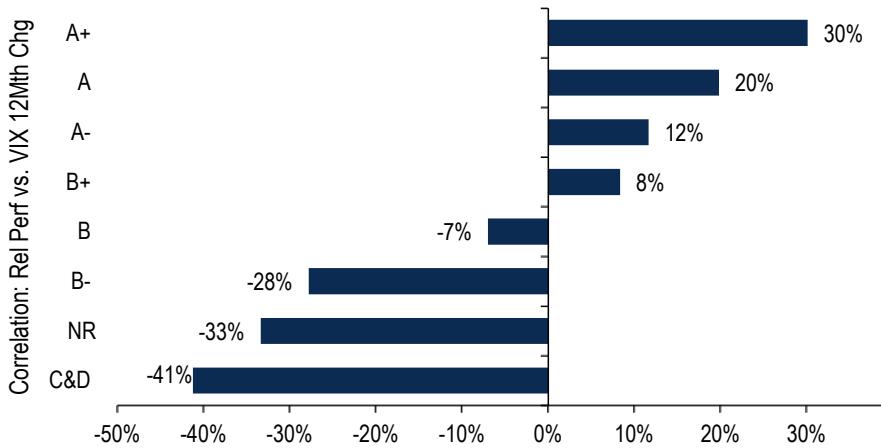
Chart 38: CBOE VIX and Inverted Slope of Yld Curve (Jan 1986 to Mar 2016)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy

Periods of rising volatility tend to favor higher quality companies, and periods of falling volatility tend to favor lower quality stocks. Moreover, during periods where volatility is at more "normal levels", fundamental strategies tend to outperform both risk and high quality strategies.

Chart 39: BofAML Quality Indices 12-Mth Performance Correlation to 12-Mth Chg in CBOE VIX (1986-present)

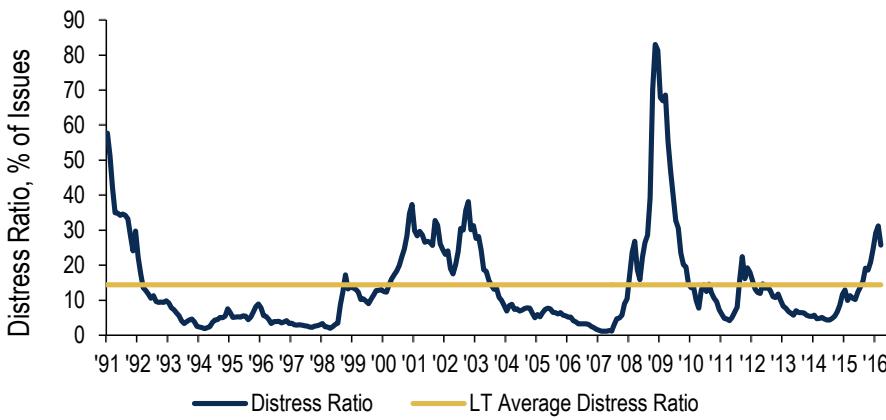


Source: BofAML US Equity & Quantitative Strategy

Distress Ratio

The Distress Ratio measures the percentage of bonds in the BofA Merrill Lynch High Yield universe yielding more than the current 10-yr Treasury note by 1,000 basis points or more on an options adjusted basis. The distress ratio has an established leading relationship to default rates, which tend to be fairly coincident to the profits cycle. In terms of strategy rotation, we have found that companies with high debt to equity ratios tend to outperform when the distress ratio is falling and vice versa.

Chart 40: BofA Merrill Lynch High Yield Distress Ratio



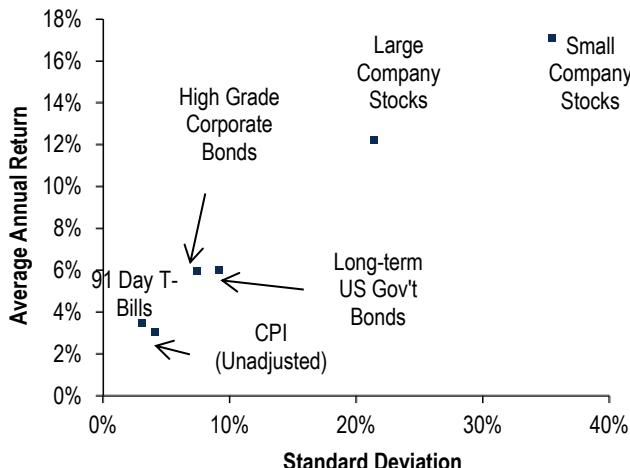
Source: BofA Merrill Lynch High Yield Research

Measuring risk

We believe that there are two basic definitions of risk. The classic or academic definition of risk is the uncertainty of the return of an investment. Standard deviation or volatility of returns is the measurement most often used to quantify this unpredictability.

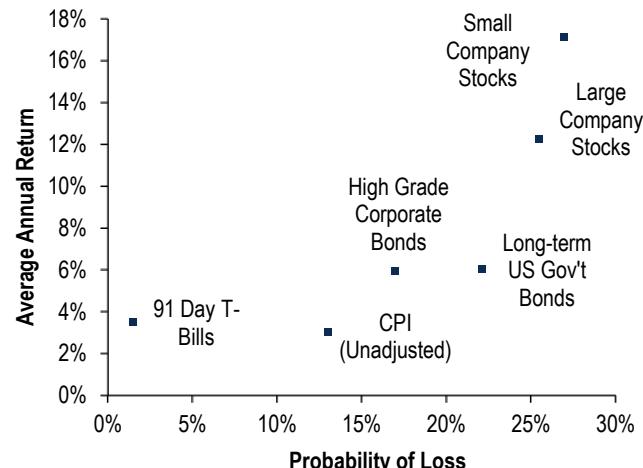
The other definition of risk is the probability of losing money. Our work suggests that, in practice, investors tend to be more concerned with the probability of losing money than they are with the predictability of return. Therefore, we prefer to define performance risk in much of our work as the probability of a negative return.

Chart 41: Risk Reward Characteristics (1925 to March 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Chart 42: Downside Risk Reward Characteristics (1925 to March 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Long-short risk reward characteristics

For long-short models, we track the average spread (or absolute return) of the strategy but consider the tradeoff as the consistency of this return being positive. Thus, we assess risk-reward for long short strategies as the average spread in returns versus the probability of the long model outperforming the short model, which we gauge as the percentage of periods during which the long-short spread was positive.

Risk-adjusted factor returns

Prudent investors cannot simply consider absolute returns, but must also consider potential returns on a risk-adjusted basis (see Appendix for risk-adjusted returns for the Russell 1000 factors). Contrary to traditional financial theory, taking on excess risk does not generate higher returns when it comes to factor performance. Among the general categories of Growth, Value, Quality, Cash Return and Risk, risk strategies including high beta, high variability of earnings, and others, comprise the worst performing group based on absolute returns, as well as risk-adjusted returns. In the 22 years leading up to the financial crisis, every risk strategy we follow underperformed its benchmark.

For Russell 1000 factor sensitivity, please see the Appendix.

Exhibit 4: Factor performance 1986 to present (Analyst Coverage since 1994; Institutional Ownership since 1999, Short Interest since 1993).

	Avg. 12m	Excess Return vs. S&P 500	Sharpe Ratio vs. 10y Tsy	Sharpe Ratio vs. S&P 500	Probability of loss	Probability of underperforming S&P 500	Volatility (Ann'zed)	Maximum Drawdown	Downside Volatility, Ann'zed
Factor	Average Annualized Return								
Free Cash Flow / EV	18.2%	7.0%	0.73	0.79	13.4%	23.9%	20.1%	-57.0%	15.1%
EV / EBITDA	17.2%	6.3%	0.66	0.62	16.5%	31.1%	21.3%	-59.1%	15.1%
Price/ Free Cash Flow	16.4%	5.7%	0.62	0.58	16.8%	28.8%	21.3%	-64.3%	16.7%
Most Active	15.6%	5.7%	0.57	0.35	21.4%	36.5%	22.4%	-63.8%	16.5%
Share Repurchase	15.1%	3.4%	0.64	0.53	16.5%	34.8%	17.5%	-50.5%	14.1%
Earnings Yield	14.9%	4.1%	0.56	0.43	19.1%	38.2%	20.6%	-66.8%	14.7%
ROC	14.4%	2.3%	0.61	0.28	17.1%	36.2%	16.9%	-49.5%	13.0%
Short Interest	14.6%	3.0%	0.69	0.58	13.3%	31.4%	16.3%	-47.6%	12.1%
Price Return - 12-mth and 1-mth Reversal	14.4%	3.0%	0.56	0.23	16.0%	30.2%	19.3%	-56.5%	16.0%
Price Return - 11-mth Perf.	14.0%	3.4%	0.52	0.12	22.2%	37.3%	20.4%	-56.2%	15.6%
P/E-to-Growth	14.2%	3.6%	0.49	0.30	22.8%	35.9%	23.4%	-69.5%	16.7%
Forward Earnings Yield	13.7%	4.4%	0.47	0.21	24.5%	41.6%	24.0%	-74.2%	17.4%
5yr ROE Adj	14.0%	2.1%	0.56	0.23	16.8%	43.0%	18.1%	-44.9%	13.4%
Price Return - 9-mth Perf.	13.9%	2.9%	0.53	0.11	19.7%	38.2%	19.7%	-54.2%	14.7%
Price Return - 12-mth Perf.	13.8%	3.0%	0.52	0.10	20.8%	38.7%	19.9%	-53.7%	14.8%
1yr ROE	14.0%	1.8%	0.59	0.24	17.1%	38.2%	16.8%	-45.6%	12.5%
1yr ROE Adj	13.8%	1.9%	0.56	0.19	20.2%	43.0%	17.5%	-51.1%	12.7%
Price/ Sales	13.4%	4.1%	0.45	0.20	25.4%	41.0%	24.8%	-70.1%	18.3%
5y ROE	13.3%	1.1%	0.55	0.14	18.2%	41.9%	16.8%	-43.6%	12.4%
Price/ Cash Flow	13.6%	3.0%	0.48	0.21	22.2%	37.9%	22.3%	-60.5%	16.2%
ROA	13.2%	1.3%	0.52	0.11	20.5%	47.0%	18.1%	-50.2%	12.8%
Relative Strength - 30wk/75wk MA	12.9%	2.5%	0.46	0.06	21.9%	45.0%	21.3%	-59.6%	16.7%
Relative Strength - 10wk/40wk MA	12.9%	1.8%	0.49	0.03	20.5%	45.9%	19.1%	-56.1%	13.9%
Size	12.0%	2.1%	0.39	0.13	28.9%	52.6%	25.3%	-68.7%	17.6%
Relative Strength - 5wk/30wk MA	12.5%	1.0%	0.48	0.00	18.5%	48.7%	18.2%	-48.8%	13.0%
Price Return - 12-mth and 1-mth Performance	12.0%	0.3%	0.46	-0.05	20.8%	47.0%	17.7%	-52.5%	13.1%
Dividend Yield	11.9%	1.4%	0.42	-0.02	23.4%	51.6%	20.3%	-78.1%	16.3%
Price to Moving Average (200 day)	11.8%	0.5%	0.44	-0.05	20.2%	51.6%	18.2%	-51.4%	13.4%
Eq. Wtd. S&P 500	11.9%	na	0.46	na	19.1%	na	17.2%	-55.7%	13.4%
Dividend Growth	11.8%	0.1%	0.45	-0.02	22.5%	46.7%	17.9%	-56.3%	13.6%
Price Return - 3-mth Perf.	11.6%	0.2%	0.43	-0.06	19.7%	50.4%	18.4%	-55.7%	13.2%
Low Price	11.2%	2.6%	0.35	0.06	28.8%	51.6%	29.3%	-68.8%	19.9%
EPS Estimate Revisions	11.5%	0.8%	0.40	-0.02	23.6%	43.6%	20.4%	-60.7%	15.6%
Price/ Book Value	11.3%	2.7%	0.36	0.04	24.5%	42.5%	26.0%	-82.6%	19.3%
Earning Momentum	11.2%	0.2%	0.40	-0.07	24.2%	51.6%	19.5%	-60.6%	15.2%
High Leverage	11.2%	0.9%	0.38	-0.03	24.8%	40.7%	21.0%	-73.0%	16.3%
Earnings Torpedo	11.0%	0.6%	0.36	-0.04	22.8%	49.9%	22.5%	-65.5%	15.6%
Neglect - Analyst Coverage	11.1%	0.2%	0.46	-0.04	24.9%	48.2%	17.8%	-60.2%	13.3%
Variability of Earnings	9.2%	-1.2%	0.29	-0.24	26.5%	53.3%	21.8%	-65.1%	16.2%
Proj. 5yr EPS Growth	9.4%	0.4%	0.29	-0.09	25.6%	53.6%	26.5%	-82.0%	19.9%
Beta	9.2%	1.7%	0.29	-0.04	31.1%	53.0%	31.3%	-81.0%	22.2%
Estimate Dispersion	8.0%	-0.7%	0.24	-0.16	27.9%	53.6%	27.7%	-74.6%	19.5%
Neglect - Institutional Ownership	7.0%	-2.0%	0.28	-0.30	29.0%	63.7%	17.0%	-59.2%	12.5%

Factor performance 1986 to present (Analyst Coverage since 1994; Institutional Ownership since 1999).

Macro matters

Exhibit 5: S&P 500 factors: Correlation vs. macro factors

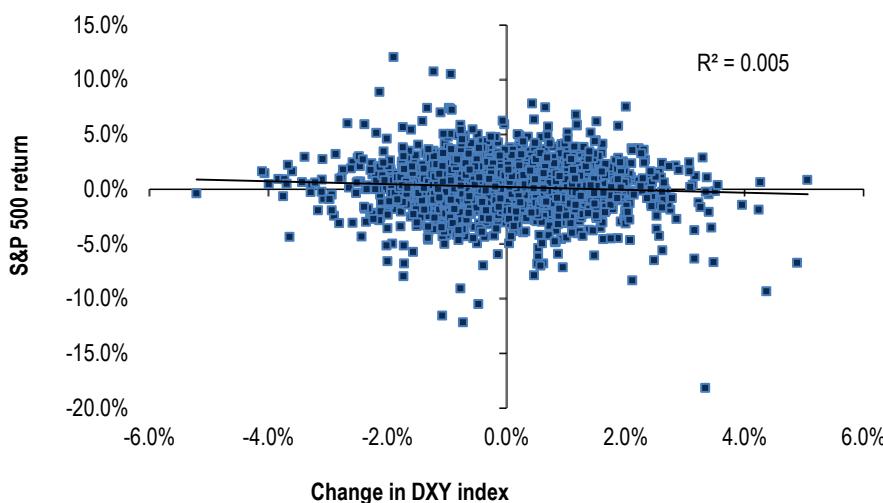
	Interest Rates		Currency	Inflation	Commodity Prices	Economy	Market Volatility	Corporate Profits	Credit Quality	
Factor	10yr Nominal Yld	10yr Real Yield	Tsy Tsy curve	Trade Wtd. USD	CPI	WTI	GDP Growth	VIX	Profit Cycle	Credit Spread
Earnings Yield	0.08	-0.10	0.10	0.08	-0.06	-0.16	0.24	-0.34	-0.08	-0.46
Forward Earnings Yield	0.31	0.04	0.10	-0.10	-0.10	-0.07	0.22	-0.42	-0.02	-0.70
Dividend Yield	-0.15	-0.34	0.16	-0.06	-0.10	-0.03	0.23	-0.26	0.10	-0.49
Price/ Book Value	0.34	0.02	0.11	-0.11	-0.15	0.02	0.26	-0.51	0.05	-0.75
Price/ Cash Flow	0.19	-0.07	0.00	-0.24	0.09	0.02	0.33	-0.19	0.07	-0.24
Price/ Free Cash Flow	-0.07	-0.23	0.13	-0.13	-0.04	-0.14	0.32	-0.20	0.03	-0.30
Price/ Sales	0.23	-0.07	0.16	-0.10	-0.32	-0.08	0.17	-0.34	-0.13	-0.73
EV/ EBITDA	0.17	0.01	0.05	-0.30	0.21	0.03	0.32	-0.23	-0.07	-0.33
Free Cash Flow/ EV	-0.13	-0.17	0.15	-0.05	0.10	-0.01	0.35	-0.07	-0.08	-0.10
Relative Strength - 30wk/75wk MA	0.31	0.28	-0.36	0.02	0.20	0.30	0.62	-0.02	0.14	0.26
Relative Strength - 5wk/30wk MA	0.27	0.26	-0.19	0.10	0.12	0.36	0.52	0.11	0.16	0.33
Relative Strength - 10wk/40wk MA	0.29	0.28	-0.27	0.08	0.11	0.34	0.62	0.09	0.27	0.28
Price to Moving Average (200 day)	0.24	0.31	-0.23	0.16	0.11	0.29	0.53	0.16	0.08	0.41
Price Return - 12-mth Perf.	0.25	0.30	-0.31	0.14	0.14	0.23	0.60	0.05	0.13	0.34
Price Return - 9-mth Perf.	0.29	0.31	-0.32	0.07	0.14	0.28	0.60	0.06	0.21	0.33
Price Return - 3-mth Perf.	0.30	0.23	-0.19	0.05	0.08	0.27	0.45	0.03	0.07	0.20
Price Return - 11-mth Perf.	0.28	0.27	-0.31	0.09	0.15	0.28	0.63	0.02	0.14	0.28
Price Return - 12-mth and 1-mth Perf.	0.17	0.27	-0.22	0.21	0.14	0.17	0.48	0.12	0.00	0.45
Price Return - 12-mth and 1-m Reversal	0.11	0.19	-0.28	0.06	0.13	0.09	0.63	0.05	0.30	0.31
Most Active	0.47	0.24	-0.10	-0.17	0.06	0.29	0.44	-0.23	0.00	-0.26
Low Price	0.31	0.02	0.23	-0.16	-0.23	0.00	0.19	-0.39	-0.03	-0.64
Earning Momentum	0.59	0.37	-0.30	-0.17	0.14	0.33	0.48	-0.25	0.21	-0.08
Proj. 5yr EPS Growth	0.50	0.27	-0.21	-0.20	0.08	0.40	0.46	-0.17	0.20	-0.14
Earnings Torpedo	0.19	-0.09	-0.01	-0.17	-0.22	0.06	0.15	-0.32	-0.03	-0.65
EPS Estimate Revisions	0.46	0.38	-0.44	-0.09	0.26	0.31	0.57	-0.09	0.28	0.05
Dividend Growth	-0.18	-0.22	-0.14	-0.17	0.18	0.09	0.33	-0.02	0.08	-0.18
P/E-to-Growth	0.32	-0.04	0.09	-0.02	0.09	0.08	0.33	-0.35	0.09	-0.55
High Leverage	-0.04	-0.25	-0.09	0.14	-0.27	-0.19	0.33	-0.32	0.15	-0.66
1yr ROE	-0.38	-0.06	0.13	0.04	0.18	-0.03	0.34	0.39	-0.28	0.60
5y ROE	-0.37	-0.10	0.10	0.16	-0.02	-0.06	0.32	0.37	-0.16	0.51
1yr ROE Adj	0.01	0.06	-0.02	-0.10	0.26	0.18	0.38	0.23	-0.12	0.35
5yr ROE Adj	0.03	0.07	0.05	-0.02	0.05	0.15	0.36	0.15	-0.16	0.29
ROA	0.09	0.07	-0.04	-0.05	0.17	0.26	0.40	0.16	-0.14	0.34
ROC	-0.22	-0.02	-0.02	0.09	0.11	0.01	0.43	0.33	-0.16	0.50
Beta	0.52	0.15	-0.06	-0.20	-0.08	0.27	0.33	-0.36	0.08	-0.50
Variability of Earnings	0.44	0.14	-0.03	-0.32	-0.06	0.15	0.29	-0.37	0.10	-0.55
Estimate Dispersion	0.48	0.09	-0.03	-0.31	-0.05	0.30	0.38	-0.46	0.13	-0.58
Neglect - Analyst Coverage	-0.01	0.00	0.23	-0.04	-0.17	-0.21	0.34	-0.03	-0.01	-0.18
Neglect - Institutional Ownership	-0.34	-0.34	0.21	-0.13	-0.33	-0.26	0.37	0.13	0.00	-0.22
Size	0.25	-0.09	0.23	-0.21	-0.28	0.04	0.13	-0.35	-0.06	-0.70
Share Repurchase	-0.19	-0.05	0.33	0.02	0.05	-0.07	0.30	0.14	-0.18	0.12
Short Interest	-0.15	-0.15	0.58	-0.09	0.06	0.05	0.42	0.10	-0.33	0.19

Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Macro focus: the US Dollar impact

Regressing monthly returns of the S&P 500 vs. the US dollar (DXY index) since 1979 reveals that moves in the dollar have virtually no explanatory power on returns over the long-term (R^2 of zero). This is partly due to the fact that—much like with interest rates—the relationship between equities and the dollar has changed over time. For example, US stocks are much more global today than twenty years ago. Another reason is that the growth backdrop may be more important: some periods of a strengthening dollar have been accompanied by weakening growth, where the dollar strength may have been driven by a flight to safety. Other periods of dollar strengthening may have been accompanied by more robust growth.

Chart 43: Change in DXY index vs. S&P 500 (weekly) since 1979



Source: Bloomberg, S&P, BofA Merrill Lynch US Equity Strategy

Dollar cycles can be persistent

Exhibit 6: Performance based on size segment has been inconsistent in secular uptrends for the USD

	10/78-3/85	6/95-2/02
Small Caps	296.1	114.2
Large Caps	159.8	125.1
Rel Performance (Small vs Large)	52.5	-4.8

Source of historical returns: CRSP®, Center for Research in Security Prices, Graduate School of Business, The University of Chicago.

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The performance has been calculated by BofA Merrill Lynch Small Cap Research All rights reserved.

Source: CRSP; Federal Reserve Bank; BofA Merrill Lynch Small Cap Research

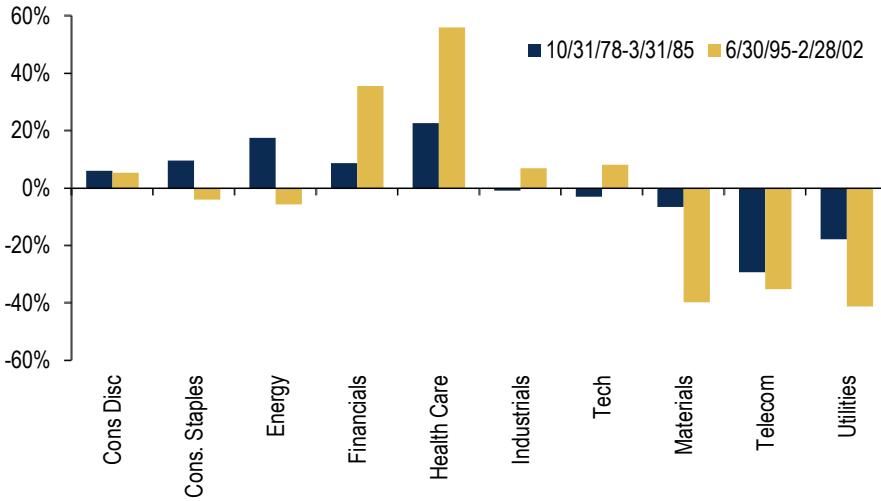
One notable observation with the USD is the persistence of its secular tendency - a trend, once started, can last for many years. In fact, the USD has completed only two major cycles in the last 40+ years. Both the 1978-1985 and the 1995-2002 cycles lasted 16 years. So what works in these secular dollar uptrends?

One common misconception is that because small caps are more tied to the US economy and have lower foreign exposure, they should outperform large caps in a rising dollar environment. But this has not always been the case. Small caps outperformed large caps during the '78-'85 dollar uptrend, but underperformed during the '95-02 dollar uptrend (Exhibit 6).

At the sector level, in the two prior periods of secular dollar strength, Financials outperformed and Materials underperformed the S&P 500 in both periods, which we also found to be true for small caps. We also saw outperformance from Health Care and Discretionary and underperformance from Telecom and Utilities in both periods within the S&P 500, with the largest outperformance from Health Care in both periods. The

consistent underperformance of both a globally-oriented sector (Materials) and domestically-oriented sectors (Telecom and Utilities) suggests that the economic backdrop may be a more important determinant of performance.

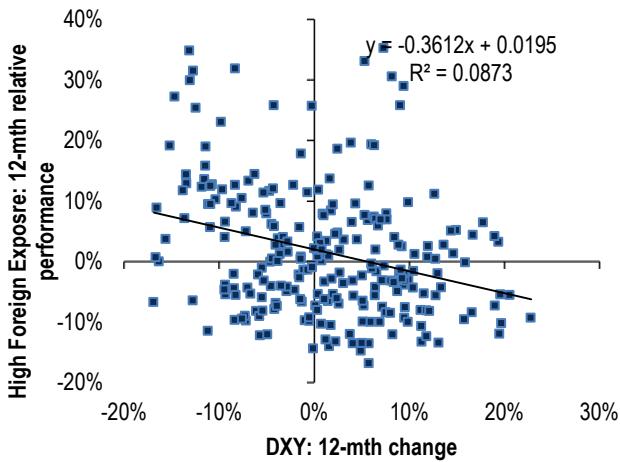
Chart 44: Within the S&P 500, Discretionary, Financials and Health Care outperformed in both rising dollar time periods, while Materials, Telecom and Utilities underperformed



Source: S&P, FactSet, Bloomberg, BofA Merrill Lynch US Equity & US Quant Strategy

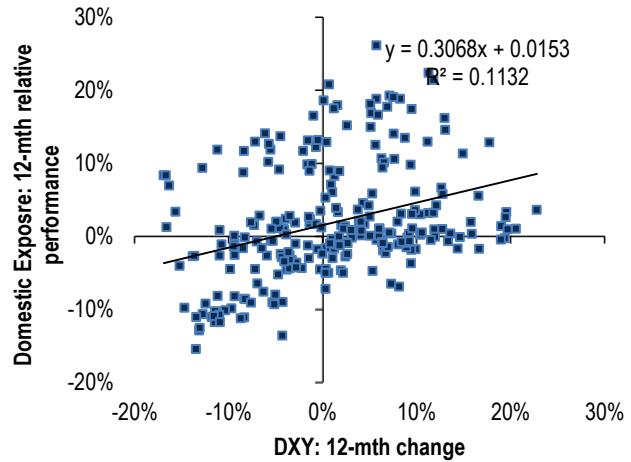
There has been a weak historical negative relationship between foreign exposed stocks and strong dollar backdrops and a slightly stronger relationship between more domestically oriented stocks and strong dollar backdrops. But the relationship has not been strong enough to justify a uniform penalty or reward assigned to stocks based on this attribute. Many companies with foreign exposure have natural or financial hedges in place to offset currency risk, and also tend to be larger and more defensive businesses, thus may be likely to withstand a downturn better than their smaller counterparts, where downturns are generally accompanied by a flight to quality mentality which tends to bolster the US dollar. Moreover, domestic companies may not disclose their foreign sales, or may have a large chunk of revenue associated with multinational companies that supply overseas and thus carry indirect currency risk based on end user demand weakening.

Chart 45: High Foreign exposure performance vs. USD



Source: BofA Merrill Lynch US Equity and Quant Strategy

Chart 46: Domestic exposure performance vs. USD



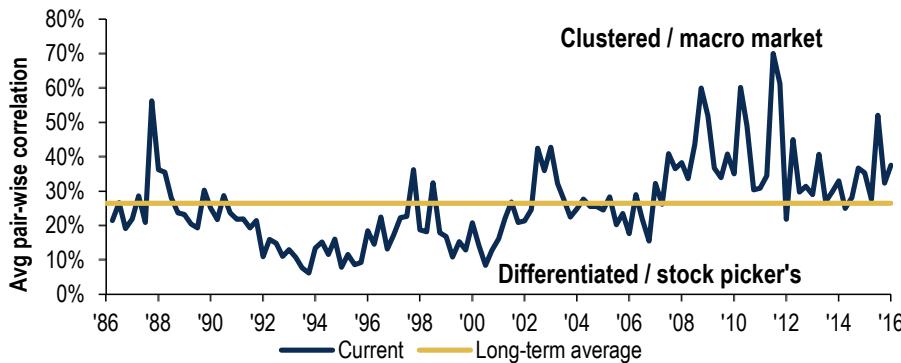
Source: BofA Merrill Lynch US Equity and Quant Strategy

Roadmap to picking stocks

Stock differentiation

The following chart includes our measure of clustered versus differentiated equity markets. We measure this by the average correlation of every pair of companies' daily price returns each quarter within the S&P 500. A high correlation implies that stocks are more clustered, whereas a low correlation implies that companies are more differentiated. This measure serves as a gauge of the potential opportunity for stock selection to generate excess returns.

Chart 47: Pair-wise correlations of all S&P 500 stock combinations (daily returns per qtr. 2Q86-1Q16)



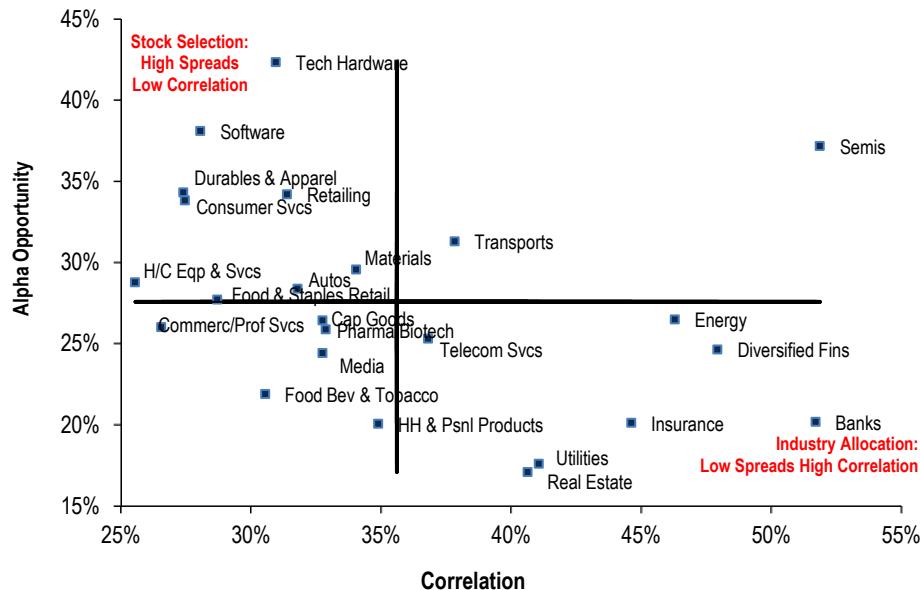
Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Stock selection within sectors

When correlations are high, we believe fundamental analysis can still be rewarded by focusing on industries that may offer better stock selection opportunity. When stocks within an industry are highly correlated, it is likely that performance is attributable to some external factor rather than company specifics. In these cases, making an industry call may be more important than a stock call. For example, the high correlation among Energy stocks can be explained by oil prices; for Banks and Insurance, correlations may be explained by rates or the yield curve; and for Semis, global GDP may be a key driver of correlations.

Similarly, when a stock has a very low level of dispersion in returns, the amount of alpha or excess return that can be generated from pair trades is capped at a lower level. Thus, fundamental analysis may be more fruitful when focusing on industries with low intra-stock correlations and high dispersion of returns. For example, groups with brand differentiation (Retail) or secular stories (Tech) have offered lower correlation and higher dispersion of returns historically.

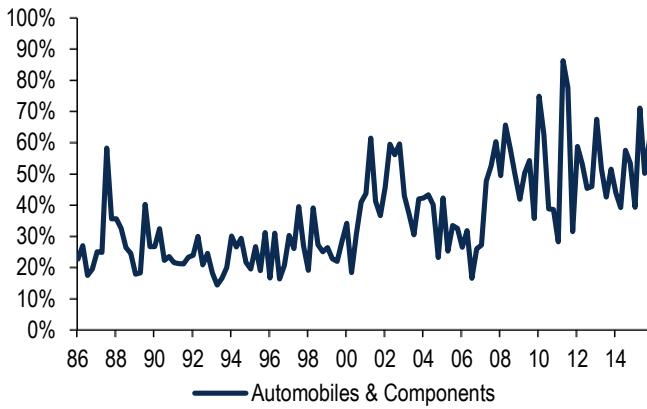
Chart 48: Historical Intra-stock correlation vs. performance spread (3Q86 to 1Q16)



Source: BofA ML US Equity & US Quant Strategy

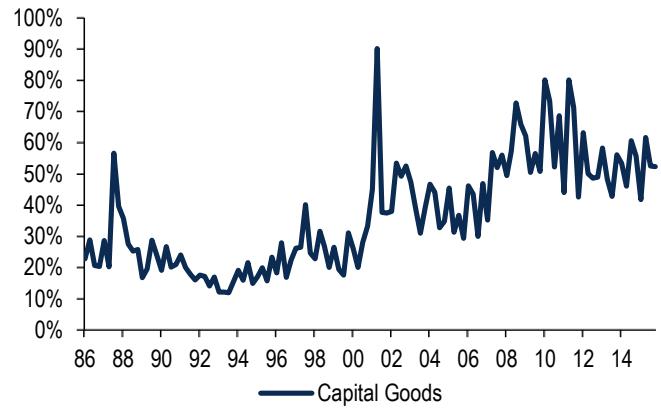
Below we provide historical charts of correlations within industry groups, which illustrate where stocks are most clustered or differentiated and how these relationships have changed over time. For example, Banks have exhibited an increase in correlations over the last two decades, while correlations among Telecom stocks have remained more stable. All charts are based on the average daily pair-wise correlation of all stock combinations within the group each quarter.

Chart 49: Automobiles & Components



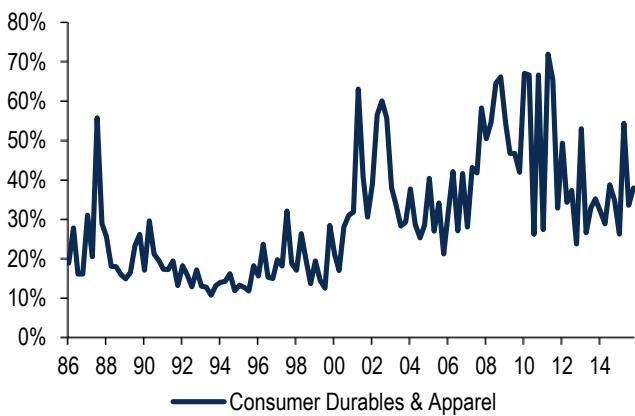
Source: BofA ML US Equity & US Quant Strategy

Chart 50: Capital Goods



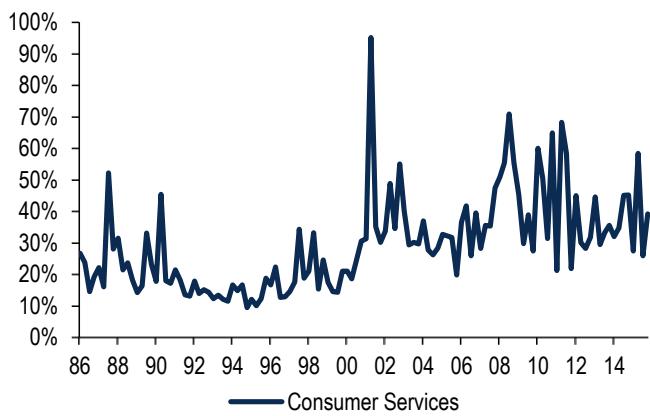
Source: BofA ML US Equity & US Quant Strategy

Chart 51: Consumer Durables & Apparel



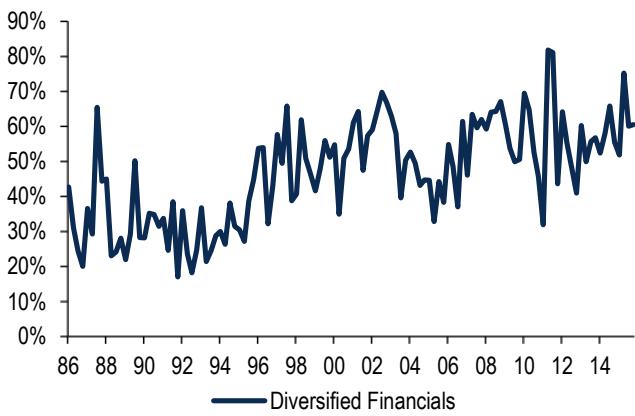
Source: BofA ML US Equity & US Quant Strategy

Chart 52: Consumer Services



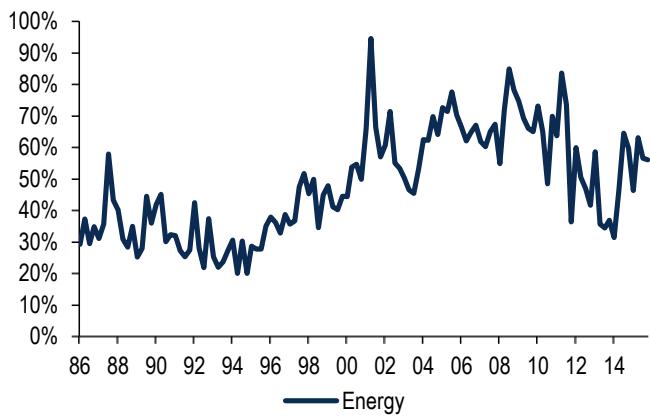
Source: BofA ML US Equity & US Quant Strategy

Chart 53: Diversified Financials



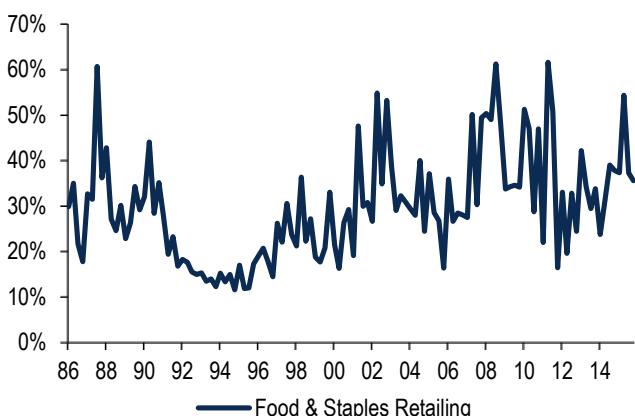
Source: BofA ML US Equity & US Quant Strategy

Chart 54: Energy



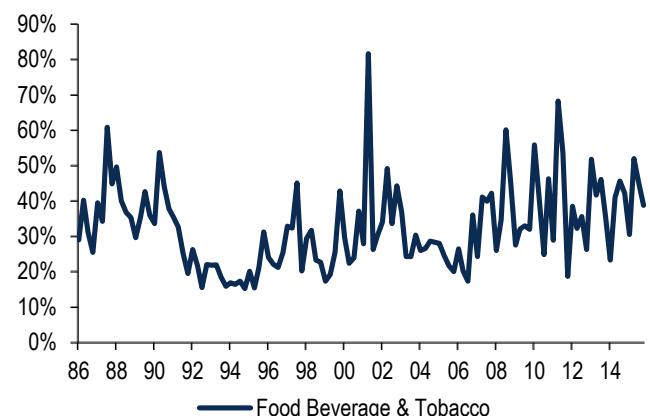
Source: BofA ML US Equity & US Quant Strategy

Chart 55: Food & Staples Retailing



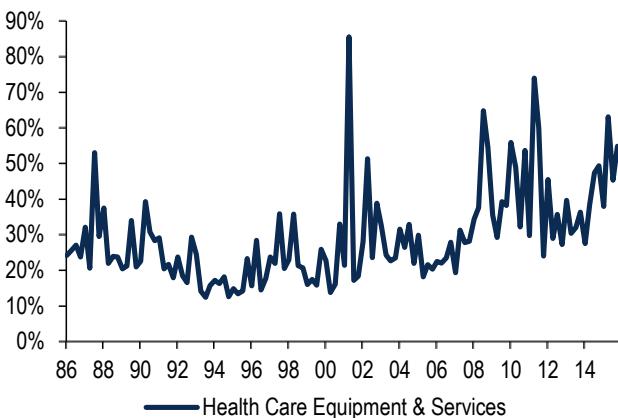
Source: BofA ML US Equity & US Quant Strategy

Chart 56: Food Beverage & Tobacco



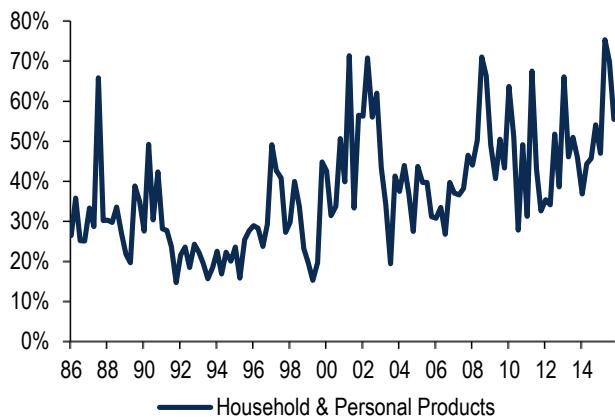
Source: BofA ML US Equity & US Quant Strategy

Chart 57: Health Care Equipment & Services



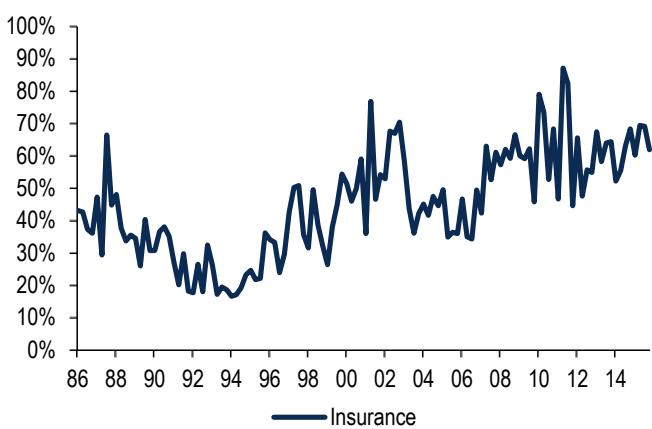
Source: BofA ML US Equity & US Quant Strategy

Chart 58: Household & Personal Products



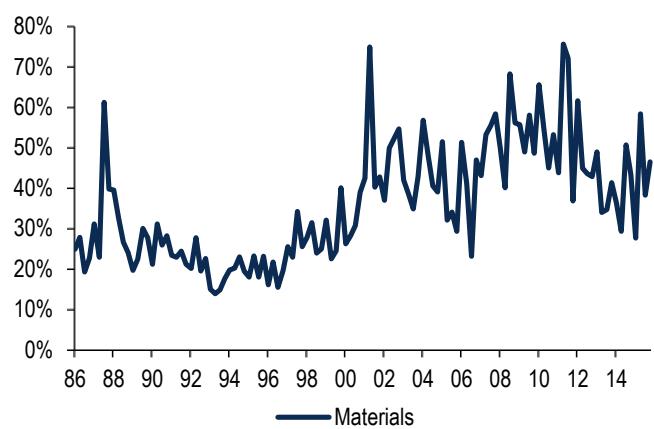
Source: BofA ML US Equity & US Quant Strategy

Chart 59: Insurance



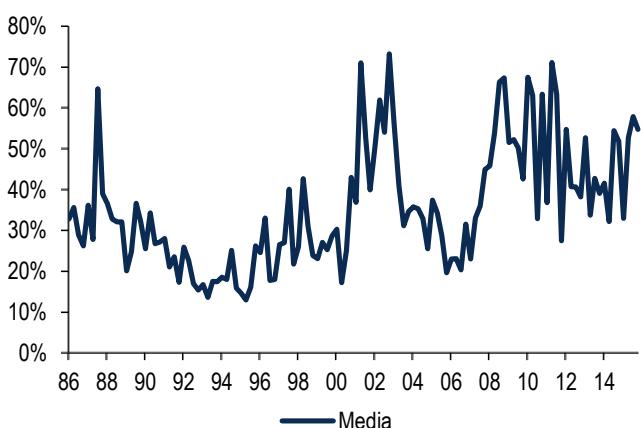
Source: BofA ML US Equity & US Quant Strategy

Chart 60: Materials



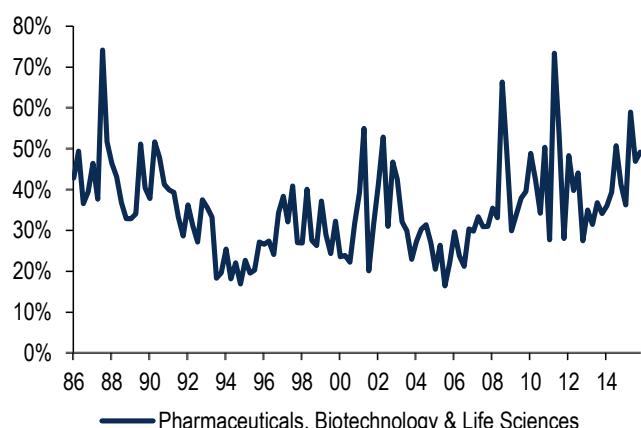
Source: BofA ML US Equity & US Quant Strategy

Chart 61: Media



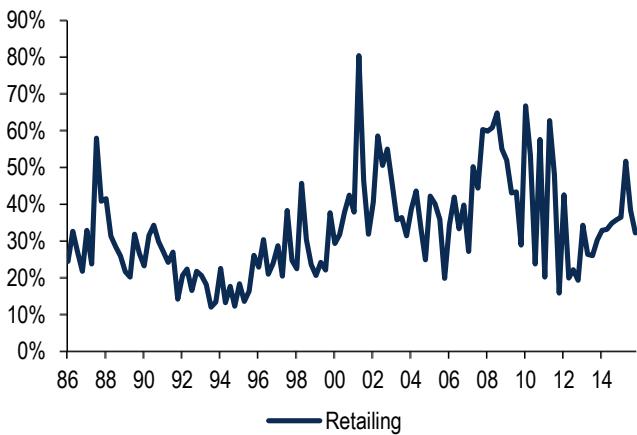
Source: BofA ML US Equity & US Quant Strategy

Chart 62: Pharmaceuticals, Biotechnology & Life Sciences



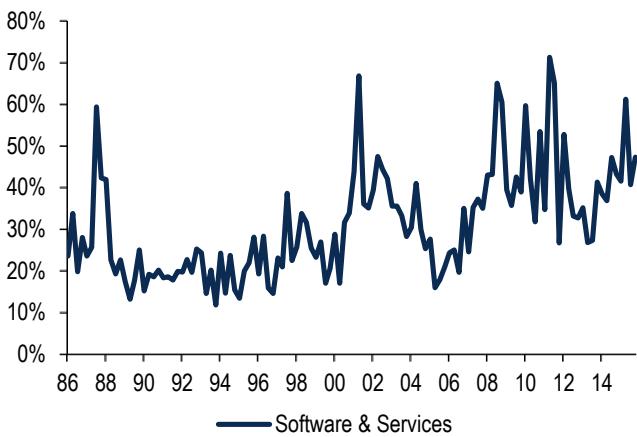
Source: BofA ML US Equity & US Quant Strategy

Chart 63: Retailing



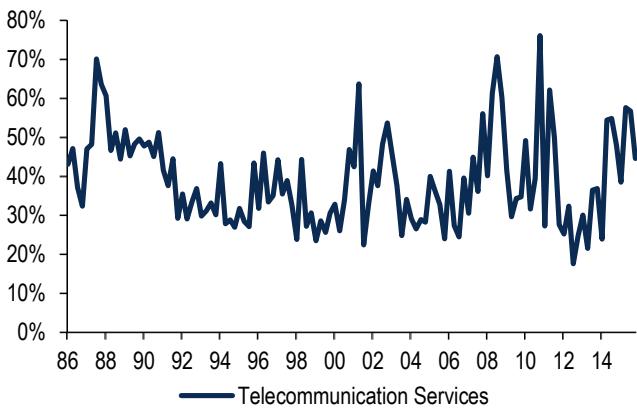
Source: BofA ML US Equity & US Quant Strategy

Chart 65: Software & Services



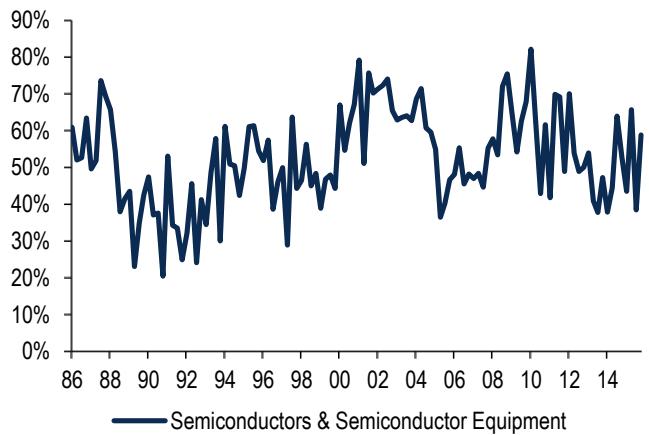
Source: BofA ML US Equity & US Quant Strategy

Chart 67: Telecommunication Services



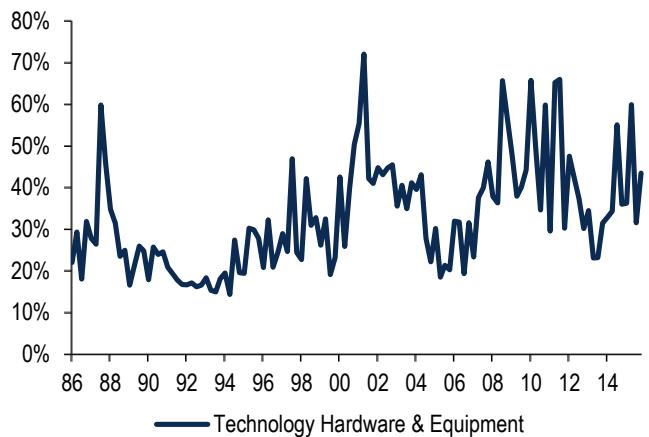
Source: BofA ML US Equity & US Quant Strategy

Chart 64: Semiconductors & Semiconductor Equipment



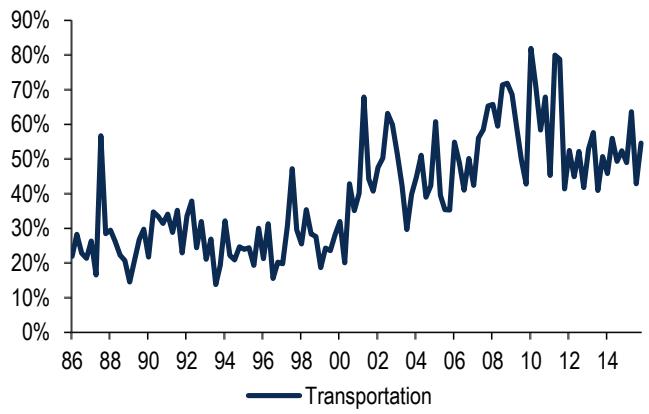
Source: BofA ML US Equity & US Quant Strategy

Chart 66: Technology Hardware & Equipment



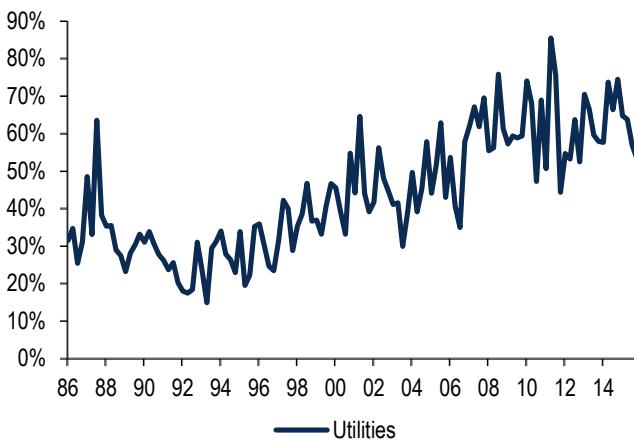
Source: BofA ML US Equity & US Quant Strategy

Chart 68: Transportation



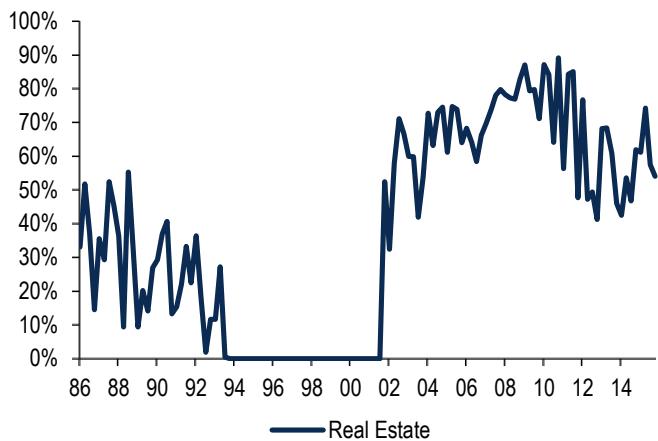
Source: BofA ML US Equity & US Quant Strategy

Chart 69: Utilities



Source: BofA ML US Equity & US Quant Strategy

Chart 70: Real Estate

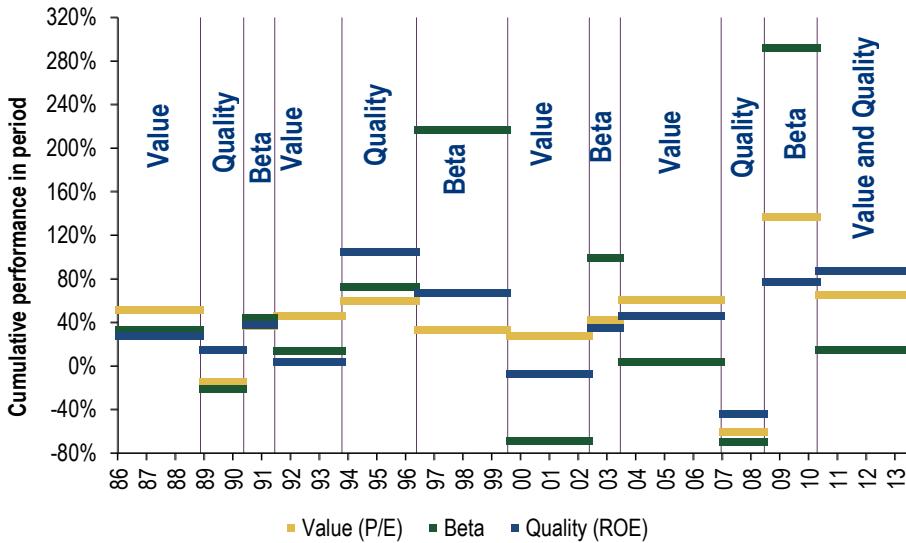


Source: BofA ML US Equity & US Quant Strategy

Fundamentals back in focus

- History suggests that after periods of extreme outperformance of risk (beta), valuation-led markets follow as investors become more selective and look for market dislocations caused by beta runs.
- We think we are currently in a Value - and Quality-led environment, which should benefit stock pickers.

Chart 71: After Beta it's Value: Cumulative performance by style (1986-3/2016)

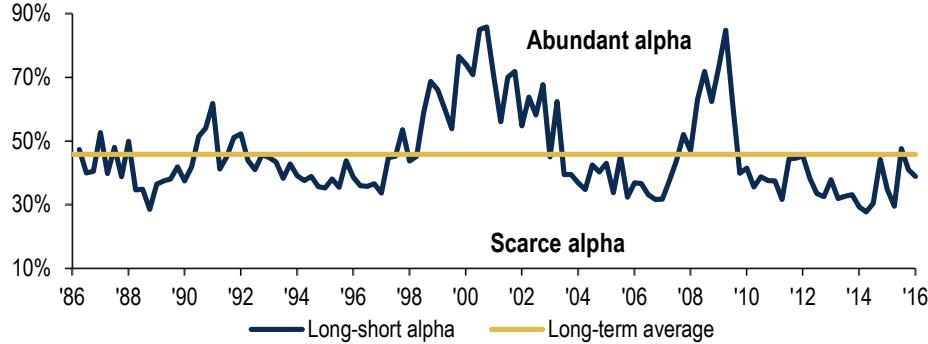


Source: BofA Merrill Lynch US Equity & US Quant Strategy

Scarce alpha remains a headwind

The scarcity of alpha opportunities (spreads) has been one headwind to active managers, with the spread between the fifty best and fifth worst performing stocks remaining near all-time lows. In 2007, managers used leverage to offset this scarcity. Today, risk aversion has capped leverage ratios at lower levels.

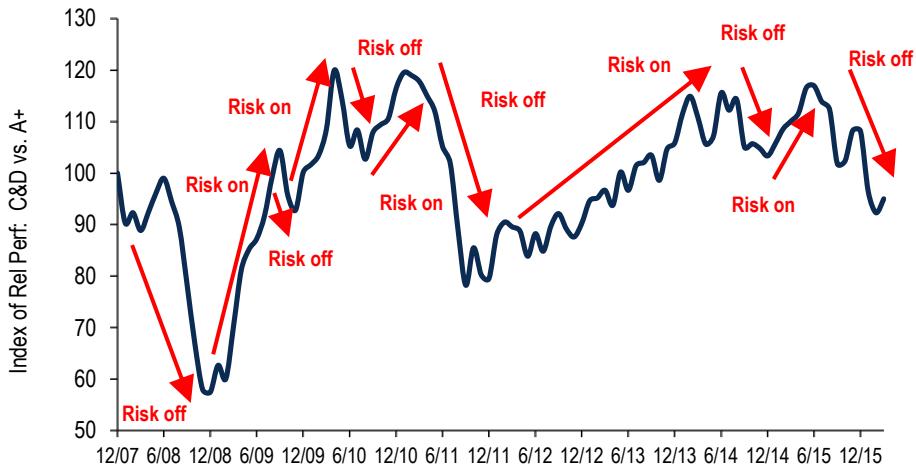
Chart 72: S&P 500 Long-Short Spreads (Alpha)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Return of the macro market?

Chart 73: Relative performance of C&D vs. A+ ranked stocks by S&P Quality rank, 2007-present



Source: S&P, BofA Merrill Lynch US Equity & US Quant Strategy

Market breadth

Chart 74: Market Breadth: % of S&P 500 stocks beating the benchmark (12-month return), 1987-present



Source: BofA Merrill Lynch US Equity & US Quant Strategy, FactSet

The performance of high quality vs. low quality stocks suggests we could be seeing a return of the risk-on/risk-off macro market.

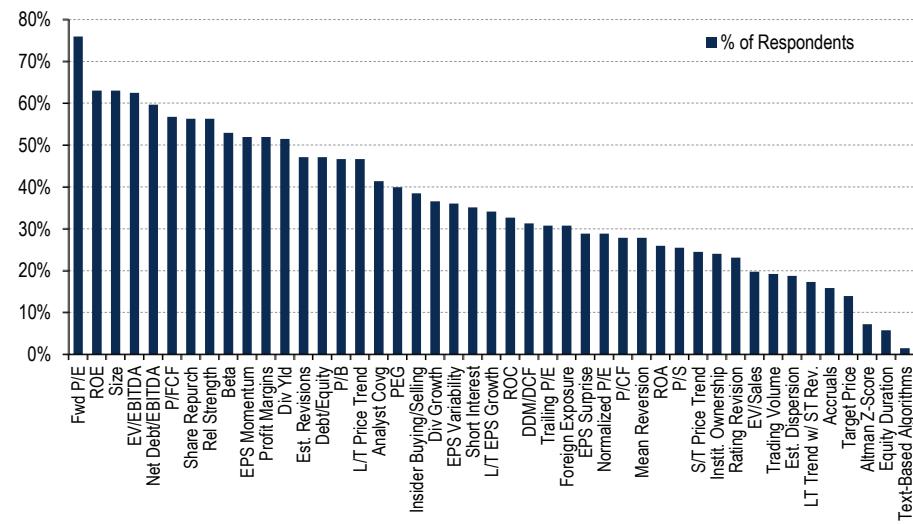
The chances of selecting an outperforming stock in the S&P 500 have recently increased. Broad market leadership could make it easier to select outperforming stocks.

What are quants doing?

Each year, we survey institutional investors to monitor which factors, characteristics, attributes and models they use in their stock selection processes. These include valuation factors, quality and growth factors, risk factors, technical and price factors, risk factors and other factors.

The results of our most recent survey, published May 3, 2016, are below. Survey respondents indicated that Forward P/E was most frequently used factor to make investment decisions (for the 10th year running), while ROE and Size (Market Capitalization) were the next most popular. Forward P/E has topped the list every year since the crisis, while prior to the crisis, cash flow-based valuation measures were more popular. Despite more discussion about off-the-beat-path signals like text analysis (i.e. combing through press releases or sell side research for indications of incrementally more positive or negative tone), few investors have cited using text-based algorithms.

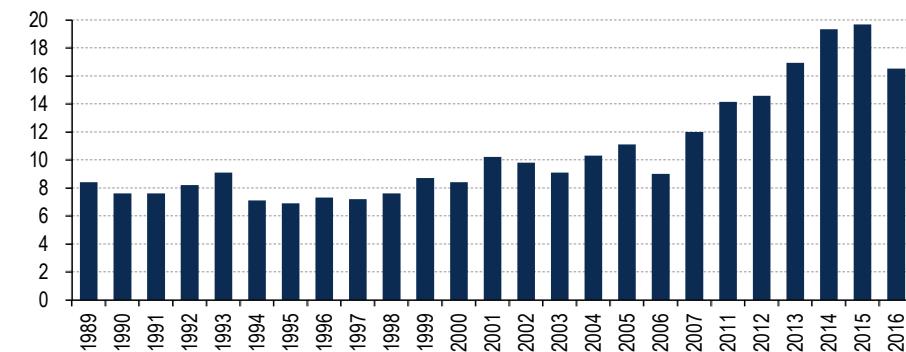
Chart 75: Percentage of 2016 survey respondents using various factors



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Our survey results also suggested that factor models grew less complex this year—our survey respondents reporting using just 17 factors, on average, in their investment processes, the lowest in four years. The number of factors used still remains above the historic average, as investors have increasingly incorporated a broader array of signals in the quest for alpha: multi-factor models are more complex/diverse today than in the 1990s, when investors used an average of just 7-8 factors.

Chart 76: Average number of factors used by survey respondents, 1989-2016



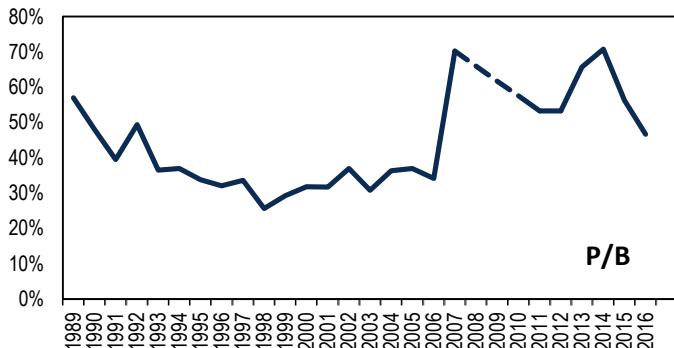
Note: 2008-10 excluded due to insufficient survey responses

Source: BofA Merrill Lynch US Equity & US Quant Strategy

Below we include a selection of time series charts that illustrate the percentage of survey respondents using the factor each year of our survey. A full set of time series charts is available upon request. Due to the lack of sufficient responses in 2008-09, our time series charts linearly interpolate results during those years based on 2007 and 2010 results. Valuation factors have remained most popular.

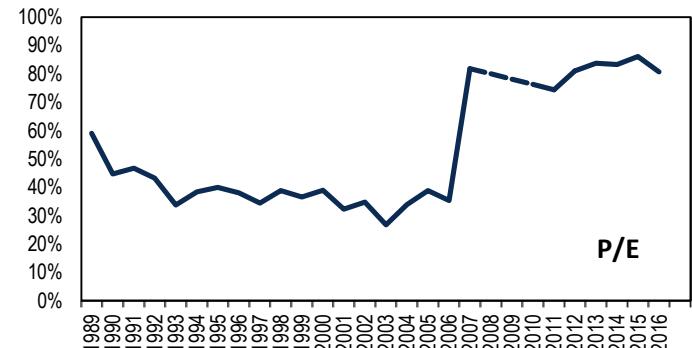
Select valuation factors

Chart 77: Percentage of Respondents using P/B



Source: BofA Merrill Lynch US Equity & US Quant Strategy

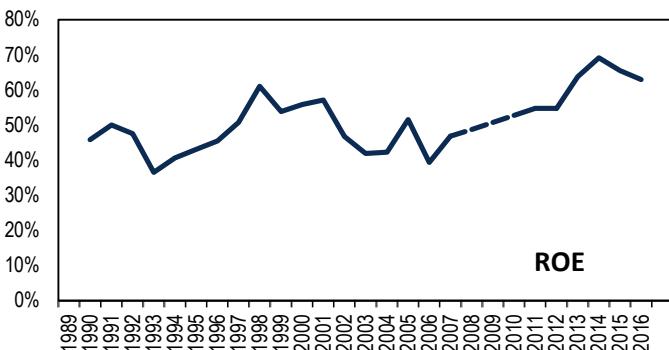
Chart 78: Percentage of Respondents using P/E



Source: BofA Merrill Lynch US Equity & US Quant Strategy

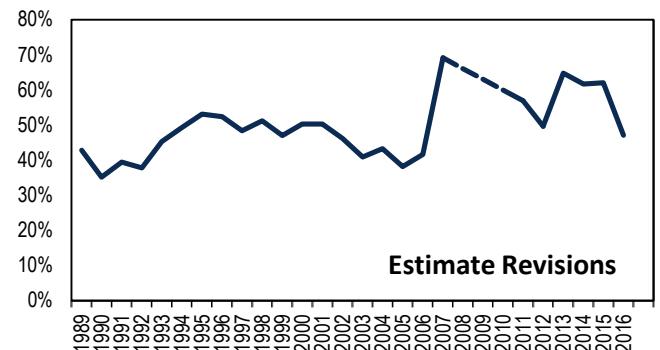
Select growth and quality factors

Chart 79: Percentage of Respondents using ROE



Source: BofA Merrill Lynch US Equity & US Quant Strategy

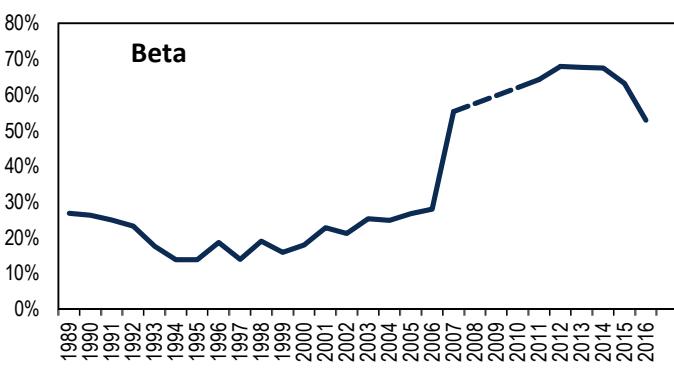
Chart 80: Percentage of Respondents using Estimate Revisions



Source: BofA Merrill Lynch US Equity & US Quant Strategy

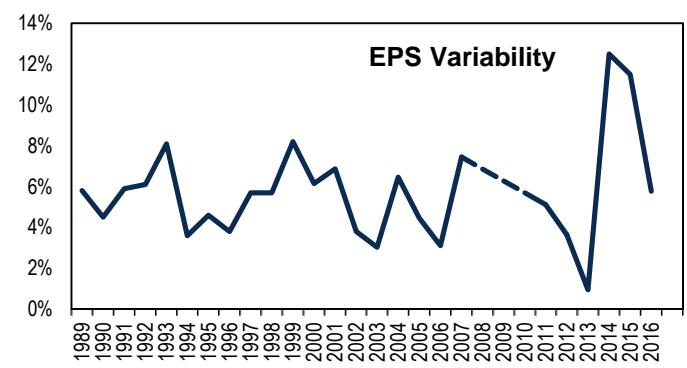
Select risk factors

Chart 81: Percentage of Respondents using Beta



Source: BofA Merrill Lynch US Equity & US Quant Strategy

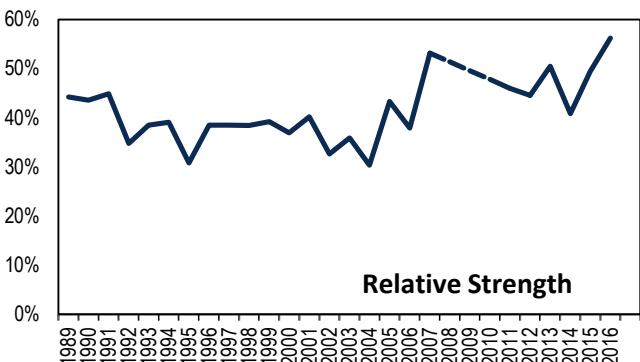
Chart 82: Percentage of Respondents using EPS Variability



Source: BofA Merrill Lynch US Equity & US Quant Strategy

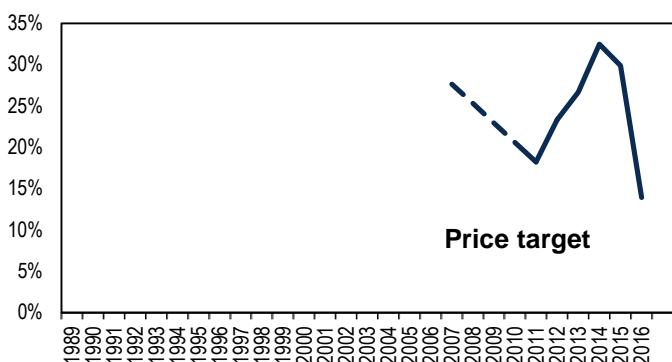
Select price trend and technical factors

Chart 83: Percentage of Respondents using Relative Strength



Source: BofA Merrill Lynch US Equity & US Quant Strategy

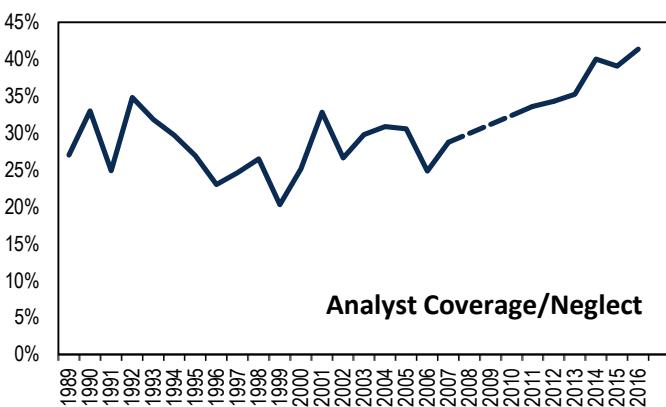
Chart 84: Percentage of respondents using Sell Side Price Targets



Source: BofA Merrill Lynch US Equity & US Quant Strategy

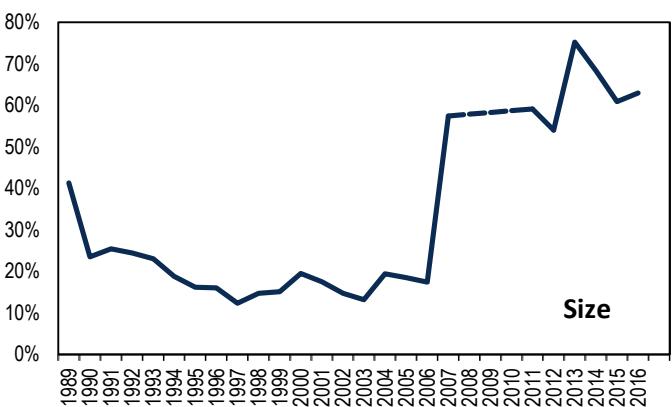
Select other (miscellaneous) factors

Chart 85: Percentage of respondents using Analyst Neglect



Source: BofA Merrill Lynch US Equity & US Quant Strategy

Chart 86: Percentage of respondents using Size (Market Cap)



Source: BofA Merrill Lynch US Quantitative Strategy

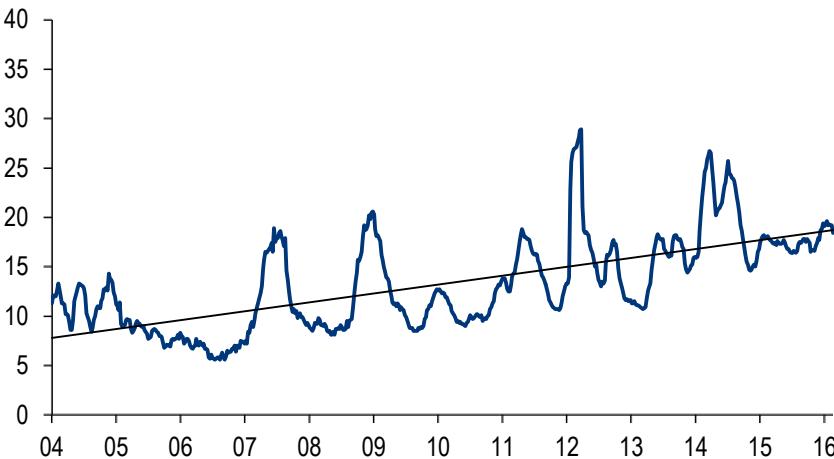
The lowdown on Smart Beta

What is smart beta?

Smart Beta emerged as a line of investment products seeking to rival traditional popular index tracking funds and ETFs in their transparency, performance and cost efficiency. The investment rationale hinges on a simple premise – market capitalization weighted indices skew performance towards largest and likely more expensive companies, inadvertently subjecting investors to sources of risk. Alternative weighing schemes emerged, such as fundamental weighting (book value, sales, cash flow, dividends..), equal weighting or volatility weighting.

Whereas the traditional market cap weighted index tracking products represent a reasonable proxy to the overall equity market exposure, or “beta”, the alternative index tracking products received the name of “Smart Beta”. The “smart” component may be misleading in implying virtuous qualities that may not necessarily exist. Hence, a wide array of alternative names emerged - alternative beta, strategic beta, scientific beta or strategic indexing, among others. It appears, however, that the term “smart beta” took deep roots in the investment community’s vernacular and will be difficult to unseat.

Chart 87: Google searches for “Smart Beta” saw a consistent rise right after the financial crisis



Source: Google Trends: BofA Merrill Lynch US Quantitative Strategy

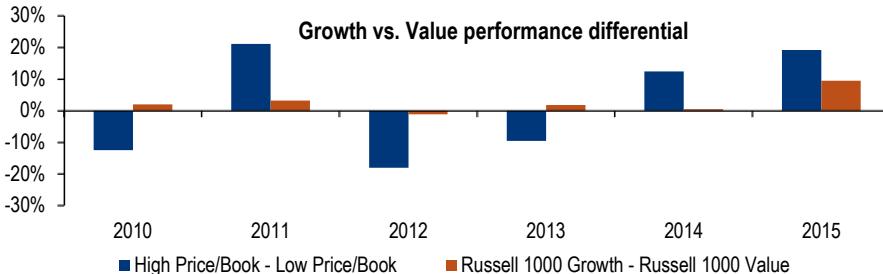
As smart beta grew in popularity, the concept expanded from alternative weighting index tracking to various rule-defined investment vehicles with properties of both active and passive investment styles -- more active than passive cap weighted index tracking but less active than active portfolio management with day-to-day investment decision making. The costs thus reflect the passive/active positioning: the management fees exceed those of the traditional index tracking products, but remain considerably below actively managed portfolio charges. Examples of this type of smart beta funds include Low Volatility products, various factor tilts (Quality, Beta, Shares buybacks, High Dividend Yield, High Dividend Growth), multifactor exposures, commodity based ETFs, thematic exposure (demographics, geography), multi-strategy ETFs. Despite a wide range of the smart beta variety, the largest share of smart beta assets is in the simplest forms of High Dividends, Growth and Value products.

Alternative weighting Is not new In quant space

Quants have been applying equal weighing to remove size bias in their work without much fanfare for decades. After all, quants seek to identify various factor exposures in their purest form, be it large or small size, low or high price/book, or high dividend yielding stocks or dividend nonpayers. The starting point is the “clean” benchmark – i.e. equal weighted to rid it of the size bias. For the same reason, quant factor performance is usually calculated on an equally weighted basis.

Arbitrage Pricing Theory (APT) stipulates that stock return is a function of multiple sources of systemic risk (betas) in addition to the idiosyncratic risk. APT, however, does not identify what the multiple betas are. In the Quant framework the quant factors are considered the sources of risk, or the multiple betas, that drive performance. While alternative index weighting removes the unwanted market cap bias and introduces the desired fundamental biases, quant factors represent alternative beta exposure in its purest form – typically a small subset (a decile or quintile) of an investable universe (the index or otherwise defined investable space) with the specified characteristics. Quant factors span across investment styles, such as Value, Growth, Momentum, Quality, Size and Risk. As an example, while the Russell 1000 Growth and the Russell 1000 Value indices saw little performance divergence in recent years, Growth / Value performance differential as measures by High Price / Book and Low Price / Book factors was quite pronounced (Chart 88).

Chart 88: Quant factors deliver more style differentiation than fundamentally weighted indices



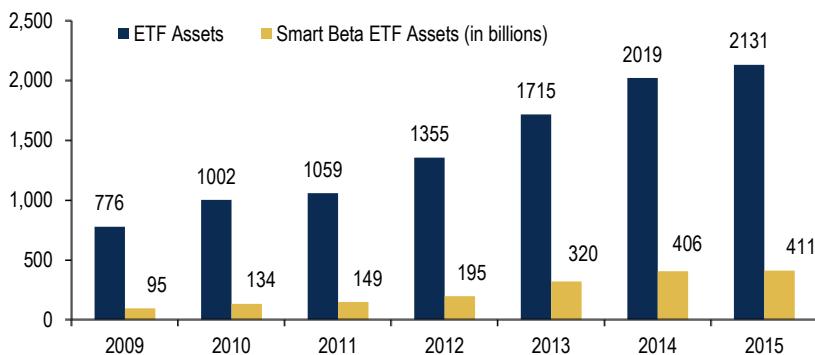
Source: BofA Merrill Lynch US Quantitative Strategy

How much money is currently tracking smart beta strategies

Smart beta strategies have experienced a rapid growth in assets under management in recent years. According to the data compiled by Bloomberg (Chart 89), smart beta funds grew from under \$100bn in 2009 to over \$400bn today, which represents a 27.5% annualized rate, well above the 18.3% growth rates for the ETF assets overall.

The bulk of these assets are in the US equities -- among top 100 smart beta ETFs by AUM, which account for 90% of assets, 87% of holdings are in the US equities.

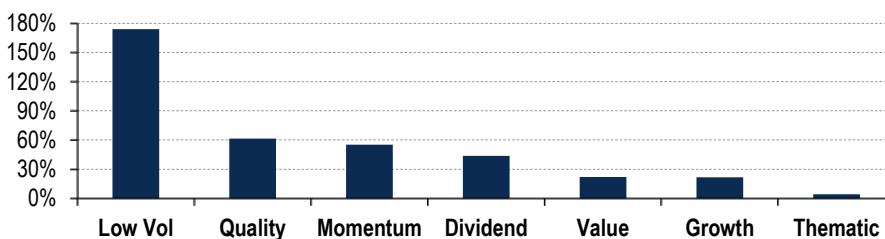
Chart 89: Growth in Smart Beta vs. all ETFs (27% 5yr CAGR for Smart Beta vs 18% 5yr CAGR for all ETFs)



Source: Bloomberg, BofA Merrill Lynch US Quantitative Strategy

A massive influx of factor- or risk premium-based ETFs has yielded atypical swings in the market driven by risk attributes rather than stocks. Low volatility equity products have seen astronomical growth, followed by quality, momentum and dividend strategies.

Chart 90: AUM growth in Smart Beta ETFs (average annual growth since 2009)



Source: Bloomberg, BofA Merrill Lynch US Quantitative Strategy

Why should we care about factors? Look at low volatility ETFs.

The rise in low volatility ETFs has grown from an estimated \$5bn five years ago to about \$40bn today. In tandem, we have seen low beta stocks re-rate to the highest relative multiple we have seen in thirty years (Chart 90).

Chart 91: Relative forward P/E of S&P 500 low beta vs. high beta quintiles (1986-1Q16)

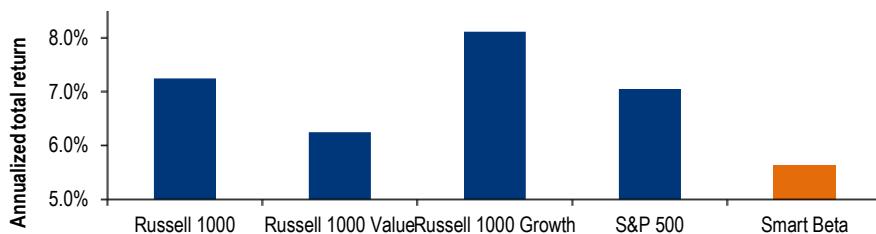


Source: BofA Merrill Lynch US Equity & US Quant Strategy

Is smart beta all that smart?

With all the attention surrounding the Smart Beta concept, the performance of Smart Beta ETFs has been remarkably unexciting in recent years – since 2005 this group of products lagged major large cap indices by 0.8ppt to 1.9ppt per annum.

Chart 92: Smart beta has lagged the benchmarks (12/2004 – 3/2016)

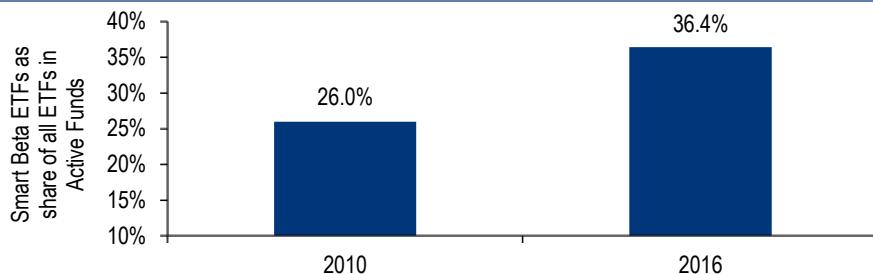


Source: BofA Merrill Lynch US Quantitative Strategy

Active funds increasingly using smart beta

Notably, active managers also turned their attention to smart beta products. While active managers have been using ETFs to easily gain exposure to various sleeves of the market, such as sectors and market cap bands (mid cap, small cap), in recent years active funds exposure to “pure” Smart Beta (style and volatility) increased materially from 26% of all ETFs used in active space in 2010 to 36% in 2016 (Chart 93).

Chart 93: Active managers use of Smart Beta ETF's increased since 2010



Source: BofA Merrill Lynch US Quantitative Strategy

Section II: Stock Strategies within the S&P 500

GARP – Alpha Surprise Strategy

Valuation Strategies

Cash Deployment Strategies

Momentum Strategies

Growth Strategies

Quality Strategies

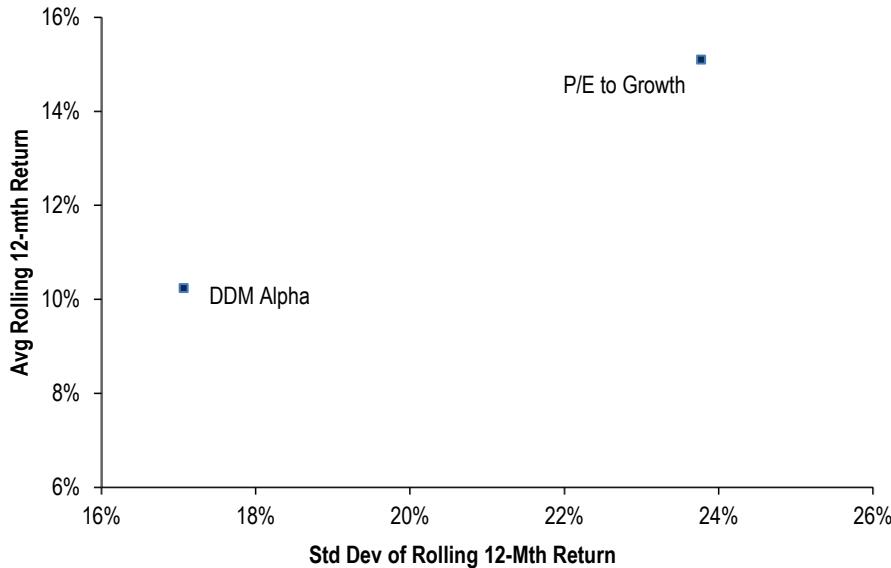
Risk Strategies

Miscellaneous Strategies

Note: All scatter plot charts in this section are based on actual performance data after the screens were introduced, except where noted.

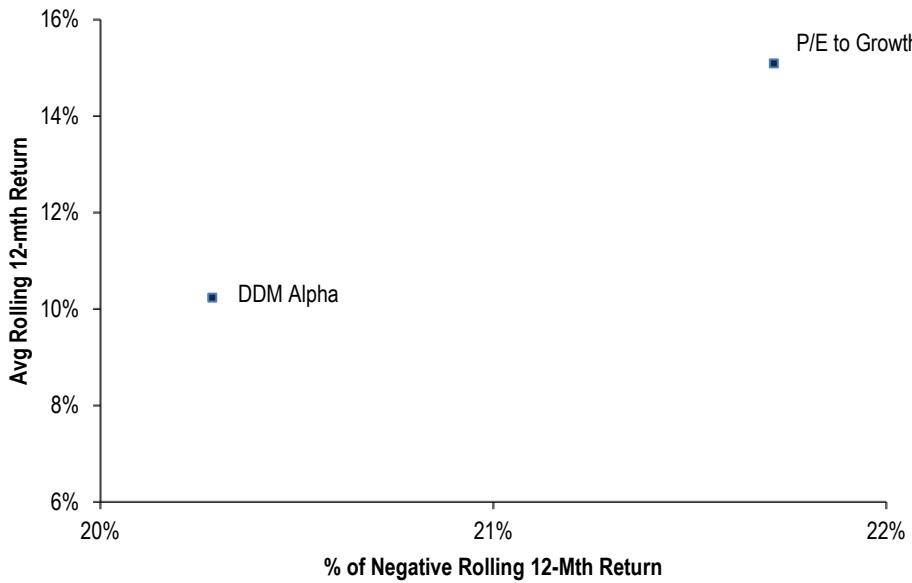
GARP Strategies

Chart 94: GARP Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

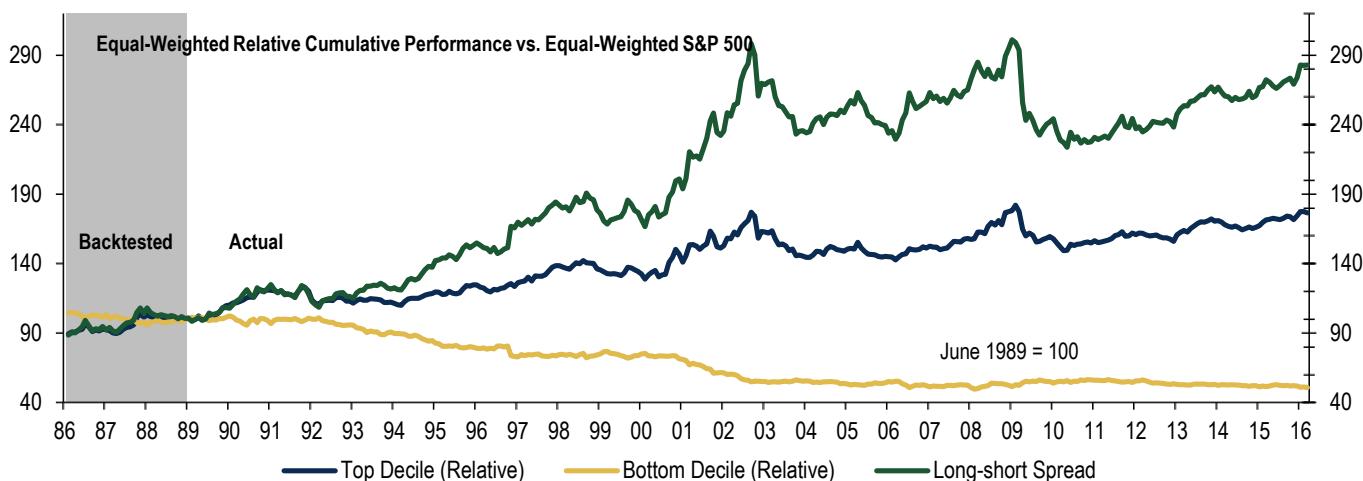
Chart 95: GARP Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

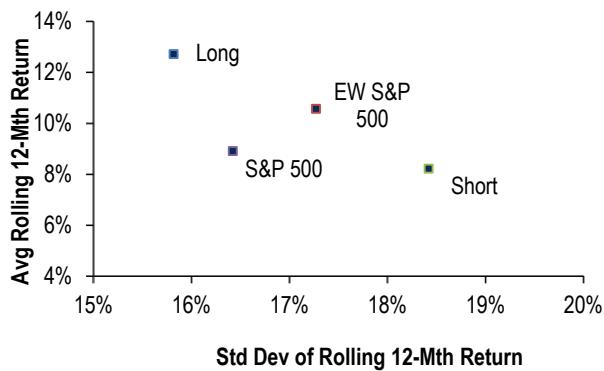
Alpha Surprise Strategy

Chart 96: Performance of Top Decile, Bottom Decile and Long-Short Spread



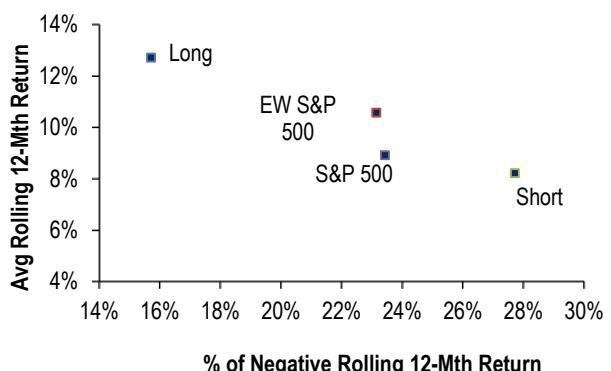
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 97: Alpha Surprise Model Risk Reward Characteristics



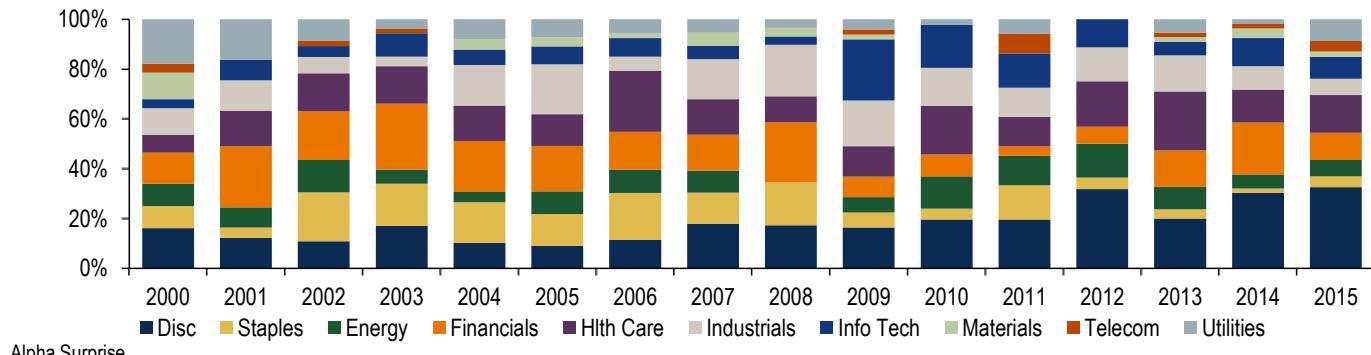
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 98: Alpha Surprise Model Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

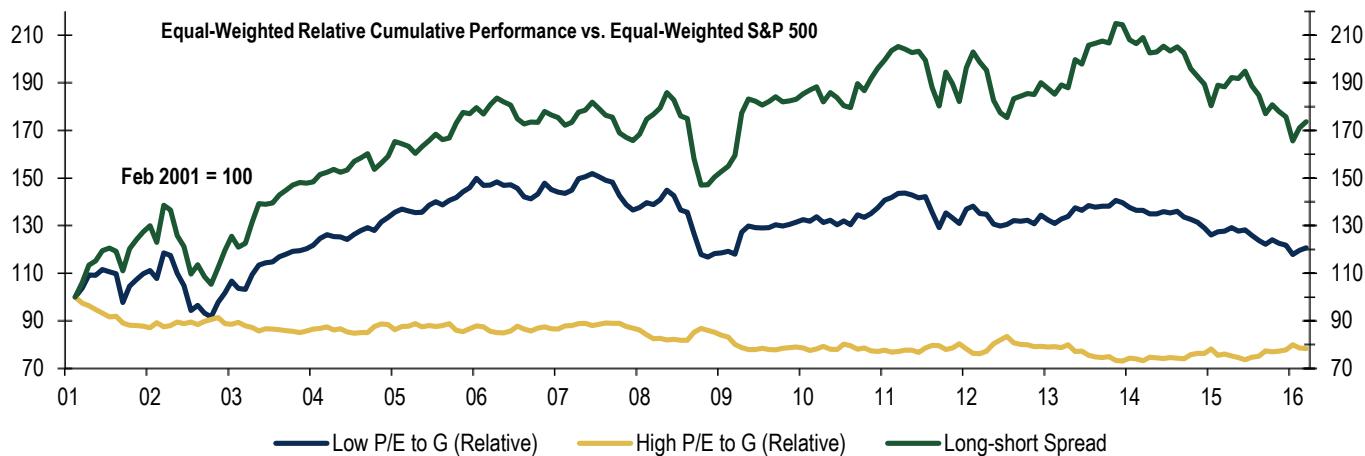
Chart 99: Alpha Surprise Model Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

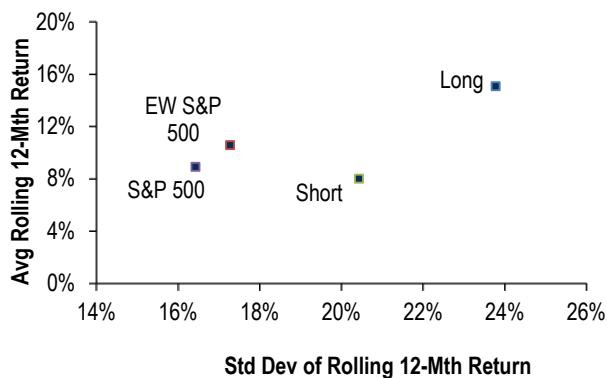
P/E-to-Growth

Chart 100: Performance of Low P/E to Growth, High P/E to Growth and Long-Short Spread



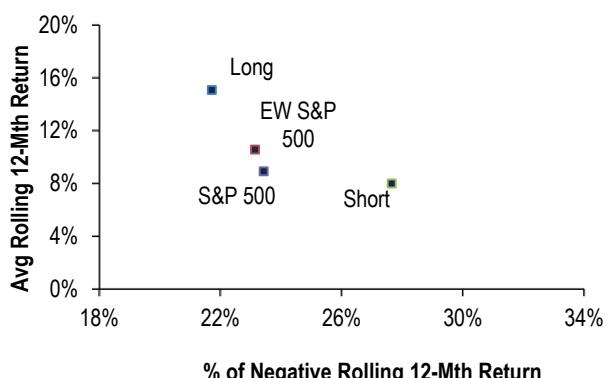
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 101: Low P/E to Growth Risk Reward



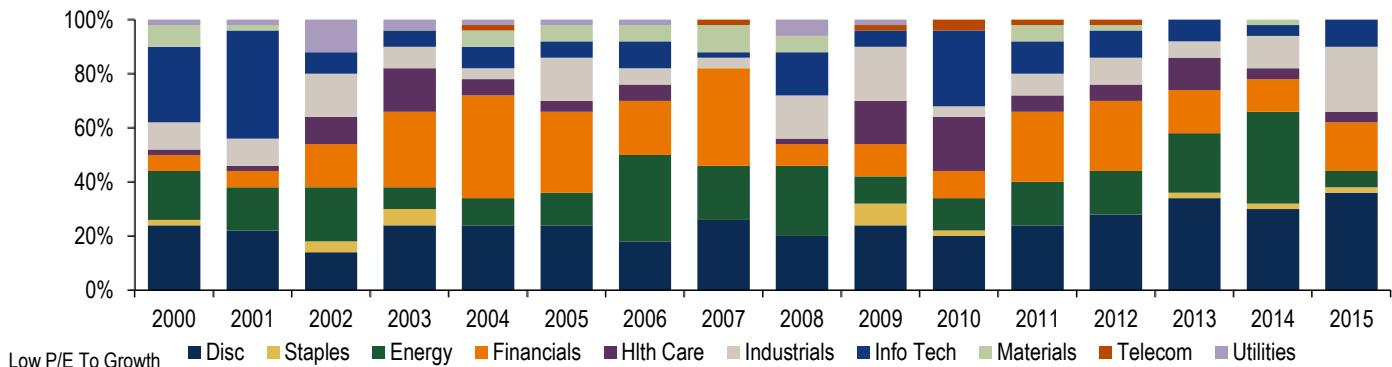
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 102: Low P/E to Growth Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

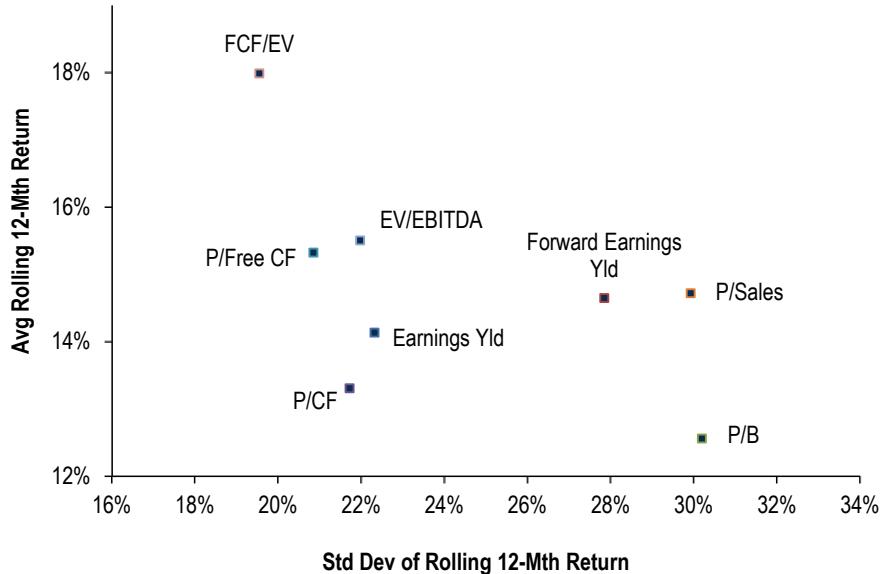
Chart 103: P/E to Growth Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

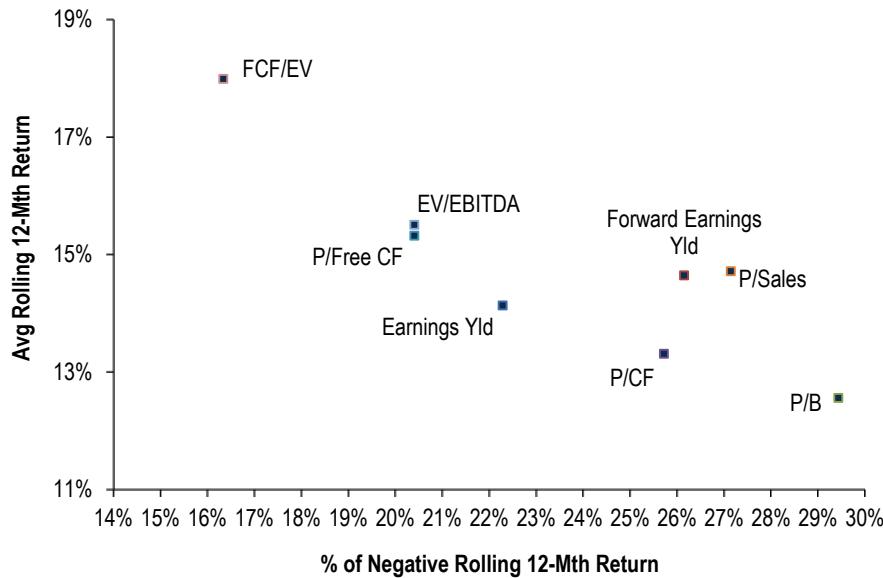
Valuation Strategies

Chart 104: Valuation Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

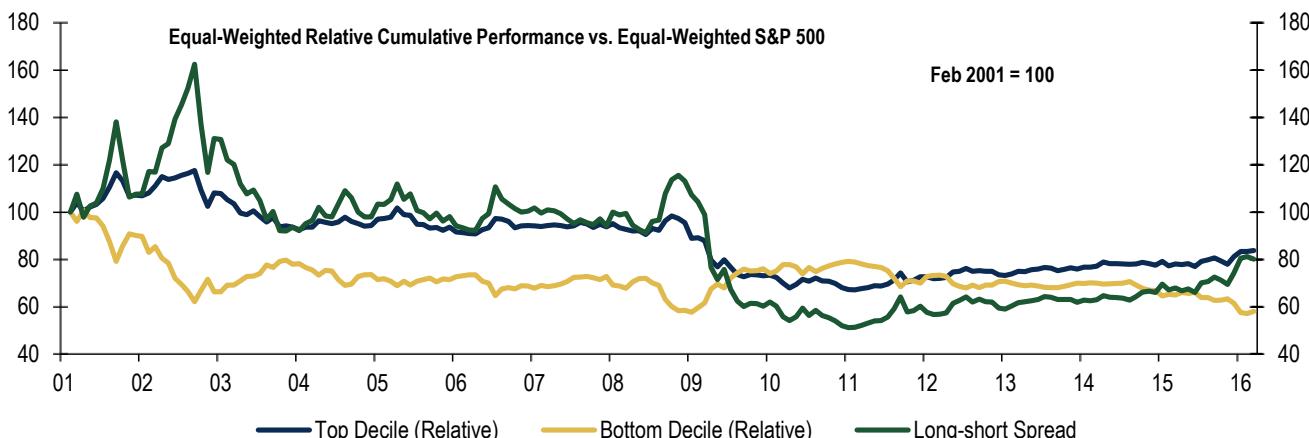
Chart 105: Valuation Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

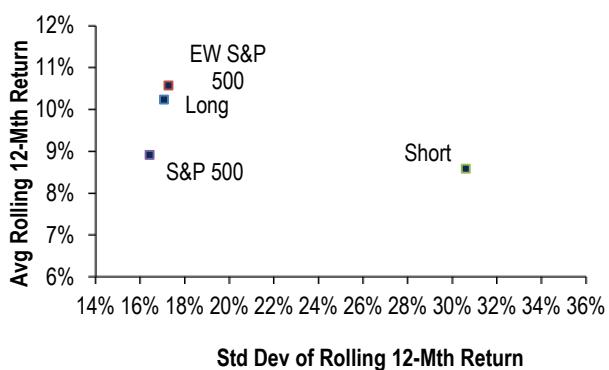
DDM Alpha

Chart 106: Performance of Top Decile, Bottom Decile and Long-Short Spread



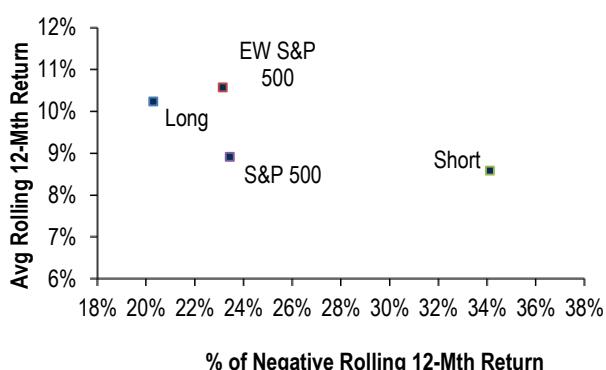
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 107: DDM Risk Reward Characteristics



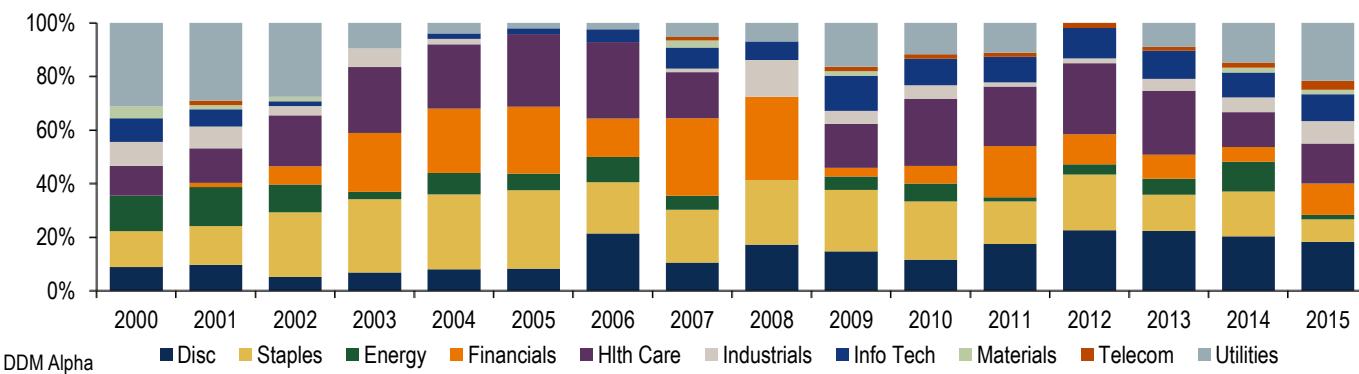
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 108: DDM Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

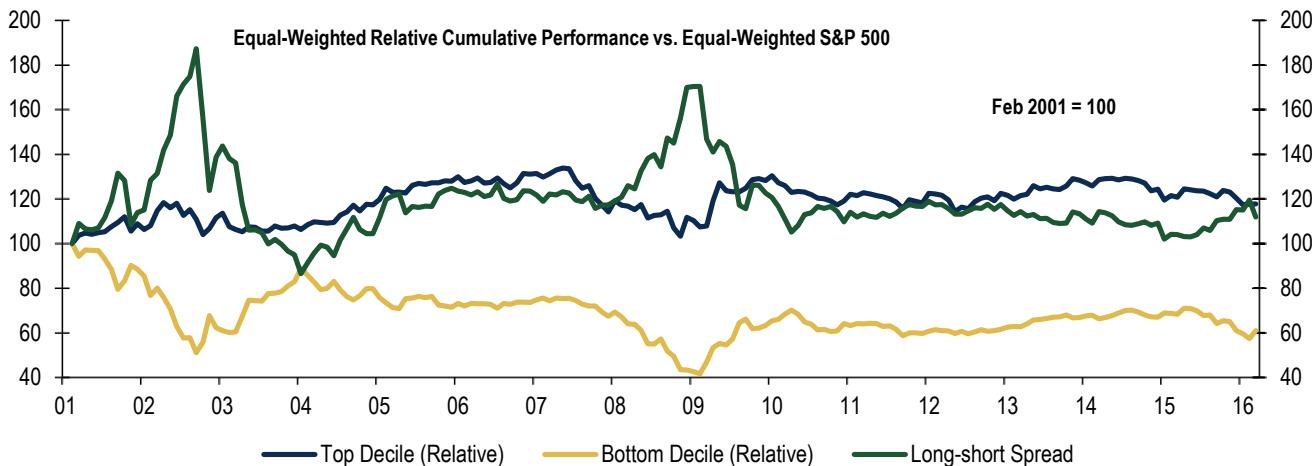
Chart 109: DDM Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

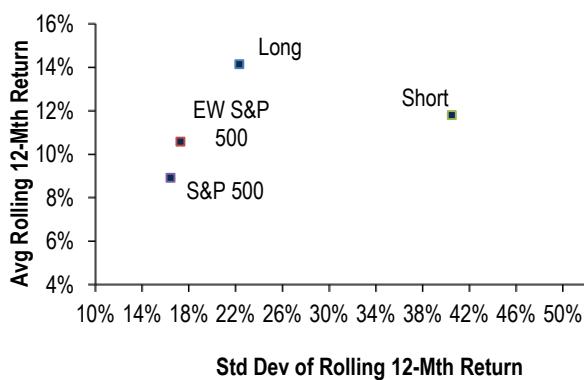
Earnings Yield

Chart 110: Performance of Top Decile, Bottom Decile and Long-Short Spread



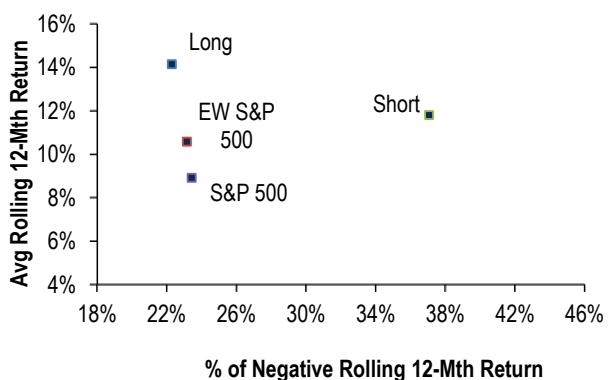
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 111: High Earnings Yield Risk Reward Characteristics



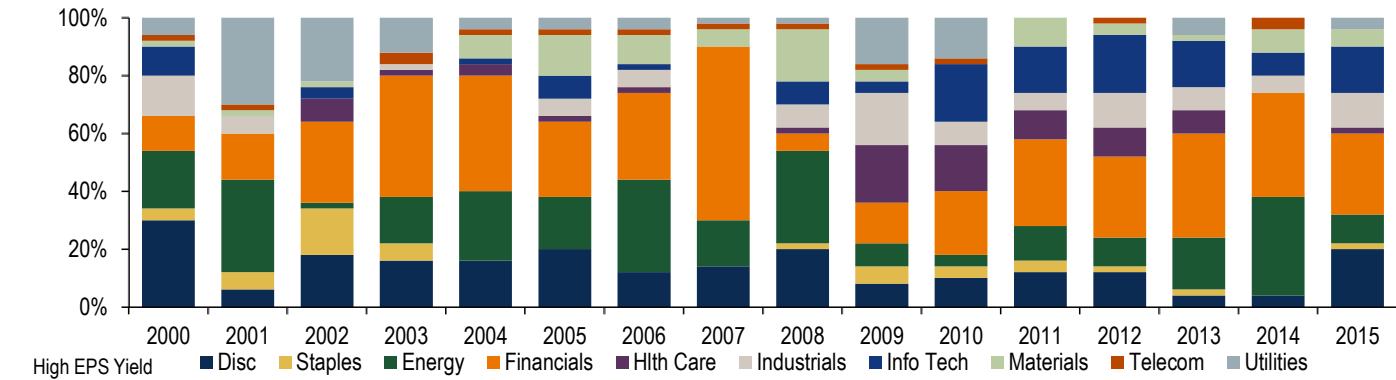
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 112: High Earnings Yield Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

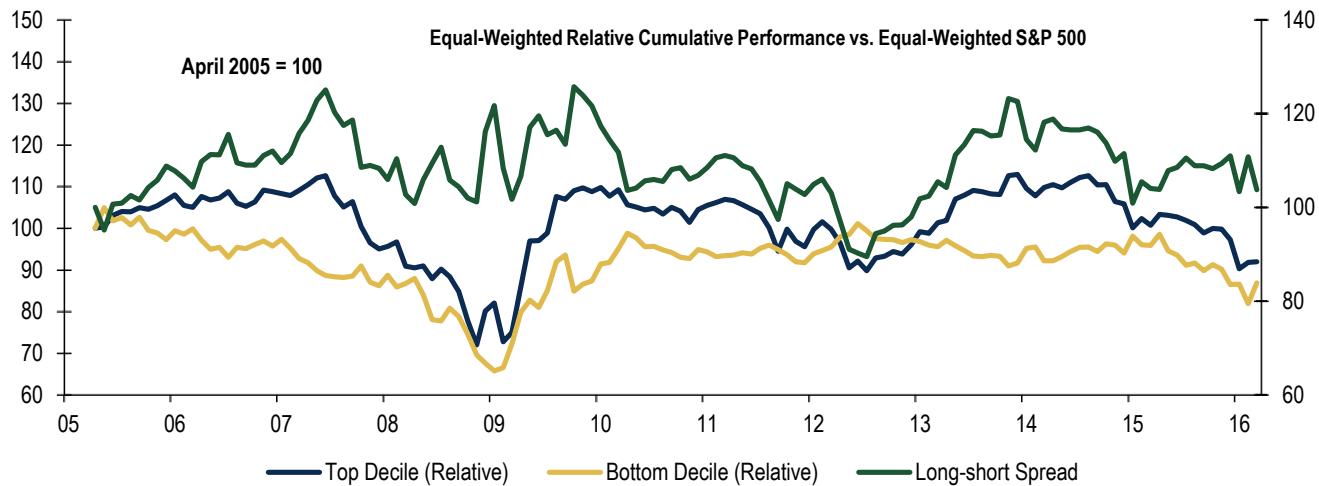
Chart 113: High Earnings Yield Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

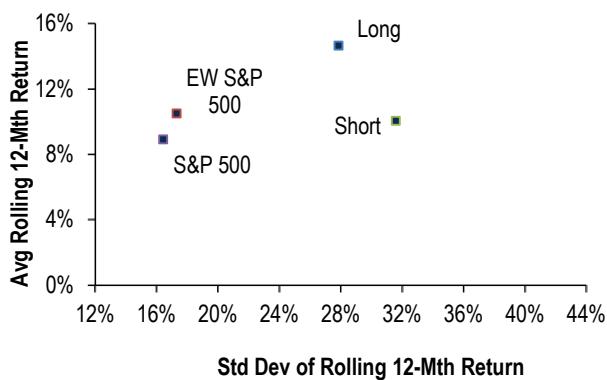
Forward Earnings Yield

Chart 114: Performance of Top Decile, Bottom Decile and Long-Short Spread



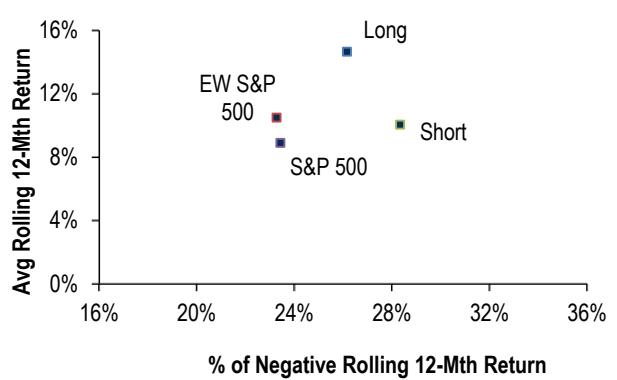
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 115: High Forward Earnings Yield Risk Reward Characteristics



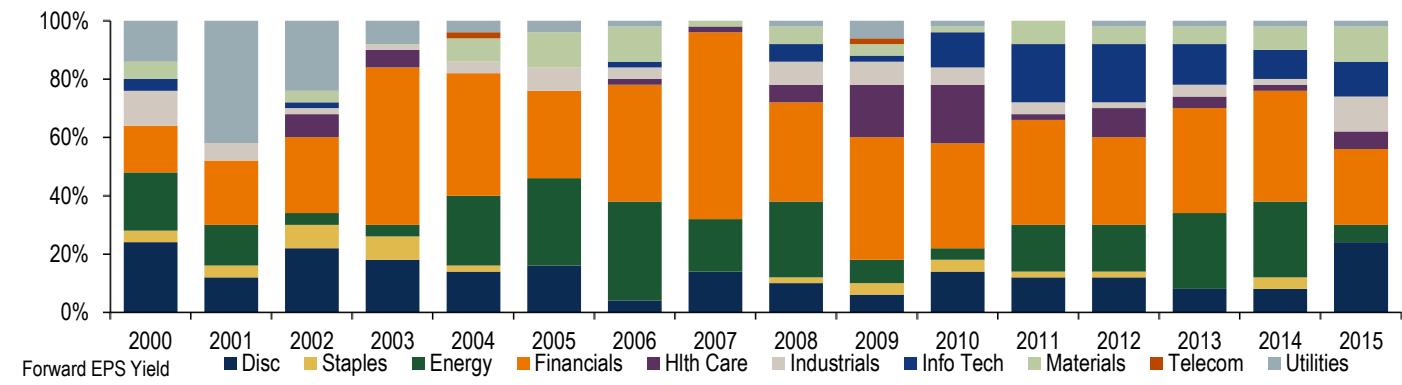
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 116: High Forward Earnings Yield Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

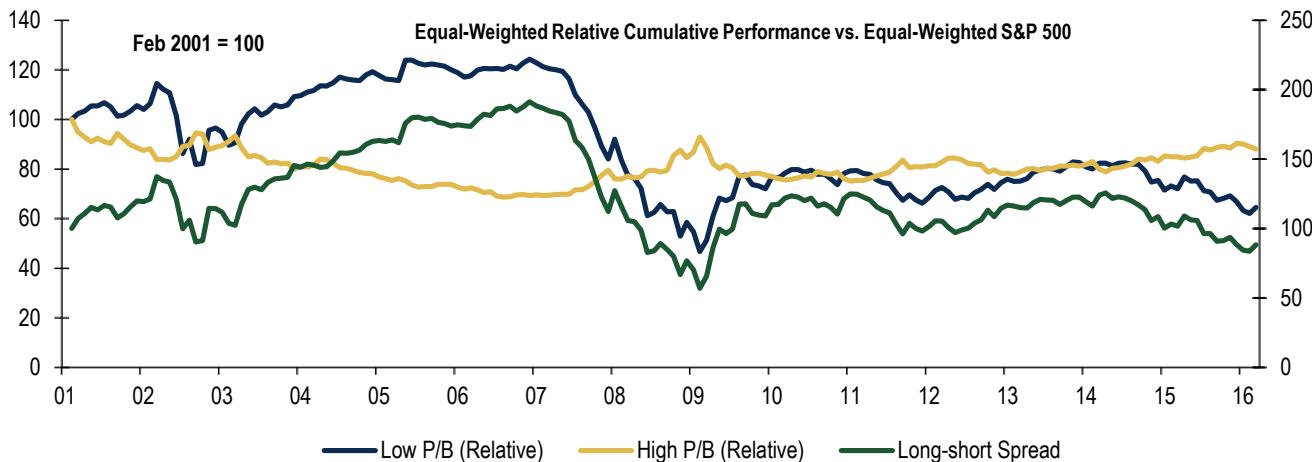
Chart 117: High Forward Earnings Yield Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

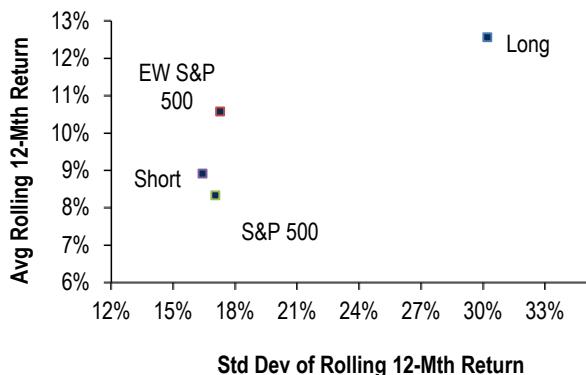
Price/Book Value

Chart 118: Performance of Low P/B, High P/B and Long-Short Spread



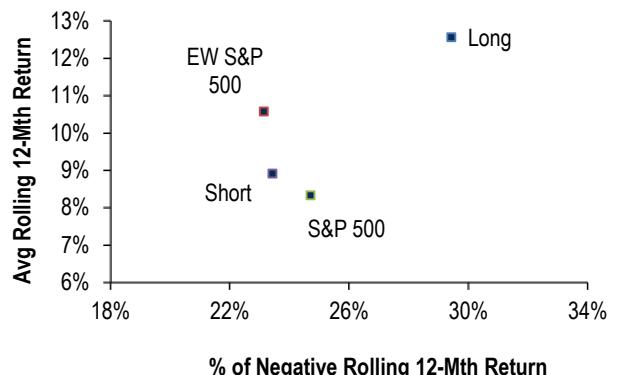
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 119: Low Price/Book Value Risk Reward Characteristics



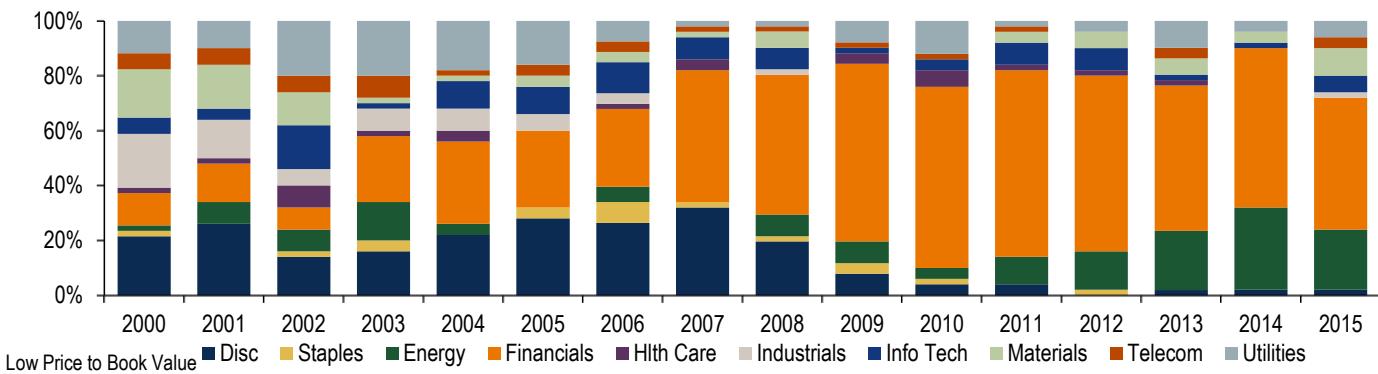
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 120: Low Price/Book Value Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

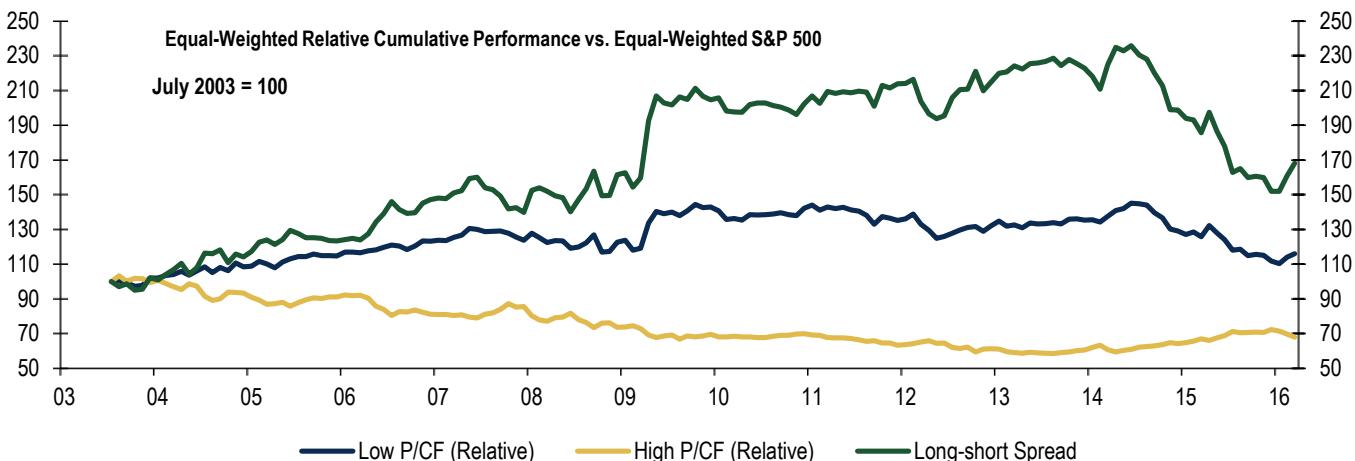
Chart 121: Low Price/Book Value Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

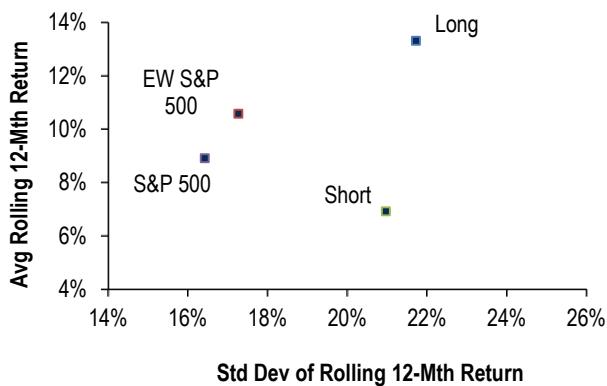
Price/Cash Flow

Chart 122: Performance of Low P/CF, High P/CF and Long-Short Spread



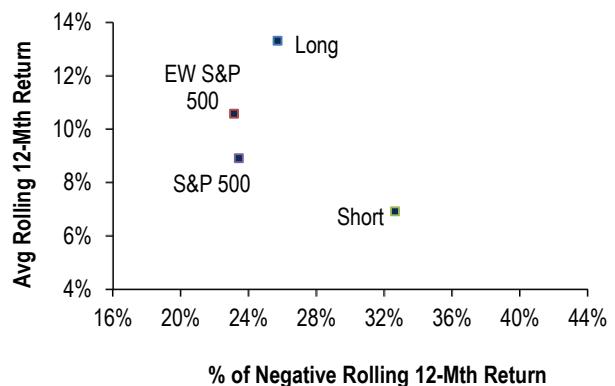
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 123: Low Price/Cash Flow Risk Reward Characteristics



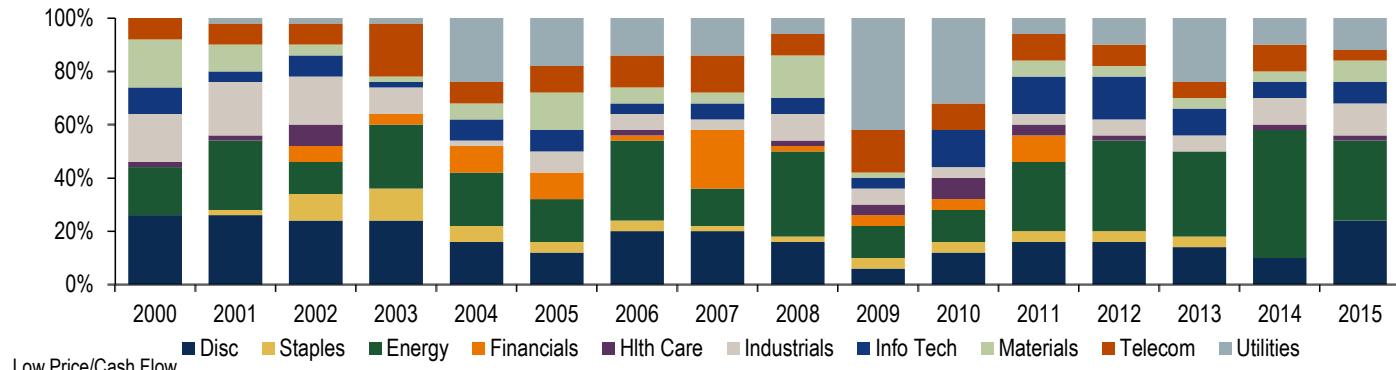
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 124: Low Price/Cash Flow Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

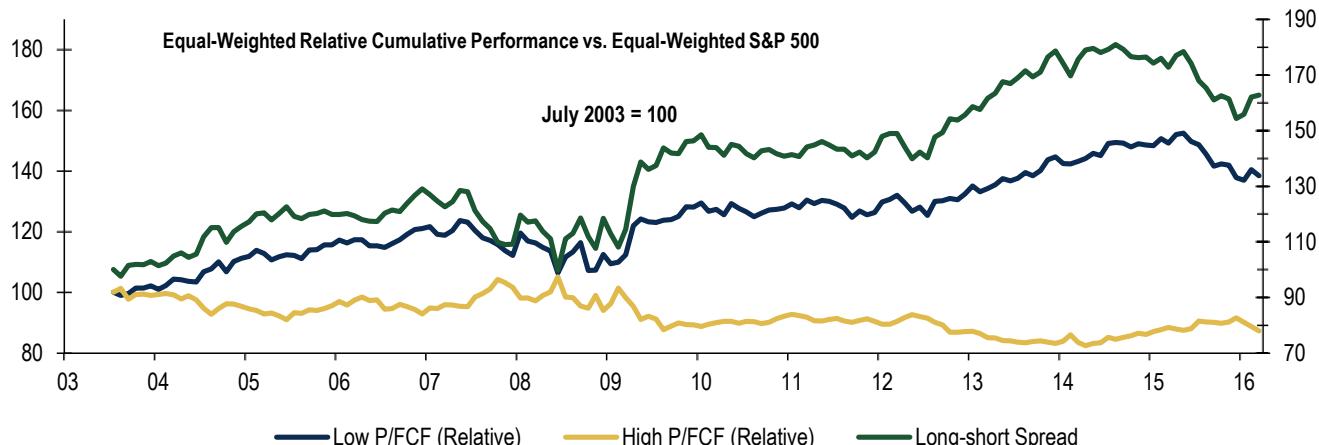
Chart 125: Low Price/Cash Flow Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

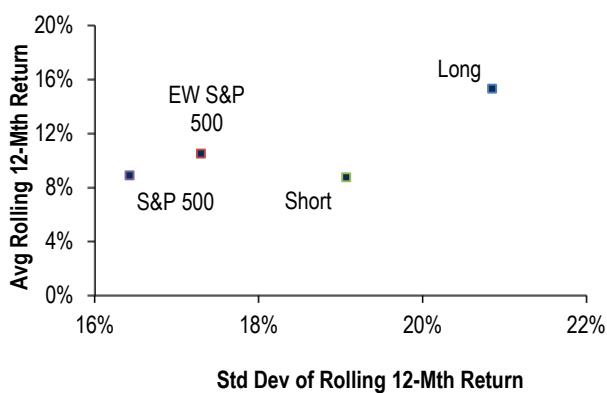
Price/Free Cash Flow

Chart 126: Performance of Low P/FCF, High P/FCF and Long-Short Spread



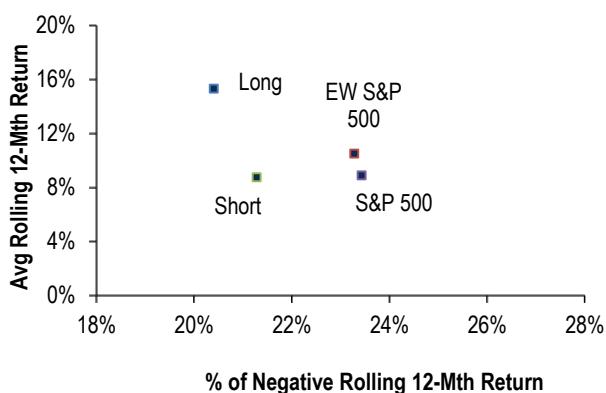
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 127: Low Price/Free Cash Flow Risk Reward Characteristics



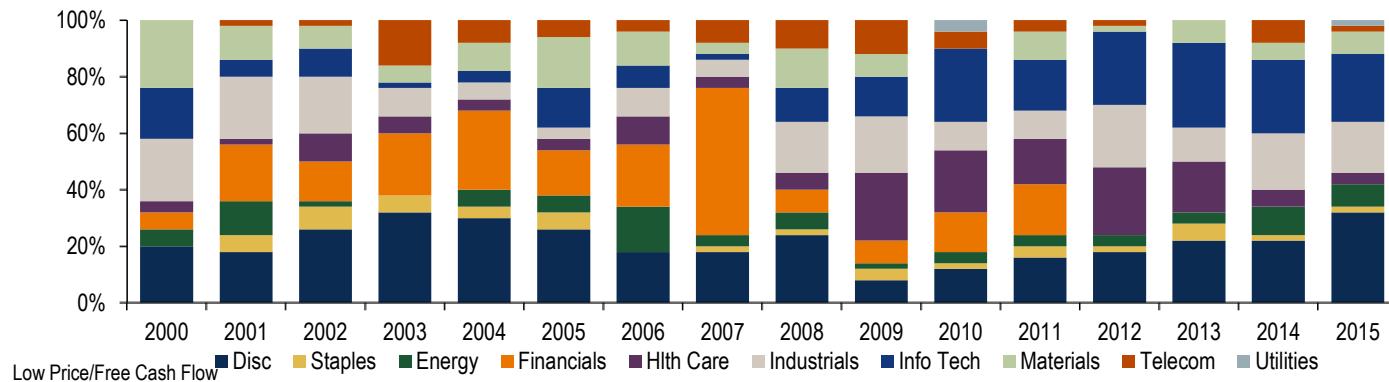
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 128: Low Price/Free Cash Flow Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

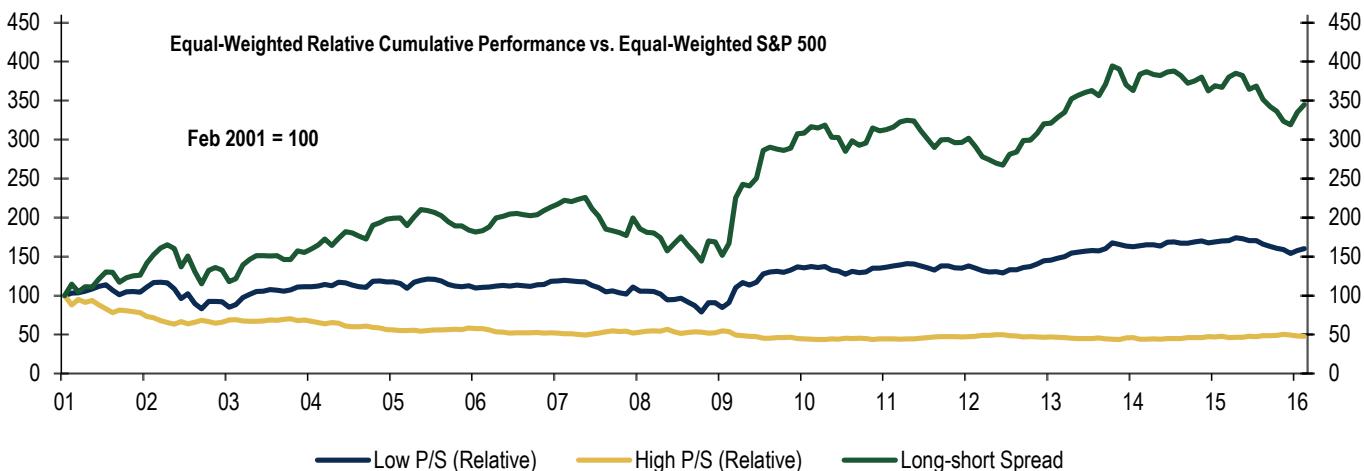
Chart 129: Low Price/Free Cash Flow Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

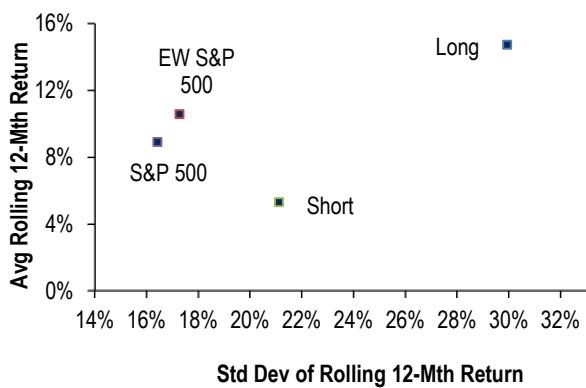
Price/Sales

Chart 130: Performance of Low P/S, High P/S and Long-Short Spread



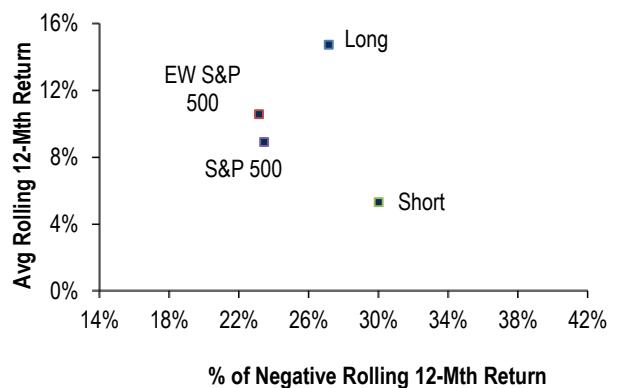
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 131: Low Price/Sales Risk Reward Characteristics



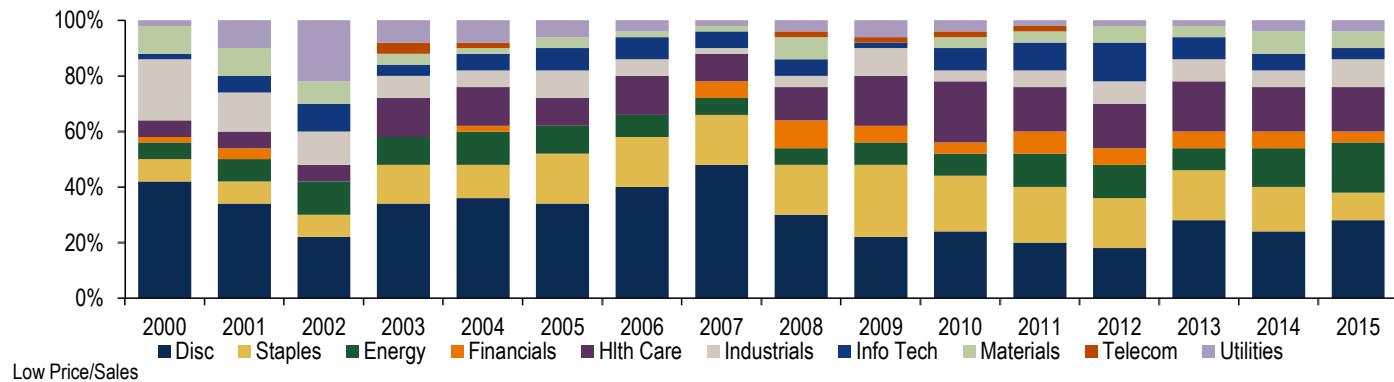
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 132: Low Price/Sales Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

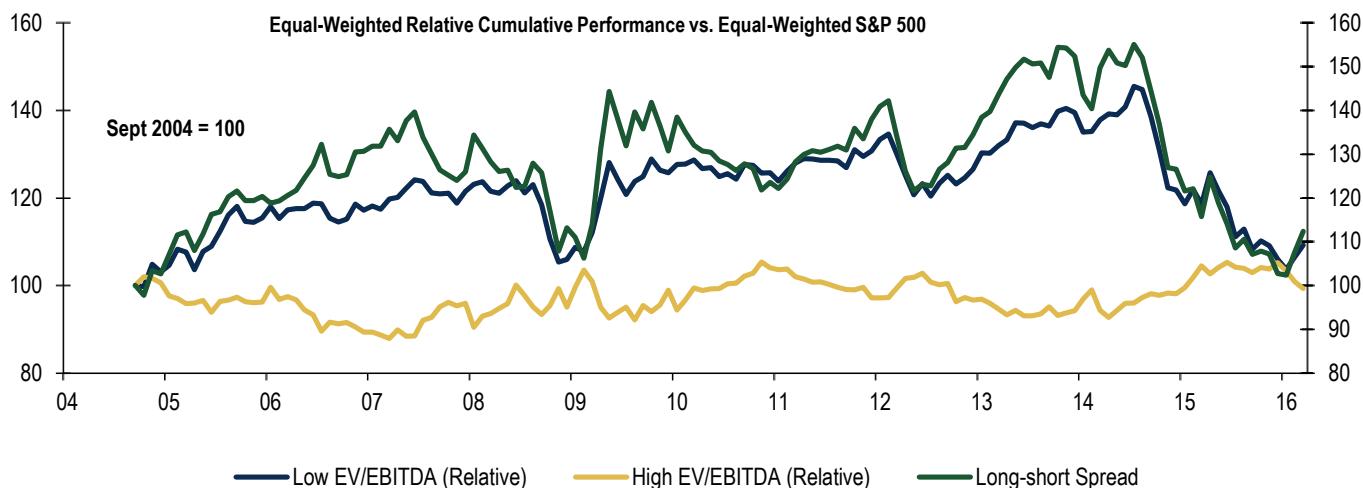
Chart 133: Low Price/Sales Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

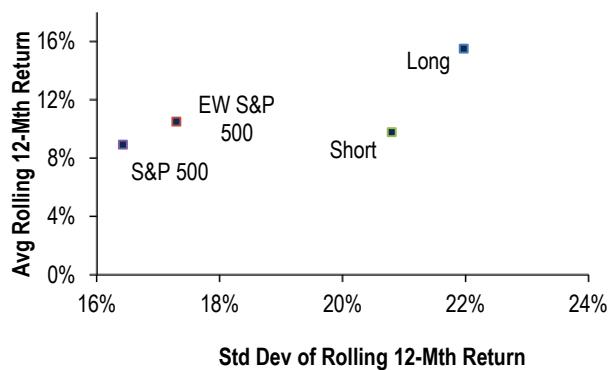
EV/EBITDA

Chart 134: Performance of Low EV/EBITDA, High EV/EBITDA and Long-Short Spread



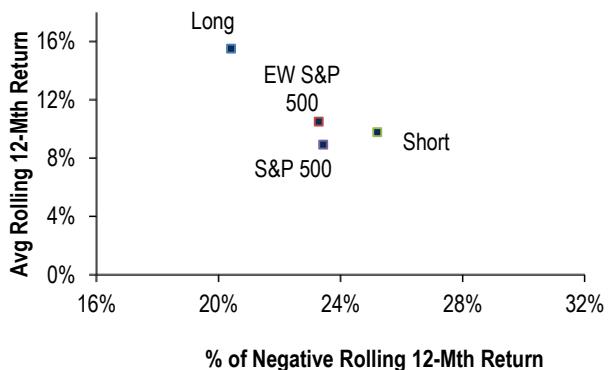
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 135: Low EV/EBITDA Risk Reward Characteristics



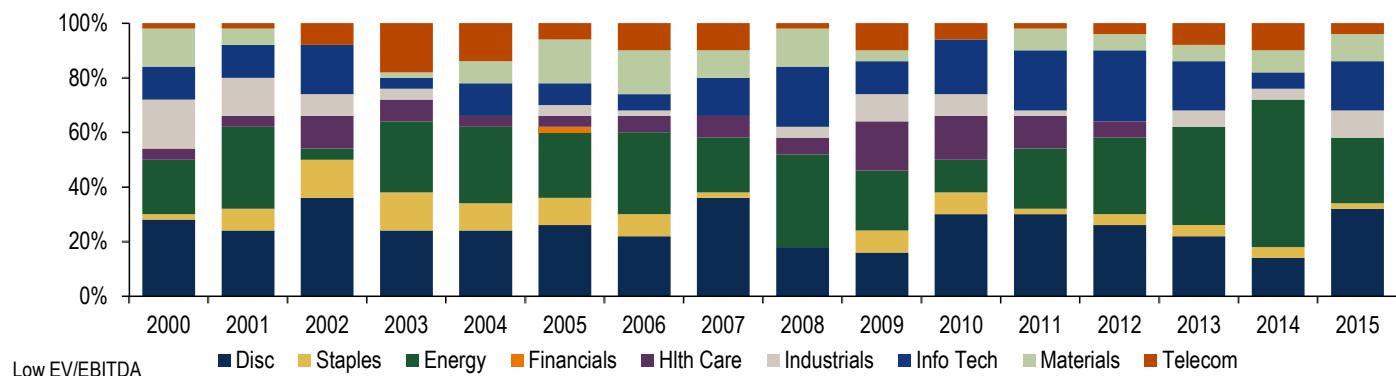
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 136: Low EV/EBITDA Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

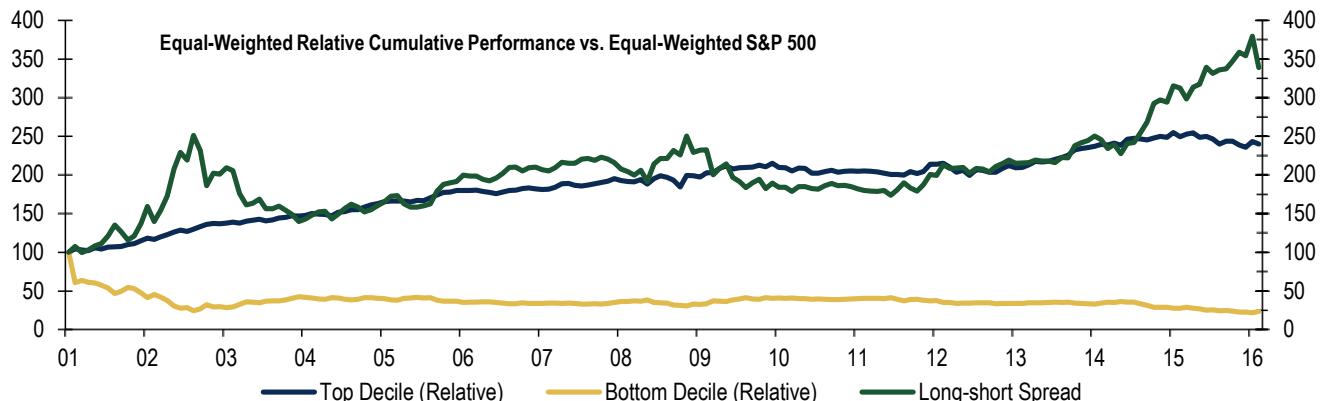
Chart 137: Low EV/EBITDA Sector Concentration (Low EV/EBITDA)



Source: BofA Merrill Lynch US Quantitative Strategy

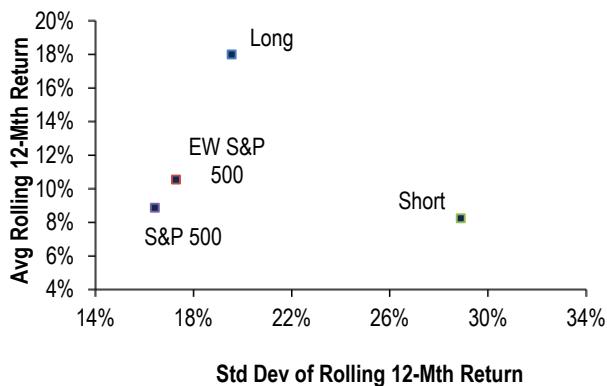
Free Cash Flow/Enterprise Value

Chart 138: Performance of Low FCF/EV, High FCF/EV and Long-Short Spread



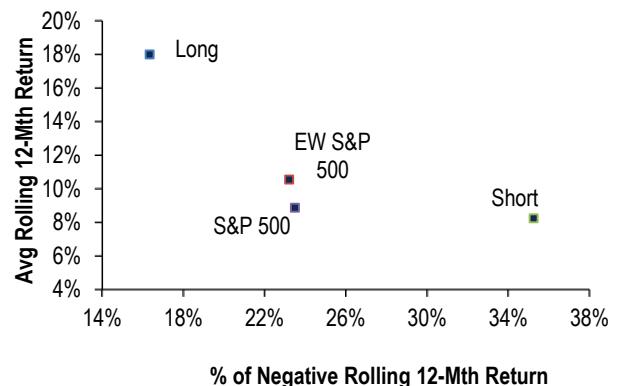
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 139: High FCF/EV Risk Reward Characteristics



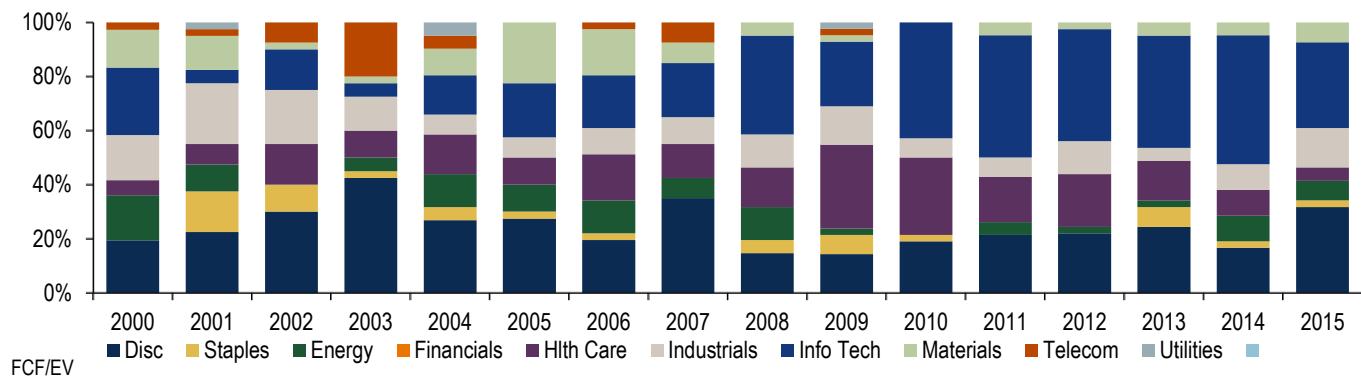
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 140: High FCF/EV Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

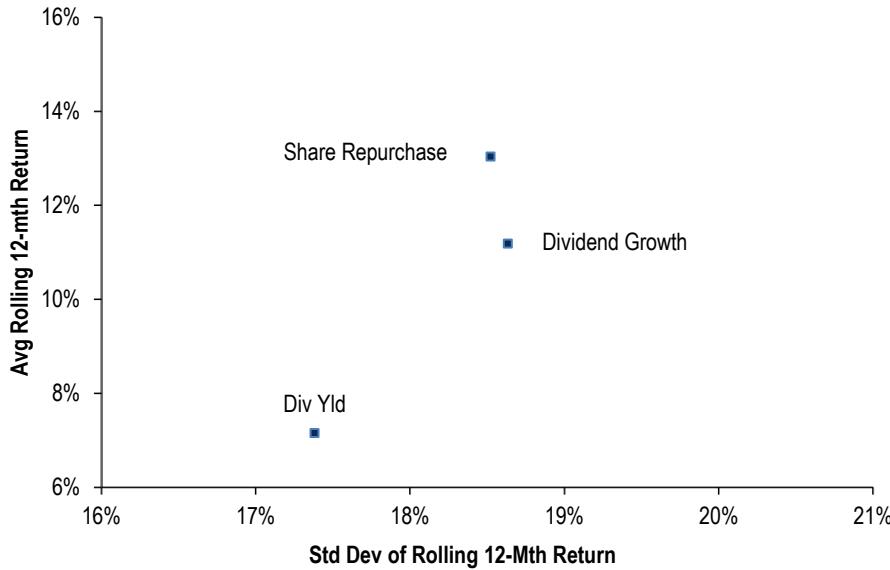
Chart 141: Low FCF/EV Sector Concentration (Low FCF/EV)



Source: BofA Merrill Lynch US Quantitative Strategy

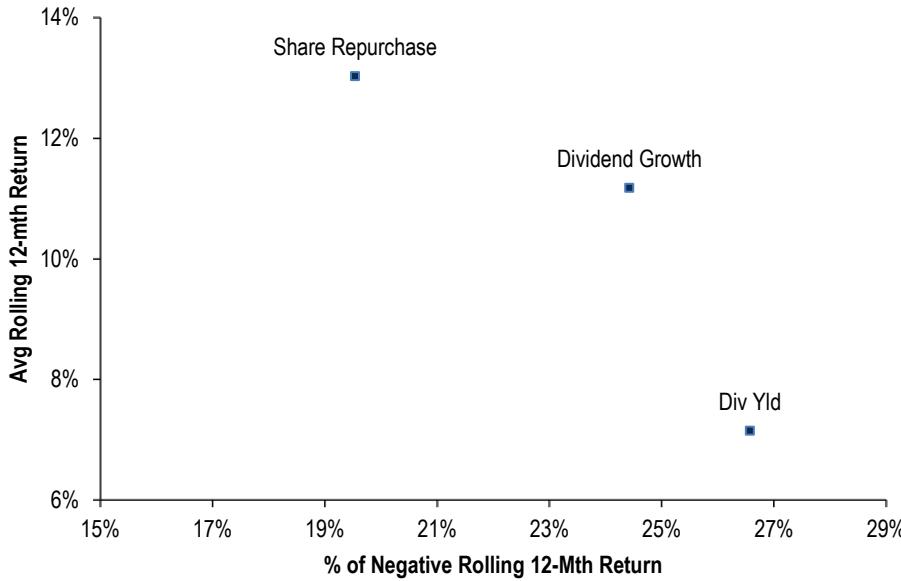
Cash Deployment Strategies

Chart 142: Cash Deployment Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

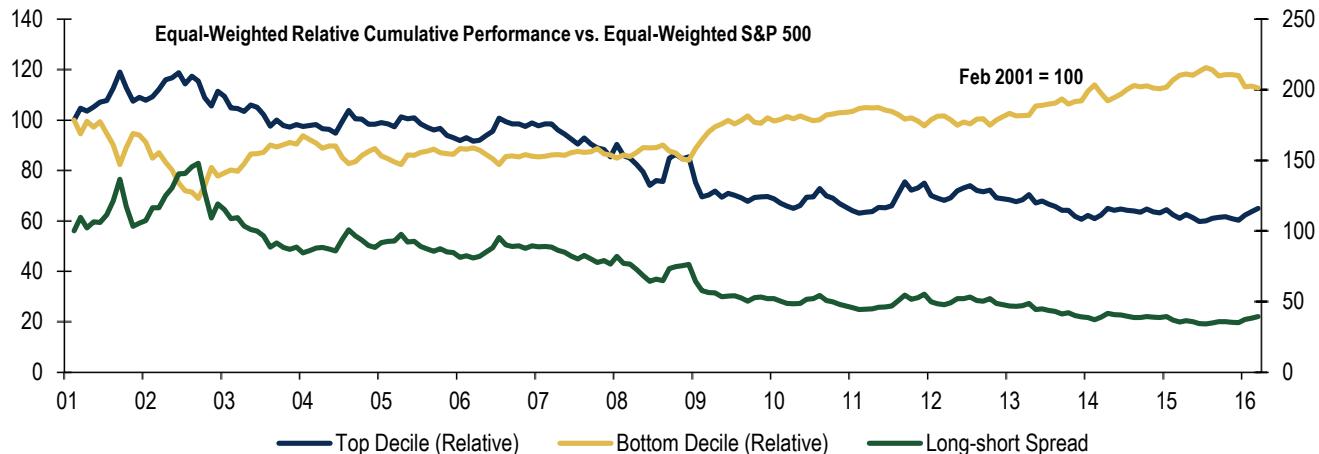
Chart 143: Cash Deployment Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

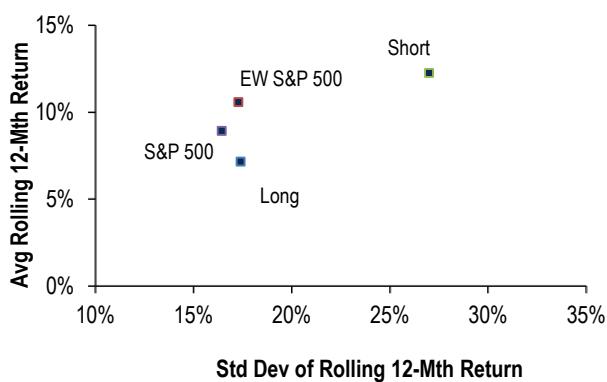
Dividend Yield

Chart 144: Performance of Top Decile, Bottom Decile and Long-Short Spread



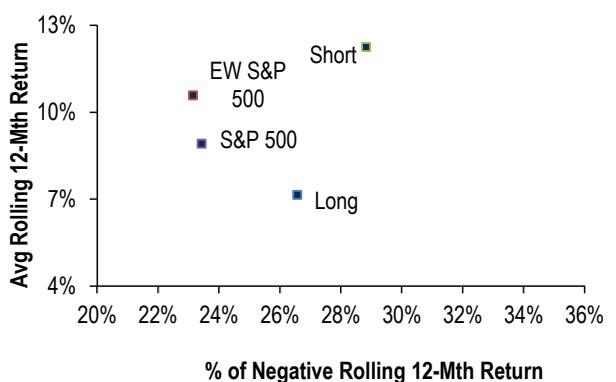
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 145: High Dividend Yield Risk Reward Characteristics



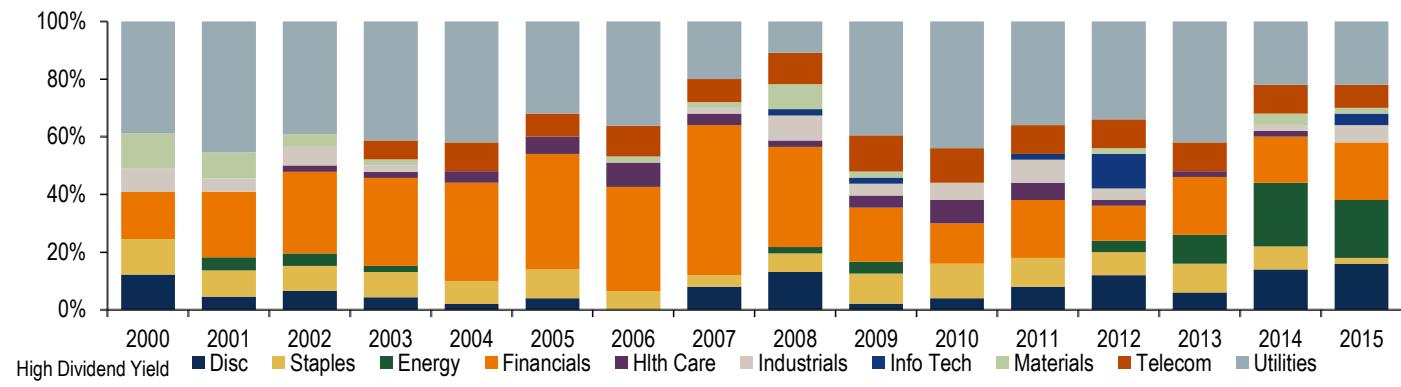
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 146: High Dividend Yield Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

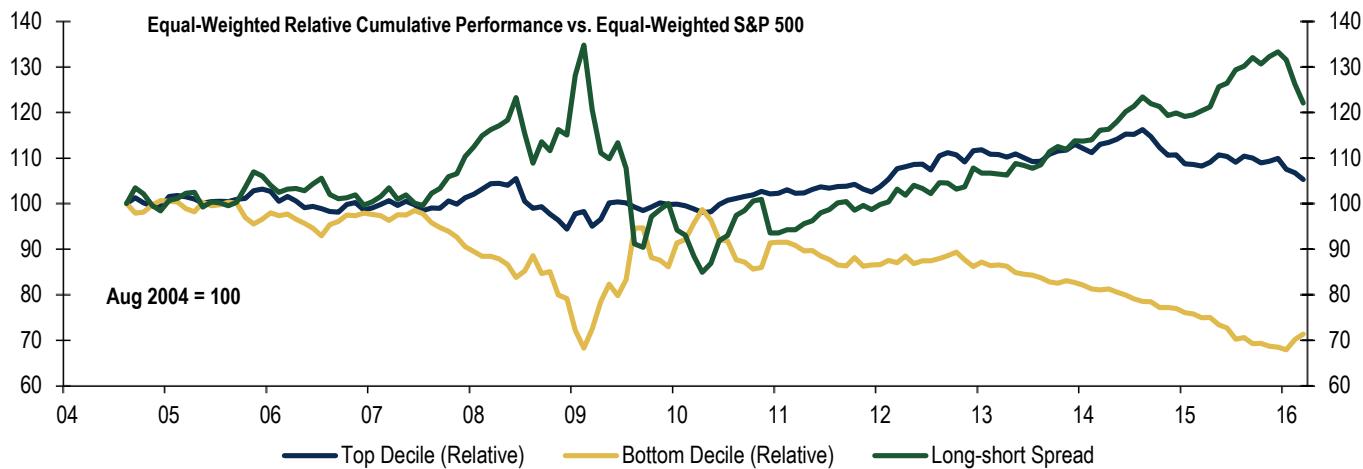
Chart 147: High Dividend Yield Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

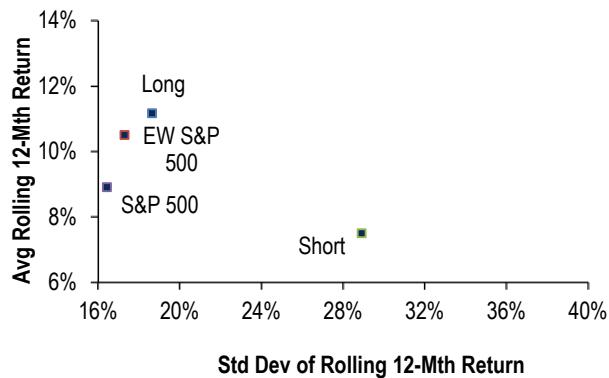
Dividend Growth

Chart 148: Performance of Top Decile, Bottom Decile and Long-Short Spread



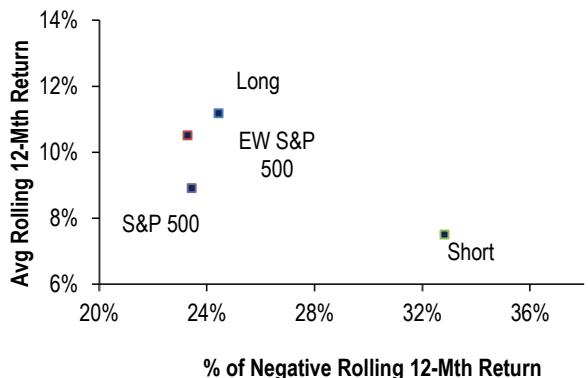
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 149: High Dividend Growth Risk Reward



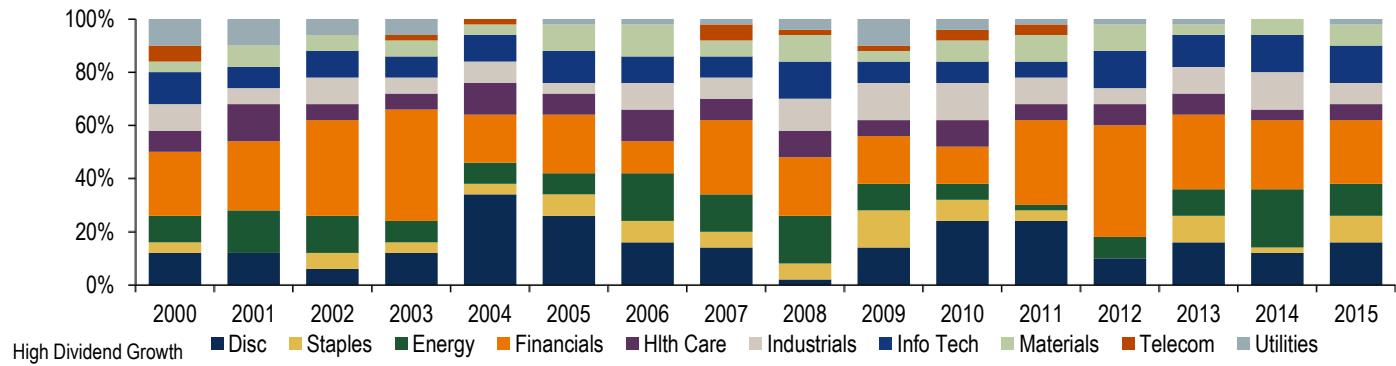
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 150: High Dividend Growth Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

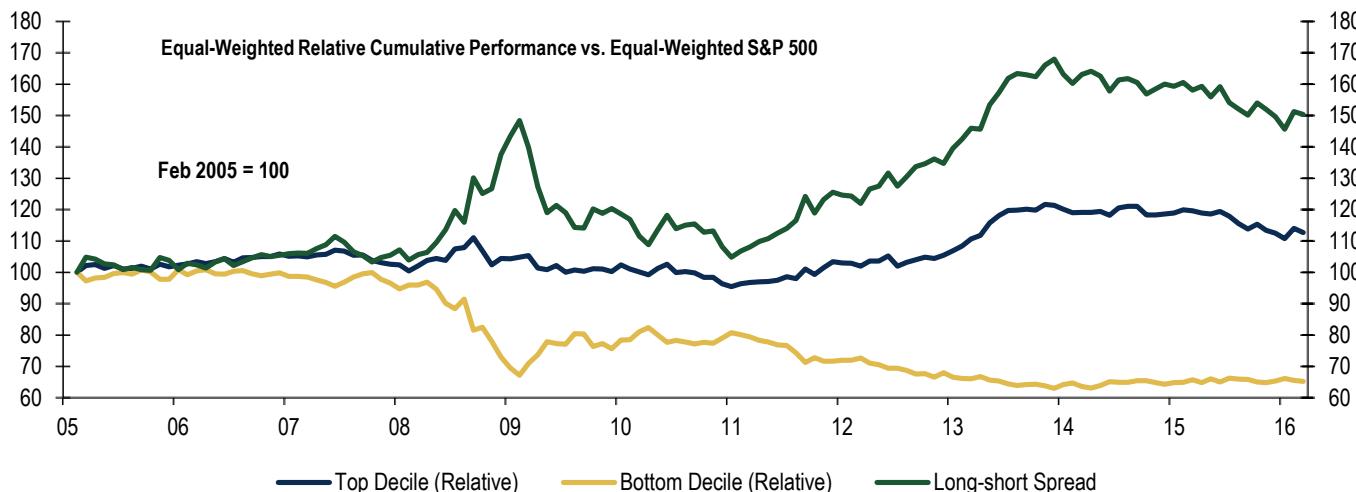
Chart 151: High Dividend Growth Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

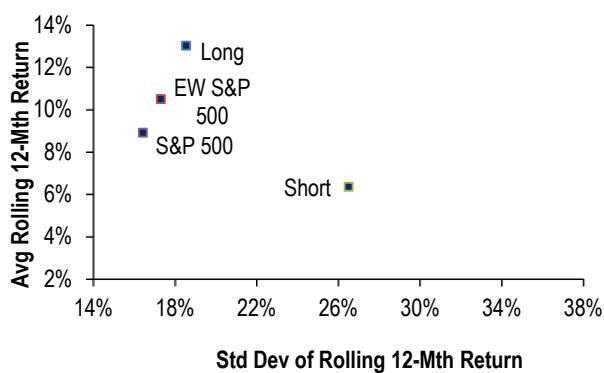
Share Repurchase

Chart 152: Performance of Top Decile, Bottom Decile and Long-Short Spread



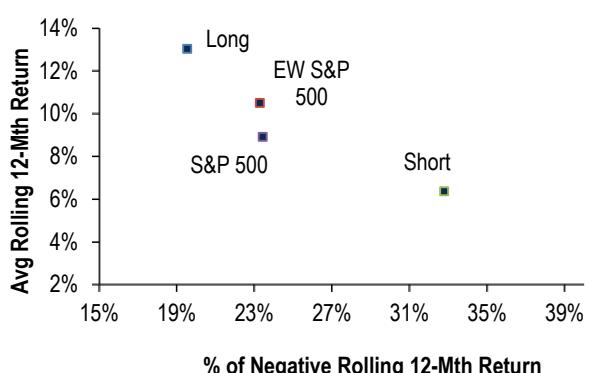
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 153: High Share Repurchase Risk Reward Characteristics



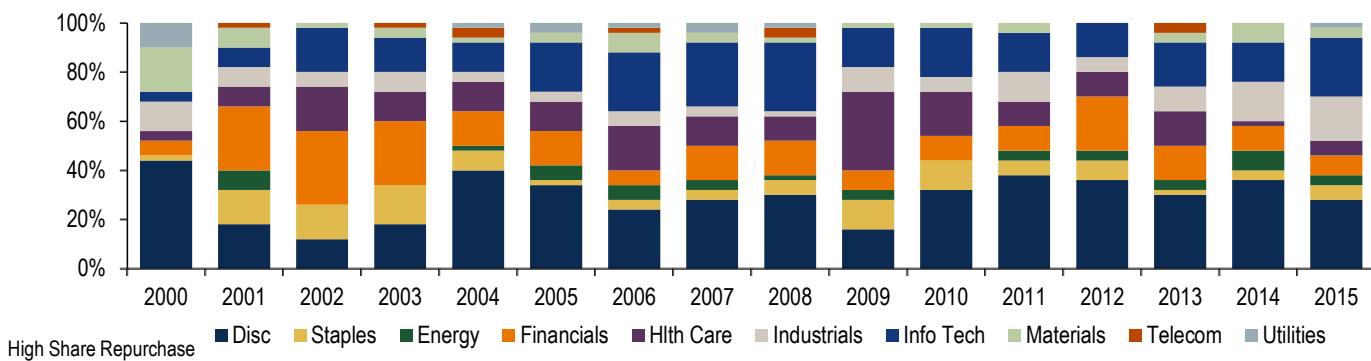
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 154: High Share Repurchase Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

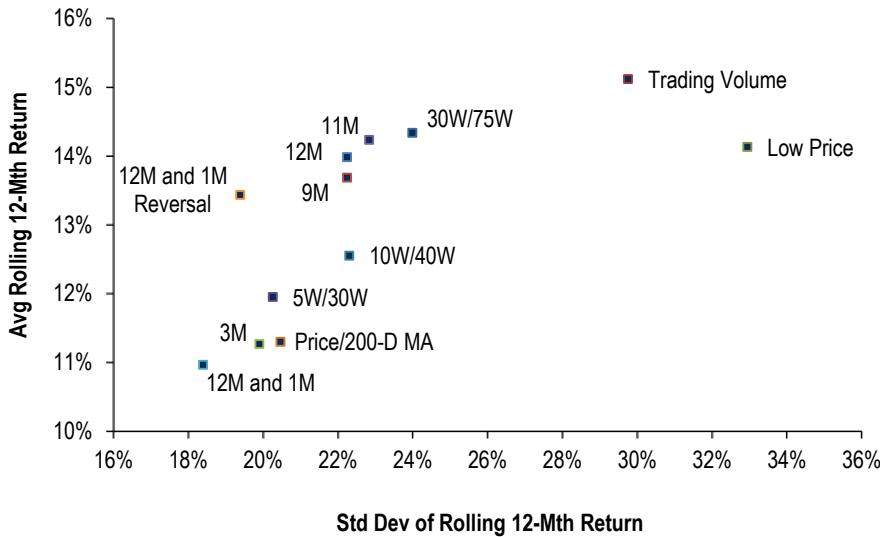
Chart 155: High Share Repurchase Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

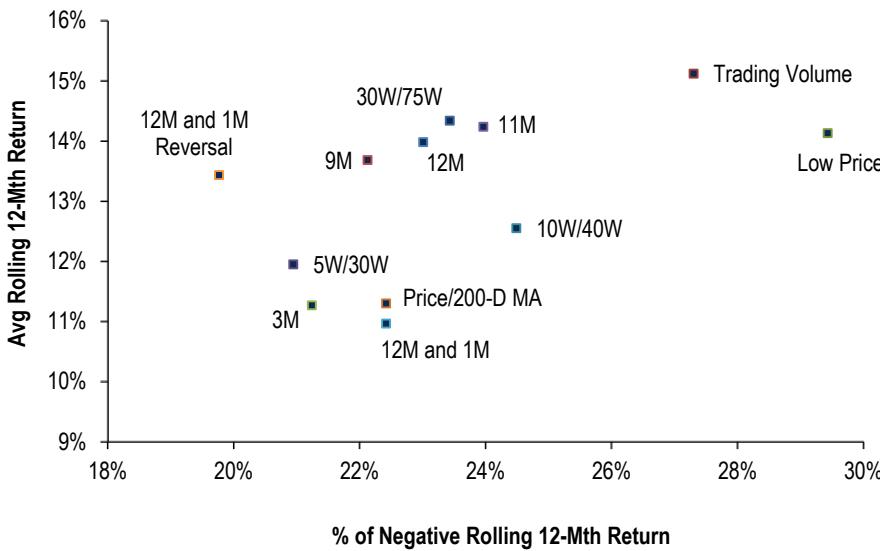
Momentum Strategies

Chart 156: Momentum Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

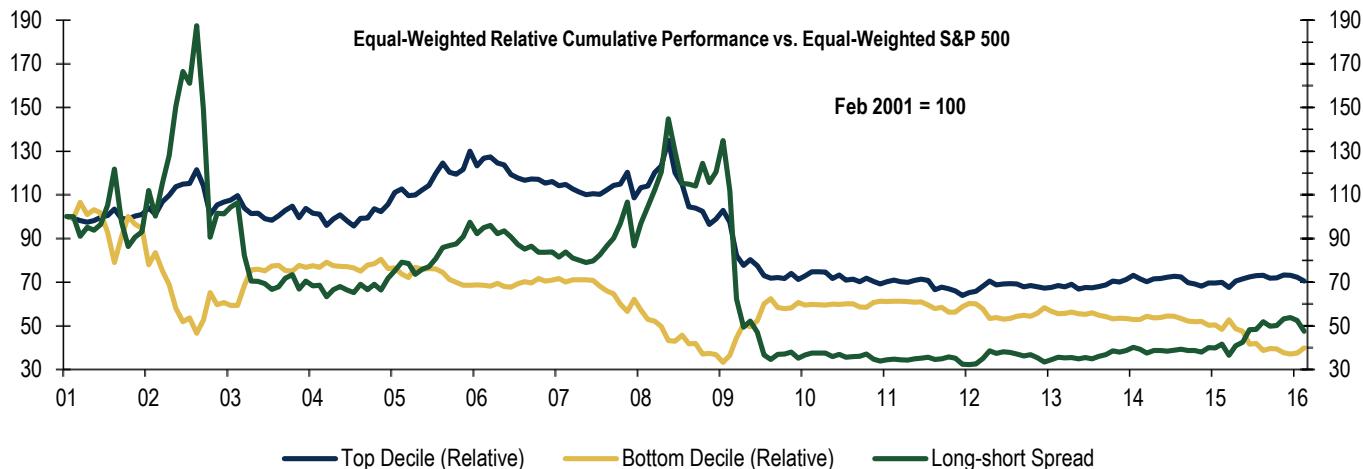
Chart 157: Momentum Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

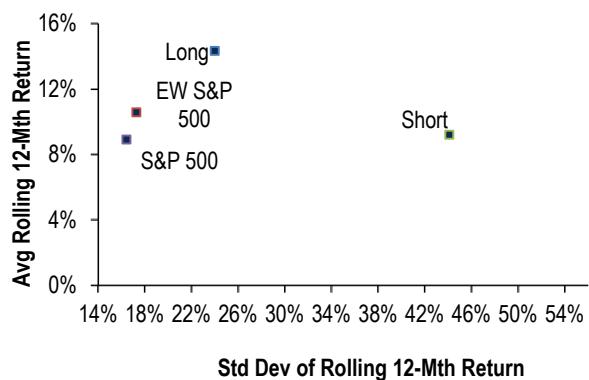
Relative Strength – 30wk/75wk

Chart 158: Performance of Top Decile, Bottom Decile and Long-Short Spread



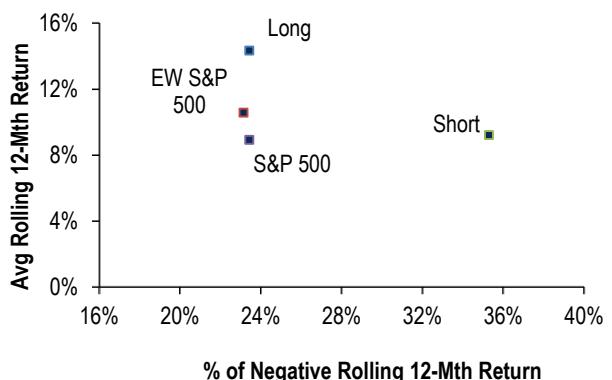
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 159: High Relative Strength – 30wk/75wk Risk Reward



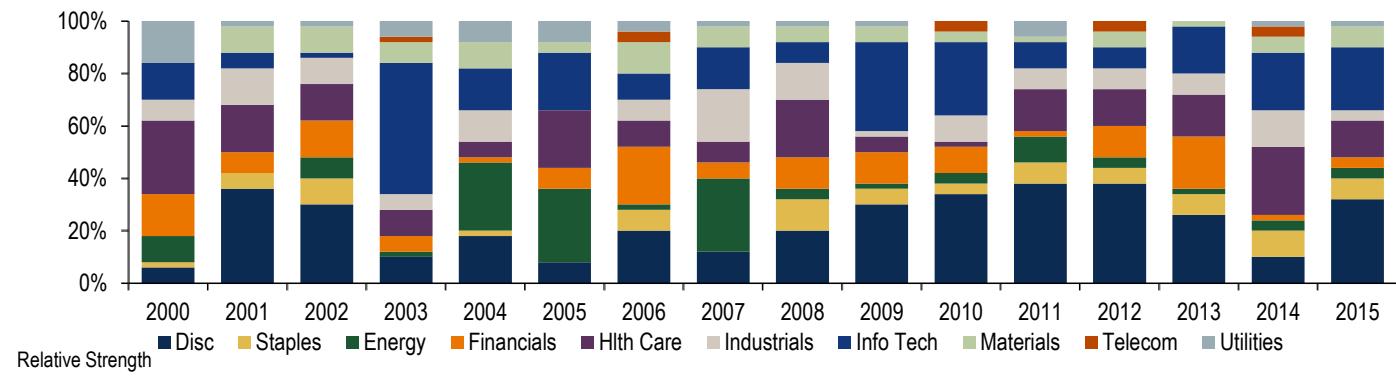
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 160: High Relative Strength – 30wk/75wk Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

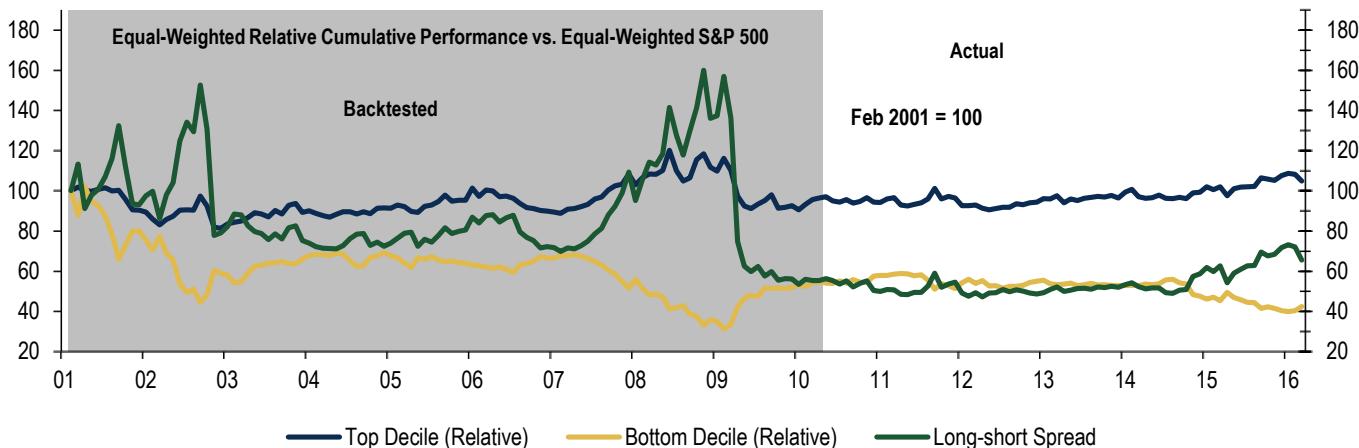
Chart 161: High Relative Strength (30wk/75wk) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

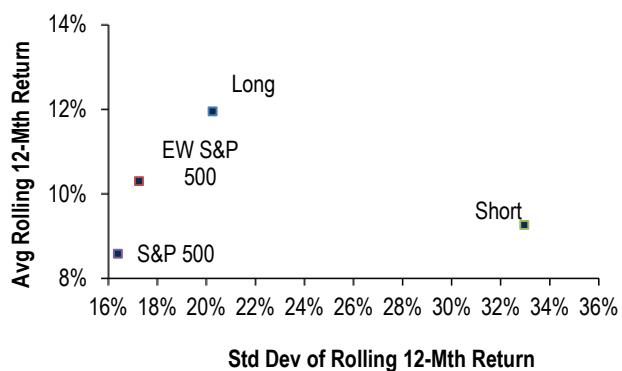
Relative Strength – 5wk/30wk

Chart 162: Performance of Top Decile, Bottom Decile and Long-Short Spread



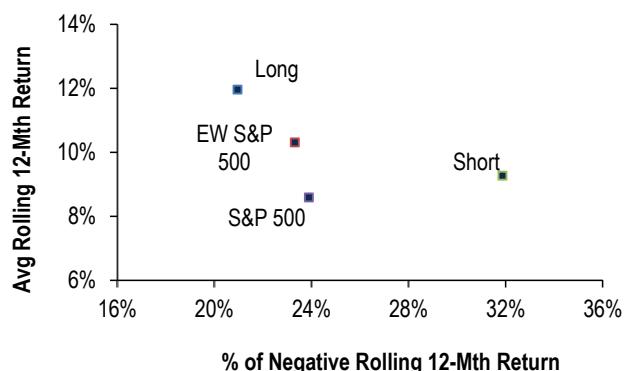
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 163: High Relative Strength – 5wk/30wk Risk Reward



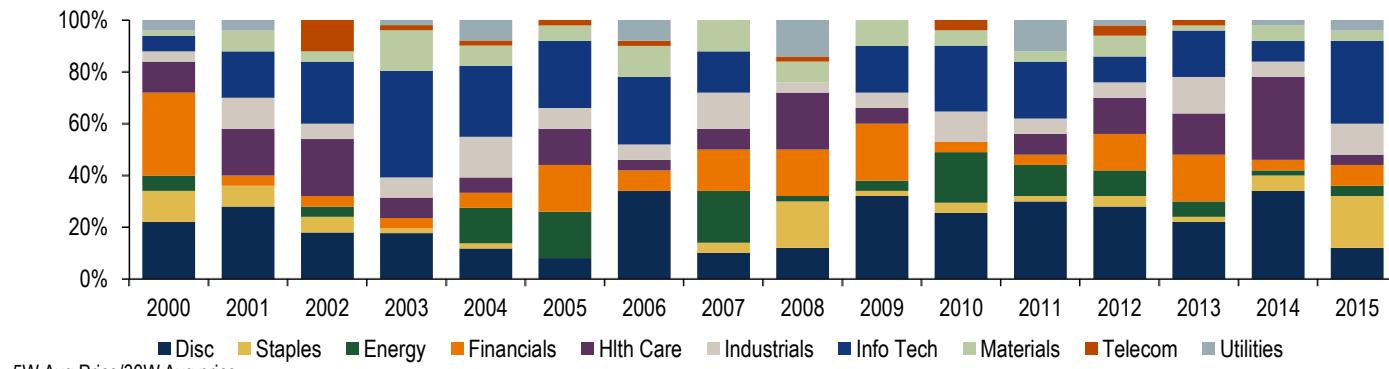
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 164: High Relative Strength – 5wk/30wk Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

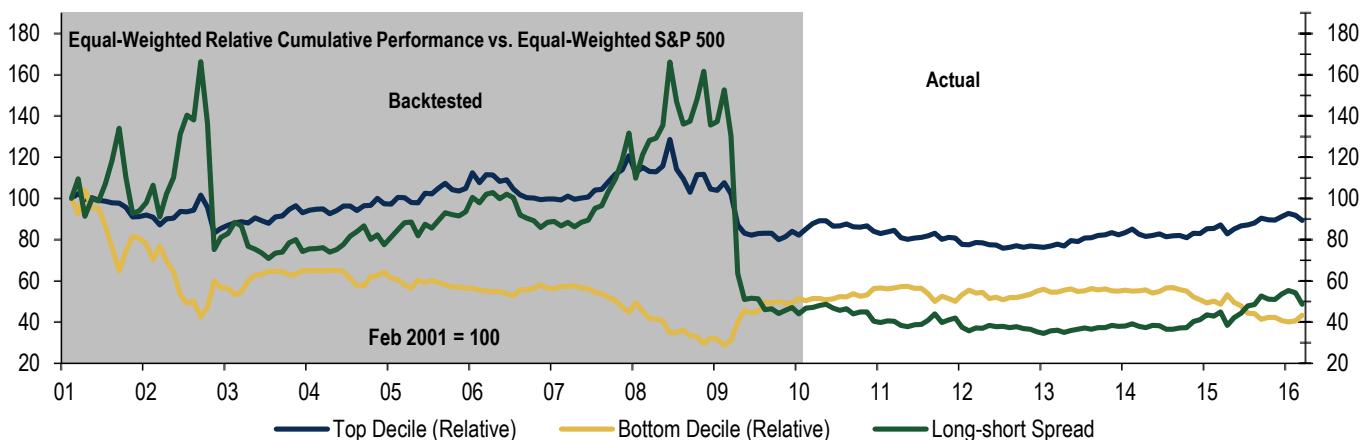
Chart 165: High Relative Strength (5wk/30wk) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

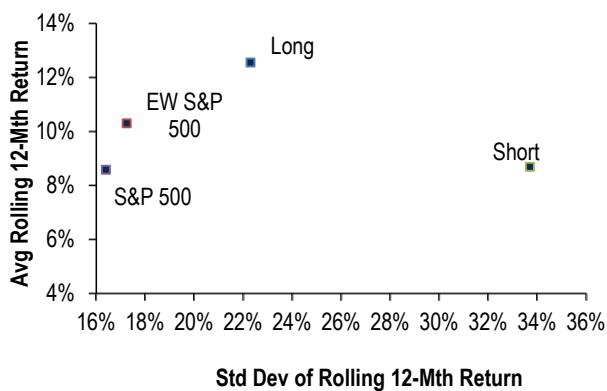
Relative Strength – 10wk/40wk

Chart 166: Performance of Top Decile, Bottom Decile and Long-Short Spread



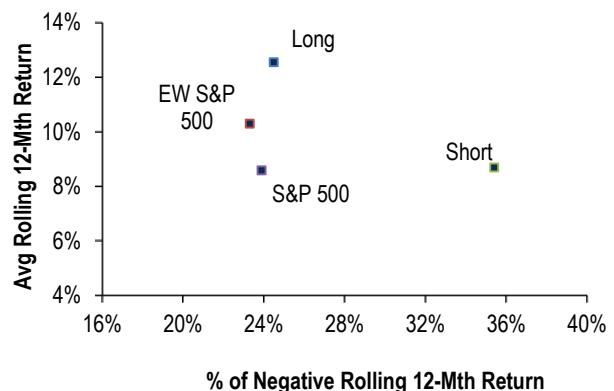
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 167: High Relative Strength – 10wk/40wk Risk Reward



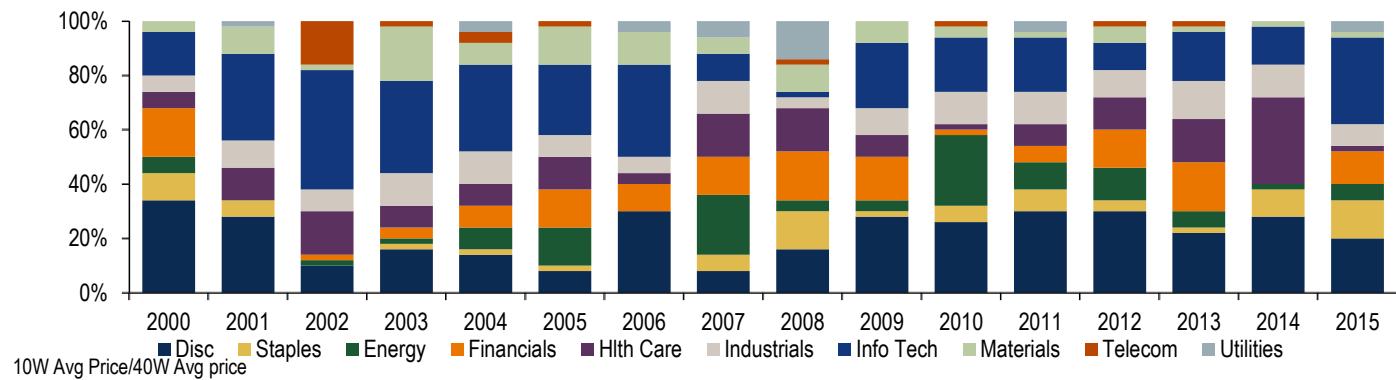
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 168: High Relative Strength – 10wk/40wk Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

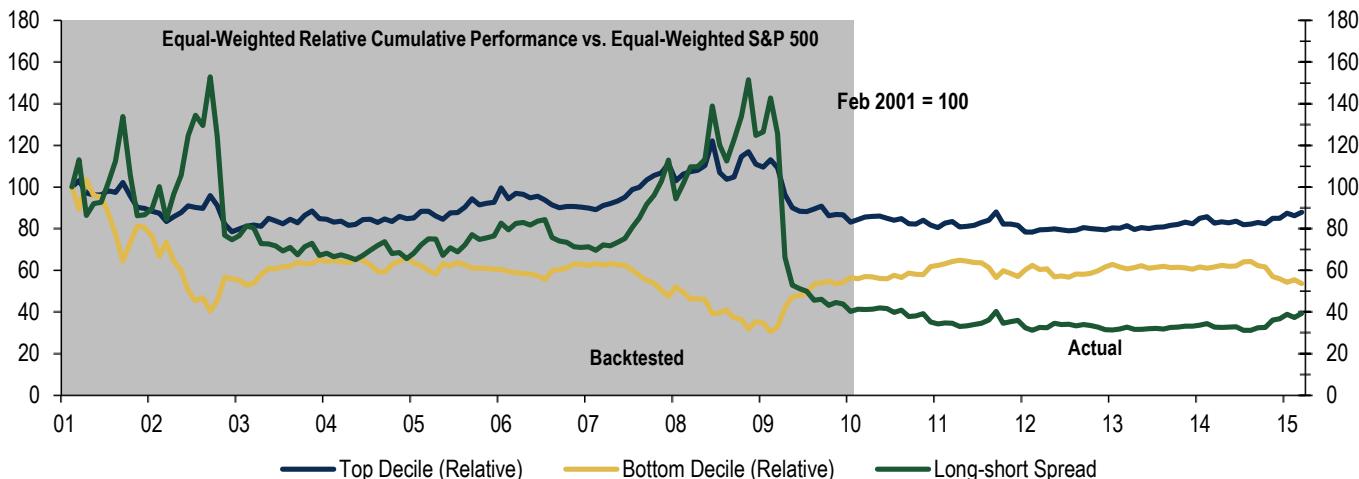
Chart 169: High Relative Strength (10wk/40wk) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

Price to Moving Average (200-Day)

Chart 170: Performance of Top Decile, Bottom Decile and Long-Short Spread



Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 171: High Price/200D MA Risk Reward

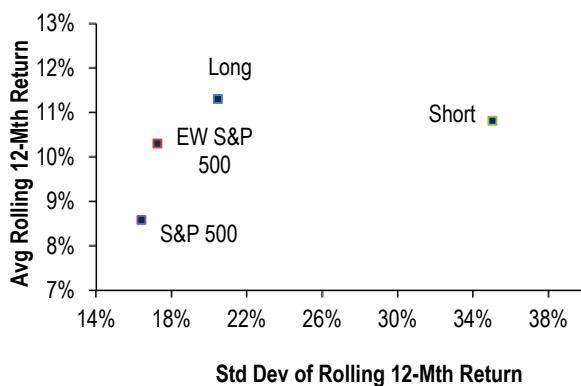
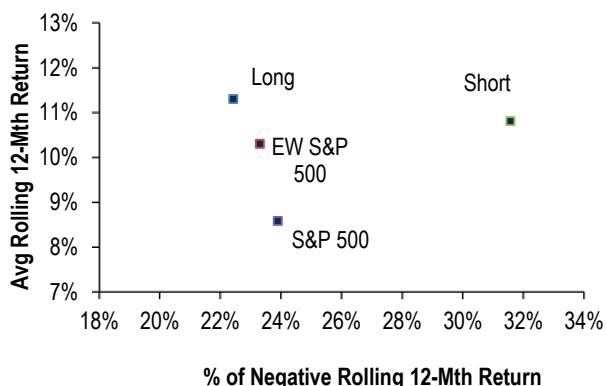


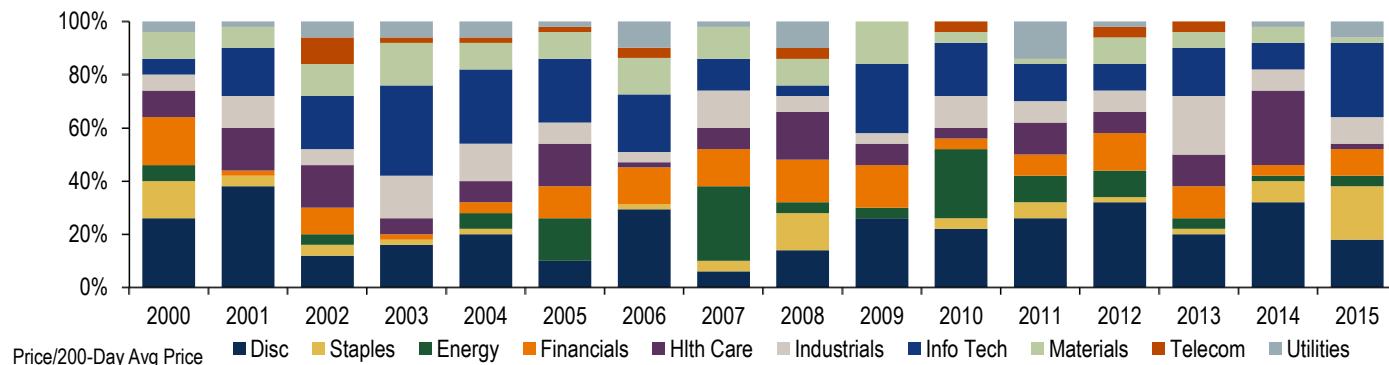
Chart 172: High Price/200D MA Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

Source: BofA Merrill Lynch US Quantitative Strategy.

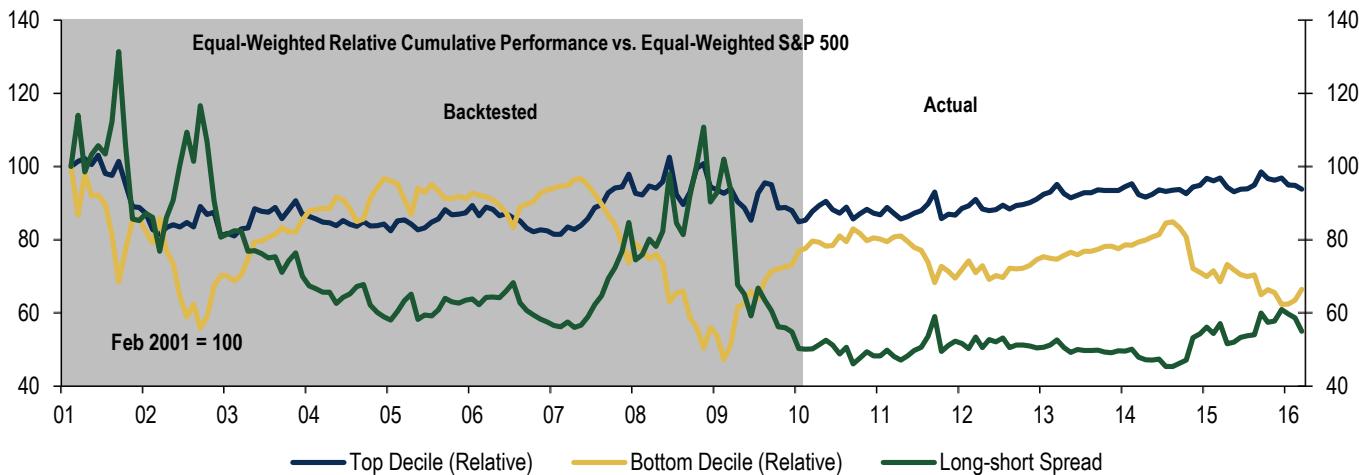
Chart 173: High Price/200D MA Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

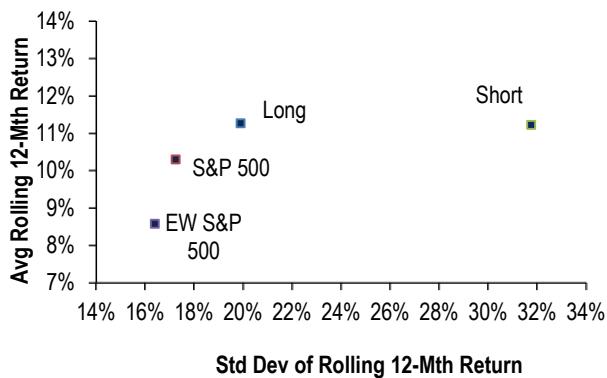
Price Return – 3-Month Performance

Chart 174: Performance of Top Decile, Bottom Decile and Long-Short Spread



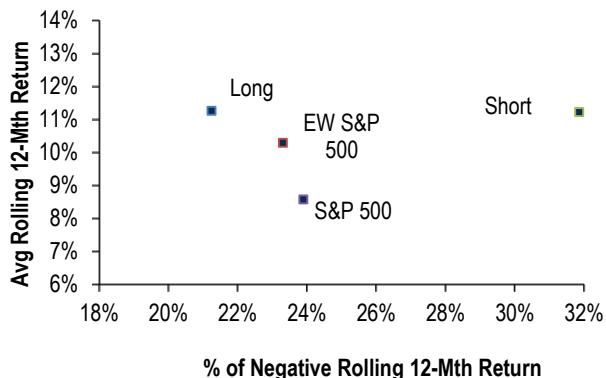
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 175: High Price Return – 3M Risk Reward



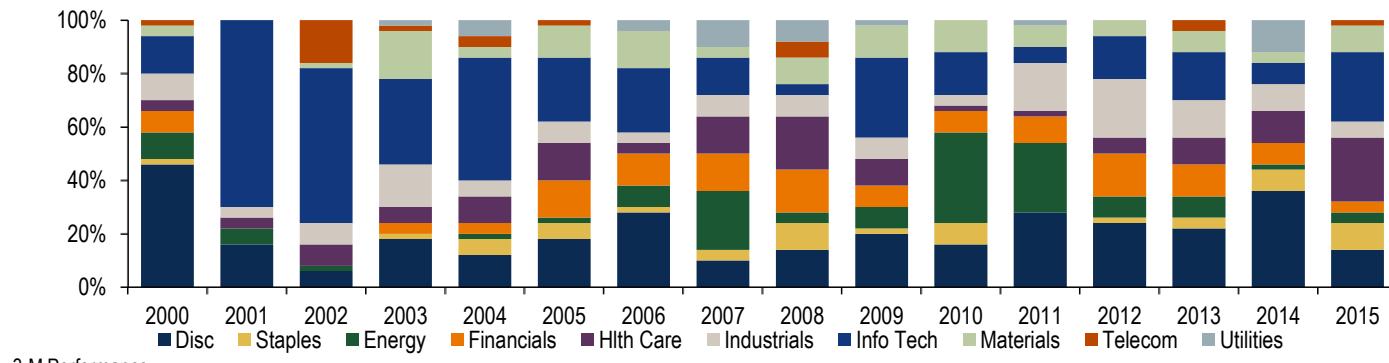
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 176: High Price Return – 3M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

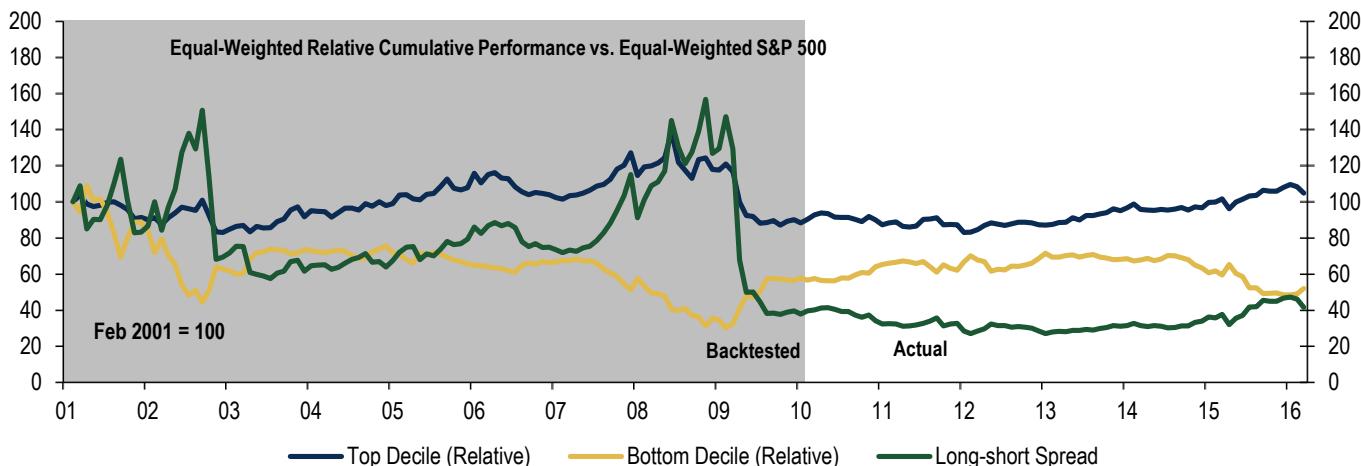
Chart 177: High Price Return (3M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

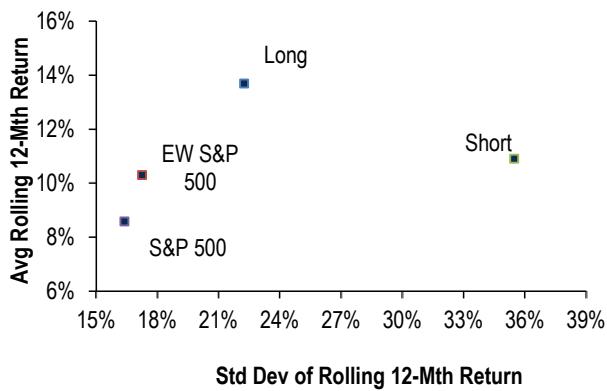
Price Return – 9-Month Performance

Chart 178: Performance of Top Decile, Bottom Decile and Long-Short Spread



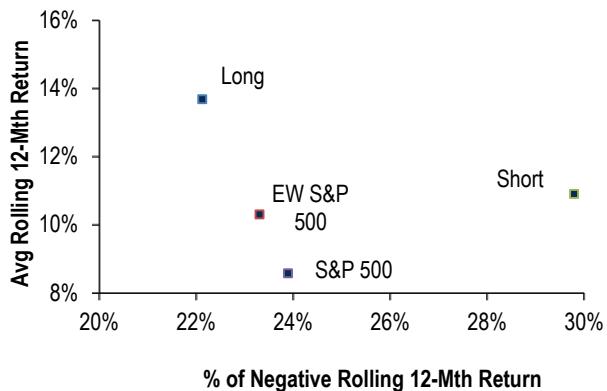
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 179: High Price Return – 9M Risk Reward



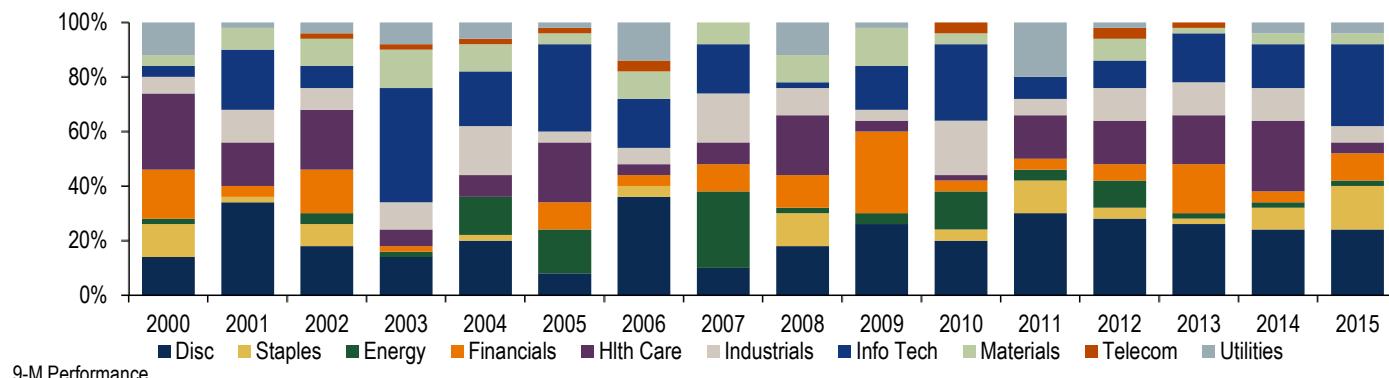
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 180: High Price Return – 9M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

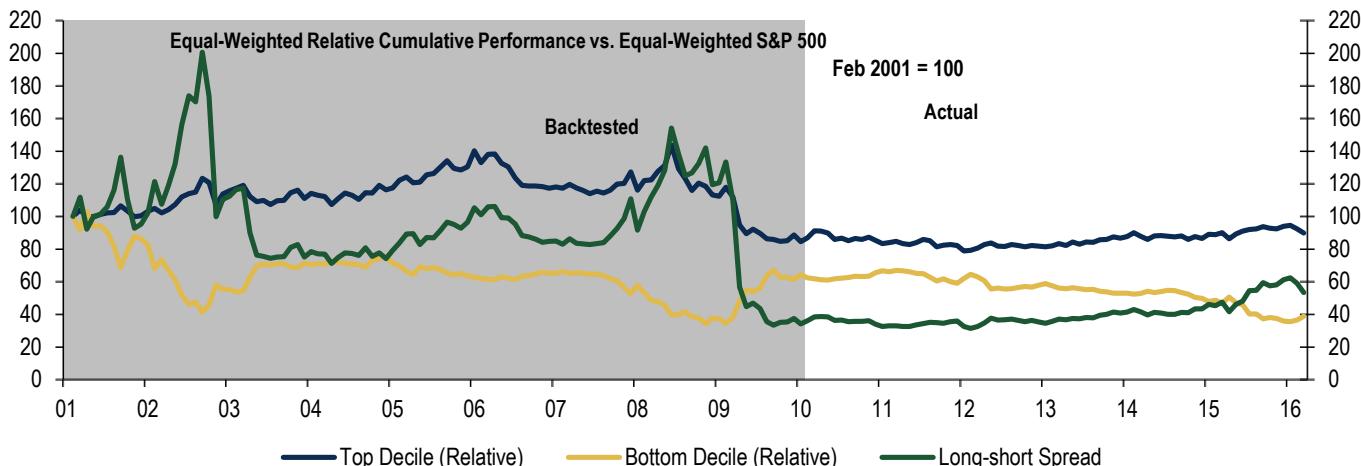
Chart 181: High Price Return (9M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy.

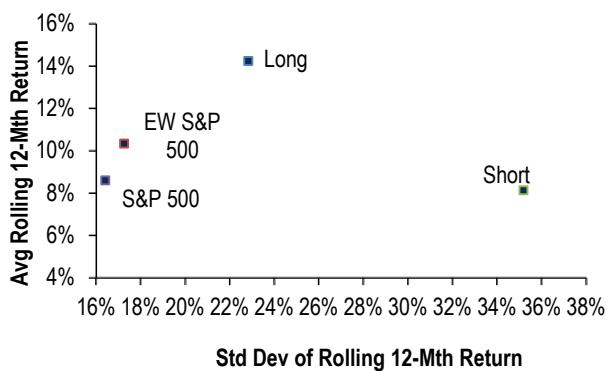
Price Return – 11-Month Performance

Chart 182: Performance of Top Decile, Bottom Decile and Long-Short Spread



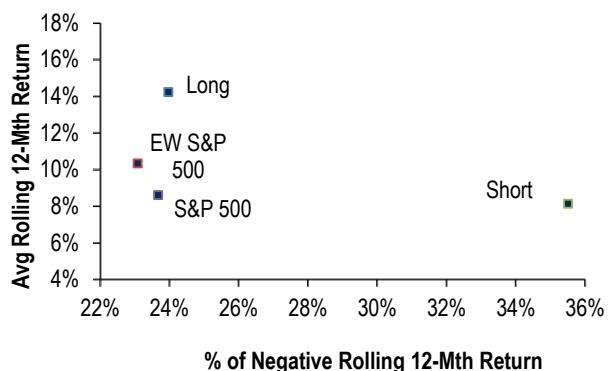
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 183: High Price Return – 11M Risk Reward



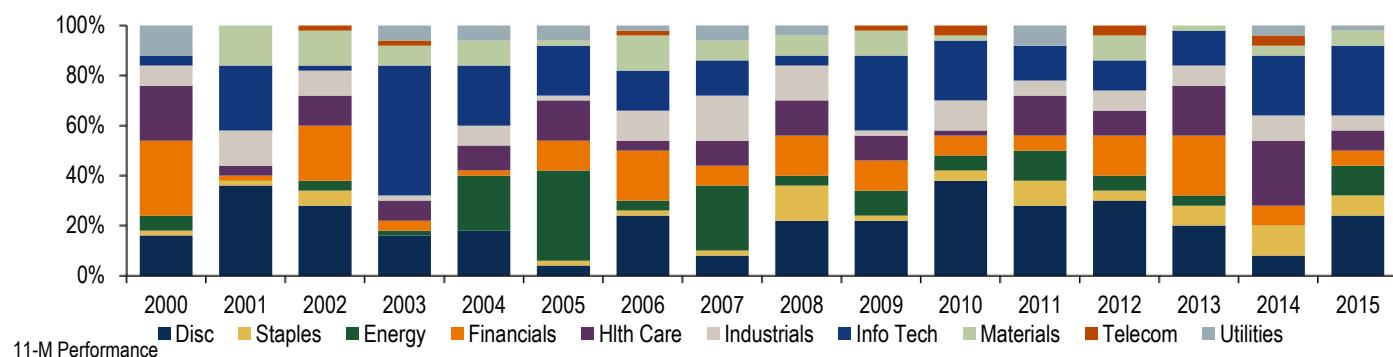
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 184: High Price Return – 11M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

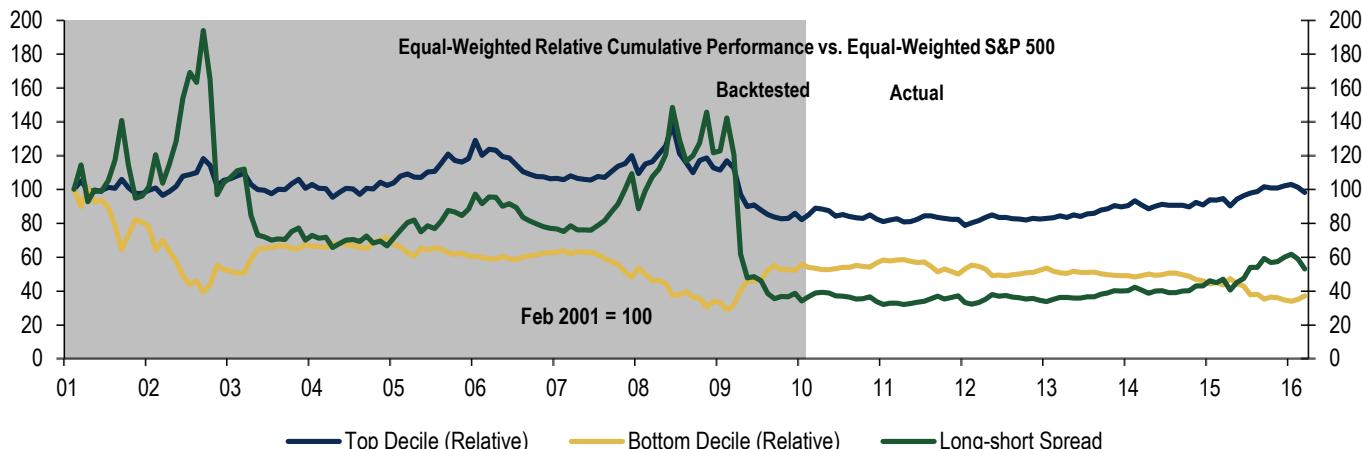
Chart 185: High Price Return (11M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

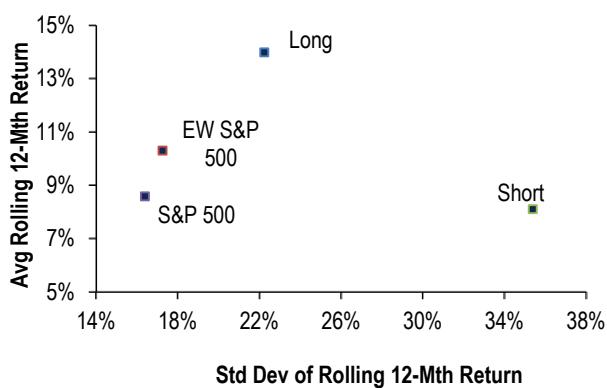
Price Return – 12-Month Performance

Chart 186: Performance of Top Decile, Bottom Decile and Long-Short Spread



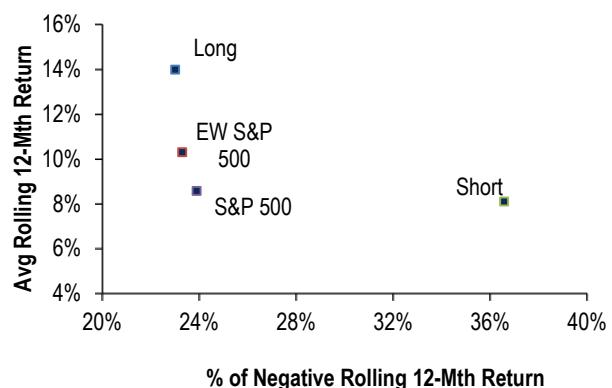
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 187: High Price Return – 12M Risk Reward



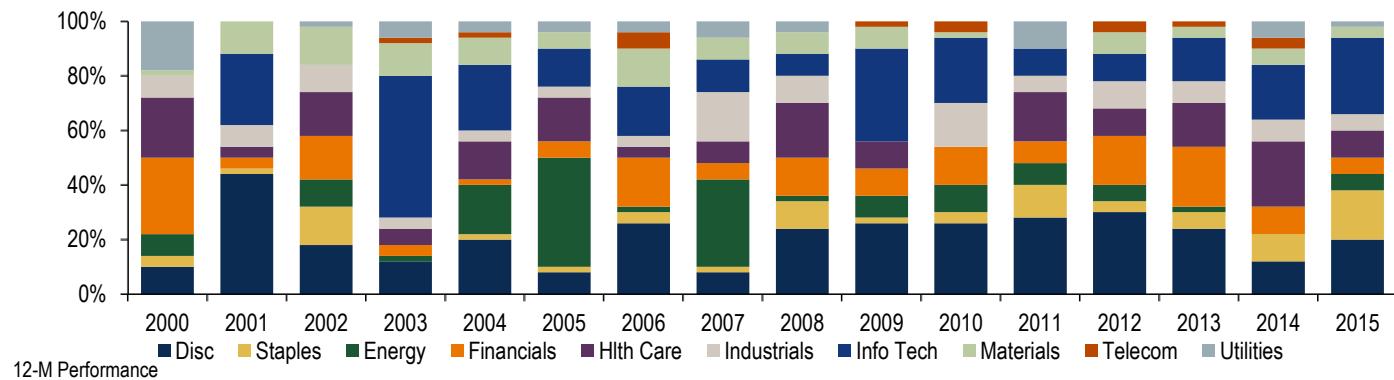
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 188: High Price Return – 12M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

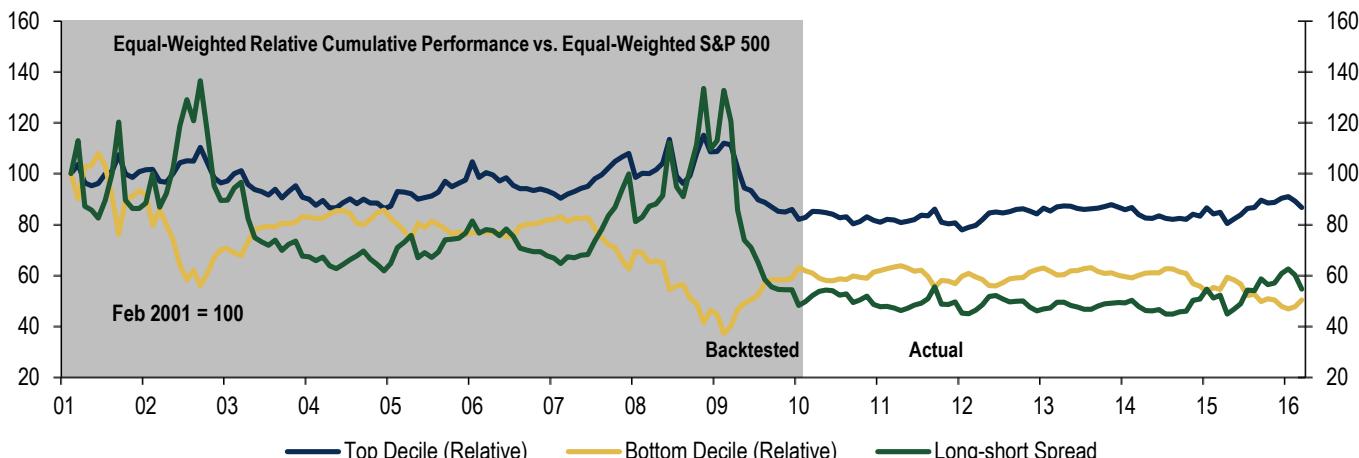
Chart 189: High Price Return (12M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

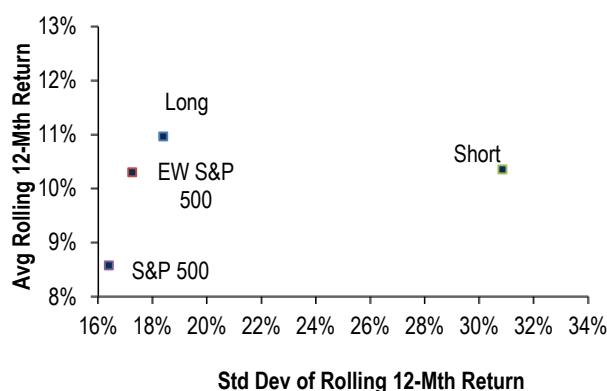
Price Return – 12-Month and 1-Month Performance

Chart 190: Performance of Top Decile, Bottom Decile and Long-Short Spread



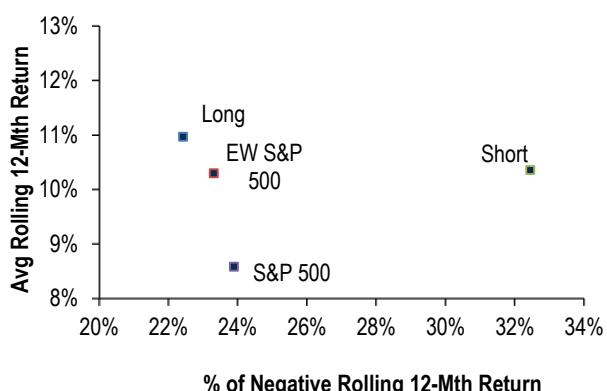
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 191: High Price Return – 12M and 1M Risk Reward



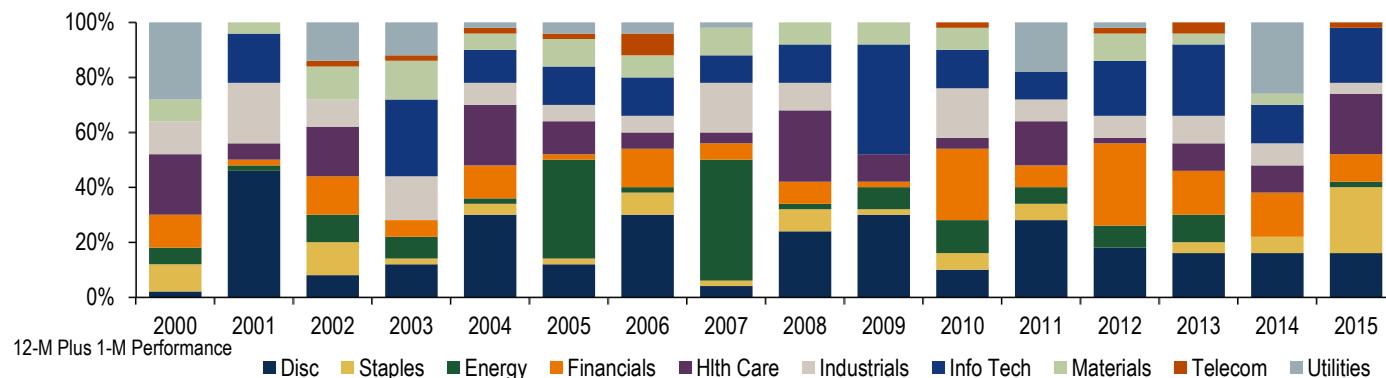
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 192: High Price Return – 12M and 1M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

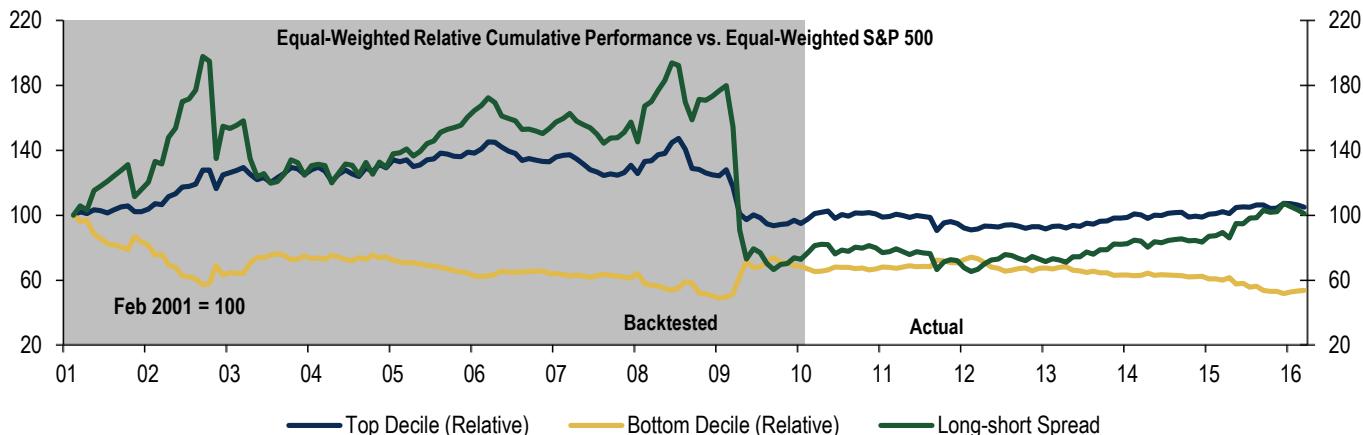
Chart 193: High Price Return (12M and 1M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

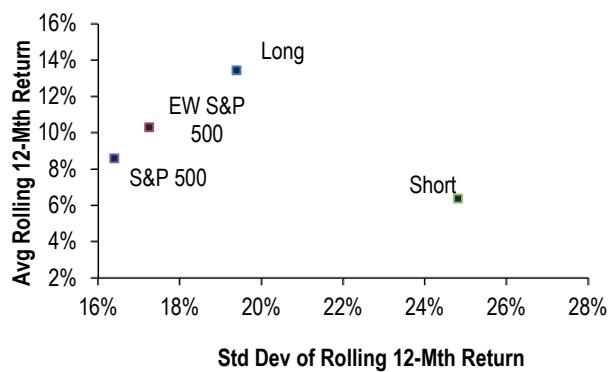
Price Return – 12-Month and 1-Month Reversal

Chart 194: Performance of Top Decile, Bottom Decile and Long-Short Spread



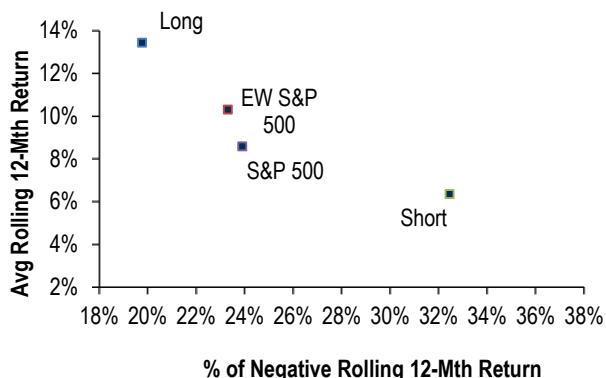
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end January 2010. The unshaded portion represents actual performance since February 2010. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 195: High Price Return – 12M and 1M Reversal Risk Reward



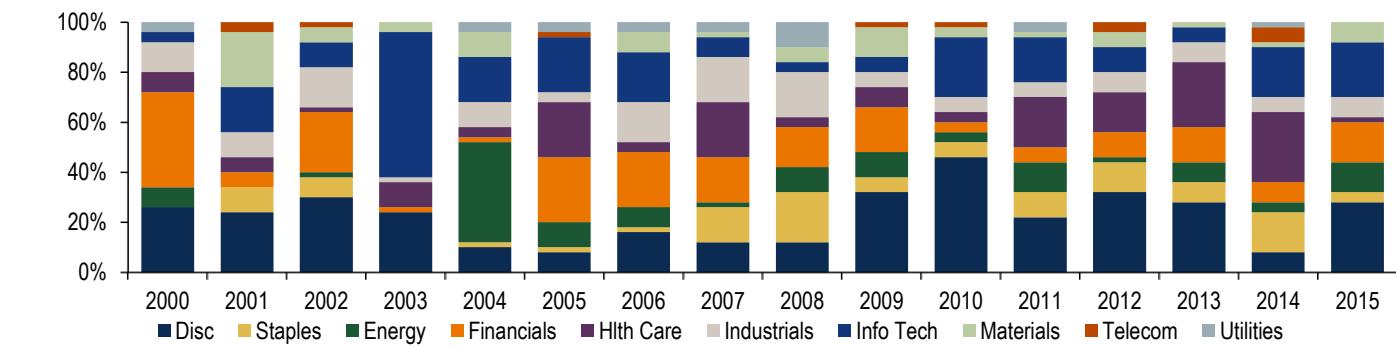
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 196: High Price Return – 12M and 1M Reversal Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 197: High Price Return (12M and 1M Reversal) Sector Concentration (Top Decile)

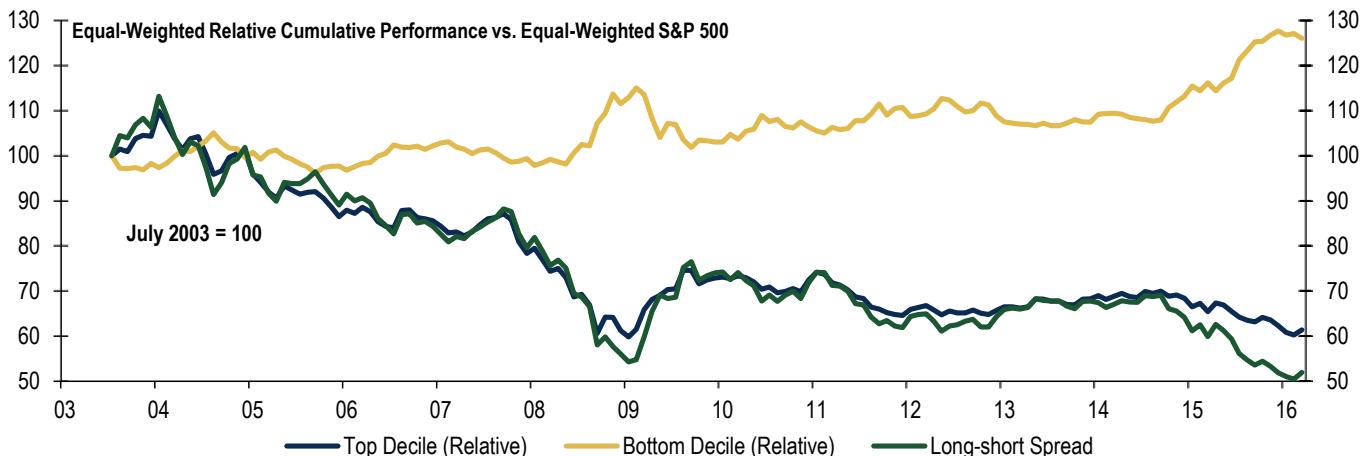


12-M Plus Reversal 1-M Performance

Source: BofA Merrill Lynch US Quantitative Strategy

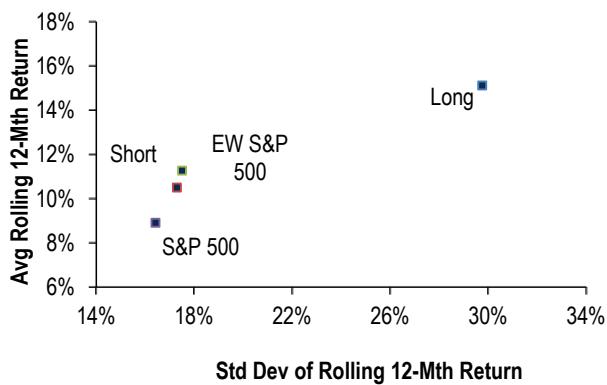
Trading Volume

Chart 198: Performance of Top Decile, Bottom Decile and Long-Short Spread



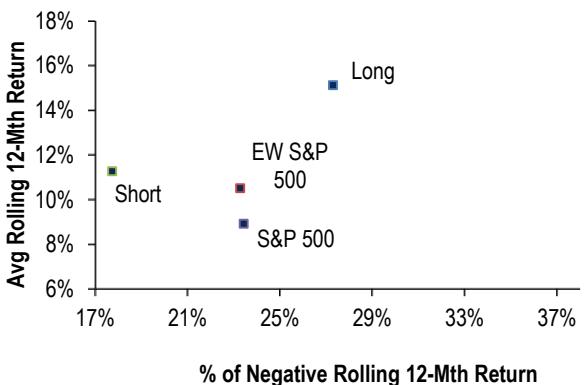
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 199: High Trading Volume Risk Reward



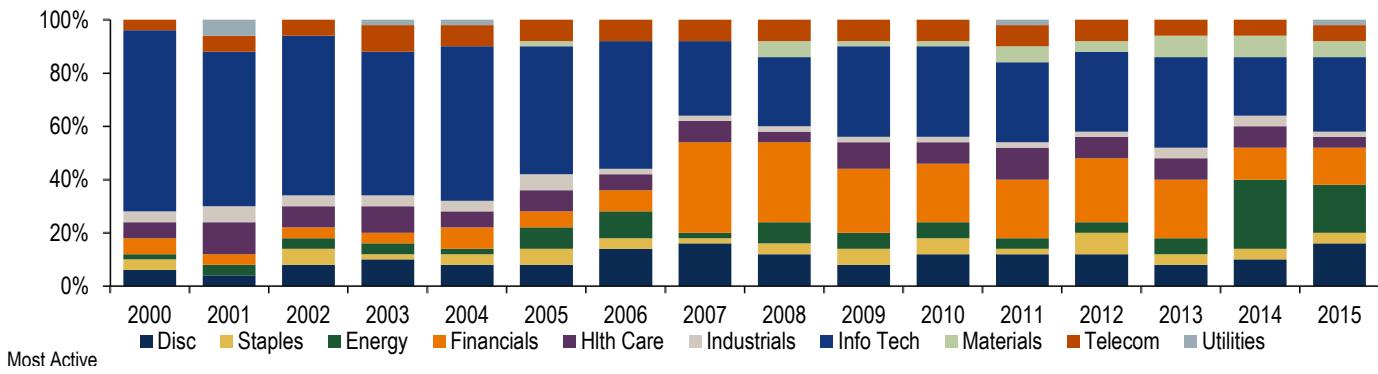
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 200: High Trading Volume Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

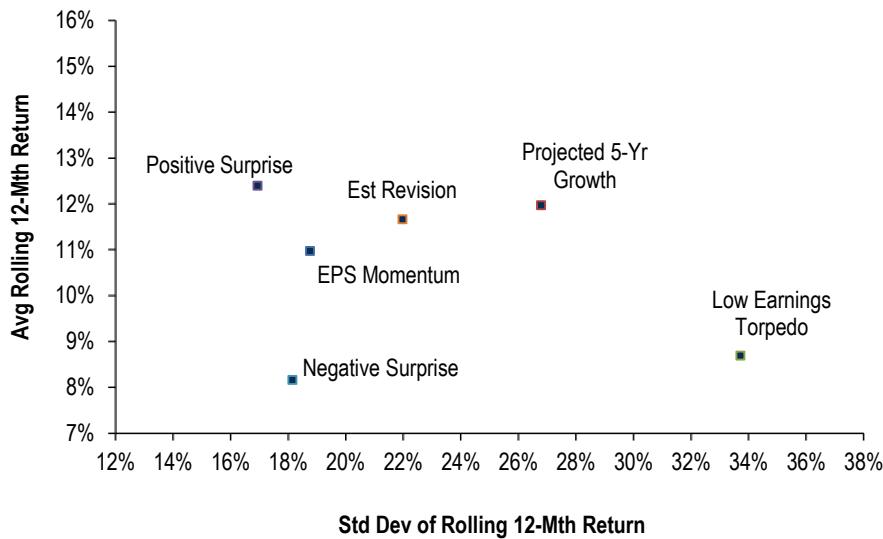
Chart 201: High Trading Volume Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

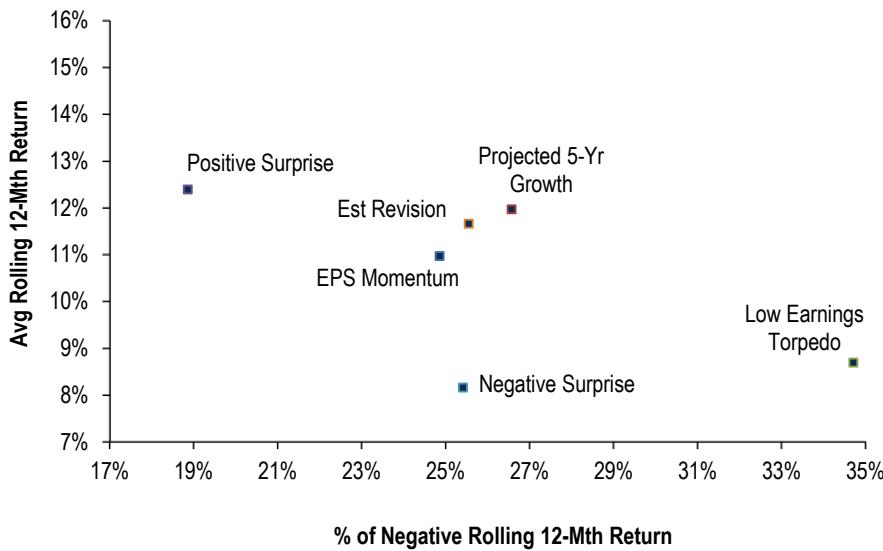
Growth Strategies

Chart 202: Growth Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

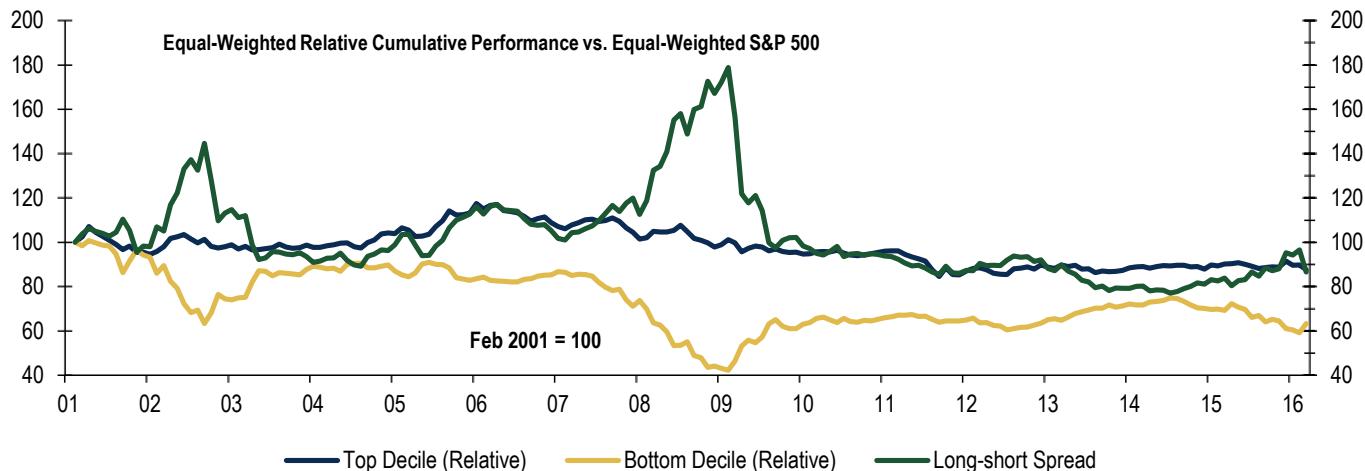
Chart 203: Growth Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

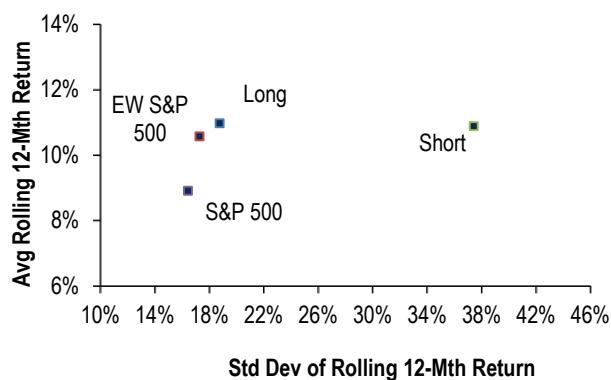
Earnings Momentum

Chart 204: Performance of Top Decile, Bottom Decile and Long-Short Spread



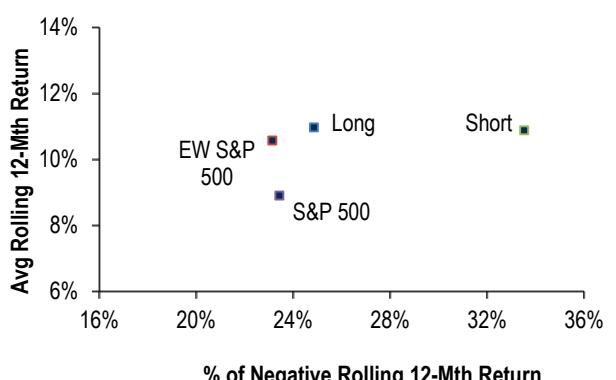
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 205: High Earnings Momentum Risk Reward



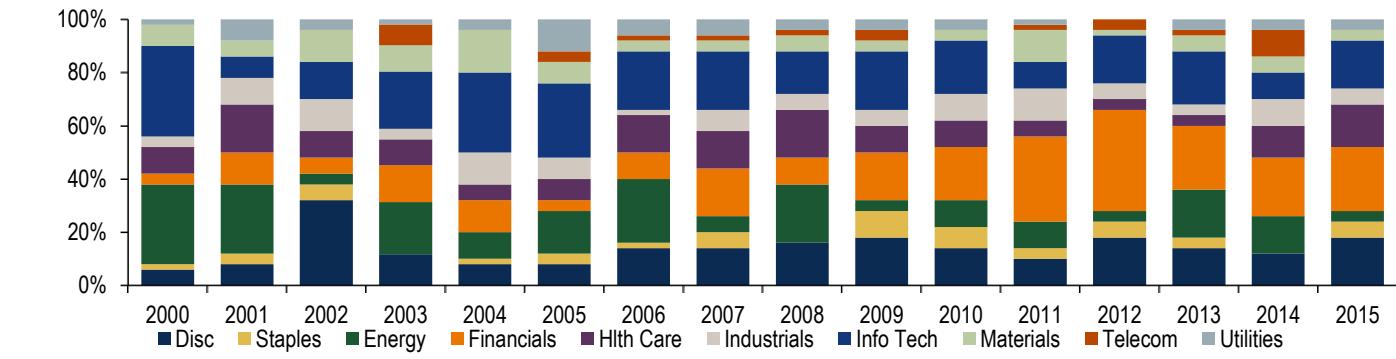
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 206: High Earnings Momentum Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

Chart 207: High Earnings Momentum Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

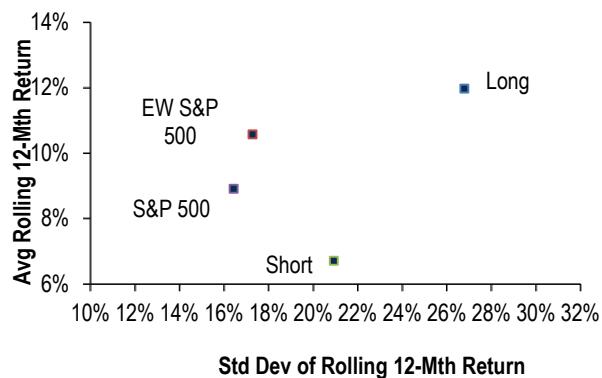
Projected Five-Year EPS Growth

Chart 208: Performance of Top Decile, Bottom Decile and Long-Short Spread



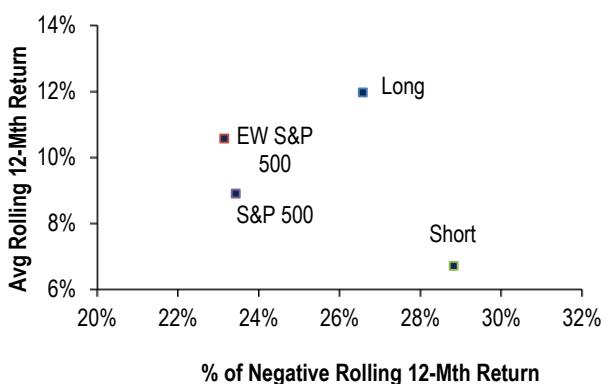
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 209: High Projected 5-Yr EPS Growth Risk Reward



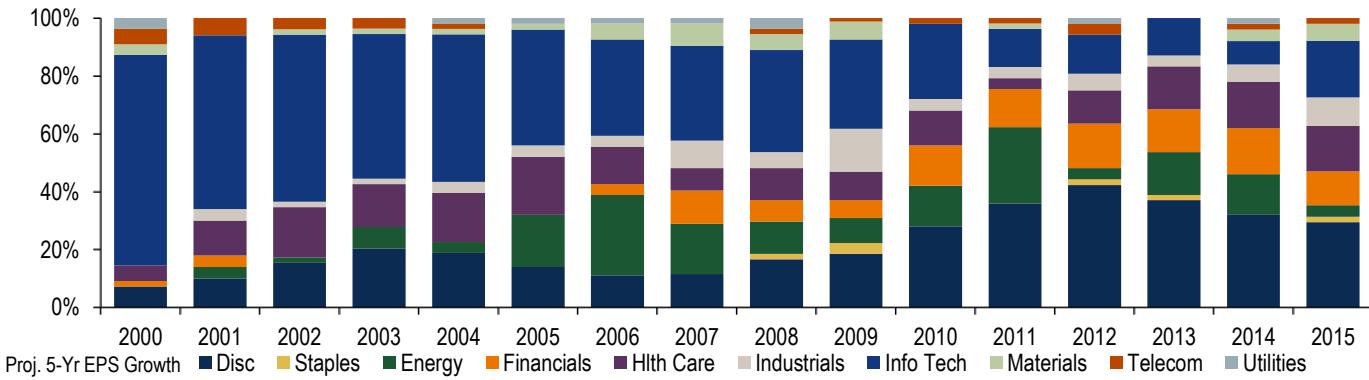
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 210: High Projected 5-Yr EPS Growth Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

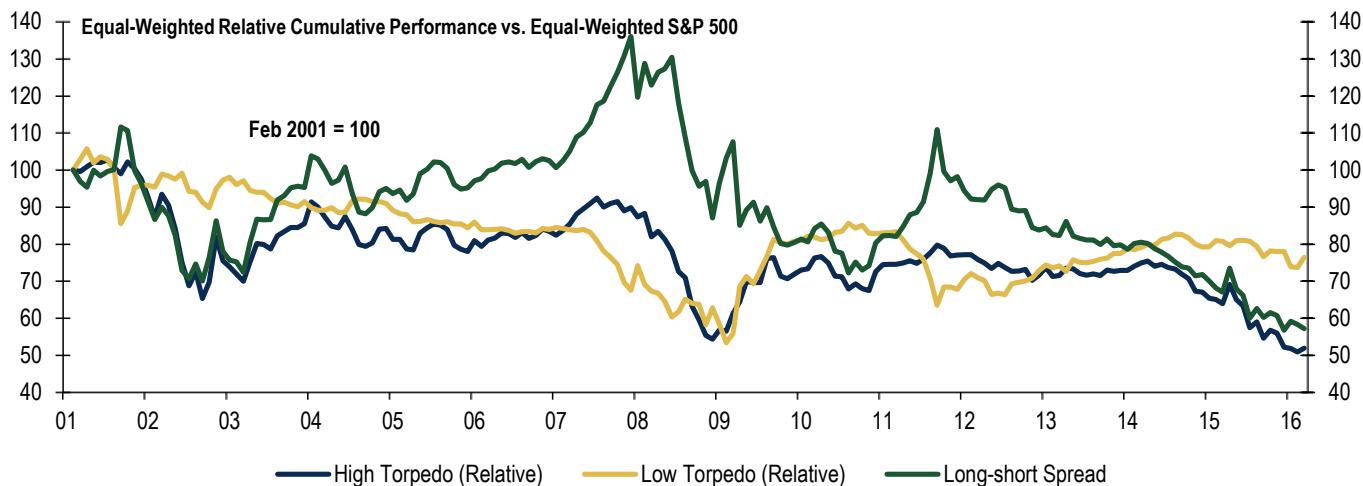
Chart 211: High Projected 5-Yr EPS Growth Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

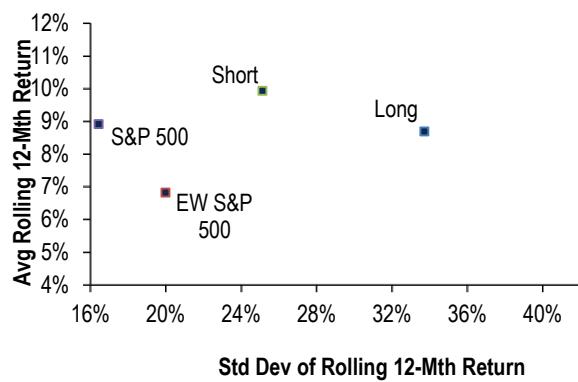
Earnings Torpedo

Chart 212: Performance of High Earnings Torpedo, Low Earnings Torpedo and Long-Short Spread



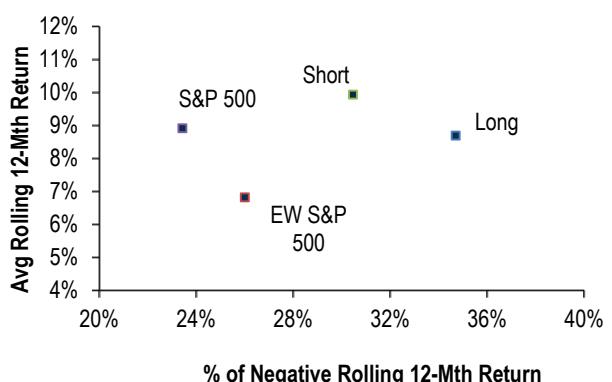
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 213: Low Earnings Torpedo Risk Reward



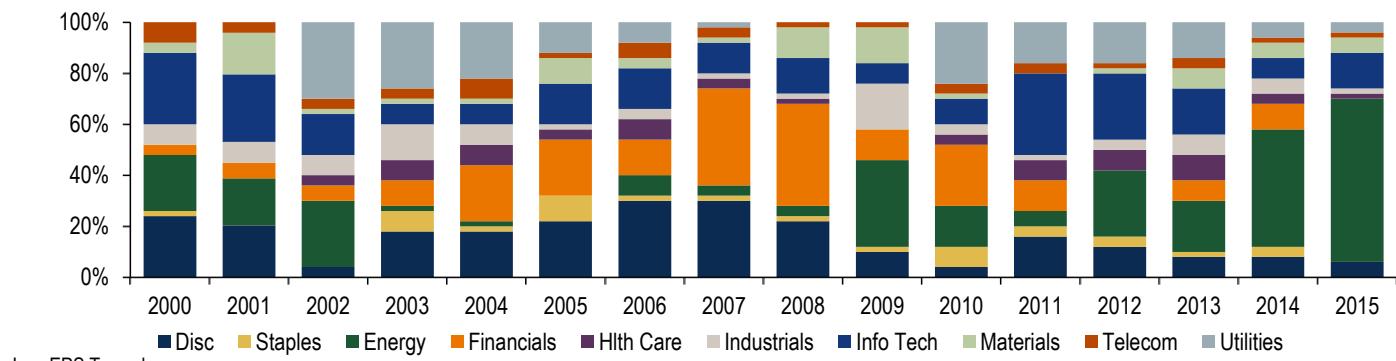
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 214: Low Earnings Torpedo Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

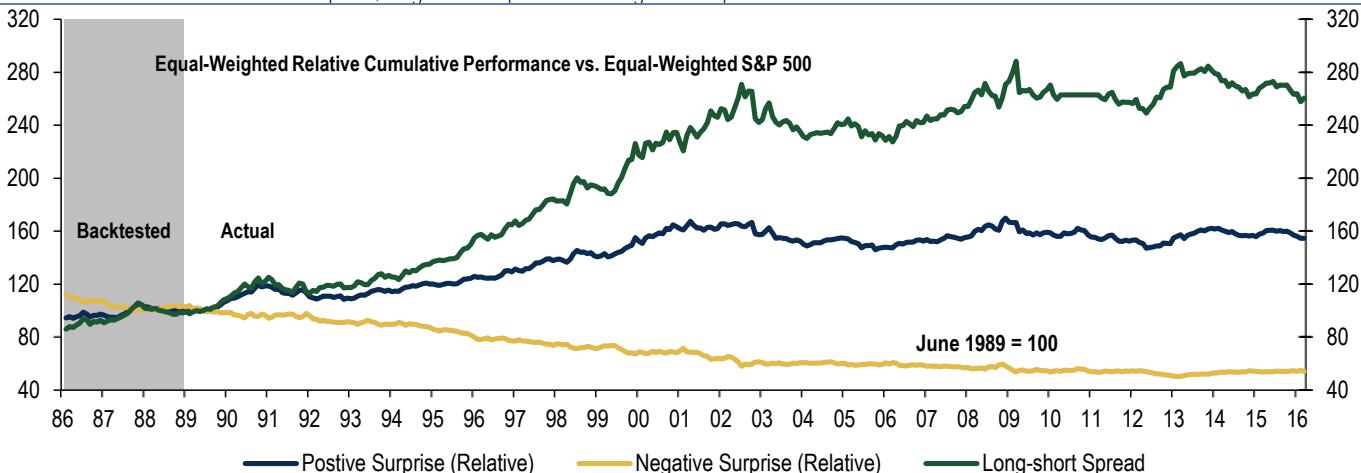
Chart 215: Low Earnings Torpedo Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

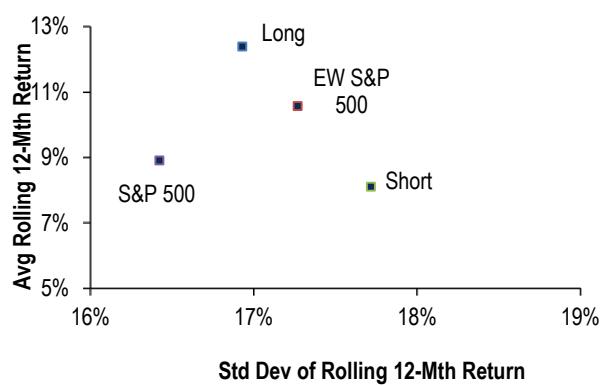
Earnings Surprise

Chart 216: Performance of Positive Surprise, Negative Surprise and Long-Short Spread



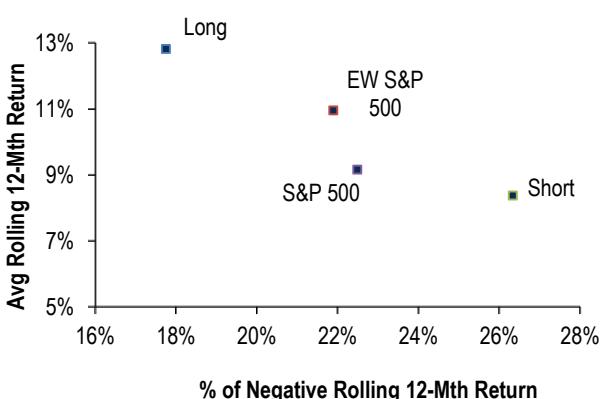
Source: BofA Merrill Lynch US Quantitative Strategy. The shaded area in performance chart shows back tested results during the period from month end March 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 217: Earnings Surprise Risk Reward



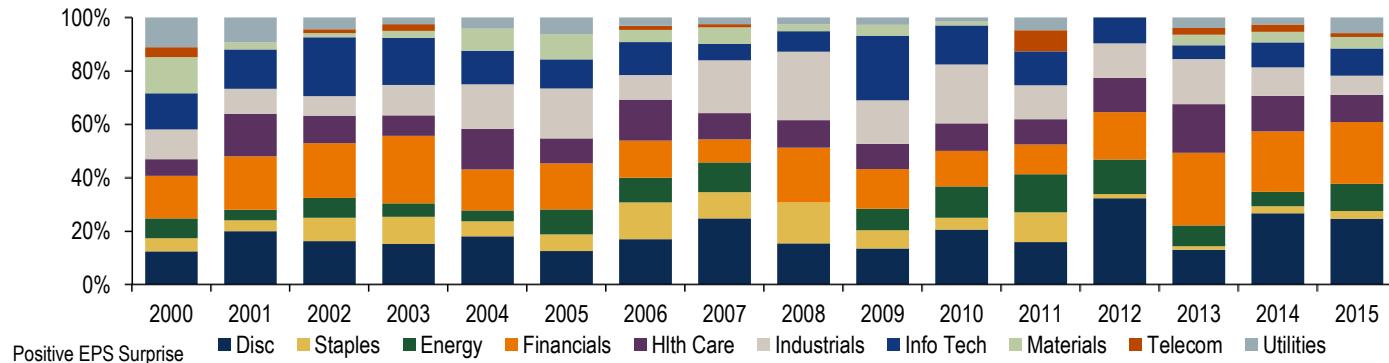
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 218: Earnings Surprise Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

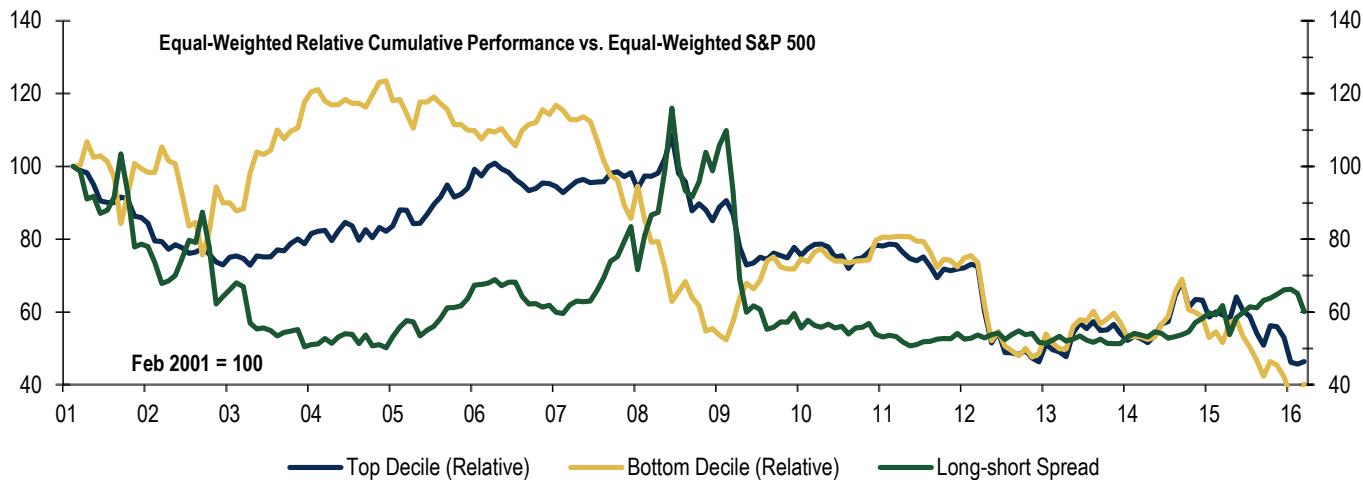
Chart 219: Positive Earnings Surprise Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

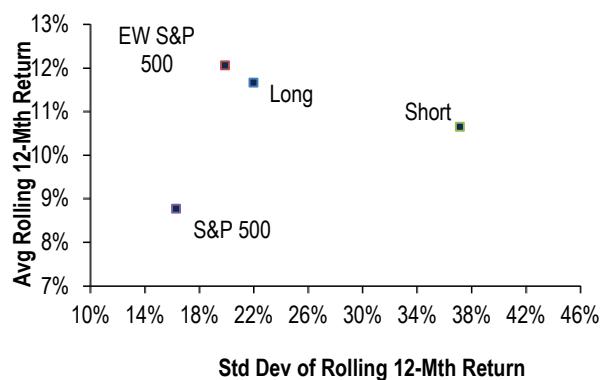
Earnings Estimate Revision

Chart 220: Performance of Top Decile, Bottom Decile and Long-Short Spread



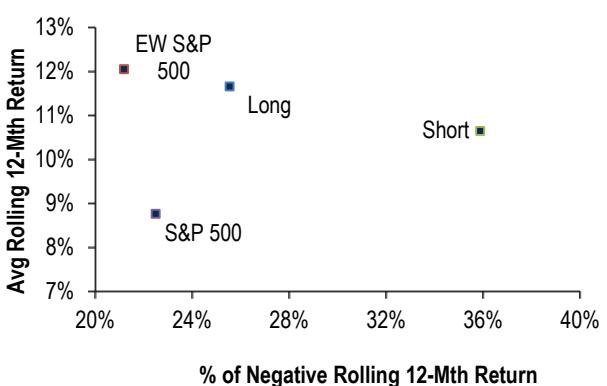
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 221: High Earnings Estimation Revision Risk Reward



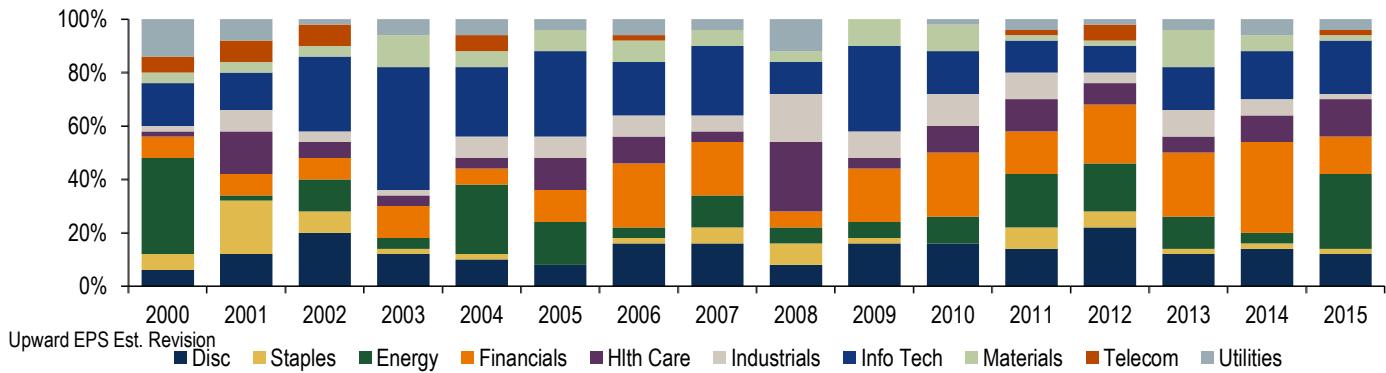
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 222: High Earnings Estimation Revision Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

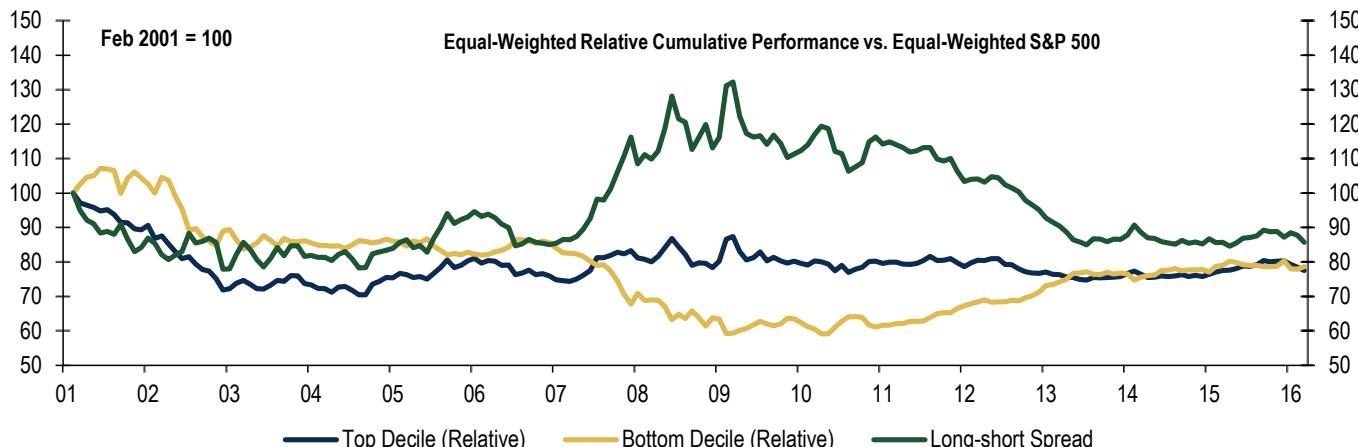
Chart 223: High Earnings Estimation Revision Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

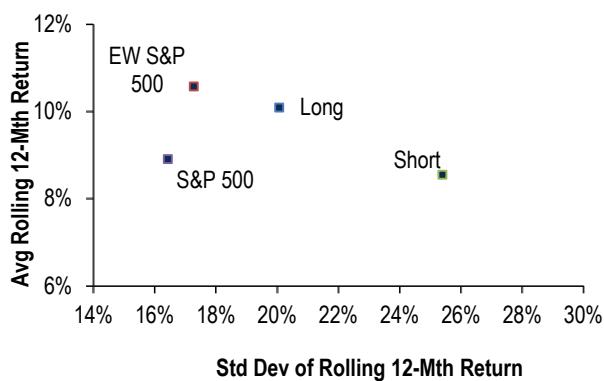
Equity Duration

Chart 224: Performance of Top Decile, Bottom Decile and Long-Short Spread



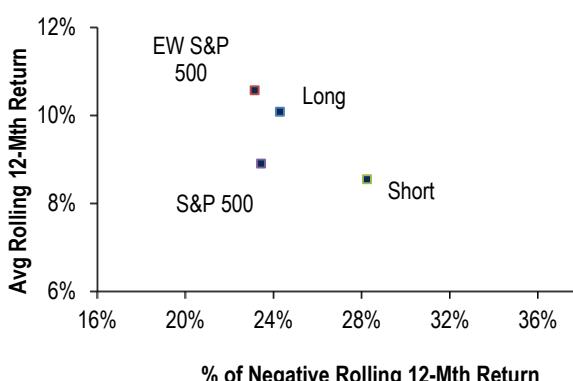
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 225: High Duration Risk Reward



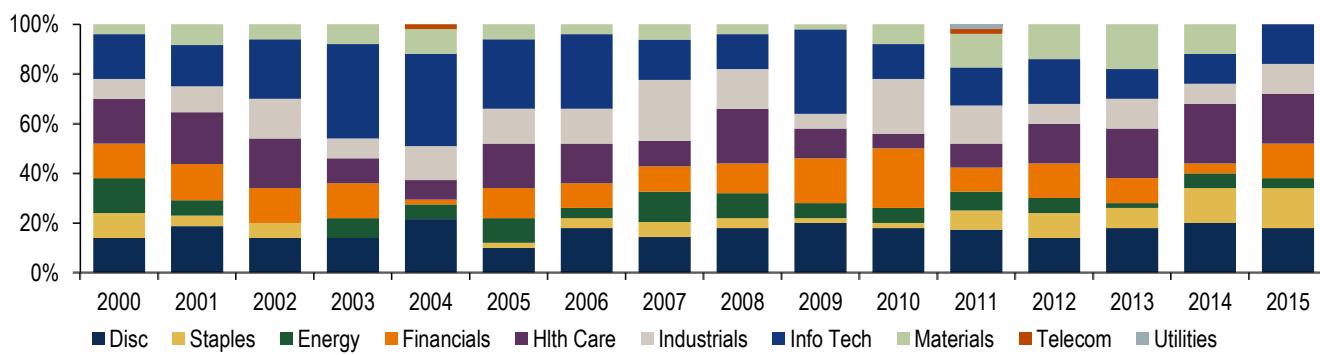
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 226: High Duration Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

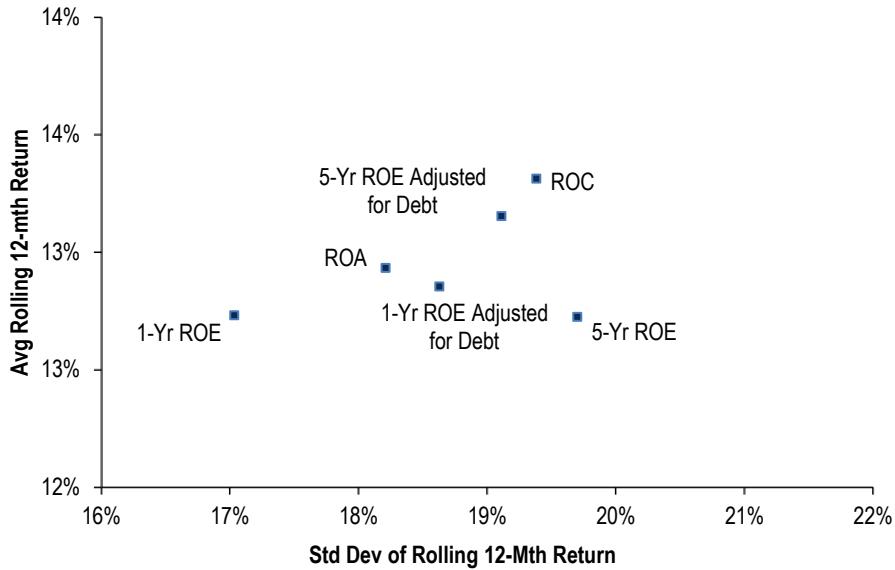
Chart 227: High Duration Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

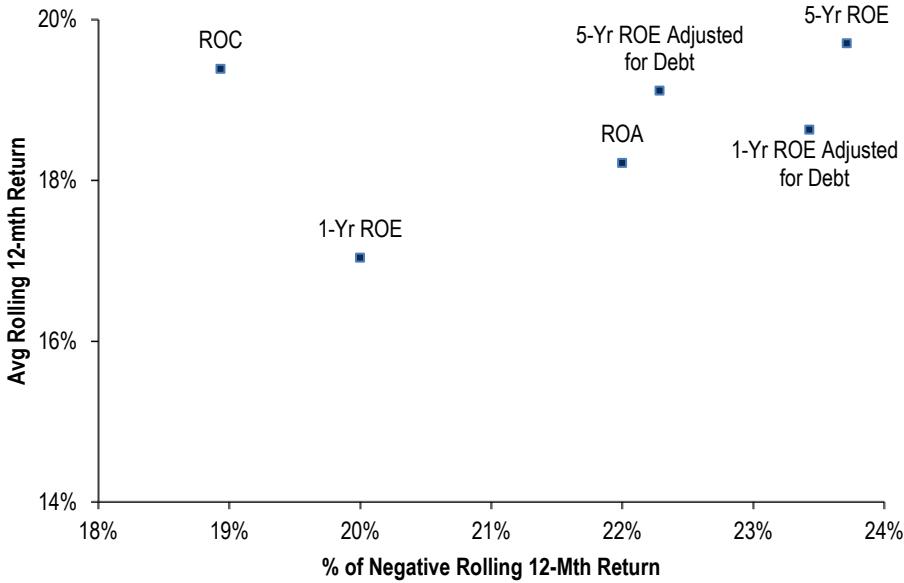
Quality Strategies

Chart 228: Quality Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

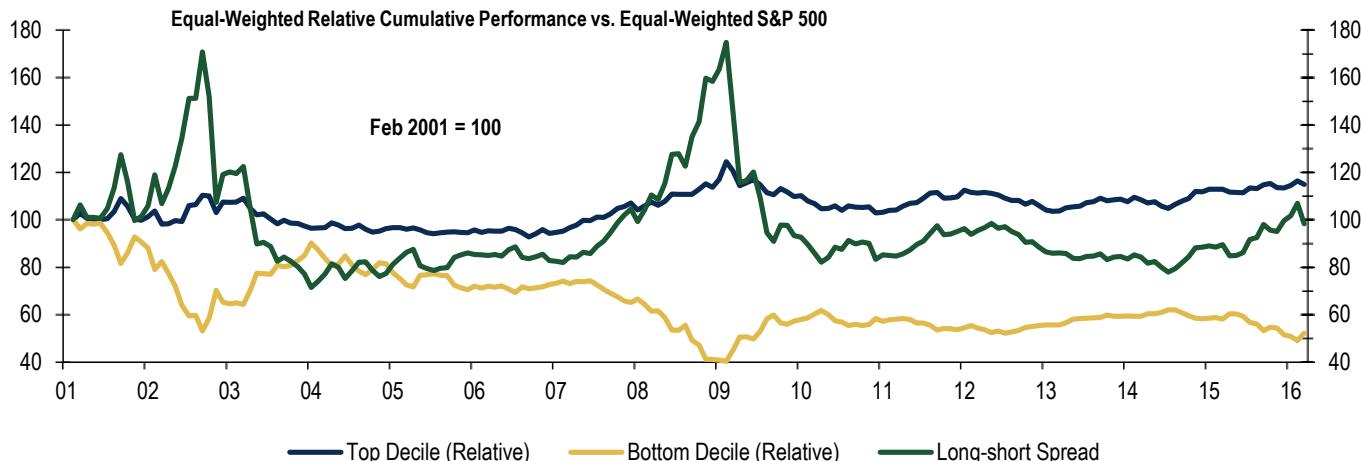
Chart 229: Quality Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

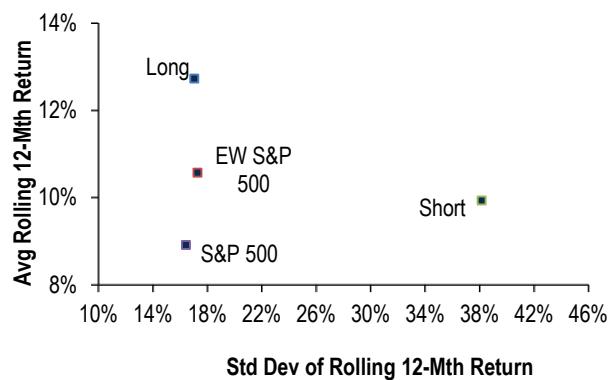
One-Year Return on Equity

Chart 230: Performance of Top Decile, Bottom Decile and Long-Short Spread



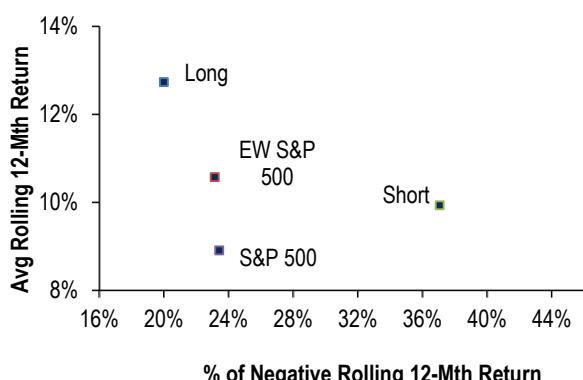
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 231: High 1-Yr Return on Equity Risk Reward



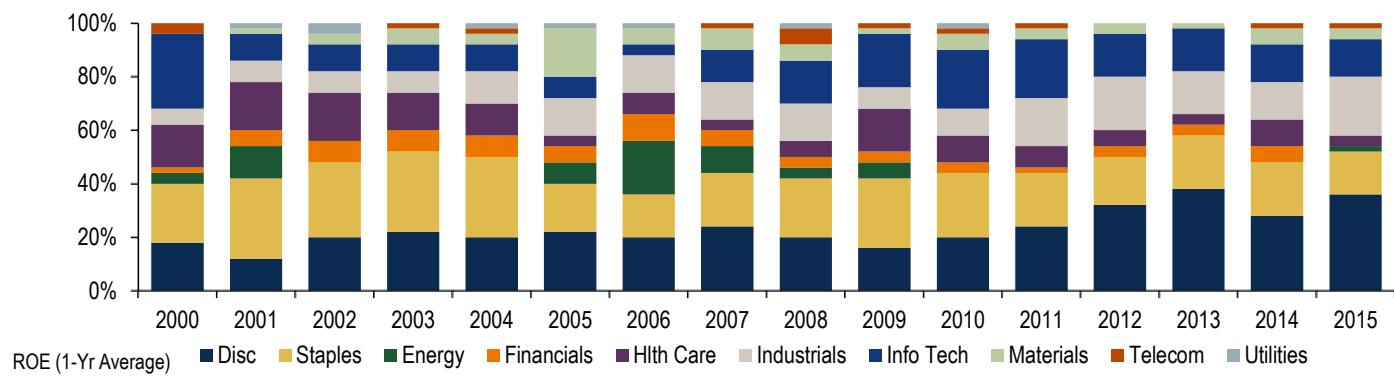
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 232: High 1-Yr Return on Equity Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

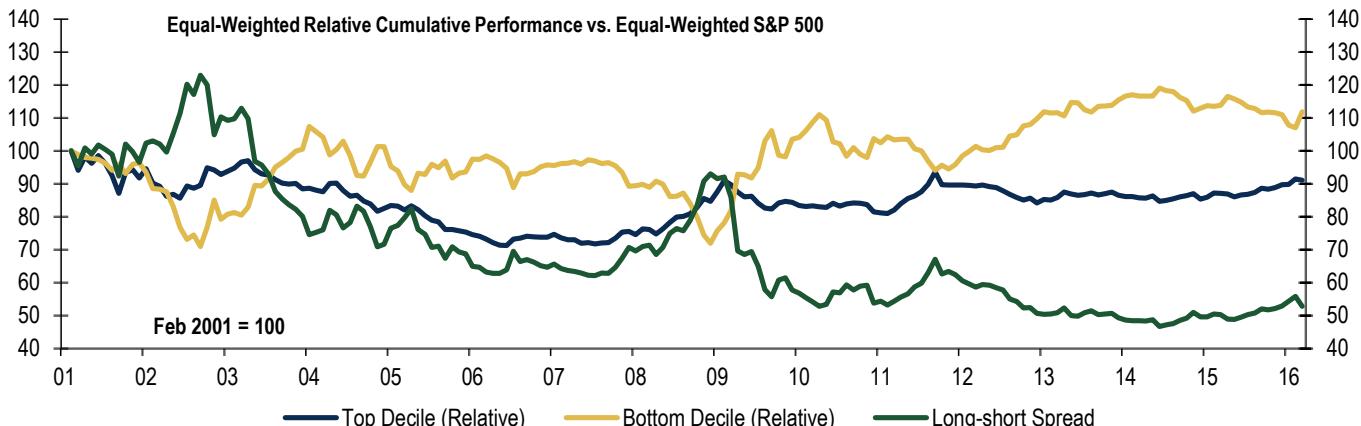
Chart 233: High 1-Yr Return on Equity Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

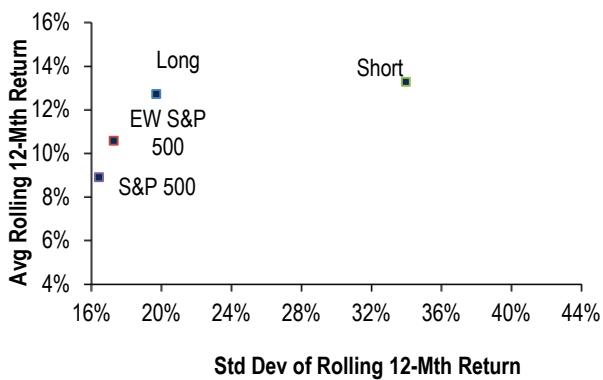
Five-Year Return on Equity

Chart 234: Performance of Top Decile, Bottom Decile and Long-Short Spread



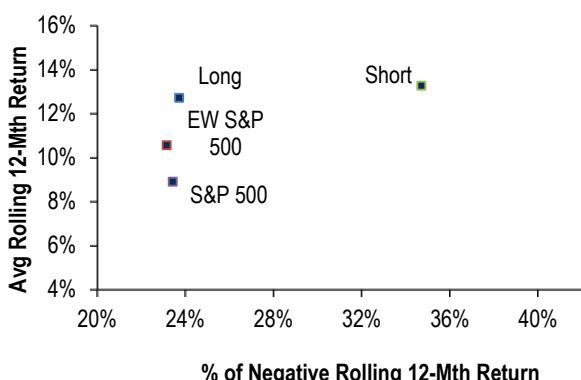
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 235: High 5-Yr Return on Equity Risk Reward



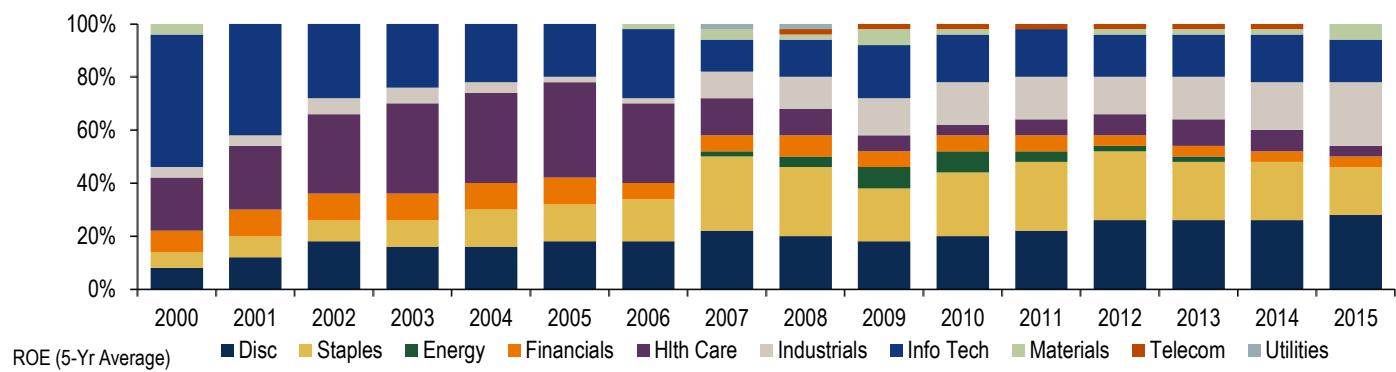
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 236: High 5-Yr Return on Equity Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

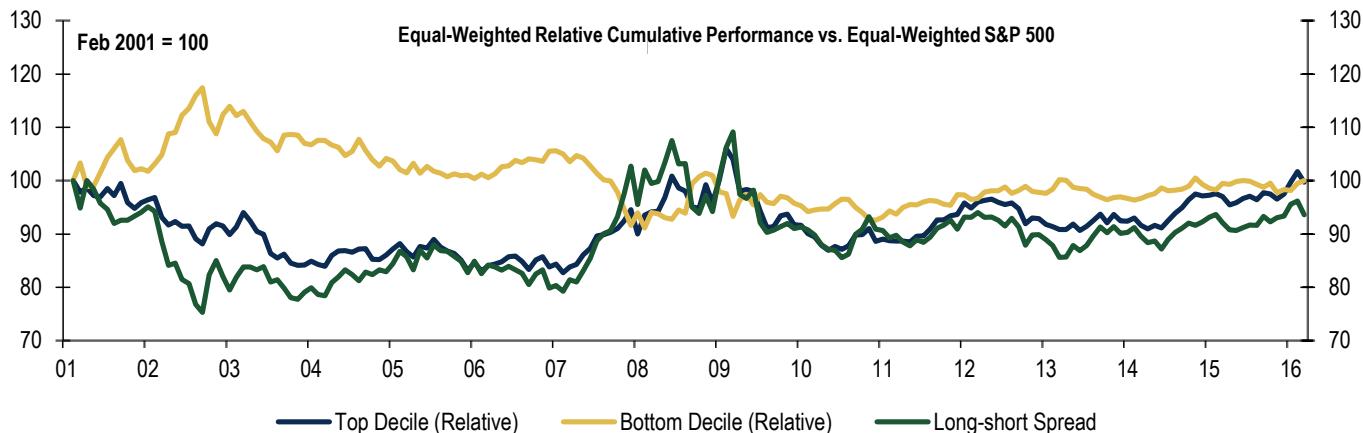
Chart 237: High 5-Yr Return on Equity Sector Concentration of (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

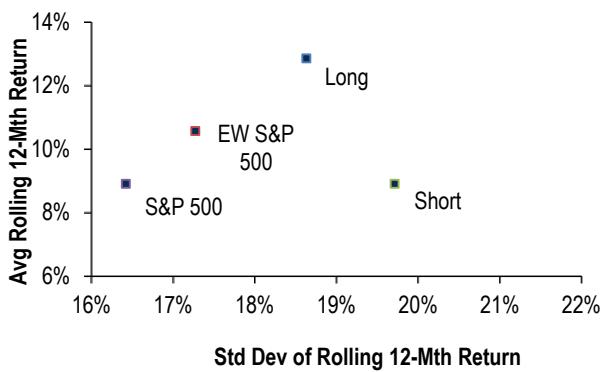
One-Year Return on Equity (Adjusted for Debt)

Chart 238: Performance of Top Decile, Bottom Decile and Long-Short Spread



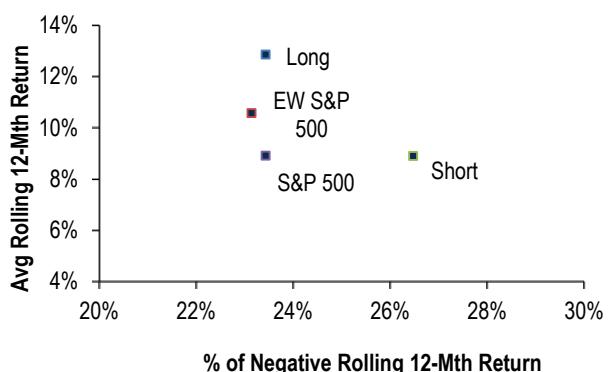
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 239: High 1-Yr ROE Adjusted for Debt Risk Reward



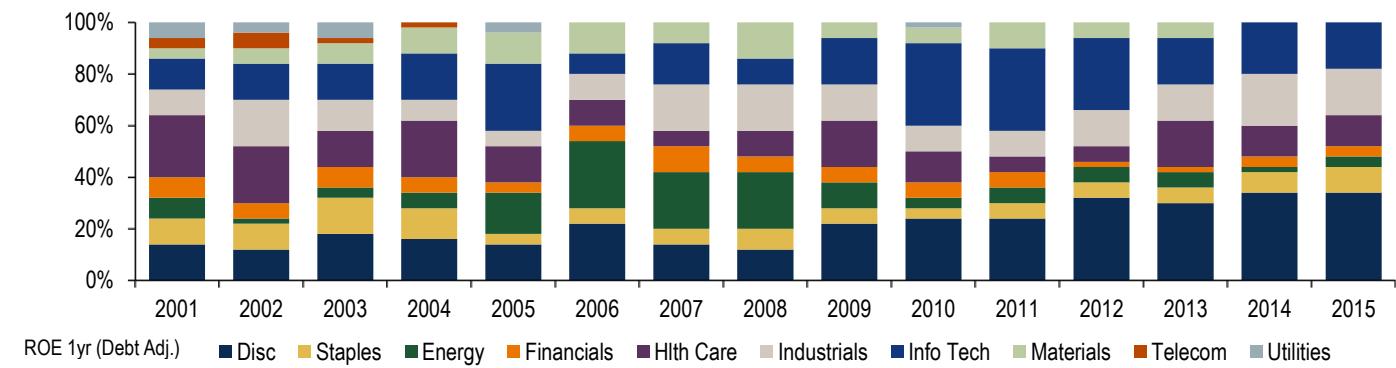
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 240: High 1-Yr ROE Adjusted for Debt Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

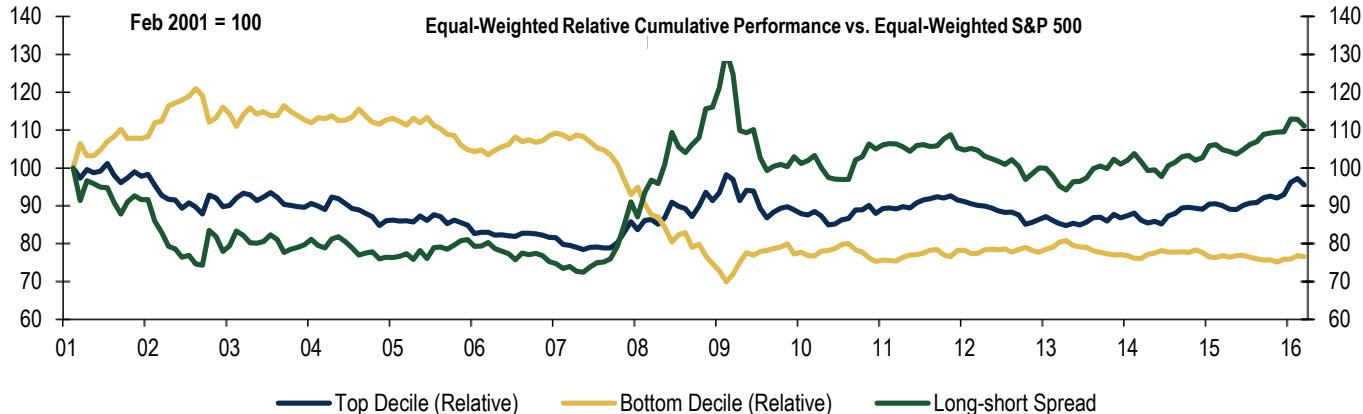
Chart 241: High 1-Yr ROE Adjusted for Debt Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

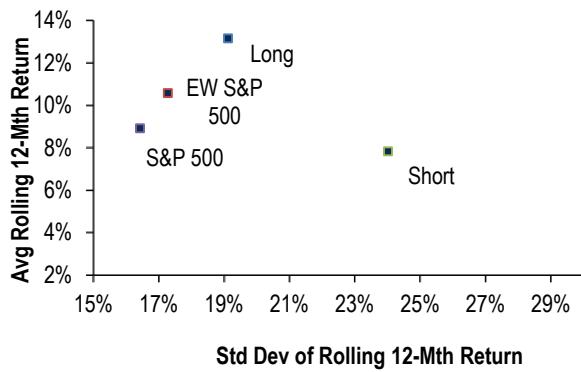
Five-Year Return on Equity (Adjusted for Debt)

Chart 242: Performance of Top Decile, Bottom Decile and Long-Short Spread



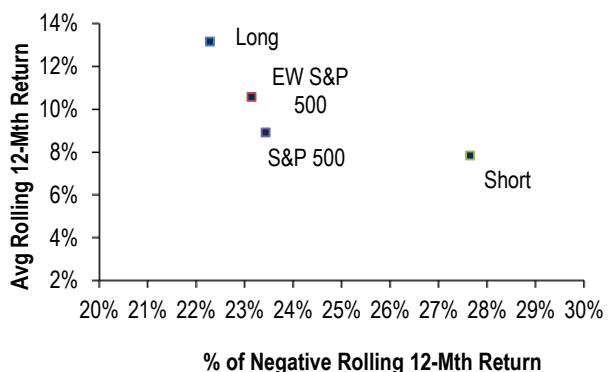
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 243: High 5-Yr ROE Adjusted for Debt Risk Reward



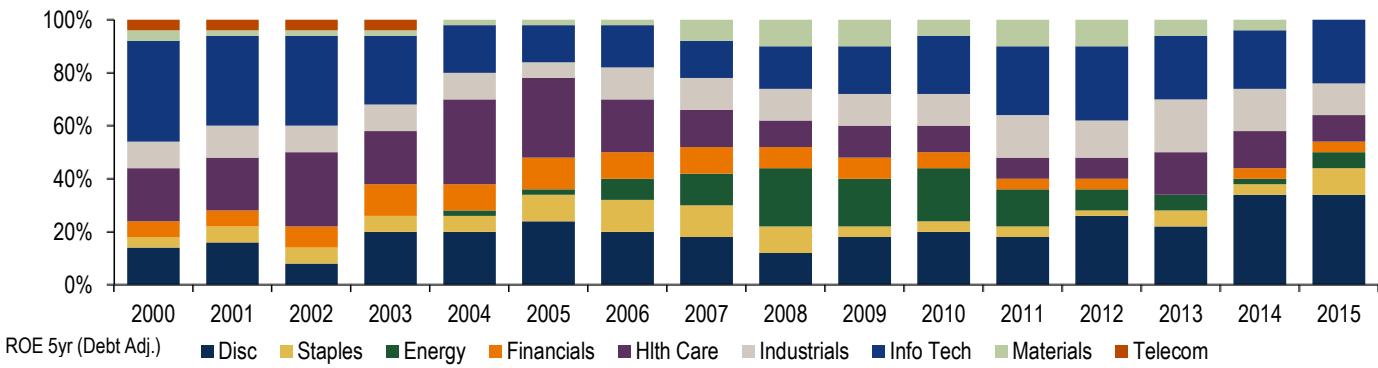
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 244: High 5-Yr ROE Adjusted for Debt Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

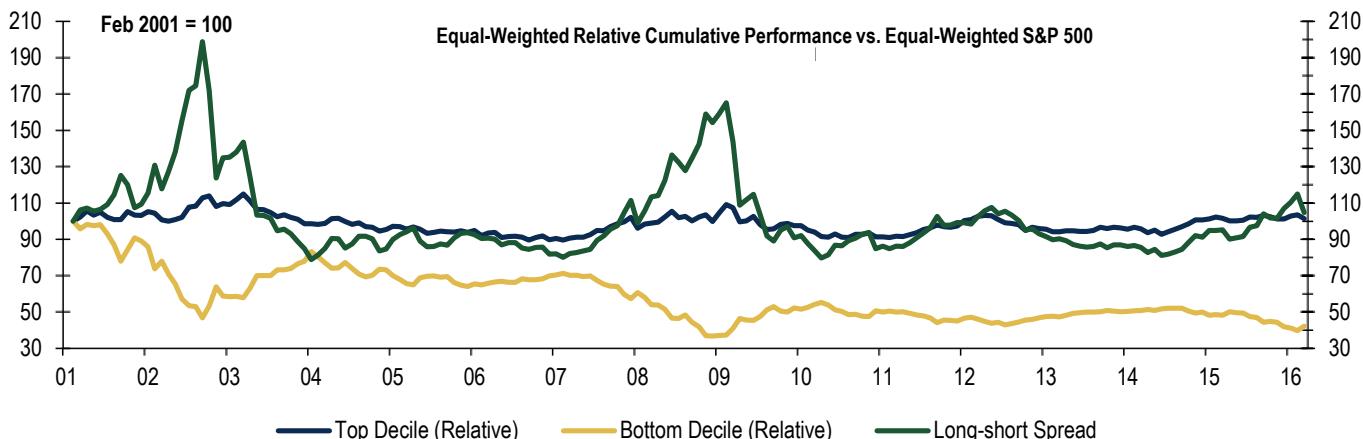
Chart 245: High 5-Yr ROE Adjusted for Debt Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

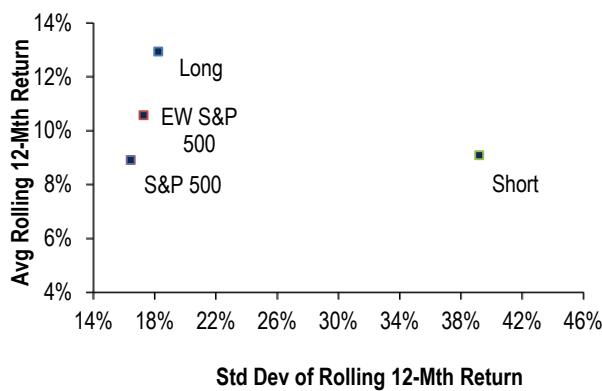
Return on Assets

Chart 246: Performance of Top Decile, Bottom Decile and Long-Short Spread



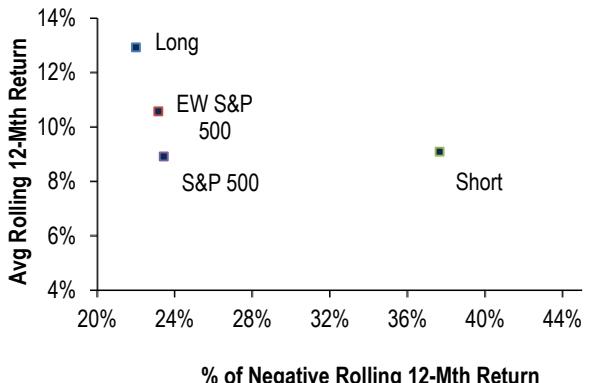
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 247: High Return on Assets Risk Reward



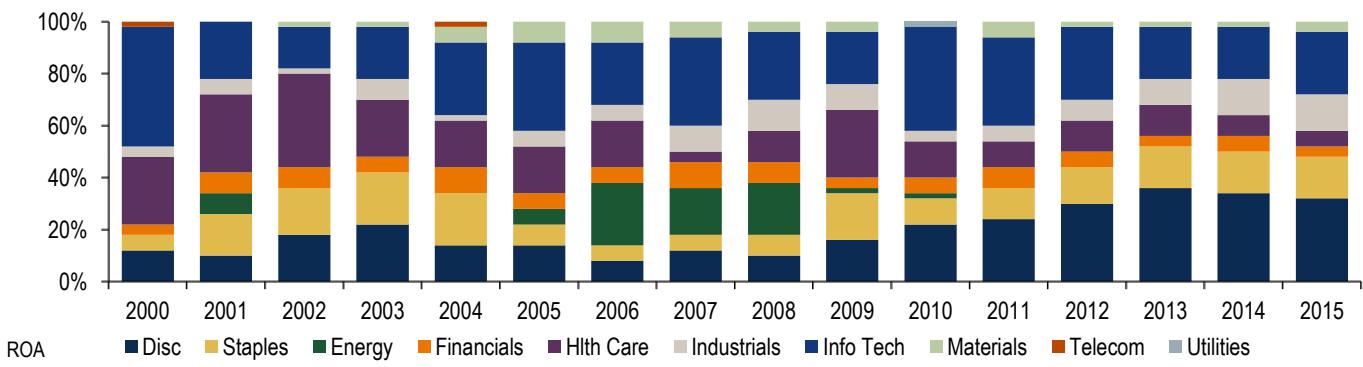
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 248: High Return on Assets Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

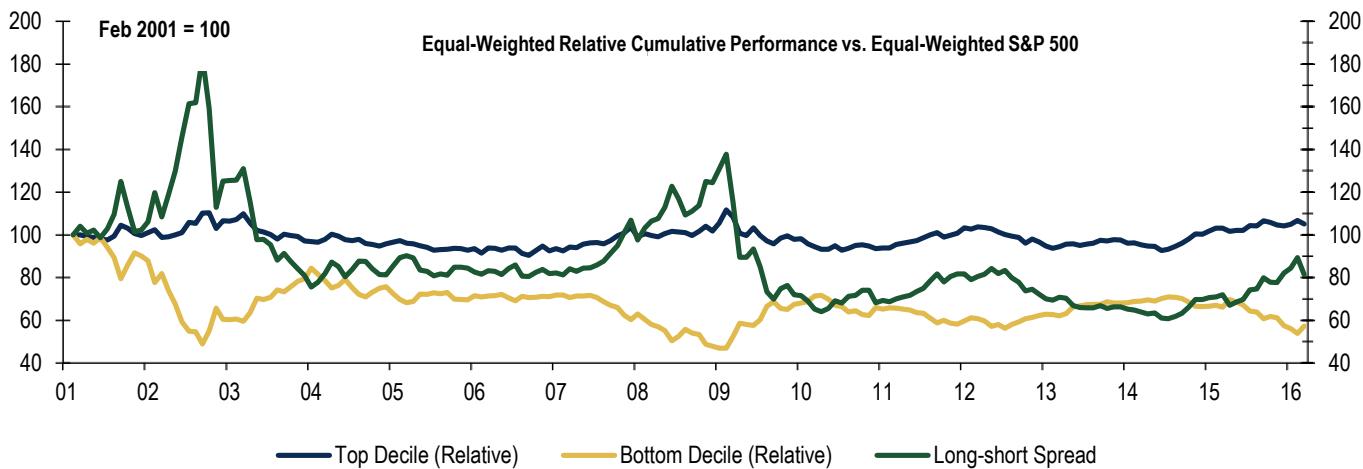
Chart 249: High Return on Assets Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

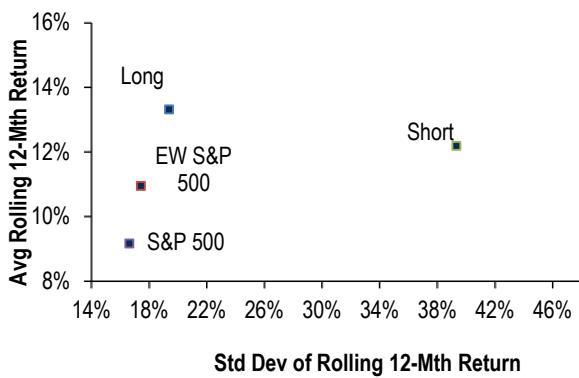
Return on Capital

Chart 250: Performance of Top Decile, Bottom Decile and Long-Short Spread



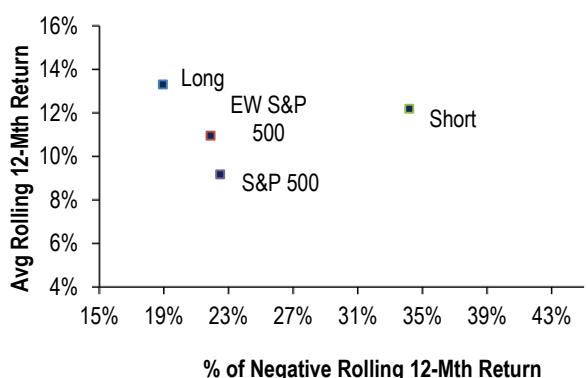
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 251: High Return on Capital Risk Reward



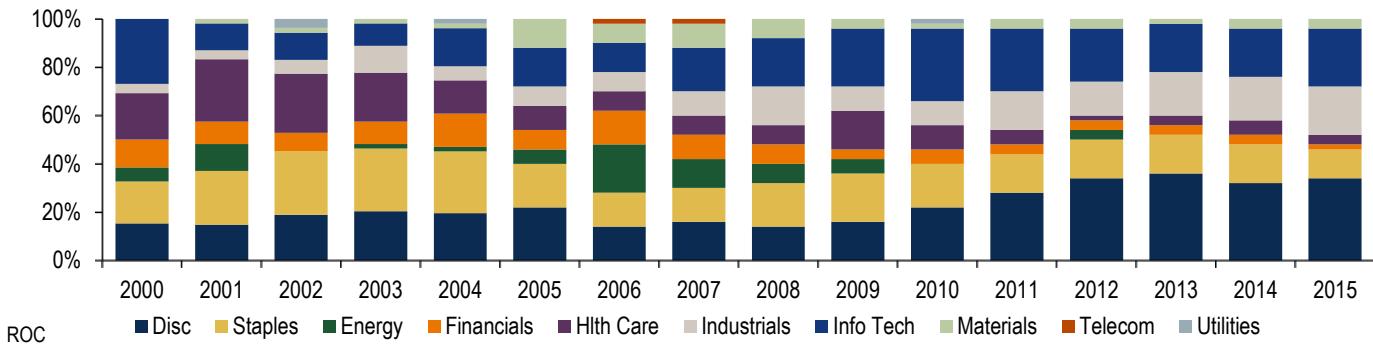
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 252: High Return on Capital Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

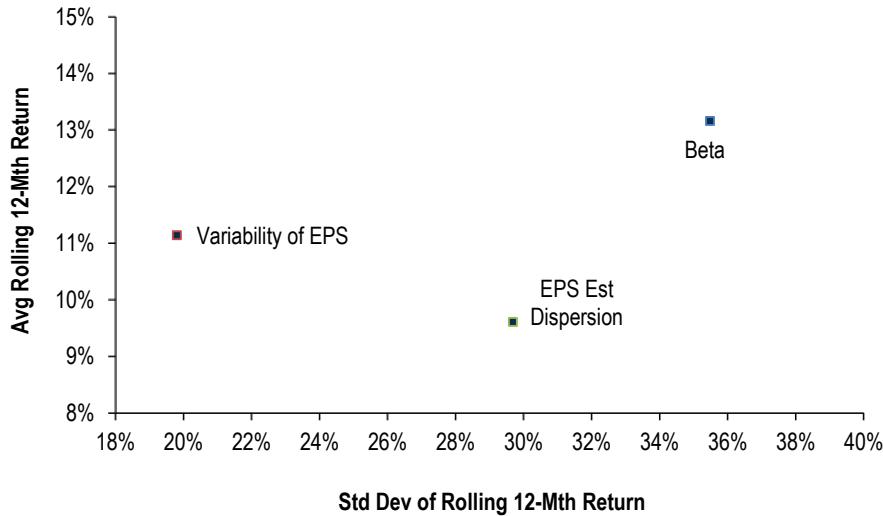
Chart 253: High Return on Capital Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

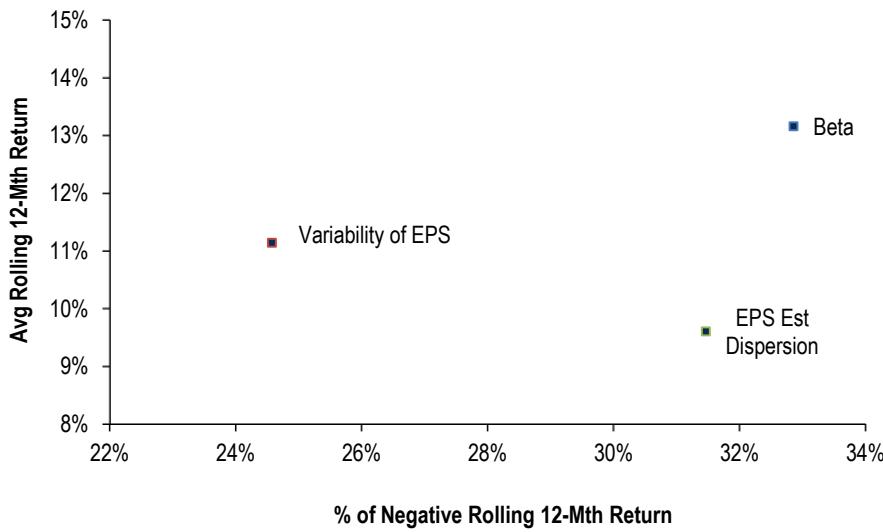
Risk Strategies

Chart 254: Risk Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

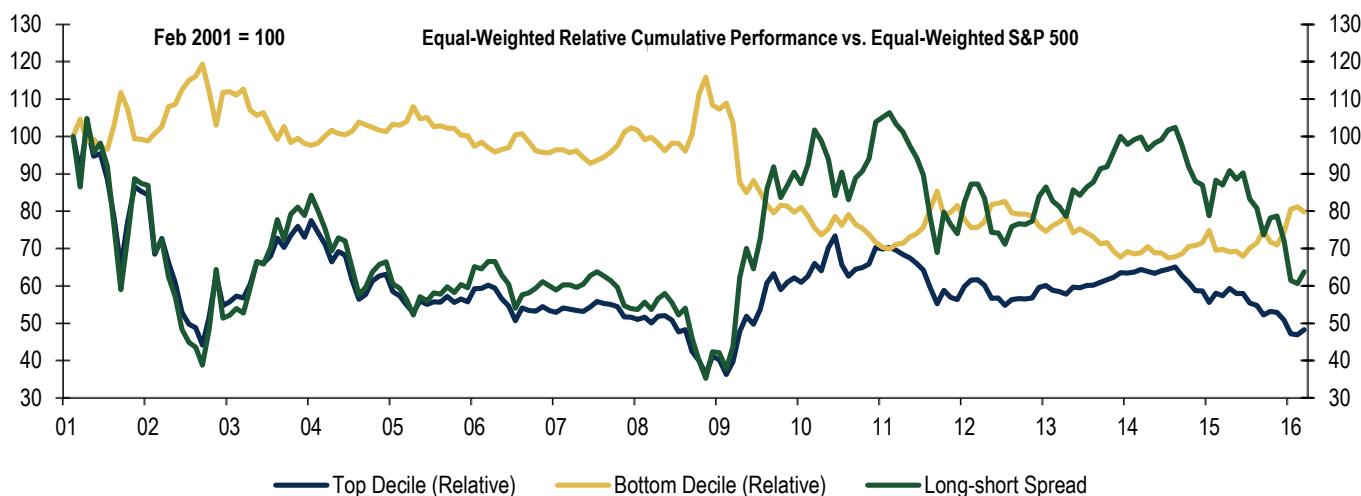
Chart 255: Risk Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

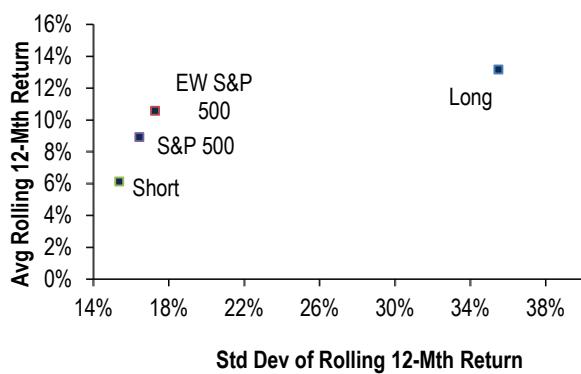
Beta

Chart 256: Performance of Top Decile, Bottom Decile and Long-Short Spread



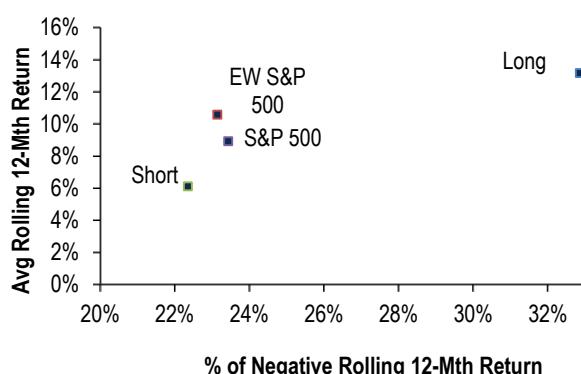
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 257: High Beta Risk Reward



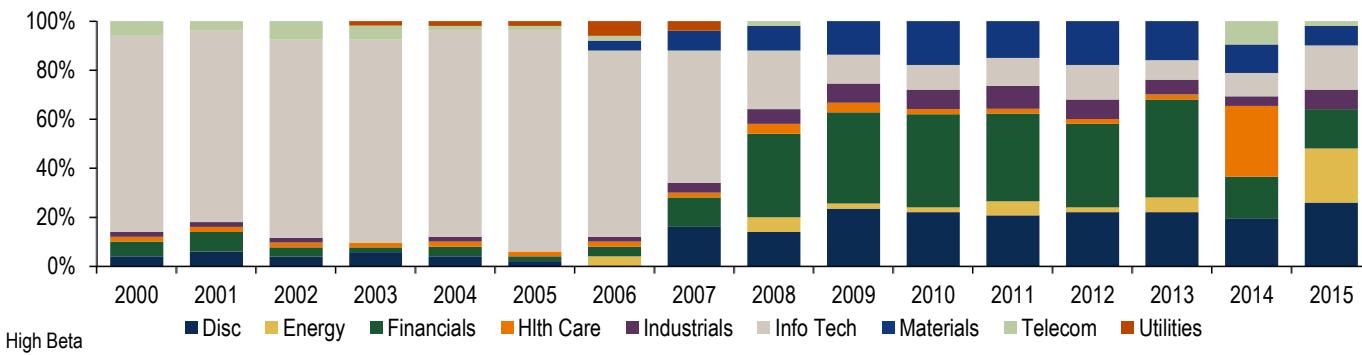
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 258: High Beta Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

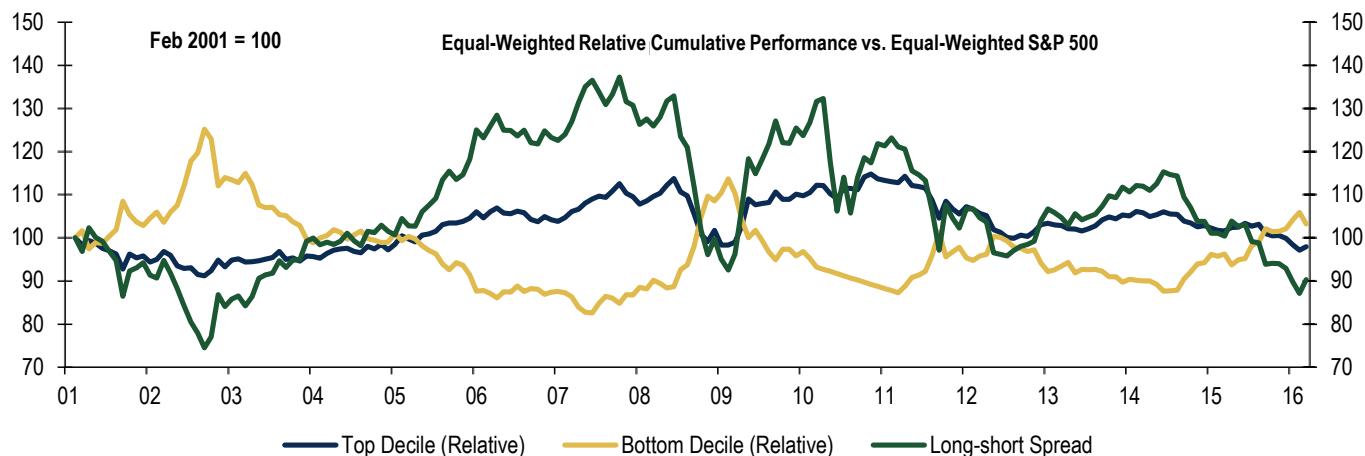
Chart 259: High Beta Sector Concentration of (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

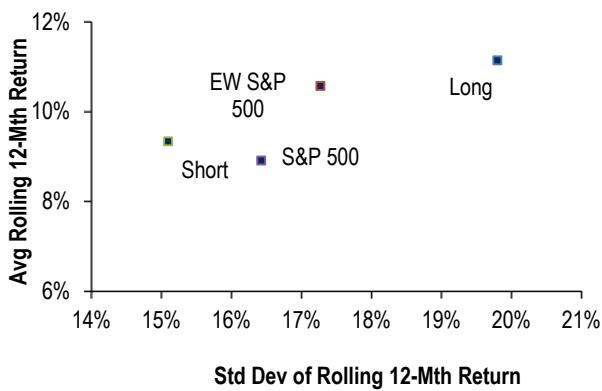
Variability of Earnings

Chart 260: Performance of Top Decile, Bottom Decile and Long-Short Spread



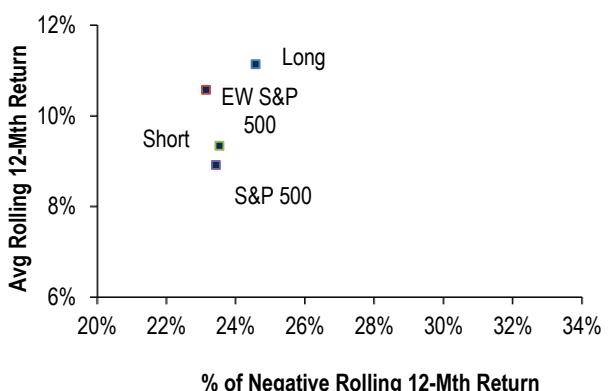
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 261: High EPS Variability Risk Reward



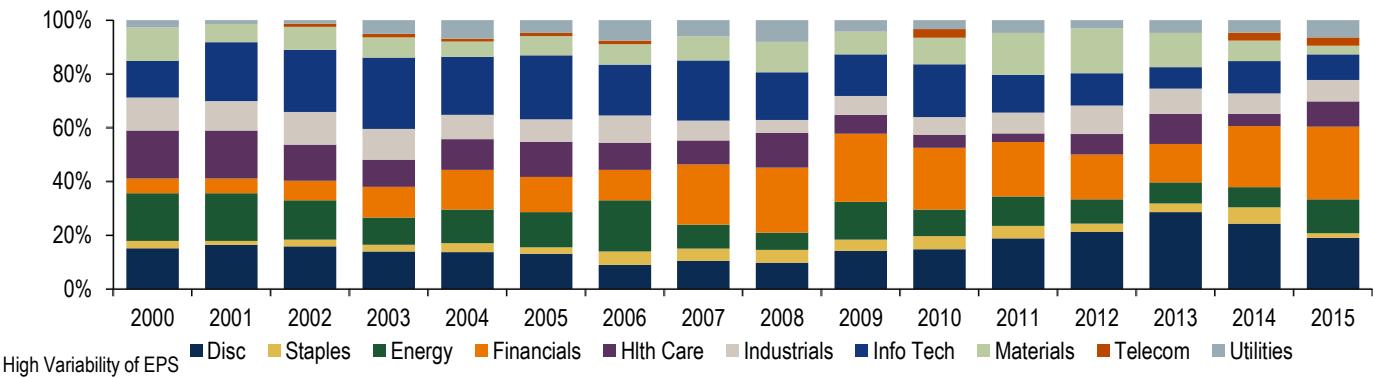
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 262: High EPS Variability Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

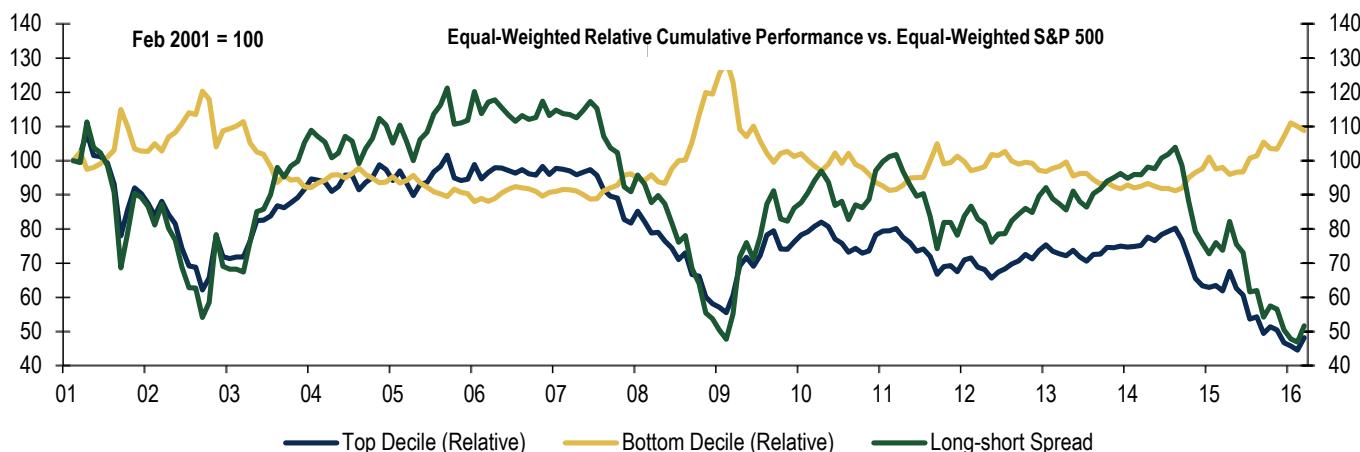
Chart 263: High EPS Variability Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

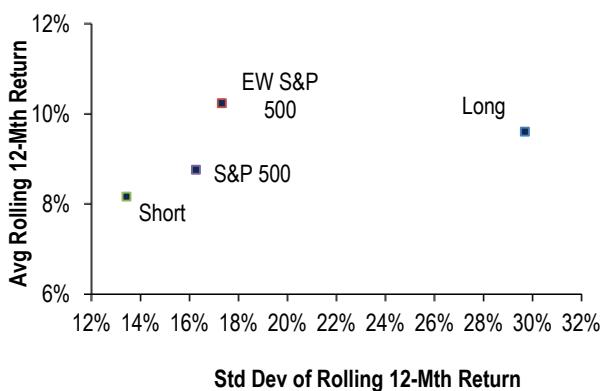
Estimate Dispersion

Chart 264: Performance of Top Decile, Bottom Decile and Long-Short Spread



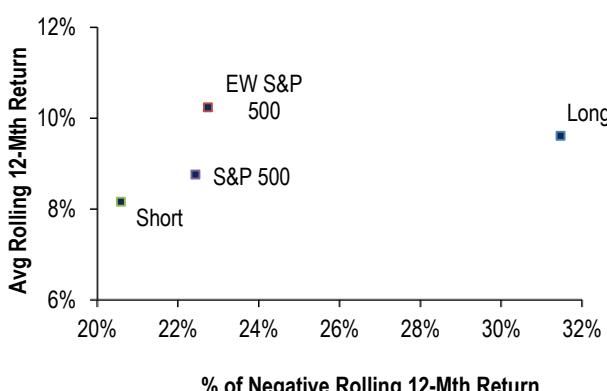
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 265: High EPS Dispersion Risk Reward



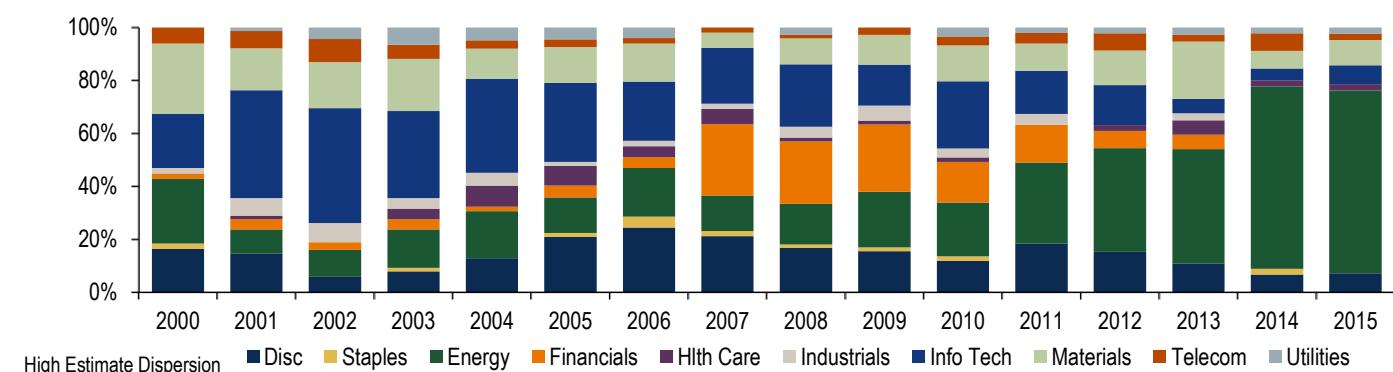
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 266: High EPS Dispersion Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

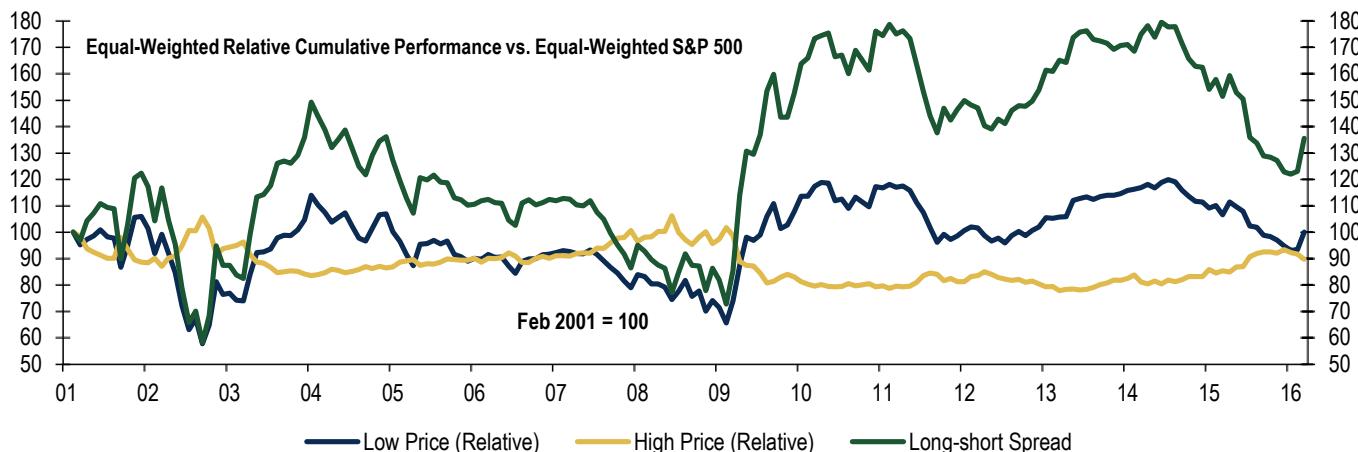
Chart 267: High EPS Dispersion Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

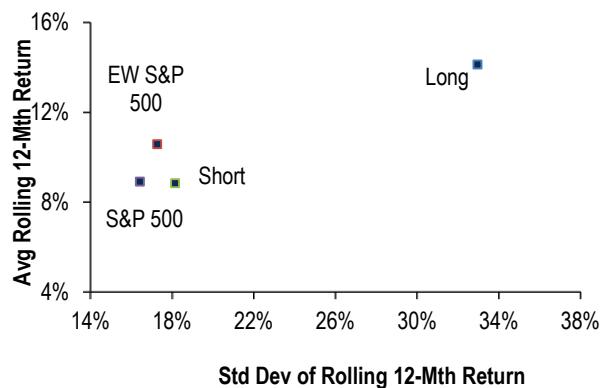
Price

Chart 268: Performance Low Price, High Price and Long-Short Spread



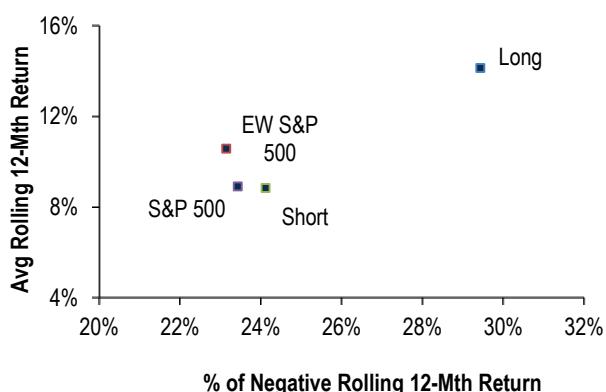
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 269: Low Price Risk Reward



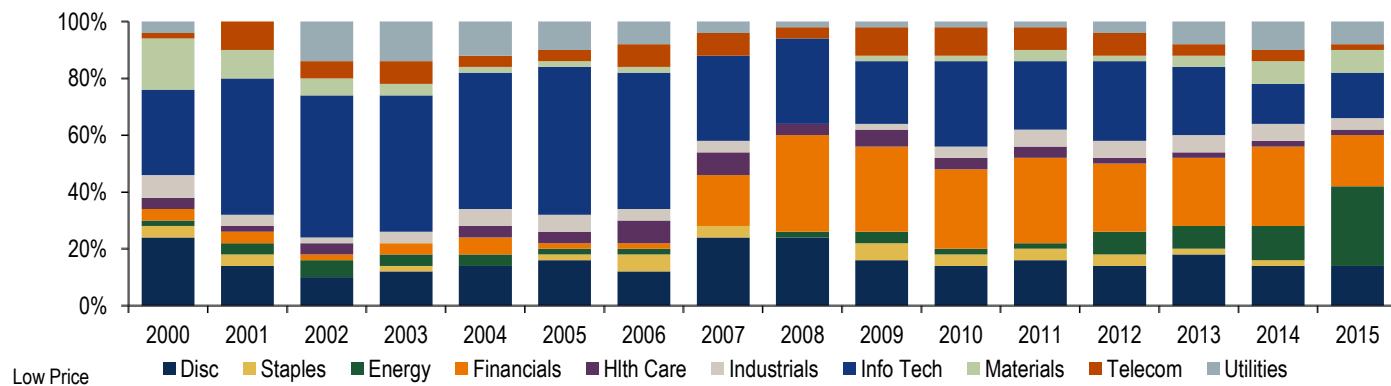
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 270: Low Price Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

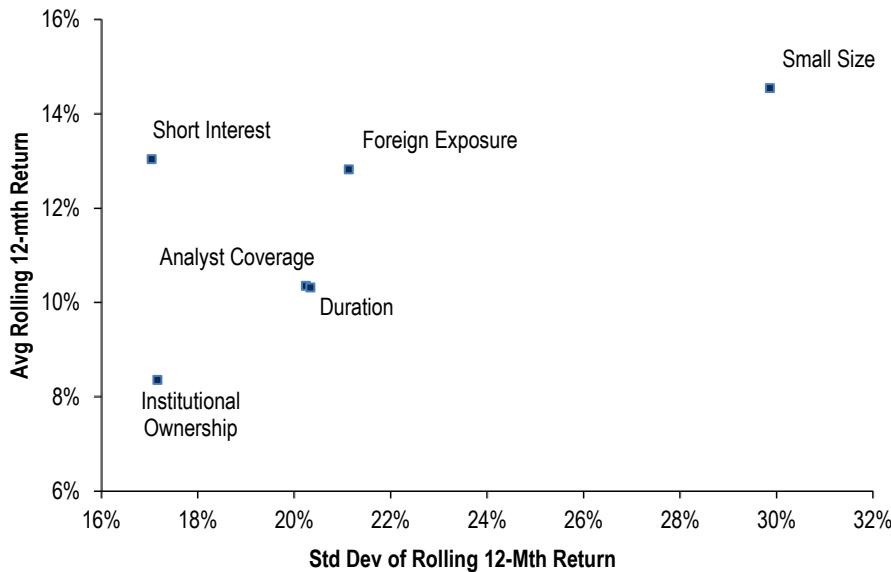
Chart 271: Price Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

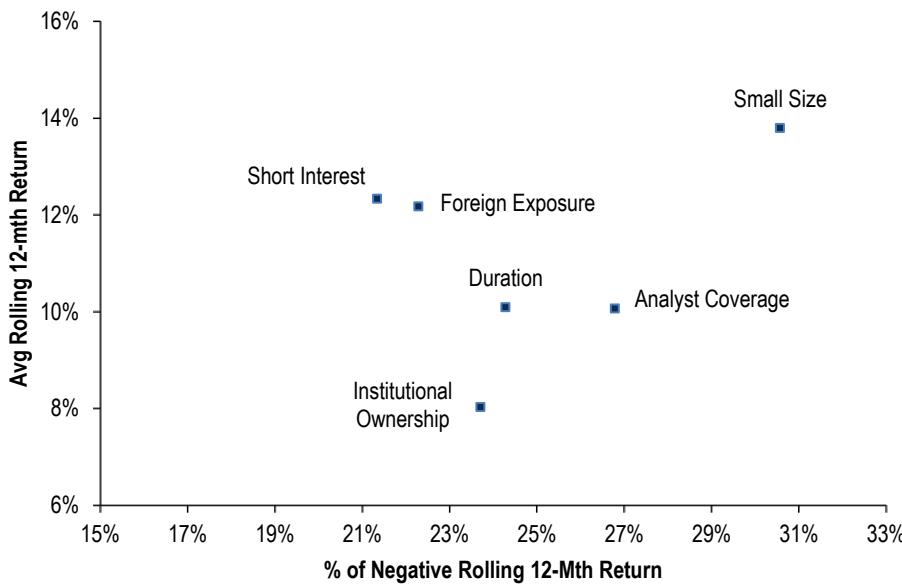
Miscellaneous Strategies

Chart 272: Miscellaneous Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

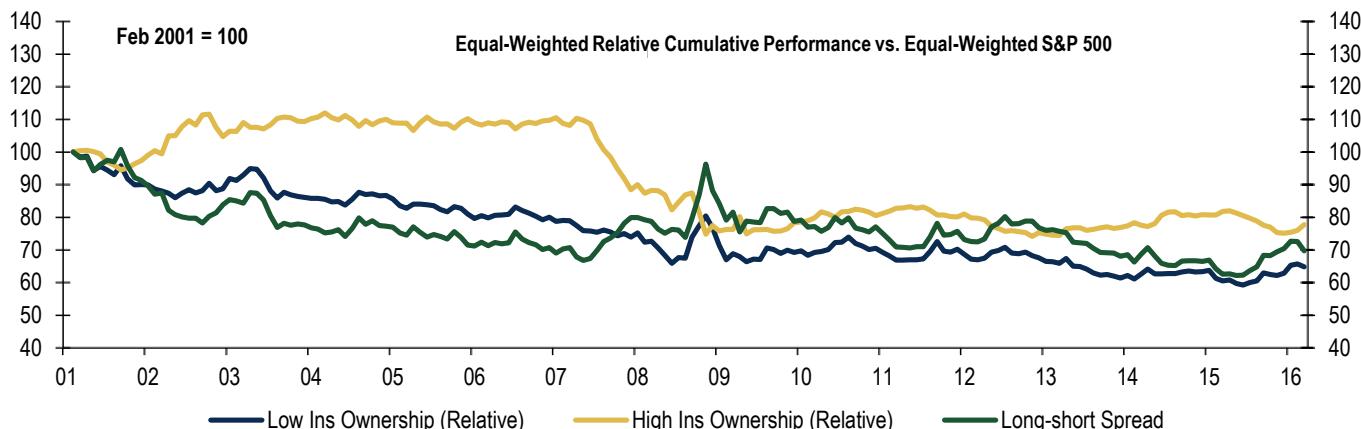
Chart 273: Miscellaneous Strategies



Source: BofA Merrill Lynch US Quantitative Strategy

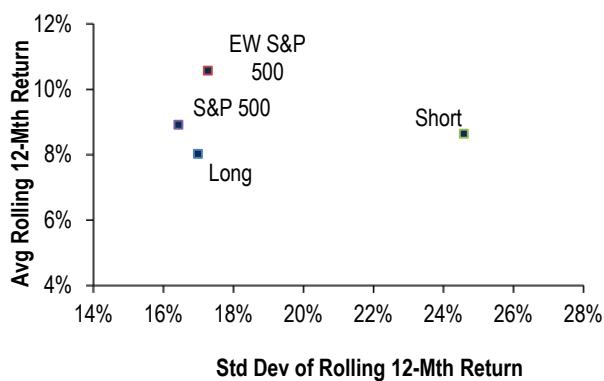
Institutional Ownership

Chart 274: Performance of Low Institutional Ownership, High Institutional Ownership and Long-Short Spread



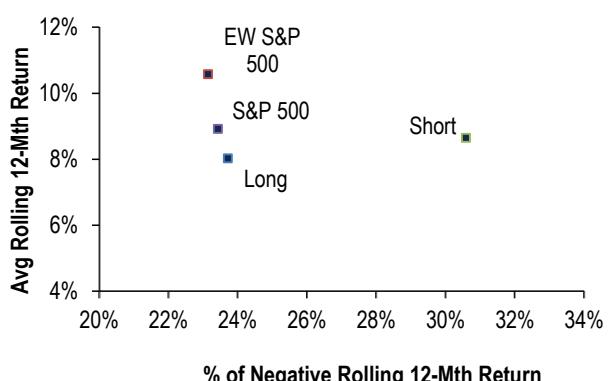
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 275: Low Institutional Ownership Risk Reward



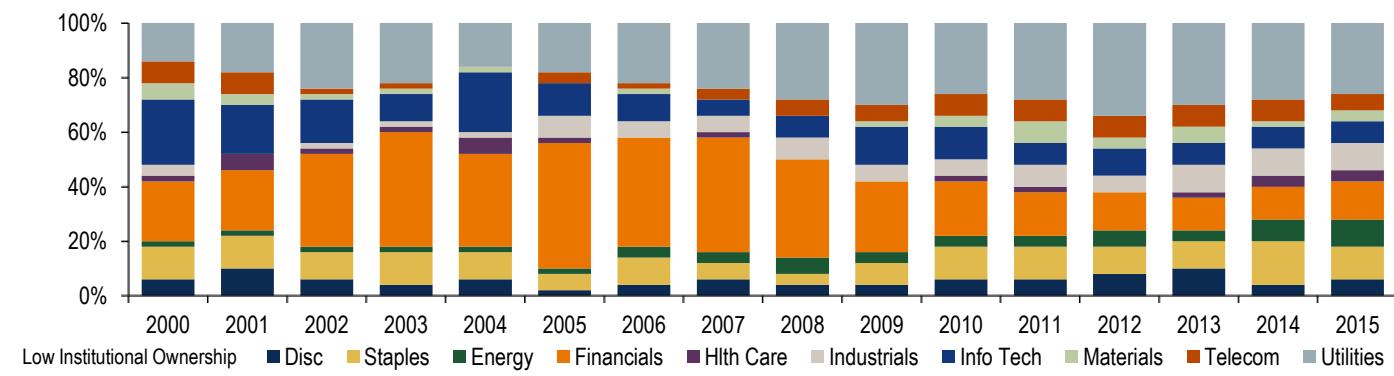
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 276: Low Institutional Ownership Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

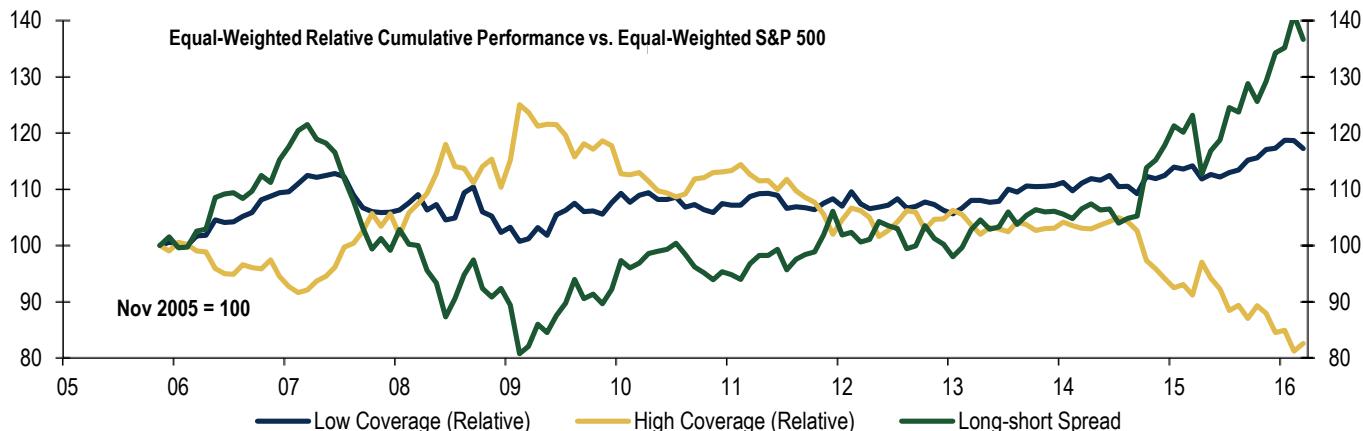
Chart 277: Low Institutional Ownership Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

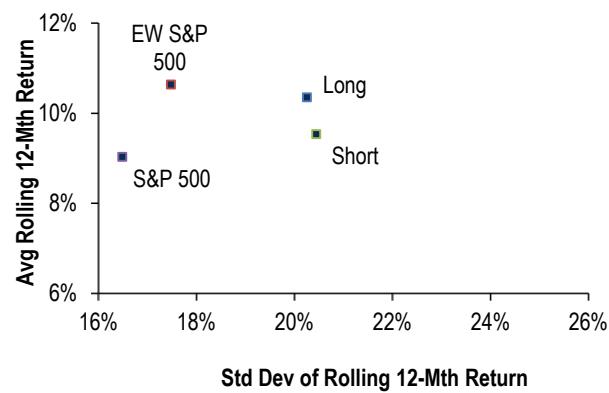
Analyst Coverage

Chart 278: Performance of Low Coverage, High Coverage and Long-Short Spread



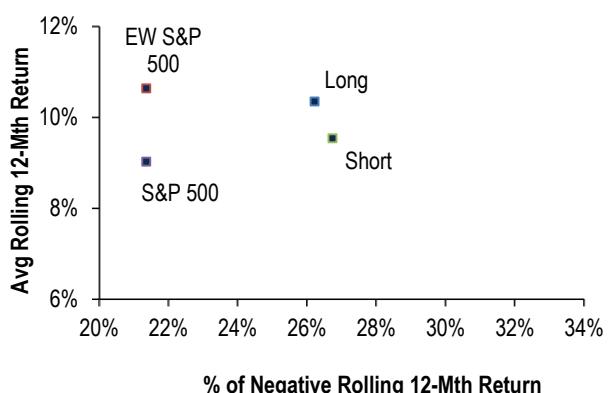
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 279: Low Analyst Coverage Risk Reward



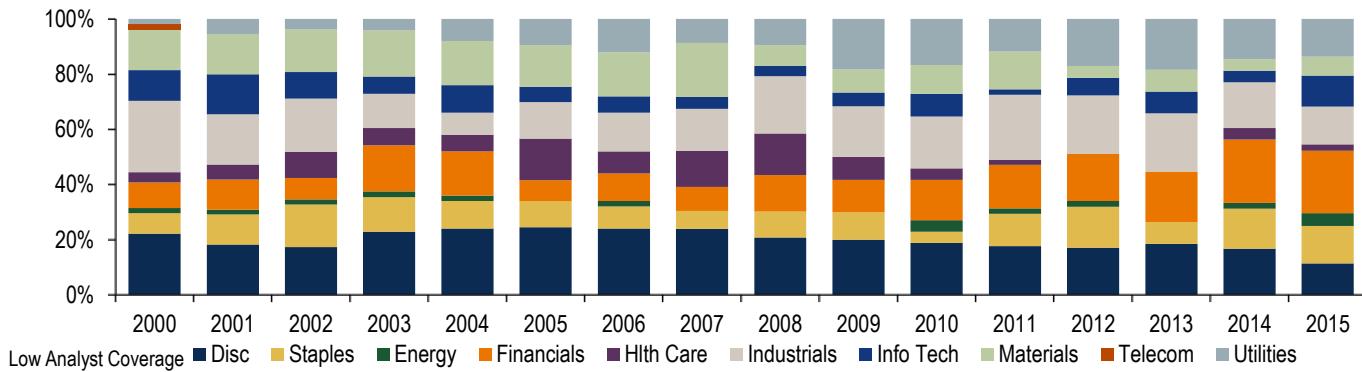
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 280: Low Analyst Coverage Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

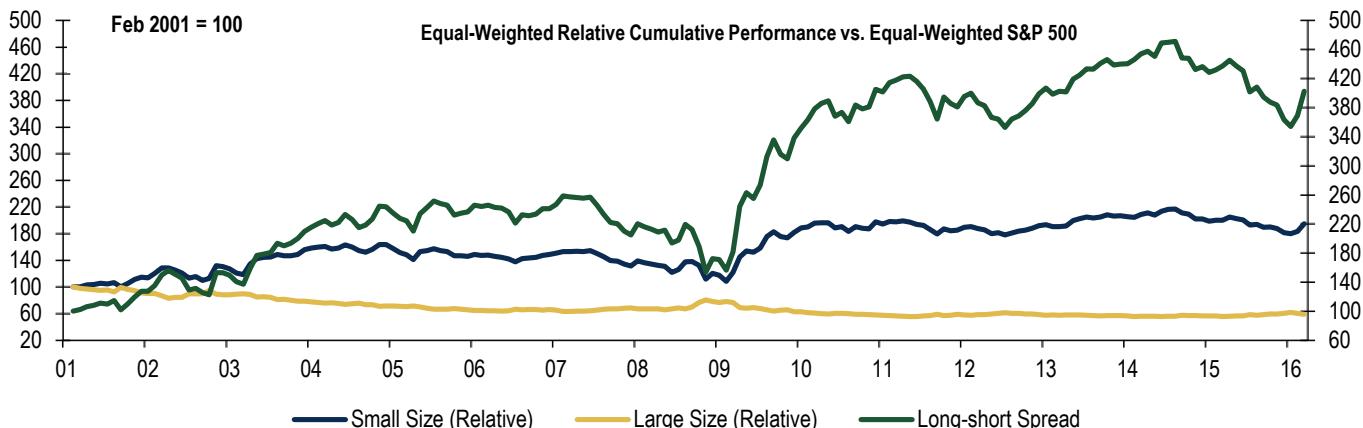
Chart 281: Low Analyst Coverage Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

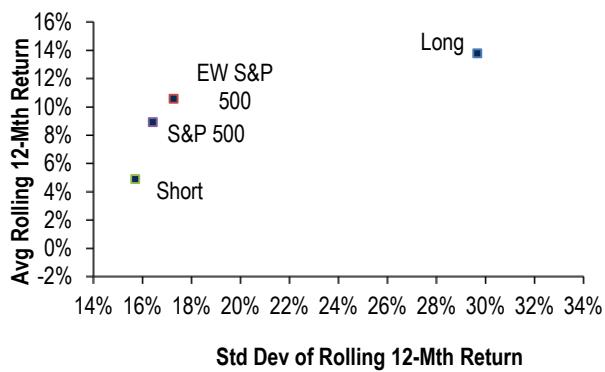
Size

Chart 282: Performance of Small Size, Large Size and Long-Short Spread



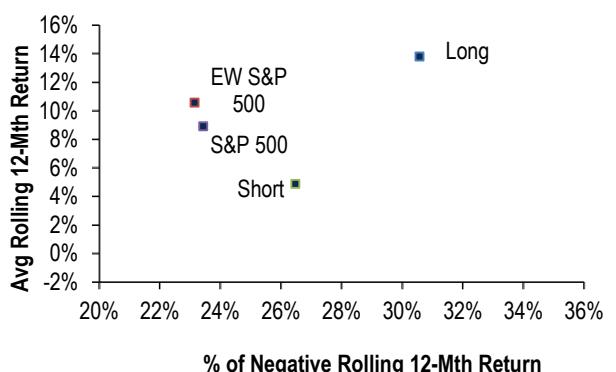
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 283: Small Size Risk Reward



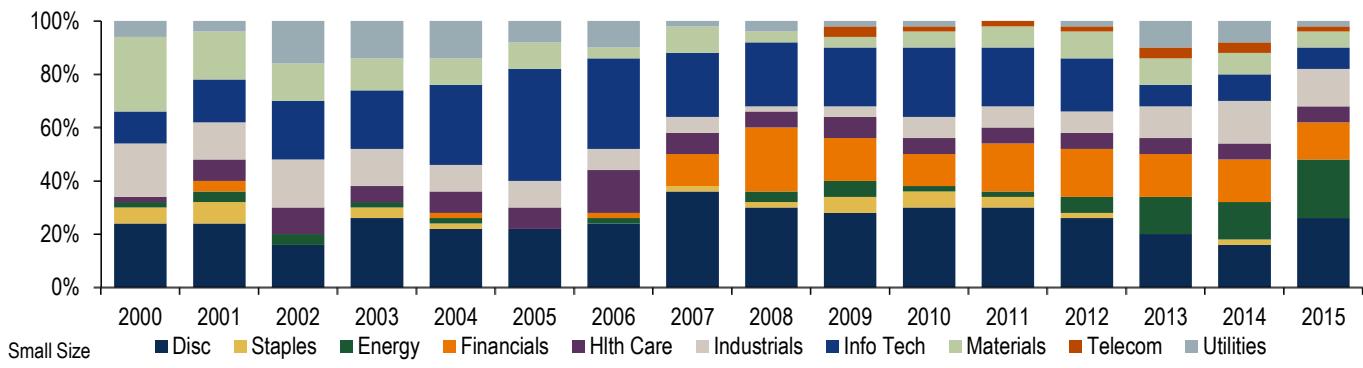
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 284: Small Size Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

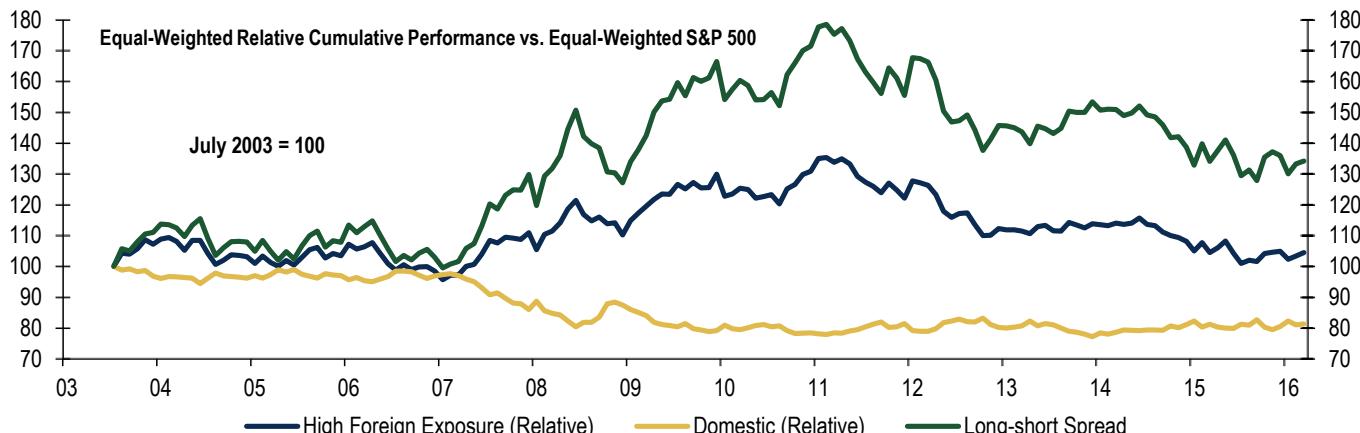
Chart 285: Small Size Sector Concentration (Low Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

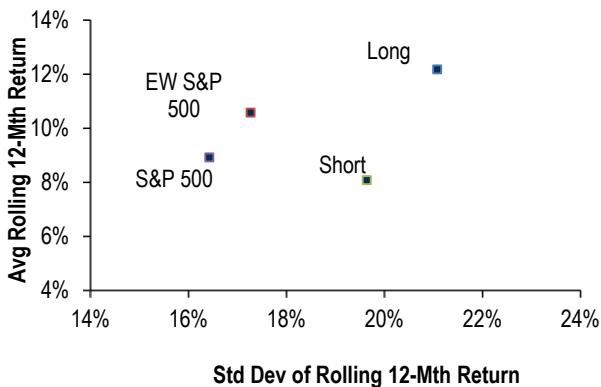
Foreign Exposure

Chart 286: Performance of High Foreign Exposure, Domestic Companies and Long-short Spread



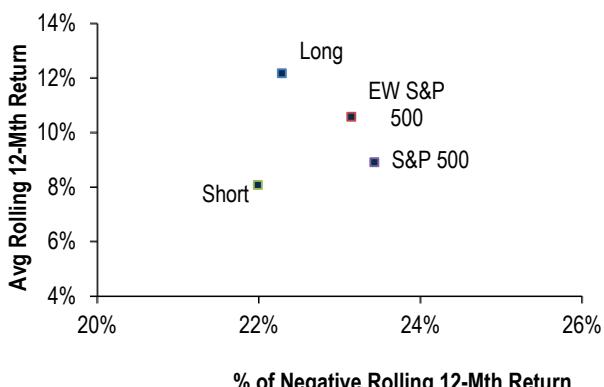
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 287: High Foreign Exposure Risk Reward



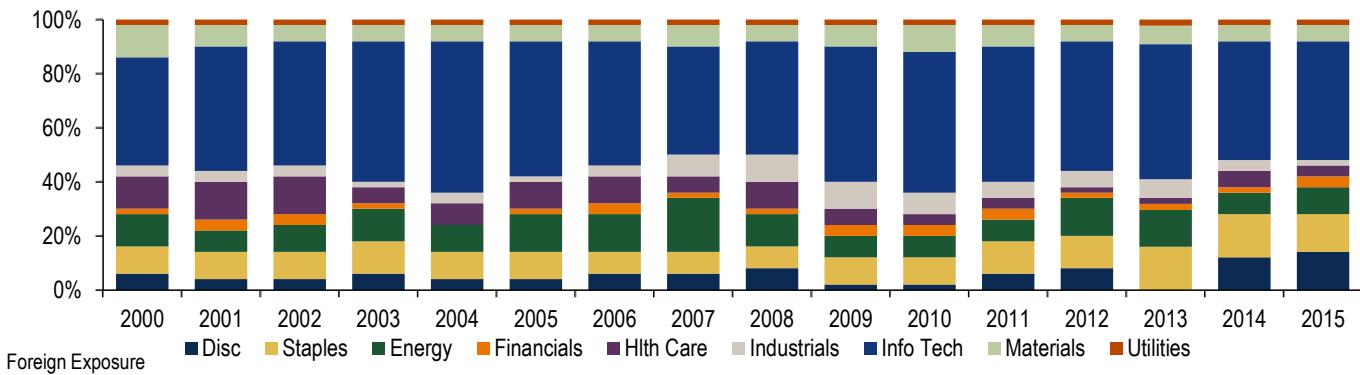
Source: BofA Merrill Lynch US Quantitative Strategy

Chart 288: High Foreign Exposure Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy

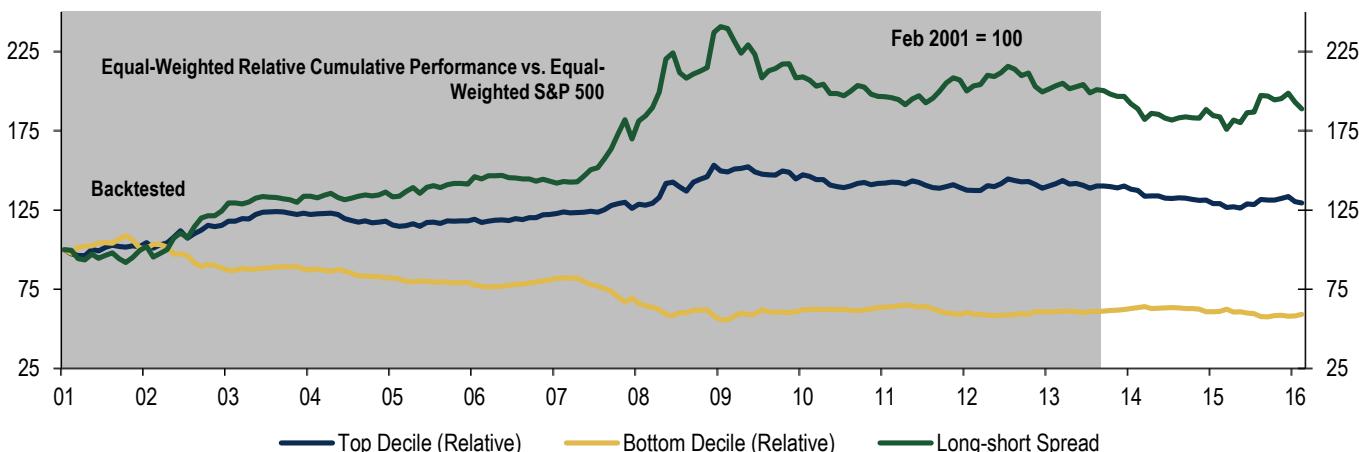
Chart 289: High Foreign Exposure Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

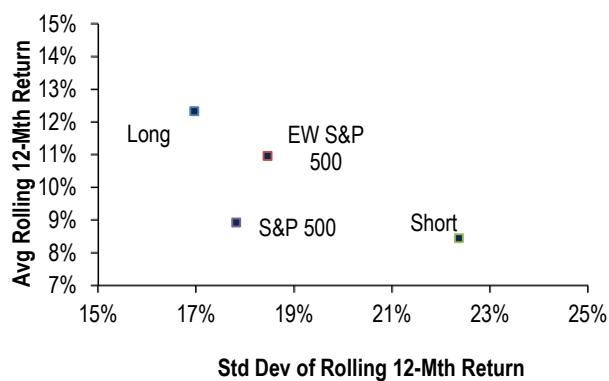
Short Interest

Chart 290: Performance of Top Decile, Bottom Decile and Long-Short Spread



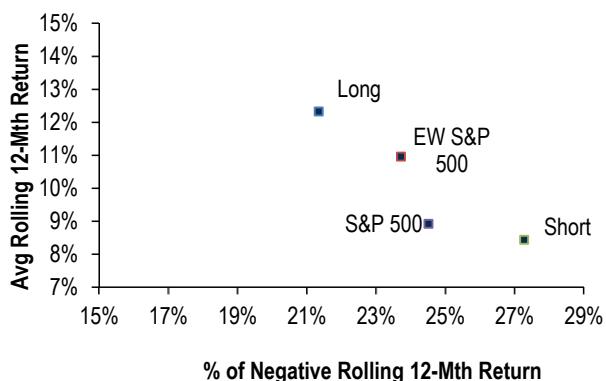
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 291: High Price Return – 12M and 1M Risk Reward



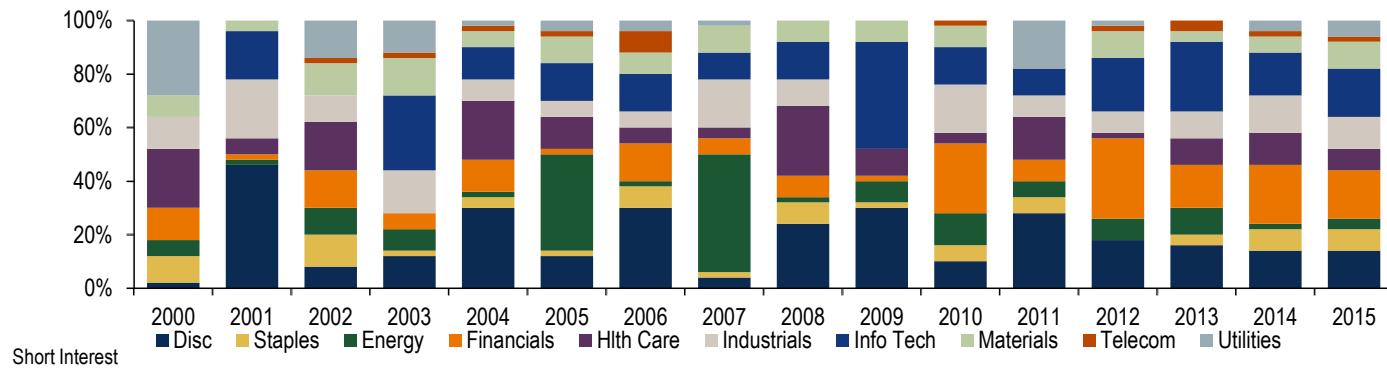
Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 292: High Price Return – 12M and 1M Downside Risk Reward



Source: BofA Merrill Lynch US Quantitative Strategy.

Chart 293: High Price Return (12M and 1M) Sector Concentration (Top Decile)



Source: BofA Merrill Lynch US Quantitative Strategy

Table 3: Annual Performance of BofAML US Quantitative Strategies: Top Decile of S&P 500 except where noted Boldface font indicates that the strategy outperformed the benchmark. Price returns except where noted.

Factor	'15	'14	'13	'12	'11	'10	'09	'08	'07	'06	'05	'04	'03	'02	'01	'00	'99	'98	'97	'96	'95	'94	'93	'92	'91	'90	'89	'88	'87	Rwd to Risk
Price Return - 12M and 1M	8	14	45	15	-2	15	10	-45	12	3	23	18	33	-12	-14	-7	60	39	31	23	26	1	30	18	41	-9	30	7	na	0.63
Price Return - 9M	7	14	46	15	-5	20	10	-46	21	10	17	24	54	-26	-19	8	51	38	29	22	28	5	22	2	37	-12	29	8	na	0.62
Relative Strength - 10wk/40wk	5	13	44	9	-5	20	16	-49	20	9	14	21	51	-24	-15	22	58	27	36	17	29	1	17	-6	32	-20	27	5	na	0.56
Price Return - 12M and 1M Reversal	4	13	42	13	-7	25	12	-44	-3	10	14	20	39	-1	3	2	24	29	37	24	36	-1	22	10	37	-20	32	12	na	0.69
Price Return - 11M	4	12	42	14	-5	15	13	-48	7	3	19	21	36	-8	-9	-7	61	43	35	29	27	0	27	18	39	-13	38	1	na	0.62
Price Return - 12M and 1M	4	8	38	20	-3	14	14	-41	15	9	20	10	31	-22	-17	6	40	16	25	17	28	0	25	16	38	-1	24	6	na	0.60
Relative Strength - 5wk/30wk	4	16	37	13	0	22	20	-40	19	8	11	19	53	-27	-18	15	62	16	25	18	24	1	18	3	36	-11	24	1	na	0.59
Proj. 5yr EPS Growth	4	12	49	20	-8	26	56	-55	18	6	9	6	65	-40	-33	-18	61	24	23	14	29	-1	10	3	32	-7	30	6	15	0.45
Price to Moving Average (200 day)	3	16	39	12	-2	13	13	-42	22	12	16	16	50	-29	-17	15	56	21	28	16	29	2	17	2	34	-11	20	-1	na	0.55
Relative Strength - 30wk/75wk	3	9	38	18	-8	14	11	-53	3	9	26	19	31	-15	-8	-7	64	45	27	26	34	-1	28	12	39	6	18	15	-9	0.60
Equity Duration	1	12	32	11	-2	20	48	-45	8	8	13	18	43	-35	-17	-1	33	20	25	16	18	2	16	15	45	-30	14	14	11	0.50
5y ROE	1	11	38	8	8	16	44	-35	1	12	-3	8	33	-18	-15	1	45	29	32	19	41	17	-5	5	59	2	24	10	-4	0.65
Alpha Surprise Model	1	9	46	11	3	17	30	-35	3	19	4	19	24	-12	3	18	8	9	41	16	36	3	11	5	31	-6	33	14	12	0.80
DDM Alpha	0	15	38	16	5	12	11	-41	-2	15	6	17	21	-18	22	12	4	10	30	20	36	5	6	1	30	-15	21	15	2	0.60
5yr ROE Adj	0	15	34	9	2	19	40	-38	4	10	5	11	39	-25	-6	-1	37	27	35	17	35	19	-4	5	56	13	24	13	-2	0.69
Neglect - Analyst Coverage	0	14	39	13	-1	20	52	-44	-4	25	0	19	42	-18	16	4	-1	-2	29	20	23	2	14	10	39	-29	na	na	0.53	
Earning Momentum	0	13	30	21	-12	20	41	-45	-5	10	15	22	40	-17	-5	-4	24	15	23	17	28	1	15	12	33	-15	17	18	10	0.58
ROC	-1	15	35	10	6	15	39	-43	11	14	3	14	27	-13	-3	6	15	27	35	21	38	17	2	19	79	-11	18	20	-18	0.68
Price Return - 3M	-2	14	37	21	-2	19	34	-44	18	8	10	12	49	-26	-20	1	49	11	24	16	30	1	19	16	41	-15	17	16	na	0.57
1yr ROE	-3	15	37	11	5	12	39	-38	12	14	4	14	26	-13	-2	9	10	26	31	24	42	16	-5	1	51	9	23	11	-3	0.75
Short Interest	-3	6	32	15	-2	14	47	-34	5	18	7	11	48	-9	3	9	11	20	21	25	23	na	na	na	na	na	na	0.73		
EPS Estimate Revisions	-4	15	40	16	-10	21	32	-49	2	16	22	51	50	-31	-15	14	33	15	25	24	24	-3	25	8	30	-11	na	na	0.54	
ROA	-4	17	34	13	5	12	41	-43	12	10	5	12	25	-14	1	-6	35	23	32	18	35	17	-8	1	56	15	29	10	1	0.71
1yr ROE Adj	-4	18	33	14	4	16	38	-41	12	15	3	18	28	-22	-4	-5	29	23	38	18	42	19	-7	1	47	13	28	10	-1	0.69
Positive EPS Surprise	-4	9	44	14	-1	19	35	-36	1	18	1	18	35	-21	-1	14	21	14	34	21	34	2	18	8	26	-5	27	12	10	0.74
Dividend Yield (Total Return)	-4	22	24	11	18	19	25	-38	-10	27	5	21	29	-13	18	19	-2	9	33	17	34	-2	19	18	42	-18	24	22	4	0.72
High Debt/Equity	-4	16	34	16	1	20	53	-40	0	15	-2	16	34	-13	14	5	-5	-2	29	13	18	-2	19	19	18	-21	14	10	11	0.54
Low Debt/Equity	-4	13	28	13	2	24	52	-41	2	11	5	13	60	-29	-19	-10	48	26	26	18	24	2	0	12	39	-2	18	9	5	0.54
S&P 500	-4	12	34	15	-2	20	44	-42	-1	15	6	16	39	-19	0	8	10	11	26	17	29	-2	12	12	32	-15	22	16	2	0.50
Dividend Growth (Total Return)	-5	10	36	26	1	27	57	-44	4	11	13	21	34	-13	-9	17	7	15	29	25	42	1	8	12	44	-11	27	22	-2	0.72
Neglect - Institutional Ownership	-5	16	22	11	-2	22	30	-39	-9	13	-1	17	35	-20	-7	2	12	17	23	10	30	1	17	6	24	-24	27	11	1	0.47
Variability of Earnings	-7	10	37	12	-9	24	56	-46	4	14	14	17	43	-21	-5	21	13	7	19	14	31	-1	22	12	17	-15	17	16	4	0.56
Foreign Exposure	-7	7	36	6	-8	21	70	-42	12	9	7	11	66	-25	-1	0	40	10	12	23	35	7	17	6	38	-13	16	7	10	0.58
Earnings Yield	-7	9	40	19	-2	11	66	-43	-14	17	16	26	34	-17	25	21	8	-2	33	15	39	-1	22	19	52	-21	18	33	-2	0.63
Free Cash Flow / EV	-8	20	50	17	-2	16	53	-39	4	18	17	27	49	0	29	26	4	10	36	24	27	6	21	21	36	-2	26	28	3	0.92
Share Repurchase	-9	10	54	17	6	15	39	-41	-4	19	9	12	36	-9	16	18	11	8	36	15	37	4	6	9	35	-13	19	19	4	0.70
P/E-to-Growth	-10	4	39	18	-6	25	61	-50	-7	14	16	28	64	-25	33	13	6	1	22	23	41	10	14	20	36	-7	15	21	17	0.63
Price/ Sales	-10	15	58	19	-1	22	112	-48	-12	17	0	24	67	-29	22	-6	-1	13	38	19	16	0	26	21	51	-36	4	28	4	0.49
Price/ Free Cash Flow	-11	15	46	21	-3	20	64	-42	-8	20	11	26	45	0	33	5	6	12	35	21	24	3	15	18	38	-19	13	26	12	0.73
Forward Earnings Yield	-12	5	57	16	-10	15	96	-51	-14	17	17	31	51	-23	27	-2	2	0	33	31	32	-1	23	20	57	-25	10	37	-2	0.53
Most Active	-13	12	39	17	-12	19	72	-54	-9	13	-9	12	61	-44	-26	-18	74	59	39	31	41	6	14	19	47	3	37	15	9	0.51
Size	-14	10	44	19	-8	30	118	-47	-13	17	-5	21	66	-7	25	-5	6	-2	31	17	22	-2	20	15	50	-32	3	27	1	0.46
Price/ Book Value	-15	2	48	29	-17	30	78	-59	-33	19	7	26	57	-26	22	11	4	9	21	20	30	-1	20	23	51	-35	3	30	5	0.42
EV/ EBITDA	-17	-2	48	11	2	20	71	-49	3	16	19	27	42	-6	44	4	15	9	34	17	19	6	21	20	29	-9	14	30	9	0.71
Beta	-17	4	43	22	-21	29	119	-54	-5	10	-6	0	86	-48	-22	-6	60	33	30	13	38	0	16	16	49	-26	9	17	0	0.37
Price/ Cash Flow	-17	7	37	12	-7	19	68	-42	-1	23	12	23	37	-3	28	-7	22	-7	33	16	21	-1	11	21	42	-23	13	34	8	0.61
Low Price	-19	9	50	19	-17	31	110	-45	-15	18	-11	18	91	-41	38	1	15	13	28	19	11	2	18	24	57	-33	8	26	3	0.43
Earnings Torpedo	-26	3	36	7	2	23	86	-46	-20	14	-1	15	31	-18	4	2	14	-2	34	16	22	-4	17	23	36	-24	7	10	-3	0.37
Estimate Dispersion	-29	-5	36	26	-15	23	89	-59	-16	16	3	23	78	-35	-3	3	53	5	10	12	19	-1	22	23	31	-37	na	na</		

Performance and Calculation Methodology

Table 4: Performance as of 03/31/2016

Strategies (Universe based on the S&P 500)								2 Yr Perf.		3 Yr Perf.		5 Yr Perf.		Inception Date
		1 M	3 M	6 M	12 M	YTD	Gross	Anlzd	Gross	Anlzd	Gross	Anlzd	Gross	Anlzd
Dividend Yield (Total Return)	Corp Cash Deployment	10.7	12.1	16.4	8.3	12.1	23.2	11.0	44.1	13.0	104.2	15.3	12/31/1988	
Dividend Yield (Price Return)	Corp Cash Deployment	10.1	10.6	13.4	3.1	10.6	12.1	5.9	25.1	7.8	60.1	9.9	12/31/1988	
Small Size	Miscellaneous	14.6	10.2	10.3	-5.5	10.2	0.4	0.2	34.8	10.5	54.2	9.0	12/31/1988	
Low Price	Risk	15.6	8.3	8.6	-9.1	8.3	-8.0	-4.1	24.7	7.6	33.7	6.0	12/31/1988	
Low Price to Cash Flow	Value	9.7	6.7	8.3	-10.6	6.7	-9.4	-4.8	15.4	4.9	26.9	4.9	12/31/1988	
Institutional Neglect	Miscellaneous	6.5	6.0	10.4	3.9	6.0	11.4	5.6	29.7	9.1	51.6	8.7	12/31/1988	
DDM Valuation	Value	8.3	5.9	11.4	4.0	5.9	16.7	8.0	47.2	13.8	93.5	14.1	12/31/1988	
High EPS Estimate Dispersion	Risk	16.7	5.9	4.4	-24.6	5.9	-31.1	-17.0	-12.7	-4.4	-6.1	-1.3	12/31/1988	
Low EV/EBITDA	Value	10.7	5.8	8.2	-10.8	5.8	-14.8	-7.7	9.1	3.0	33.5	5.9	9/30/2001	
ROE (5-Yr Avg. Adj. by Debt)	Quality	6.1	5.5	11.1	2.9	5.5	19.1	9.1	47.6	13.9	67.4	10.9	4/30/1997	
ROE (1-Yr Avg. Adj. by Debt)	Quality	5.7	5.1	9.4	-0.4	5.1	17.0	8.2	44.7	13.1	75.7	11.9	4/30/1997	
ROE (5-Yr Average)	Quality	7.4	4.3	10.2	1.3	4.3	14.2	6.9	39.8	11.8	73.6	11.7	4/30/1997	
ROE (1-Yr Average)	Quality	6.5	4.0	7.3	-1.4	4.0	13.9	6.7	46.0	13.4	72.4	11.5	4/30/1997	
Alpha Surprise Model	GARP	7.2	3.9	8.6	-0.3	3.9	12.9	6.2	41.9	12.4	77.3	12.1	12/31/1988	
ROC	Quality	6.2	3.6	5.7	-1.2	3.6	18.5	8.9	46.6	13.6	72.0	11.5	4/30/1997	
S&P 500 Equal Weighted (Total Return)	Benchmark	8.2	3.3	8.4	-0.7	3.3	12.3	6.0	40.5	12.0	73.7	11.7		
Low Price to Sales	Value	9.4	3.3	3.3	-8.9	3.3	4.9	2.4	42.6	12.6	81.5	12.7	12/31/1988	
Low Price to Free Cash Flow	Value	6.4	3.2	4.9	-10.1	3.2	3.9	2.0	36.1	10.8	66.1	10.7	7/30/2003	
High Free Cash Flow to EV	Value	6.4	3.2	7.2	-6.9	3.2	7.7	3.8	50.8	14.7	82.8	12.8	7/31/2010	
Share Repurchase	Corp Cash Deployment	6.6	2.9	6.1	-8.8	2.9	1.6	0.8	34.1	10.3	82.0	12.7	12/31/2004	
ROA	Quality	5.7	2.8	5.2	-3.4	2.8	13.7	6.6	41.8	12.3	72.7	11.6	4/30/1997	
S&P 500 Equal Weighted (Price Return)	Benchmark	7.9	2.7	7.2	-3.1	2.7	7.5	3.7	31.8	9.6	56.3	9.3		
Analyst Coverage Neglect	Miscellaneous	6.6	2.7	9.1	-0.5	2.7	13.4	6.5	42.1	12.4	67.4	10.9	6/30/1989	
High Foreign Exposure	Miscellaneous	9.1	2.3	10.2	-3.1	2.3	-1.6	-0.8	23.5	7.3	22.1	4.1	12/31/1988	
Forecast Negative Earnings Surprise	Growth (Negative)	6.8	2.2	7.7	-2.1	2.2	8.5	4.1	42.4	12.5	58.7	9.7	12/31/1988	
Low EPS Torpedo	Growth (Negative)	9.9	2.1	1.8	-21.3	2.1	-25.6	-13.7	-4.5	-1.5	8.7	1.7	12/31/1988	
Low PE to GROWTH	GARP	8.9	1.9	6.0	-8.4	1.9	-4.9	-2.5	19.9	6.2	31.4	5.6	12/30/1988	
Most Active	Technical	9.9	1.2	4.2	-9.0	1.2	-4.2	-2.1	22.2	6.9	33.6	6.0	8/31/2003	
Forecast Positive Earnings Surprise	Growth	7.8	1.0	3.8	-5.5	1.0	3.3	1.6	29.6	9.0	56.7	9.4	12/31/1988	
S&P 500 Index (Price Return)	Benchmark	6.6	0.8	7.3	-0.4	0.8	10.0	4.9	31.3	9.5	55.4	9.2		
High Variability of EPS	Risk	8.8	0.7	4.0	-6.6	0.7	-0.5	-0.3	25.6	7.9	35.7	6.3	12/31/1988	
Relative Strength (10wk/40wk)	Technical	5.0	0.7	6.0	-0.6	0.7	16.3	7.8	51.4	14.8	65.3	10.6	1/31/2010	
Relative Strength (Price/200-Day Moving Avg)	Technical	4.1	0.6	5.0	-1.0	0.6	16.8	8.1	45.5	13.3	68.1	11.0	1/31/2010	
Earnings Yield	Value	8.1	0.5	4.5	-5.5	0.5	-1.6	-0.8	27.8	8.5	50.1	8.5	12/31/1988	
Short Interest	Miscellaneous	7.3	0.5	5.5	-2.8	0.5	1.3	0.6					10/31/2013	
Price Returns (12-Month plus 1-Month Reversal)	Technical	6.3	0.3	5.8	-0.5	0.3	12.4	6.0	48.1	14.0	63.0	10.3	1/31/2010	
Relative Strength (5wk/30wk)	Technical	4.5	0.1	5.6	-0.3	0.1	16.2	7.8	41.8	12.3	69.6	11.1	1/31/2010	
Price Returns (9-Month)	Technical	4.5	-0.2	5.6	0.1	-0.2	17.7	8.5	56.2	16.0	84.4	13.0	1/31/2010	
Price Returns (3-Month)	Technical	6.6	-0.6	2.1	-6.2	-0.6	9.2	4.5	29.9	9.1	68.1	10.9	1/31/2010	
High Duration	Growth	6.6	-0.8	3.3	-3.1	-0.8	9.1	4.5	33.9	10.2	51.5	8.7	12/31/1988	
Low Price to Book Value	Value	12.1	-0.9	2.8	-13.2	-0.9	-15.7	-8.2	13.2	4.2	29.0	5.2	12/31/1988	
Relative Strength (30wk/75wk)	Technical	5.3	-1.3	3.5	-2.3	-1.3	5.9	2.9	35.9	10.8	55.3	9.2	8/31/1995	
Price Returns (12-Month)	Technical	4.6	-1.3	3.7	0.5	-1.3	16.2	7.8	53.4	15.3	85.8	13.2	1/31/2010	
Price Returns (12-Month plus 1-Month)	Technical	4.8	-1.4	3.8	-1.0	-1.4	10.9	5.3	31.4	9.5	65.6	10.6	1/31/2010	
EPS Momentum	Growth	5.4	-1.6	6.2	-5.8	-1.6	5.9	2.9	28.8	8.8	42.4	7.3	12/31/1988	
High Dividend Growth (Total Return)	Corp Cash Deployment	6.4	-1.6	2.7	-5.7	-1.6	0.1	0.1	25.3	7.8	64.5	10.5	12/31/2004	
Price Returns (11-Month since 1 year ago)	Technical	4.8	-1.7	2.7	-3.4	-1.7	9.8	4.8	42.1	12.4	65.6	10.6	1/31/2010	
High Projected 5-Yr Growth	Growth	7.8	-1.9	5.1	-4.2	-1.9	9.3	4.6	48.7	14.1	71.5	11.4	12/31/1988	
Upward Estimate Revisions	Growth	5.9	-1.9	4.5	-10.0	-1.9	4.4	2.2	33.6	10.1	49.1	8.3	12/31/1988	
High Dividend Growth (Price Return)	Corp Cash Deployment	6.1	-2.2	1.5	-7.8	-2.2	-4.3	-2.2	17.4	5.5	46.9	8.0	12/31/2004	
High Beta	Risk	11.1	-2.5	-0.9	-18.4	-2.5	-19.3	-10.2	8.9	2.9	8.6	1.7	12/31/1988	
Forward Earnings Yield	Value	8.1	-2.8	-0.2	-11.5	-2.8	-9.9	-5.1	19.9	6.2	34.7	6.1	12/31/1988	

Source: BofA Merrill Lynch US Quantitative Strategy

The performance does not reflect transaction costs or tax withholdings or any applicable advisory fees. Had these costs been reflected, the performance would have been lower. Performance is calculated on the basis of price return unless noted. Total return performance calculations assume that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. Please see Performance Calculation methodology on page 88 for a full explanation.

*For screens that have less than 5 years history, performance is since inception.

Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

Advances and Declines as of 3/31/2016

Table 5: Advances and Declines as of 03/31/2016

Quantitative Strategies	1M		3M		6M		12M		YTD		2Yr		3Yr		5Yr	
	Adv.	Dec.														
Dividend Yield (Total Return)	49	1	108	42	191	109	309	290	108	42	661	536	1037	759	1799	1194
Dividend Yield (Price Return)	46	3	104	45	186	113	295	303	104	45	632	564	985	810	1703	1288
Small Size	48	2	90	60	162	137	272	326	90	60	594	600	970	821	1587	1402
Low Price	47	3	85	65	161	137	262	336	85	65	577	614	955	835	1567	1414
Low Price to Cash Flow	48	2	96	54	170	130	267	333	96	54	588	610	954	841	1574	1412
Institutional Neglect	45	4	101	48	184	115	302	296	101	48	625	571	997	797	1694	1298
DDM Valuation	60	1	118	62	203	142	313	304	118	62	727	573	1178	850	2033	1441
High EPS Estimate Dispersion	40	3	66	63	129	125	206	313	66	63	435	549	715	741	1335	1329
Low EV/EBITDA	48	2	91	59	167	133	270	330	91	59	578	619	953	842	1606	1388
ROE (5-Yr Avg. Adj. by Debt)	45	5	91	59	177	123	295	305	91	59	652	547	1024	775	1699	1300
ROE (1-Yr Avg. Adj. by Debt)	44	6	90	60	168	132	288	312	90	60	642	558	1016	784	1711	1289
ROE (5-Yr Average)	50	0	101	49	187	113	302	298	101	49	638	560	1012	784	1688	1306
ROE (1-Yr Average)	47	2	97	52	175	124	295	304	97	52	650	547	1027	769	1701	1292
Alpha Surprise Model	45	3	86	57	154	106	282	276	86	57	677	539	1061	756	1677	1254
ROC	46	3	91	58	162	137	286	313	91	58	651	548	1025	773	1692	1305
Low Price to Sales	45	5	83	67	161	139	275	325	83	67	629	570	1011	786	1669	1322
Low Price to Free Cash Flow	44	6	90	60	163	137	270	330	90	60	617	580	1016	780	1690	1304
High Free Cash Flow to EV	37	4	74	49	134	111	222	272	74	49	521	474	862	628	1427	1089
Share Repurchase	44	6	86	64	156	144	253	346	86	64	614	585	1007	792	1717	1281
ROA	44	5	89	60	164	135	284	315	89	60	631	568	999	800	1664	1335
Analyst Coverage Neglect	38	5	77	55	167	107	284	299	77	55	634	534	976	721	1592	1247
High Foreign Exposure	47	3	83	66	170	129	274	325	83	66	590	606	966	829	1581	1412
Forecast Negative Earnings Surprise	57	7	114	89	229	185	394	443	114	89	825	780	1362	1060	2241	1730
Low EPS Torpedo	45	5	83	67	162	138	245	355	83	67	550	648	920	877	1553	1438
Low PE to GROWTH	48	2	87	63	161	139	273	327	87	63	602	596	990	807	1619	1376
Most Active	46	4	78	72	166	132	288	310	78	72	621	575	1000	795	1644	1343
Forecast Positive Earnings Surprise	68	6	121	94	237	186	415	433	121	94	962	823	1541	1151	2427	1870
High Variability of EPS	59	2	111	79	221	151	383	380	111	79	812	699	1306	961	2139	1667
Relative Strength (10wk/40wk)	44	6	89	60	183	114	309	288	89	60	659	535	1023	767	1691	1297
Relative Strength (Price/200-Day Moving Avg)	45	5	92	58	182	116	303	295	92	58	662	534	1026	765	1699	1286
Earnings Yield	48	2	81	69	160	140	285	315	81	69	626	572	1031	766	1702	1292
Short Interest	46	4	84	65	169	130	293	304	84	65	604	590	922	811	1579	1333
Price Returns (12-Month plus 1-Month Reversal)	42	8	78	71	172	127	297	300	78	71	651	544	1030	765	1690	1302
Relative Strength (5wk/30wk)	45	5	87	62	184	113	312	284	87	62	659	534	1015	774	1697	1285
Price Returns (9-Month)	44	6	87	62	180	117	309	288	87	62	666	529	1042	747	1724	1260
Price Returns (3-Month)	47	3	88	61	178	119	292	305	88	61	641	556	981	812	1671	1316
High Duration	43	6	66	83	152	146	280	318	66	83	629	569	994	803	1664	1332
Low Price to Book Value	49	1	74	76	157	143	284	318	74	76	614	590	1030	778	1684	1335
Relative Strength (30wk/75wk)	44	7	80	70	162	137	289	310	80	70	628	567	1000	795	1660	1332
Price Returns (12-Month)	44	6	82	67	170	128	304	294	82	67	653	542	1031	761	1709	1280
Price Returns (12-Month plus 1-Month)	48	2	83	66	176	122	309	289	83	66	644	553	998	794	1702	1288
EPS Momentum	44	6	79	70	172	127	292	307	79	70	640	557	1005	792	1648	1346
High Dividend Growth (Total Return)	44	6	77	73	161	139	287	313	77	73	628	571	1027	771	1730	1265
Price Returns (11-Month since 1 year ago)	43	7	78	71	164	134	289	309	78	71	641	553	1016	777	1695	1295
High Projected 5-Yr Growth	48	3	76	76	161	141	284	318	76	76	641	569	1028	793	1687	1341
Upward Estimate Revisions	48	2	85	65	175	124	290	308	85	65	640	558	1023	774	1684	1308
High Dividend Growth (Price Return)	42	7	74	75	156	143	280	319	74	75	612	586	1006	791	1701	1295
High Beta	48	4	78	77	154	155	262	359	78	77	583	656	982	864	1602	1454
Forward Earnings Yield	48	2	82	68	165	135	290	310	82	68	616	582	1021	775	1645	1348

Source: BofA Merrill Lynch US Quantitative Strategy

Russell 1000 factor efficacy

Exhibit 7: Russell 1000 factors: Sharpe Ratio

Boldface font indicates quintiles with the highest Sharpe ratio for each factor.

Shaded cells indicate the quintile with the lowest Sharpe ratio for each factor.

Factor performance 1986 to present (Analyst Coverage since 1994; Institutional Ownership since 1999; Short Interest since 1993).

Factor	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Earnings Yield	0.63	0.50	0.54	0.32	0.25
Forward Earnings Yield	0.58	0.56	0.48	0.42	0.17
Dividend Yield	0.52	0.61	0.51	0.42	0.42
Price/ Book Value	0.51	0.51	0.40	0.37	0.38
Price/ Cash Flow	0.60	0.49	0.48	0.33	0.25
Price/ Free Cash Flow	0.65	0.57	0.41	0.34	0.22
Price/ Sales	0.53	0.55	0.52	0.37	0.21
EV/ EBITDA	0.71	0.54	0.46	0.37	0.15
Free Cash Flow/ EV	0.71	0.53	0.42	0.33	0.22
Relative Strength - 30wk/75wk MA	0.53	0.55	0.51	0.42	0.20
Relative Strength - 5wk/30wk MA	0.54	0.39	0.56	0.47	0.25
Relative Strength - 10wk/40wk MA	0.51	0.42	0.57	0.48	0.22
Price to Moving Average (200 day)	0.47	0.43	0.55	0.47	0.27
Price Return - 12-mth Perf.	0.56	0.53	0.48	0.41	0.23
Price Return - 9-mth Perf.	0.49	0.52	0.50	0.44	0.25
Price Return - 3-mth Perf.	0.47	0.45	0.50	0.48	0.30
Price Return - 11-mth Perf.	0.58	0.54	0.49	0.40	0.20
Price Return - 12-mth and 1-mth Performance	0.44	0.45	0.48	0.48	0.32
Price Return - 12-mth and 1-mth Reversal	0.56	0.53	0.47	0.41	0.21
Most Active	0.57	0.41	0.47	0.40	0.32
Low Price	0.38	0.45	0.45	0.45	0.46
Earning Momentum	0.43	0.53	0.56	0.50	0.27
Proj. 5yr EPS Growth	0.24	0.45	0.52	0.51	0.54
Earnings Torpedo	0.35	0.55	0.57	0.48	0.32
EPS Estimate Revisions	0.43	0.52	0.56	0.41	0.30
Dividend Growth	0.46	0.48	0.60	0.52	0.50
P/E-to-Growth	0.50	0.55	0.61	0.45	0.37
High Leverage	0.42	0.47	0.49	0.44	0.39
1yr ROE	0.55	0.54	0.54	0.45	0.23
5y ROE	0.48	0.50	0.50	0.49	0.29
1yr ROE Adj	0.53	0.58	0.48	0.49	0.22
5yr ROE Adj	0.52	0.48	0.49	0.48	0.29
ROA	0.51	0.51	0.53	0.51	0.23
ROC	0.64	0.57	0.55	0.40	0.16
Beta	0.31	0.37	0.51	0.59	0.49
Variability of Earnings	0.36	0.38	0.44	0.46	0.63
Estimate Dispersion	0.30	0.42	0.44	0.50	0.63
Neglect - Analyst Coverage	0.48	0.48	0.48	0.49	0.37
Neglect - Institutional Ownership	0.26	0.50	0.47	0.40	0.47
Size	0.42	0.50	0.42	0.45	0.41
Share Repurchase	0.66	0.54	0.48	0.40	0.20
Short Interest	0.74	0.61	0.41	0.32	0.20

Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Sharpe ratio is calculated as the average annualized monthly excess return vs. 10-yr Treasury yield divided by the annualized volatility (standard deviation) of monthly excess returns.

Performance Calculation Methodology

For each of the strategies, rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The performance of each strategy is computed on the basis of price return. The performance is presented relative to the benchmark which consists of the equal weighted price performance of stocks in the S&P 500 as of the last business day of each month. For the Alpha Surprise model, the performance is also represented as relative to the market capitalization-weighted S&P 500 benchmark.

The results of quantitative strategies presented here may differ from the S&P 500 in that they are significantly less diversified, and, as such, their performance is more exposed to specific stock or sector results. Therefore investors following these strategies may experience greater volatility in their returns.

The performance results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the performance would have been lower. The performance results of individuals following the strategies presented here will differ from the performance contained in this report for a variety of reasons, including differences related to incurring transaction costs and/or investment advisory fees, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities. The performance results of individuals following these strategies will also differ based on differences in treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

Dividend Yield and Dividend Growth Strategies

We also provide total returns for dividend oriented strategies (high dividend yield strategy and high dividend growth strategy). The total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested. The performance is presented relative to the equal weighted total returns index of stocks in the S&P 500 as of the last business day of each month.

This report includes strategies for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the strategy or portfolio.

Past performance should not and cannot be viewed as an indicator of future performance. A complete performance record is available upon request.

Section III: Stock Strategies within Industries

Sector Specific Overview

Consumer Discretionary: Media

Consumer Discretionary: Retailing

Other Discretionary (Autos, Durables, Services)

Consumer Staples

Energy

Financials: Banks

Financials: Insurance

Other Financials (REITs, Diversified)

Health Care: Health Care Equipment & Services

Health Care: Pharmaceuticals Biotech& Life Sciences

Industrials: Capital Goods

Other Industrials (Services, Transports)

Information Technology

Materials

Telecommunication Services

Utilities

Note: All charts in Section III are based on backtested results. Backtesting is hypothetical in nature and reflects application of the screen at the time when it did not exist. It is not intended to be indicative of how the screen would perform if used going forward.

Sector Specific Overview

Exhibit 8: Most predictive long-short factors within industry groups. (Analysis spans 1985 to 2016, Historical Russell 1000 Constituents)

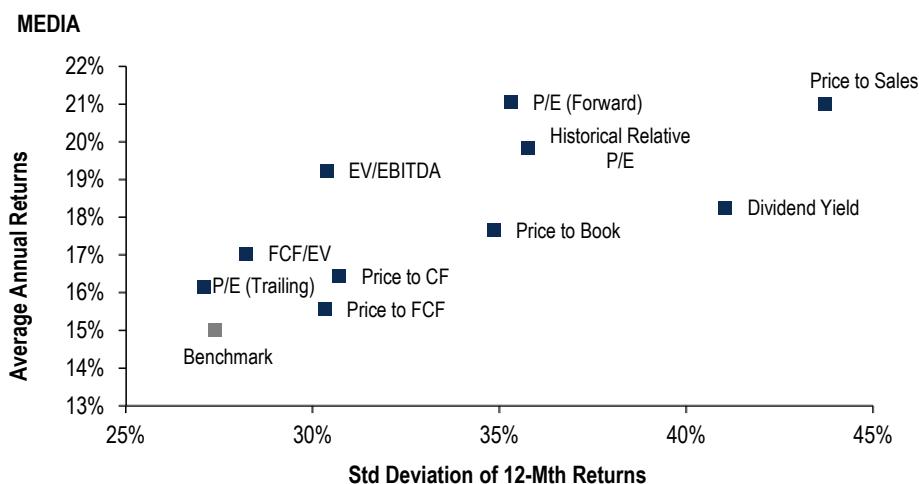
	Valuation Measure	Momentum Measure	Growth Measure	Quality Measure
Consumer Discretionary				
Media	Forward P/E, EV/EBITDA	12-Mth Return and 1-Mth Reversal	PEG Ratio, Estimate Revision	ROE (1-Yr)
Retailing	Free Cash Flow / EV, Price / FCF	5W/30W Relative Strength	Estimate Revision	ROC
Other Discretionary (Autos, Durables, Services)	Fwd P/E, FCF/EV	12-Mth Return and 1-Mth Reversal	Estimate Revision	ROC
	FCF/EV	Trading Volume, 30W/75W Relative Strength	PEG Ratio	ROC
Consumer Staples	Historical P/E	Trading Volume	PEG Ratio, Estimate Revision	ROE (5-Yr)
Energy				
Financials				
Banks	Historical Relative P/E, Fwd P/E	12-Mth Return and 1-Mth Reversal	EPS Momentum, EPS Estimate Revisions	ROC
Insurance	Historical Relative P/E, P/E (Fwd)	Trading Volume	PEG Ratio	ROC
Other Financials (REITs, Diversified)	Fwd P/E, Trail P/E	12-Mth Return and 1-Mth Reversal	PEG Ratio, EPS Momentum	ROE (1-Yr), ROC
Health Care				
Health Care Equipment & Services	Price to Free Cash Flow, FCF/EV	12-Mth Return and 1-Mth Reversal	PEG Ratio, Estimate Revision	ROE (1-Yr Debt Adj'd), ROC
Pharma, Biotech + Life sci	Price to Sales	Trading Volume	Earnings Momentum, Estimate Revisions	ROC
Industrials				
Capital Goods	FCF/EV, Dividend Yield	Trading Volume	Estimate Revisions	ROE (5-Yr, Debt Adj'd), ROE (1-yr)
Other Industrials (Services, Transports)	EV/EBITDA, Historical Relative P/E	12-Mth Return and 1-Mth Reversal	PEG Ratio	ROC
Technology	FCF/EV, Price to Free Cash Flow	Trading Volume	Estimate Revision	ROC
Materials	EV/EBITDA	12-Mth Return and 1-Mth Reversal	PEG Ratio	ROC
Telecommunication Services	Price / Sales, P/E (Fwd)	12-Mth Return and 1-Mth Reversal	Long-Term Growth	ROE (1-yr), ROC
Utilities	Price to Sales, EV/EBITDA	10WK/40WK Moving Average, 11-Mth Price Return	PEG Ratio, EPS Momentum, Estimate Revisions	ROC

Note: Historical Relative P/E is calculated as the relative forward P/E of a stock versus the market compared to its long-term average relative P/E.

Consumer Discretionary: Media

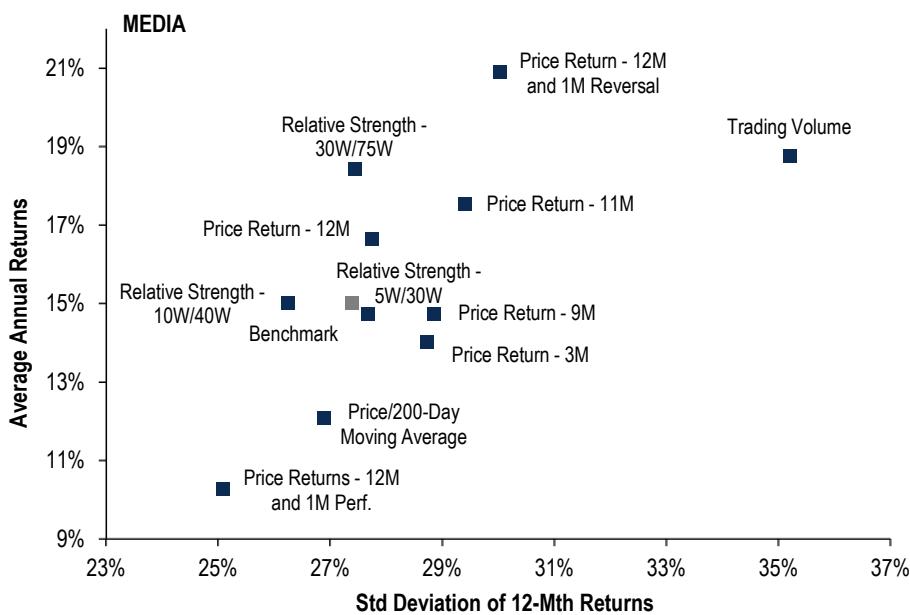
Long only: Top Quintile Performance

Chart 294: Valuation Strategies for Media: Top Quintile Returns (1985 to 2016)



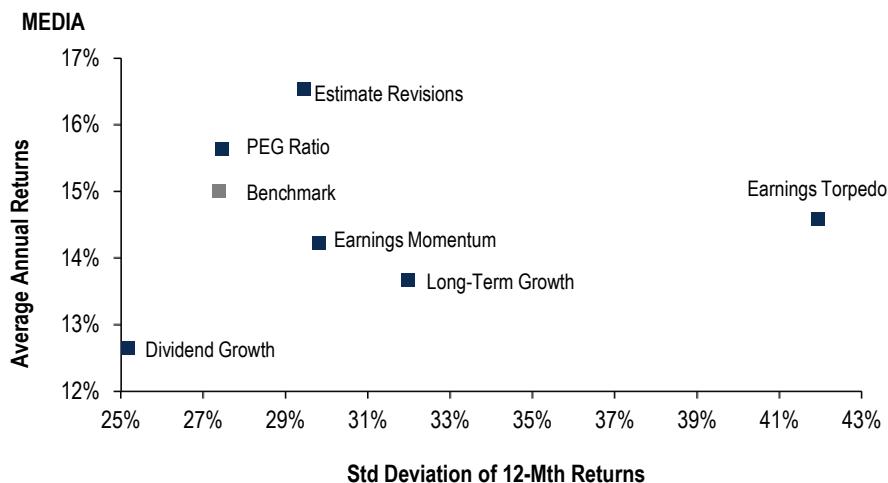
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 295: Momentum Strategies for Media: Top Quintile Returns (1985 to 2016)



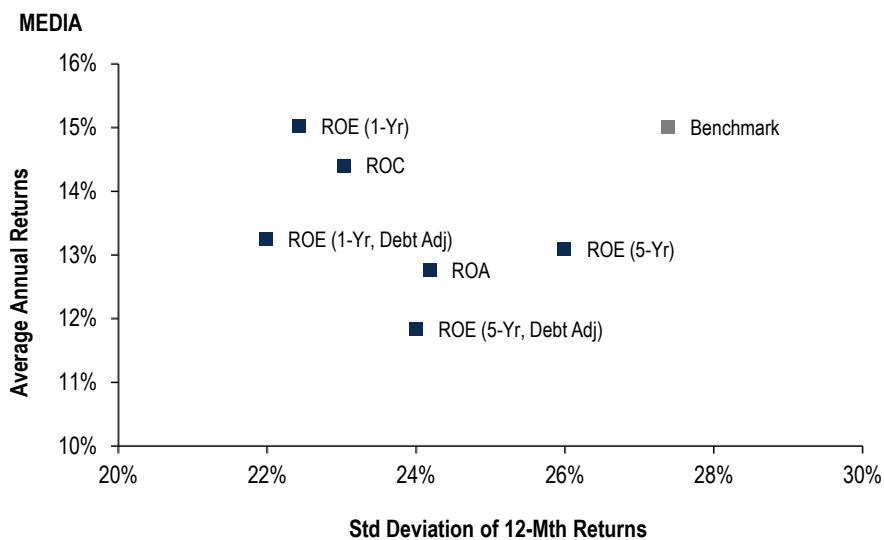
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 296: Growth Strategies for Media: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

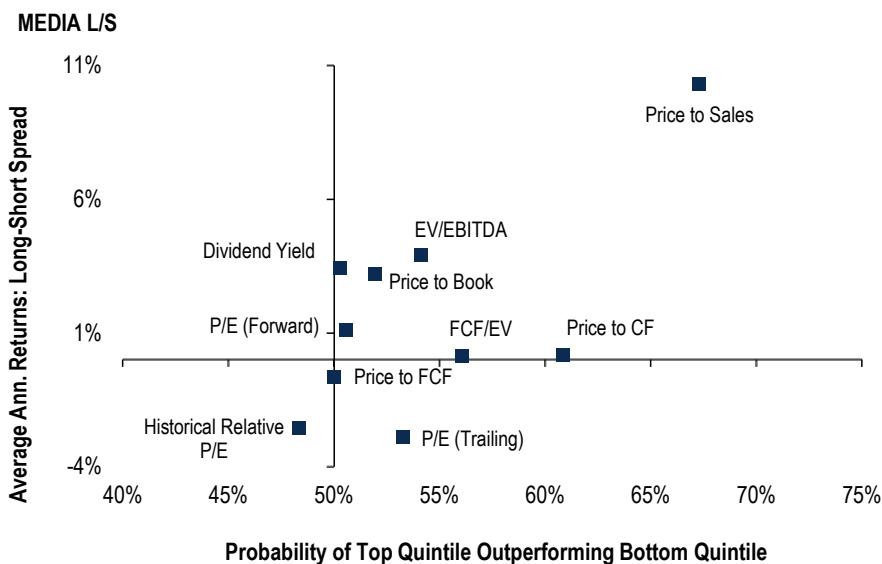
Chart 297: Quality Strategies for Media: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

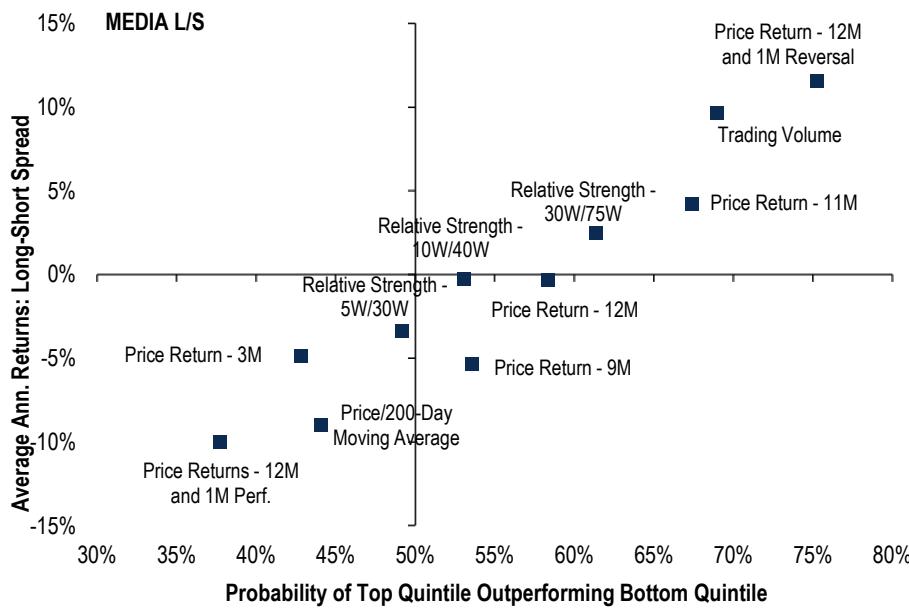
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 298: Valuation Strategies for Media: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



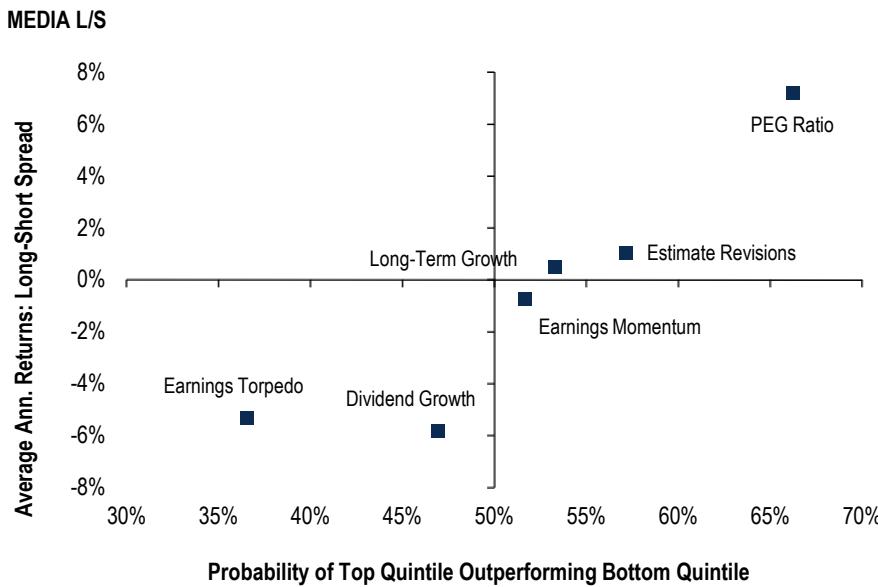
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 299: Momentum Strategies for Media: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



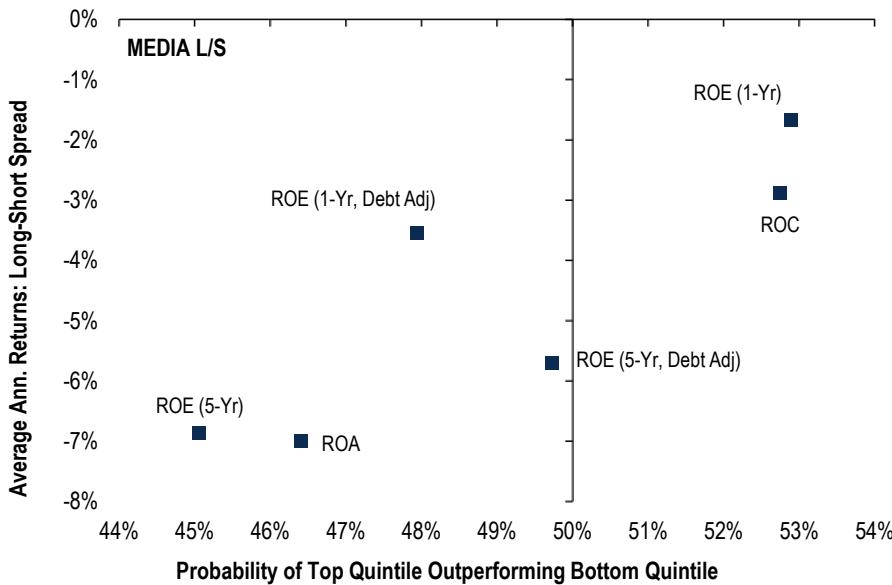
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 300: Growth Strategies for Media: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 301: Quality Strategies for Media: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

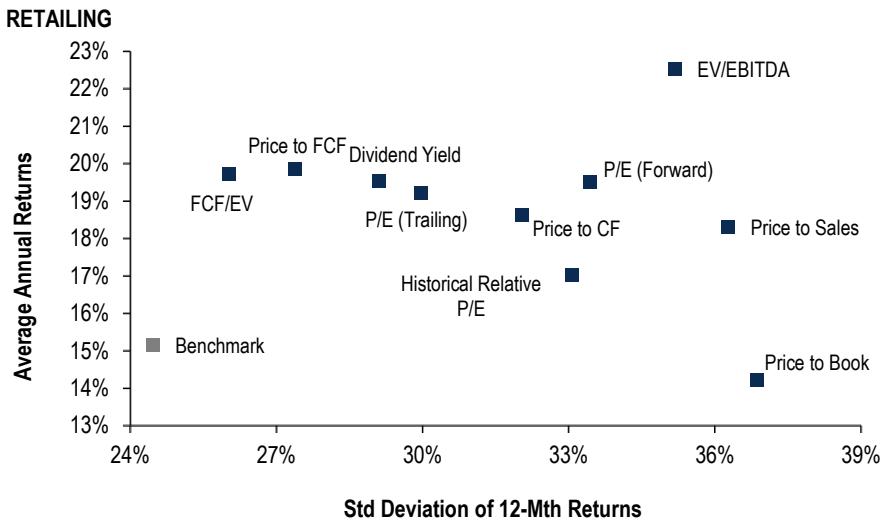


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Consumer Discretionary: Retailing

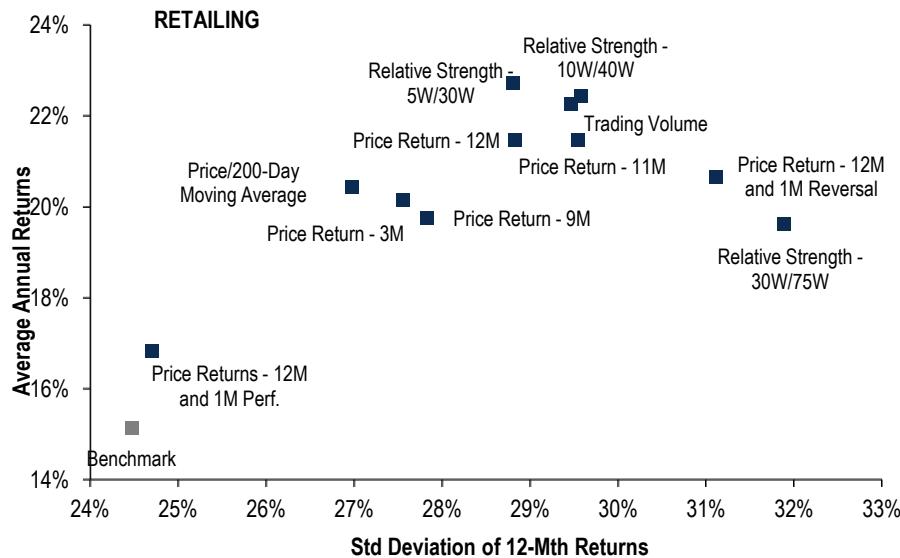
Long only: Top Quintile Performance

Chart 302: Valuation Strategies for Retailing: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

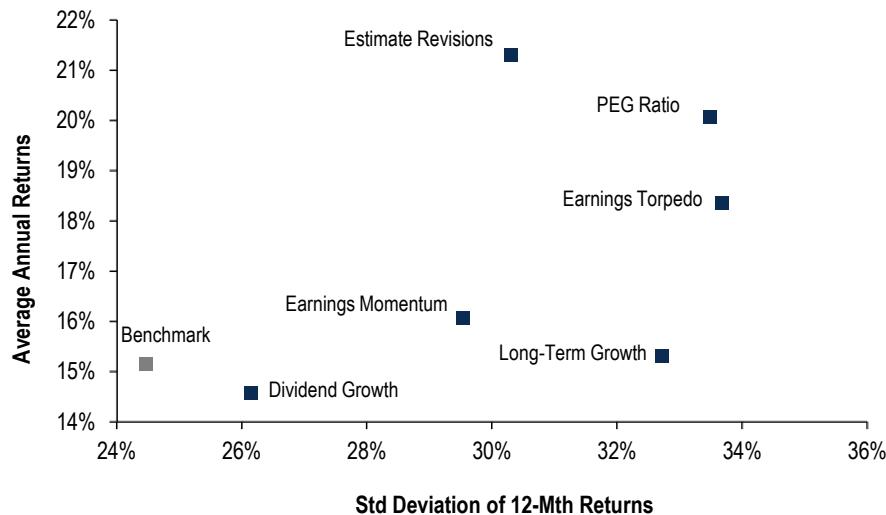
Chart 303: Momentum Strategies for Retailing: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 304: Growth Strategies for Retailing: Top Quintile Returns (1985 to 2016)

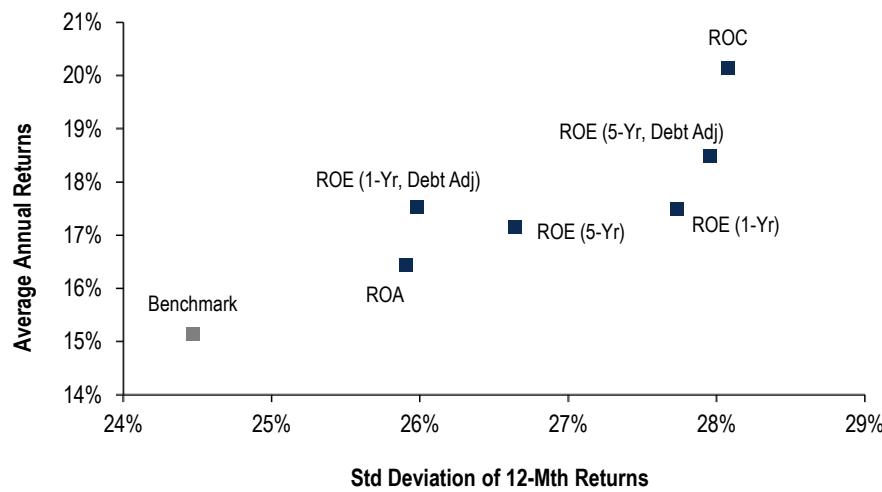
RETAILING



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 305: Quality Strategies for Retailing: Top Quintile Returns (1985 to 2016)

RETAILING

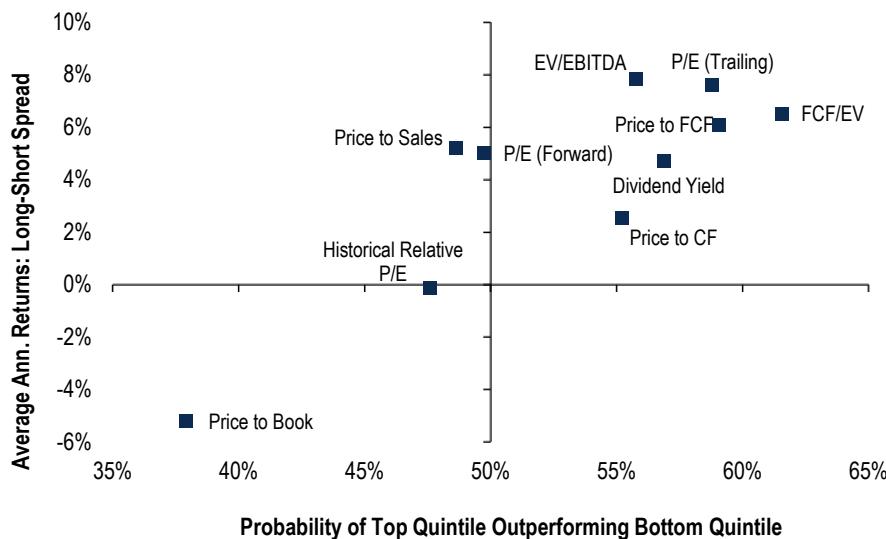


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Long-Short: Quintile 1 / Quintile 5 Spread

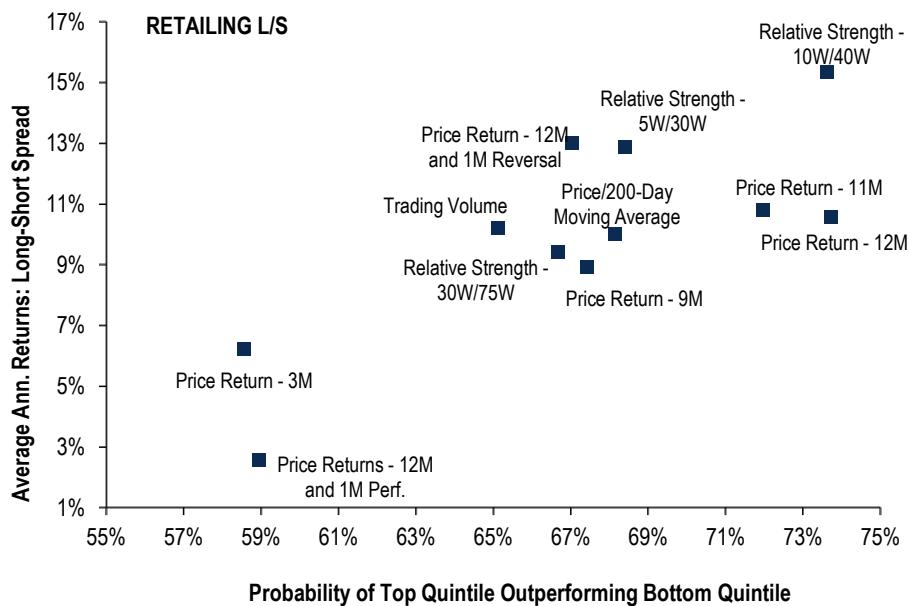
Chart 306: Valuation Strategies for Retailing: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

RETAILING L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

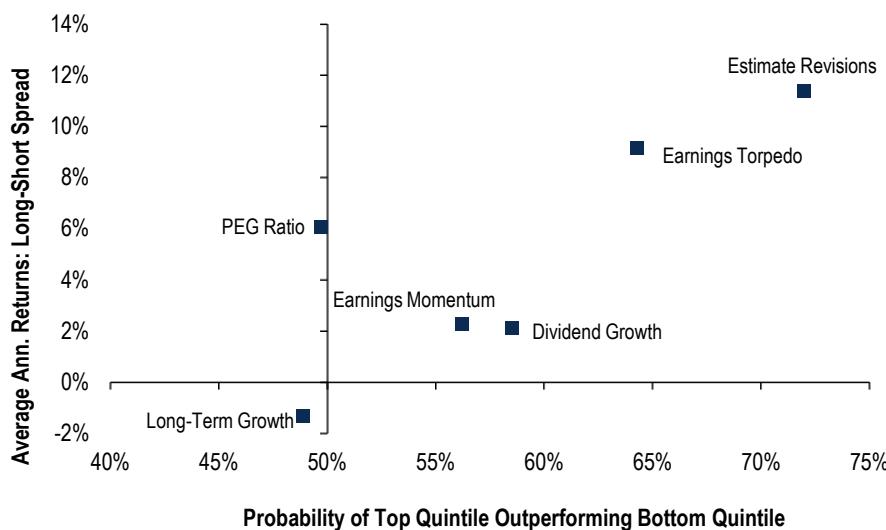
Chart 307: Momentum Strategies for Retailing: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 308: Growth Strategies for Retailing: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

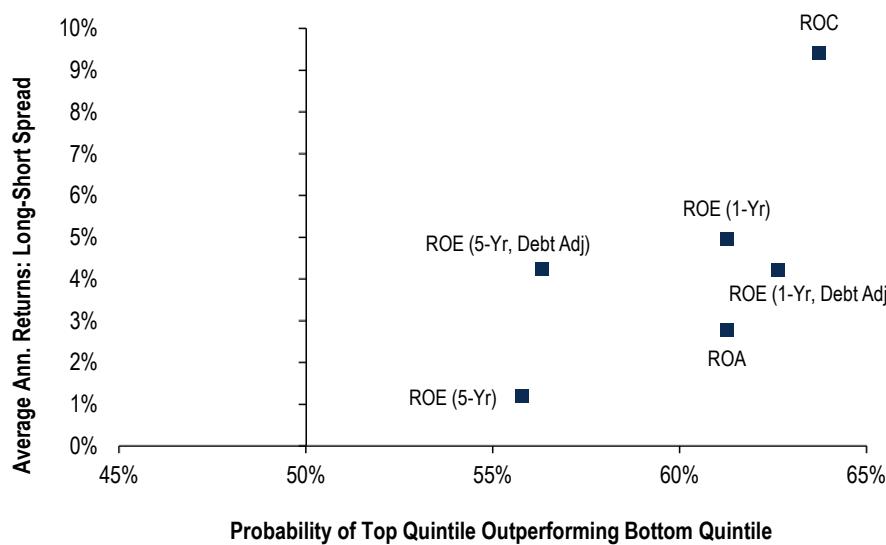
RETAILING L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 309: Quality Strategies for Retailing: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

RETAILING L/S



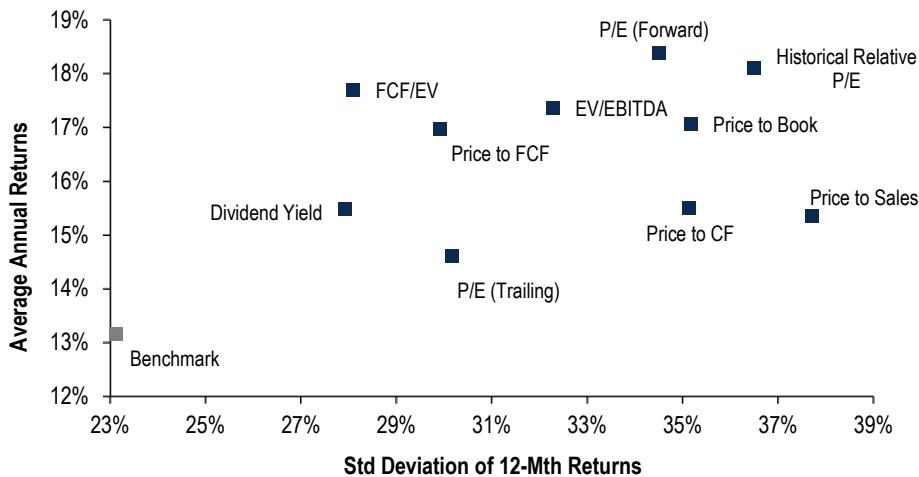
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Other Disc. (Autos, Durables, Services)

Long only: Hypothetical Top Quintile Performance

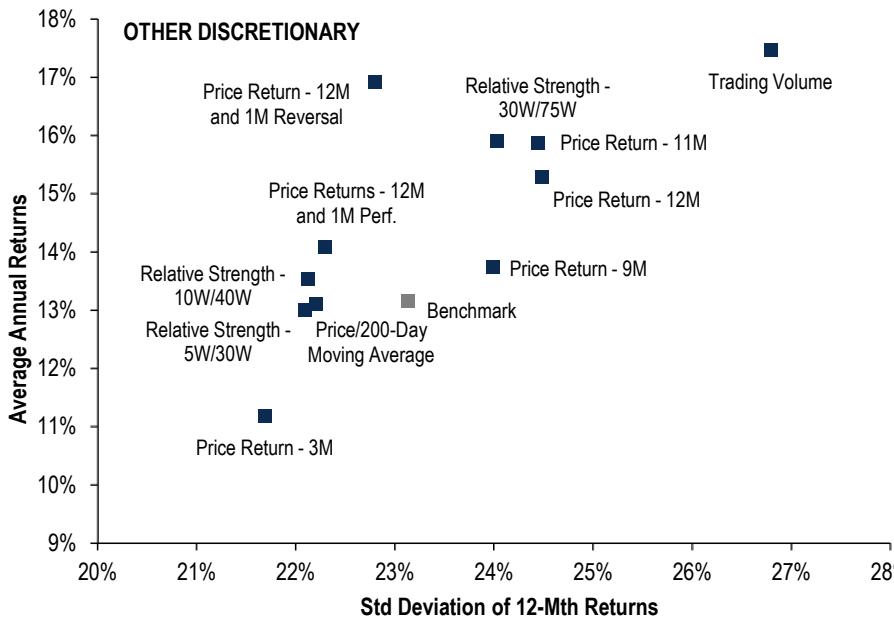
Chart 310: Valuation Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Top Quintile Returns (1985 to 2016)

OTHER DISCRETIONARY



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

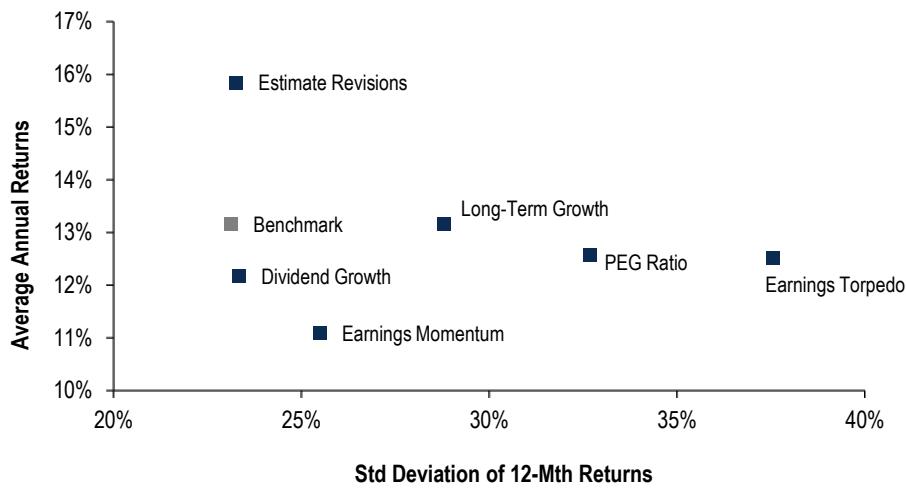
Chart 311: Momentum Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 312: Growth Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Top Quintile Returns (1985 to 2016)

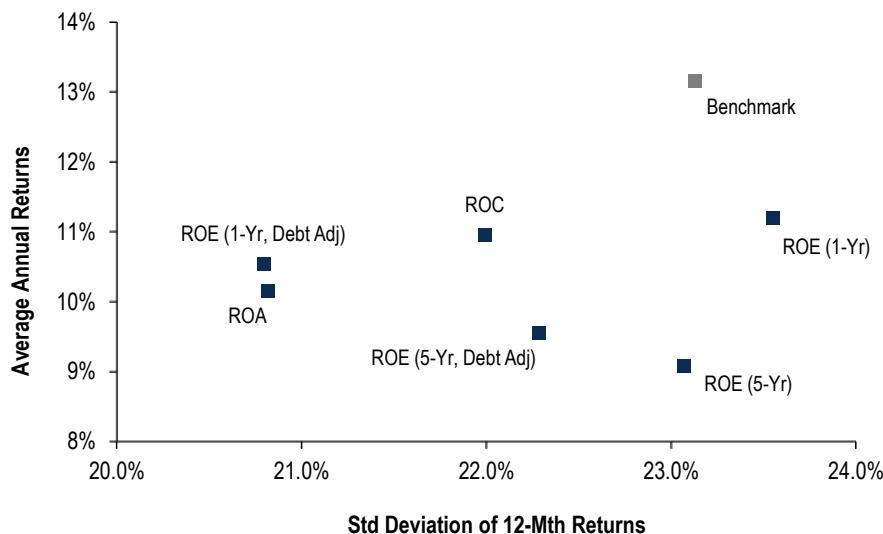
OTHER DISCRETIONARY



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 313: Quality Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Top Quintile Returns (1985 to 2016)

OTHER DISCRETIONARY

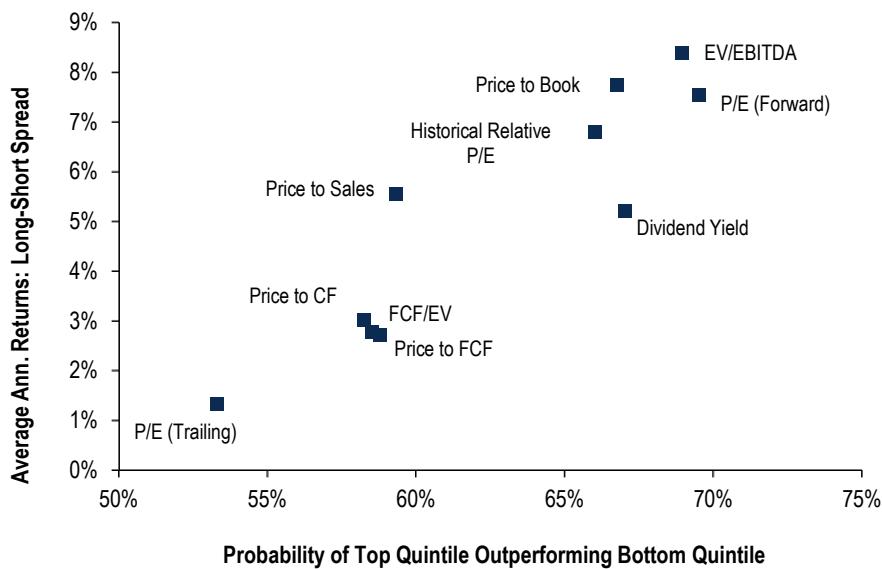


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Long-Short: Quintile 1 / Quintile 5 Spread

Chart 314: Valuation Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

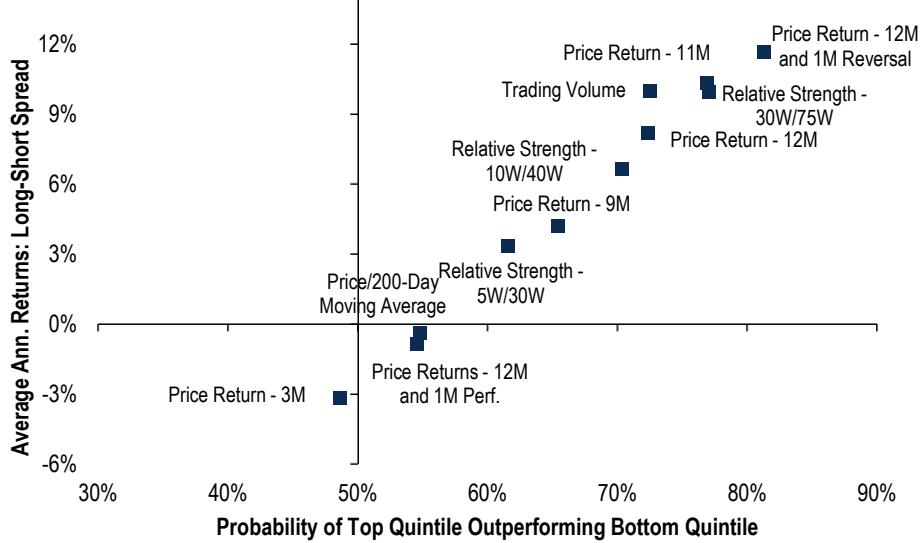
OTHER DISCRETIONARY L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 315: Momentum Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

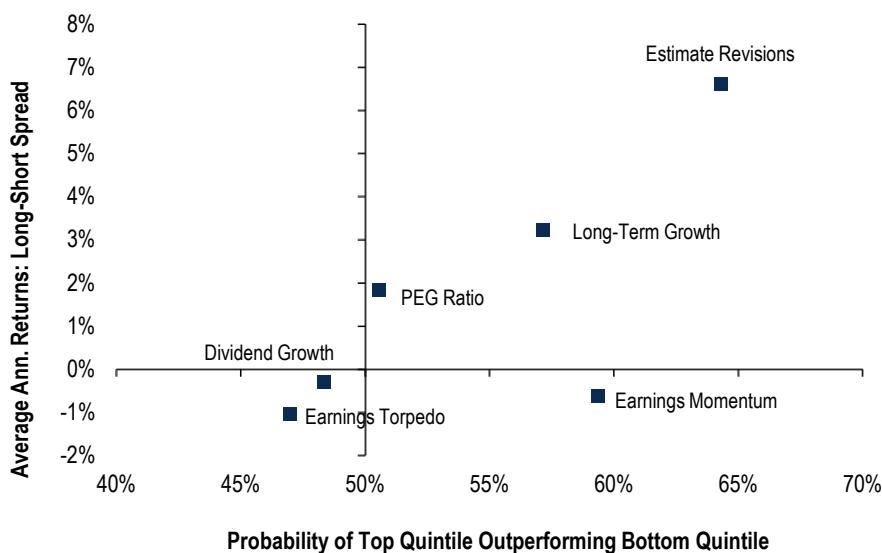
OTHER DISCRETIONARY L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 316: Growth Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

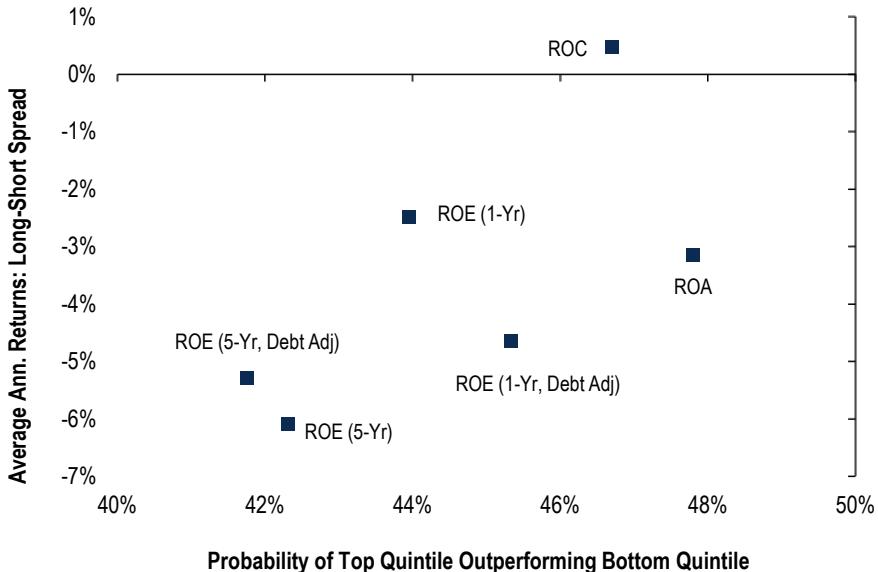
OTHER DISCRETIONARY L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 317: Quality Strategies for Autos, Cons Durables & Apparel, Cons Svcs: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

OTHER DISCRETIONARY L/S

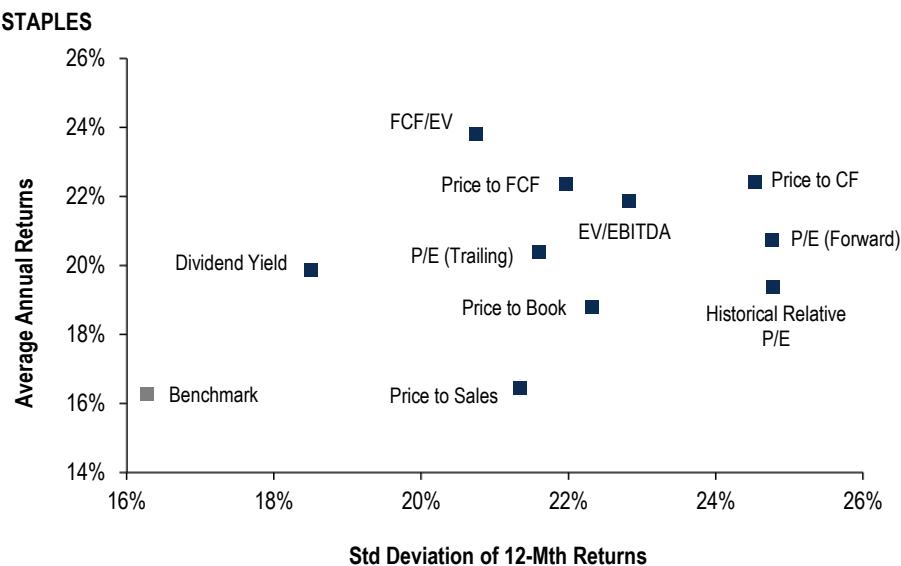


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Consumer Staples

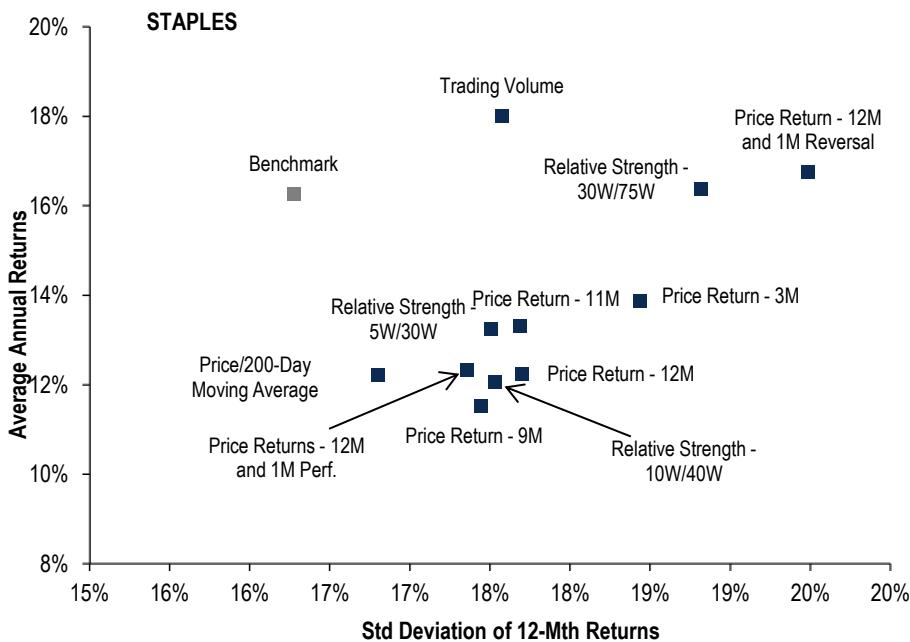
Long only: Top Quintile Performance

Chart 318: Valuation Strategies for Consumer Staples: Top Quintile Returns (1985 to 2016)



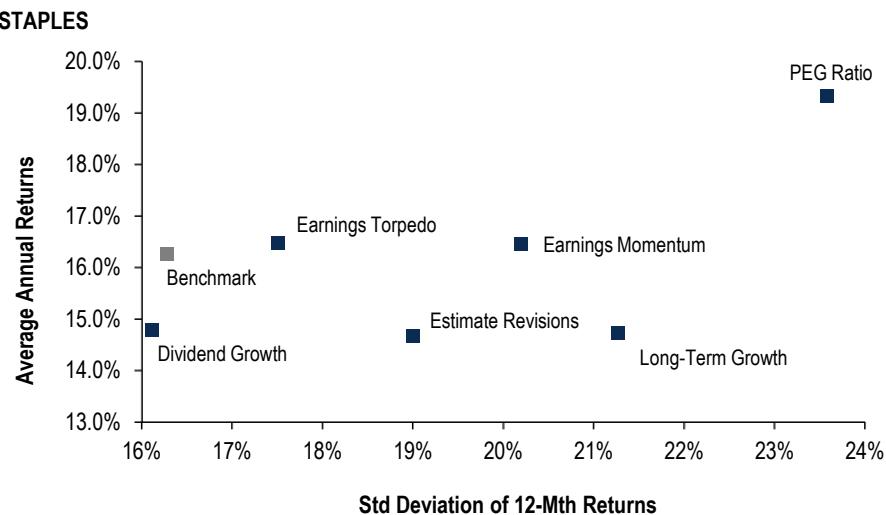
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 319: Momentum Strategies for Consumer Staples: Top Quintile Returns (1985 to 2016)



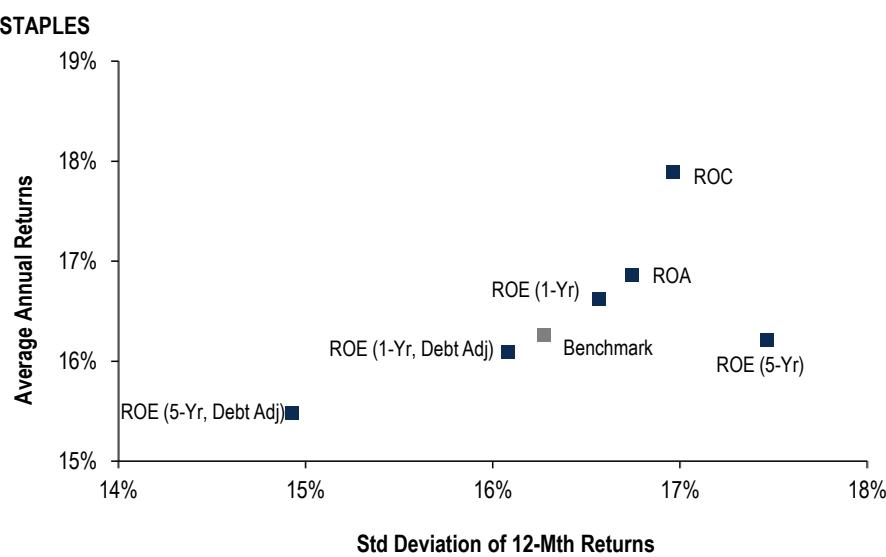
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 320: Growth Strategies for Consumer Staples: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

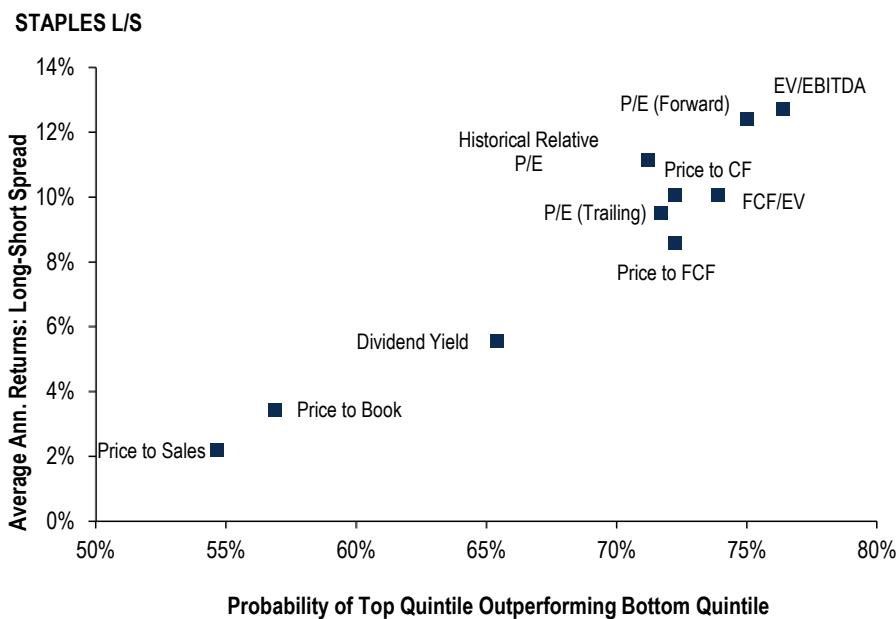
Chart 321: Quality Strategies for Consumer Staples: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

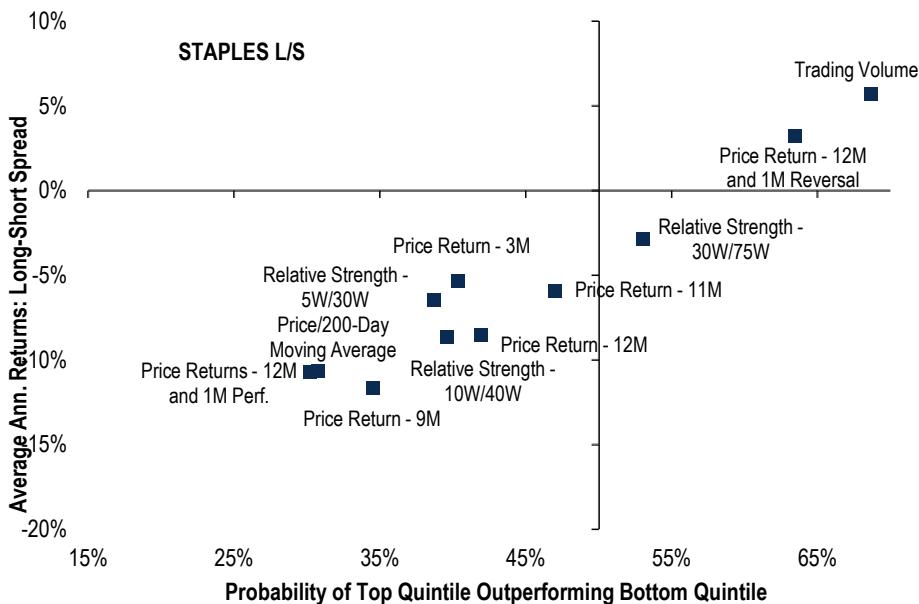
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 322: Valuation Strategies for Consumer Staples: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

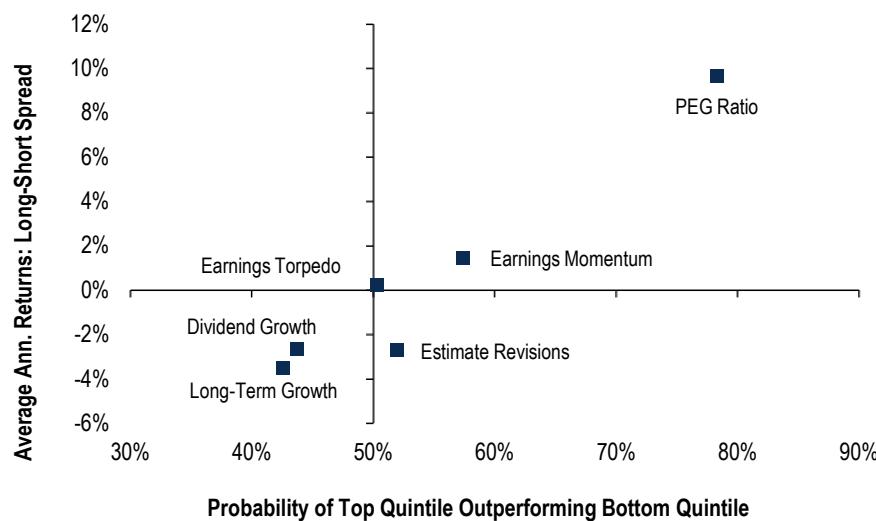
Chart 323: Momentum Strategies for Consumer Staples: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 324: Growth Strategies for Consumer Staples: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

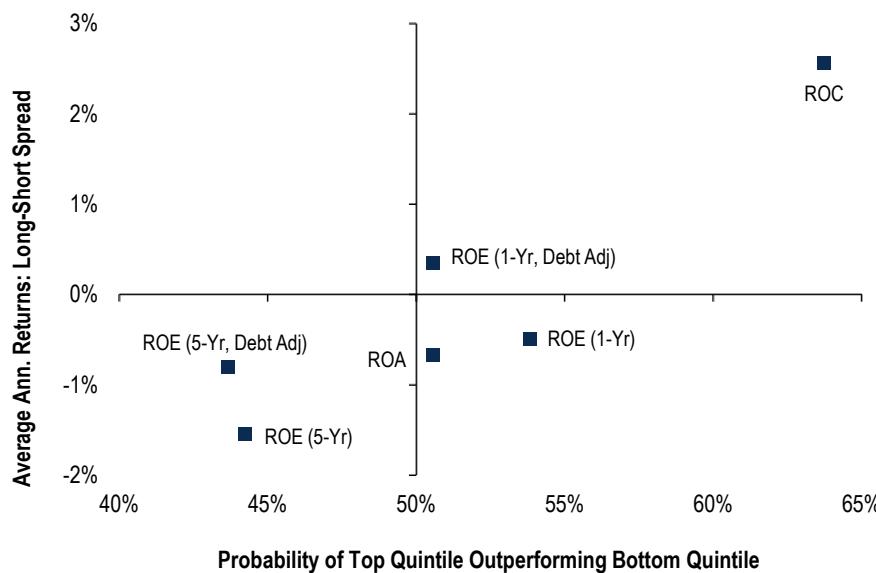
STAPLES L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 325: Quality Strategies for Consumer Staples: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

STAPLES L/S

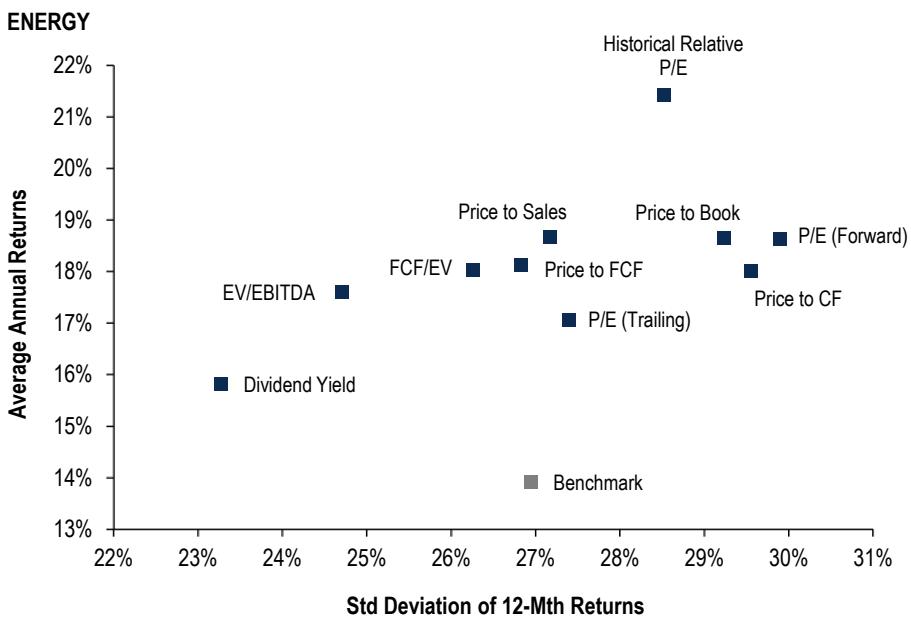


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Energy

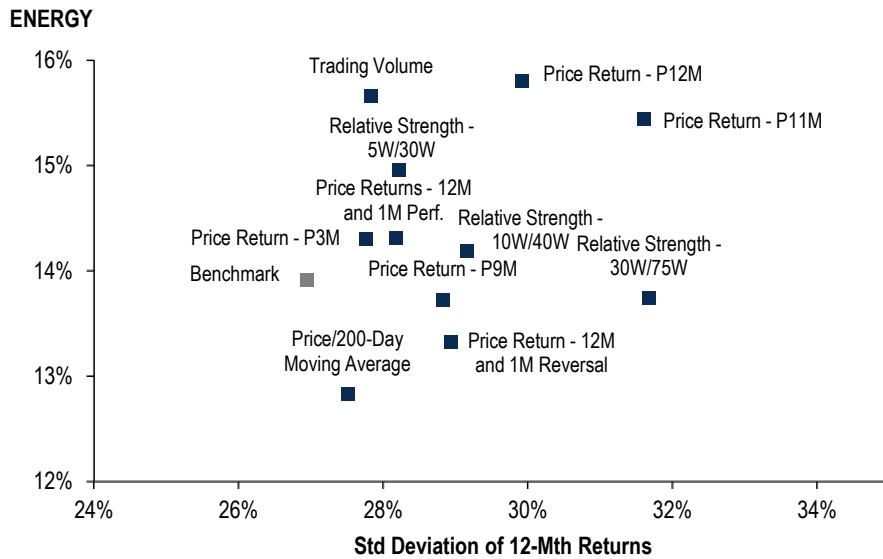
Long only: Top Quintile Performance

Chart 326: Valuation Strategies for Energy: Top Quintile Returns (1985 to 2016)



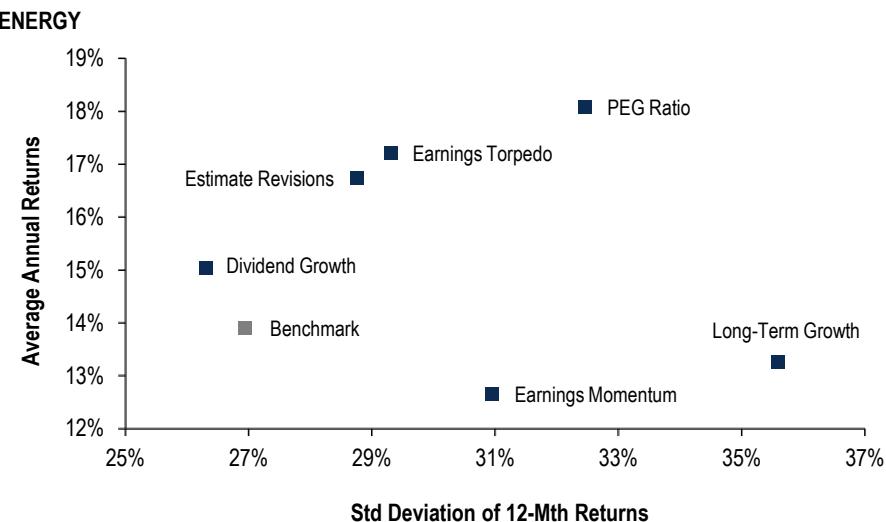
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 327: Momentum Strategies for Energy: Top Quintile Returns (1985 to 2016)



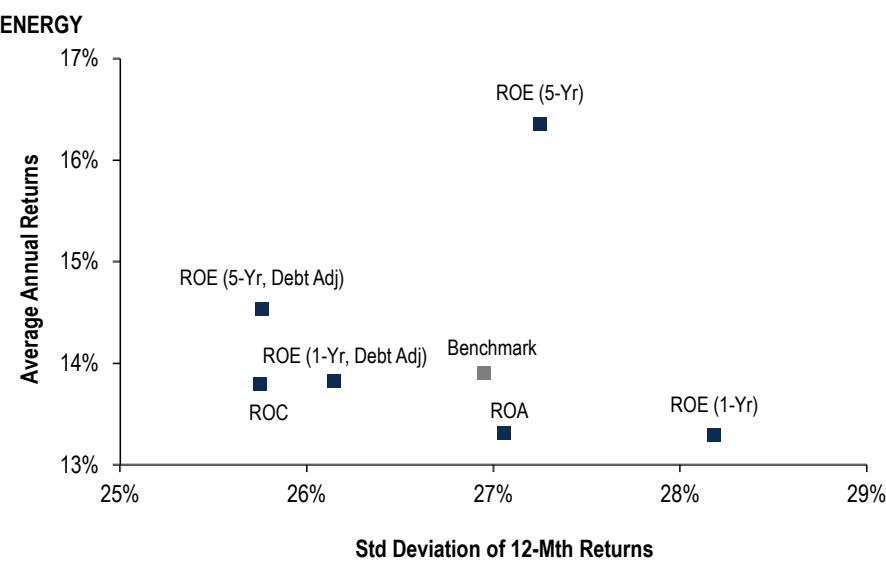
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 328: Growth Strategies for Energy: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

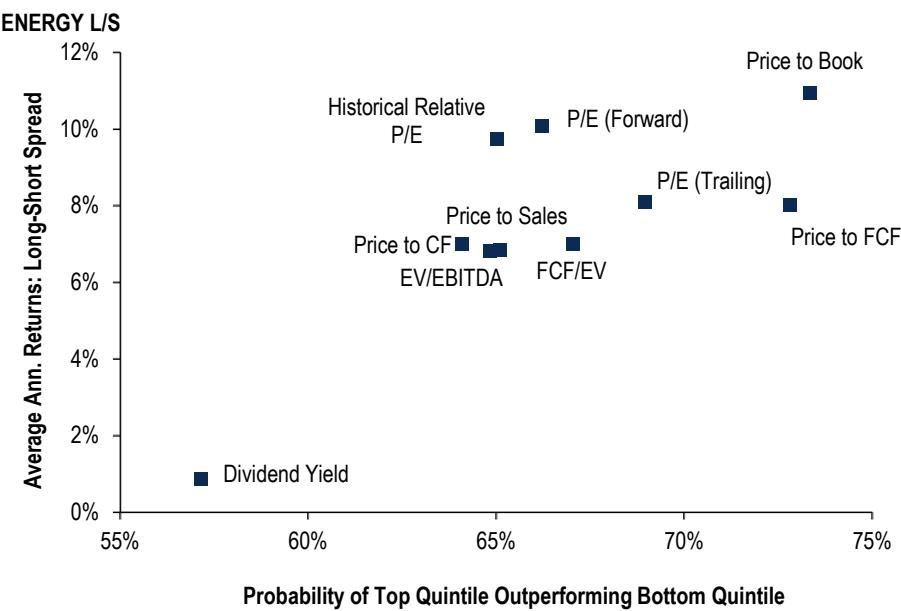
Chart 329: Quality Strategies for Energy: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

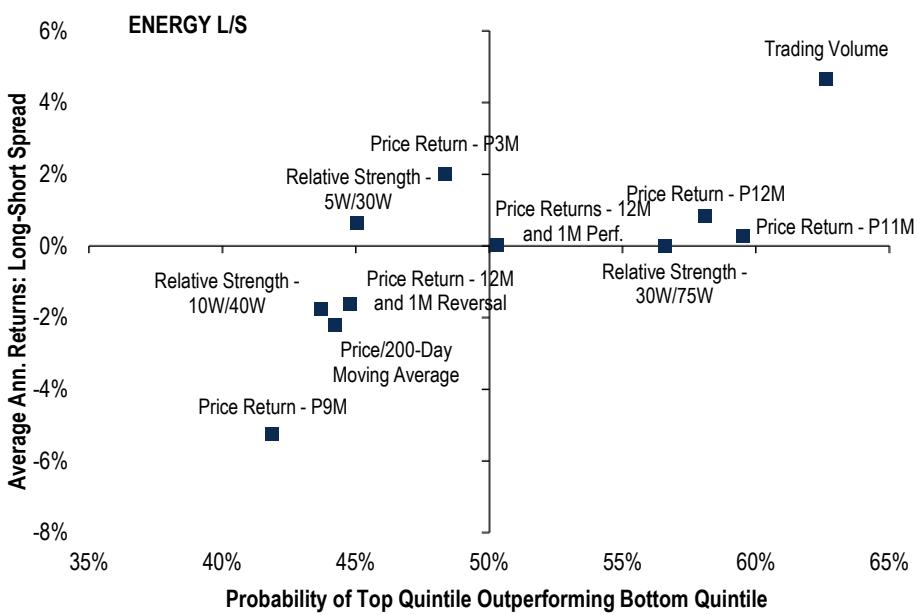
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 330: Valuation Strategies for Energy: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



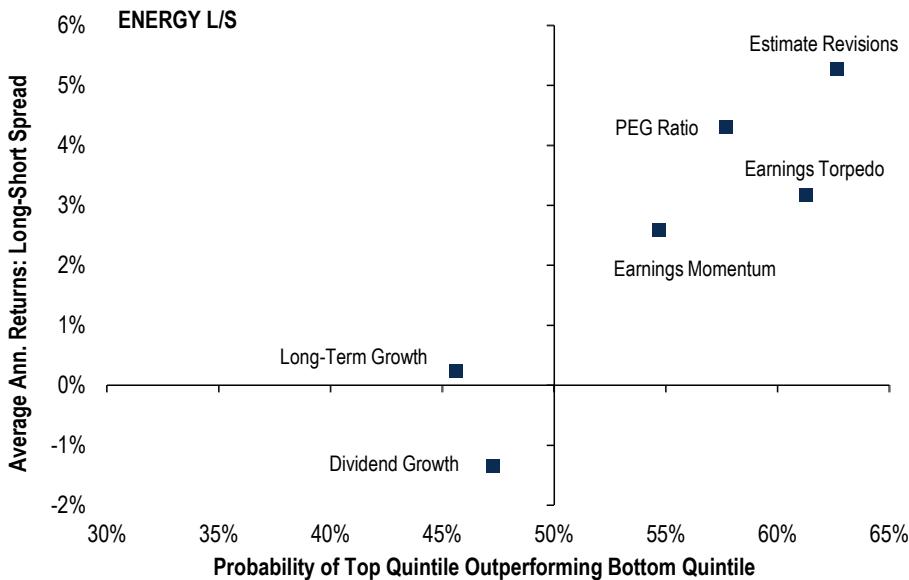
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 331: Momentum Strategies for Energy: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



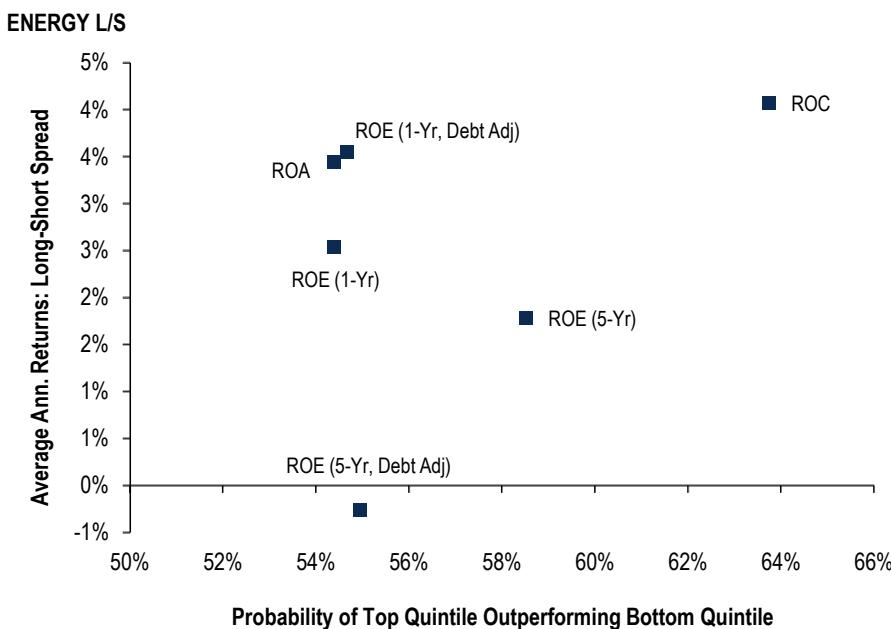
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 332: Growth Strategies for Energy: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 333: Quality Strategies for Energy: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

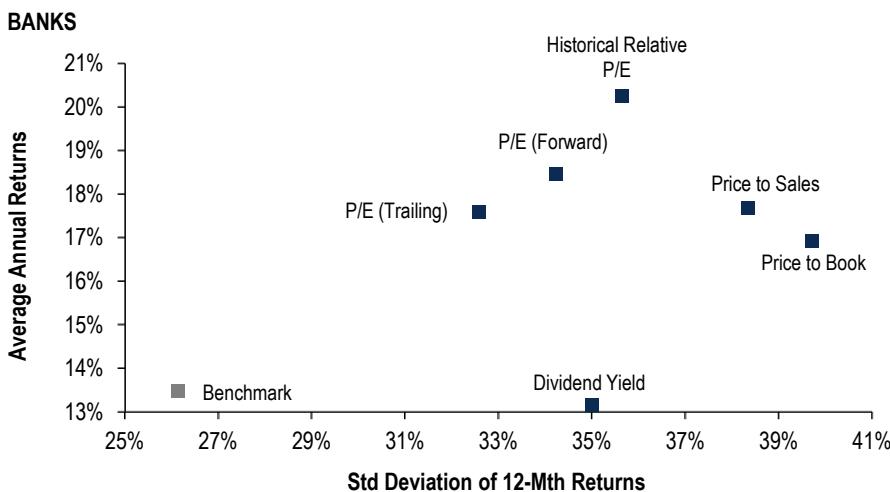


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Financials: Banks

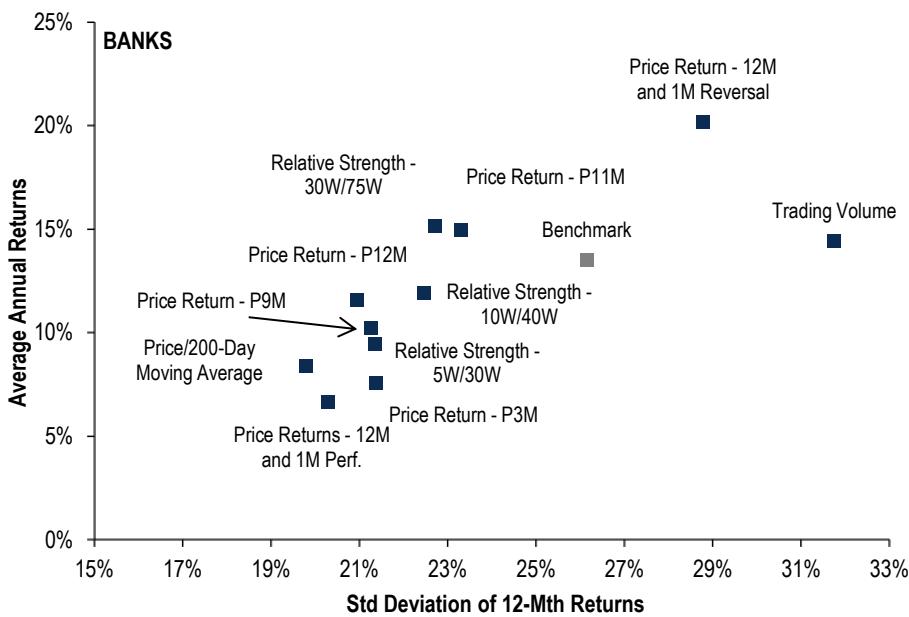
Long only: Top Quintile Performance

Chart 334: Valuation Strategies for Banks: Top Quintile Returns (1985 to 2016)



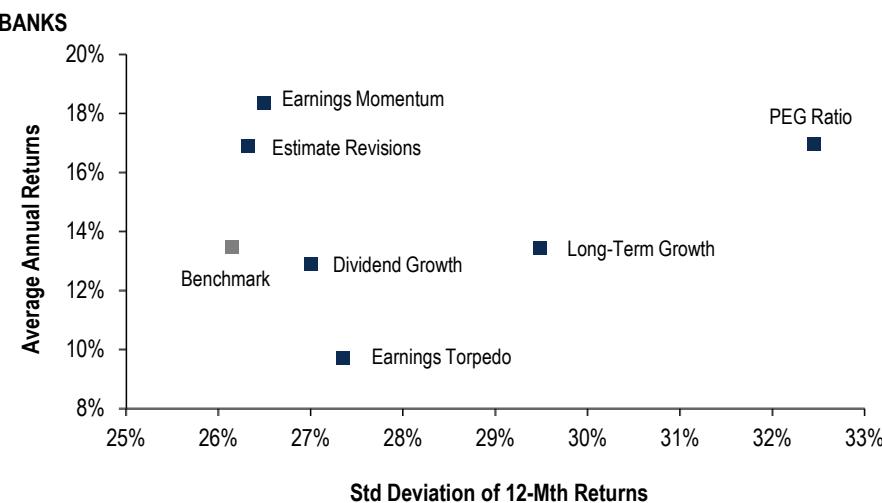
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 335: Momentum Strategies for Banks: Top Quintile Returns (1985 to 2016)



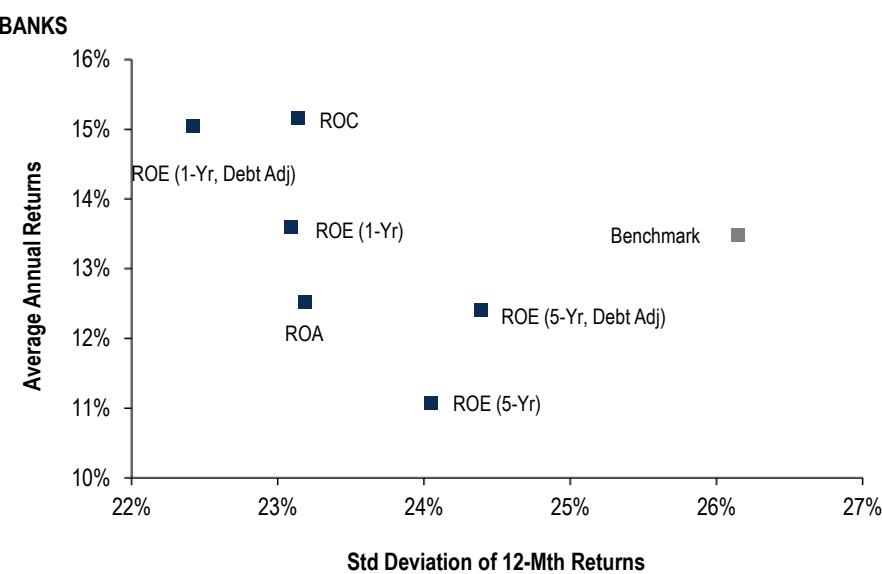
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 336: Growth Strategies for Banks: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

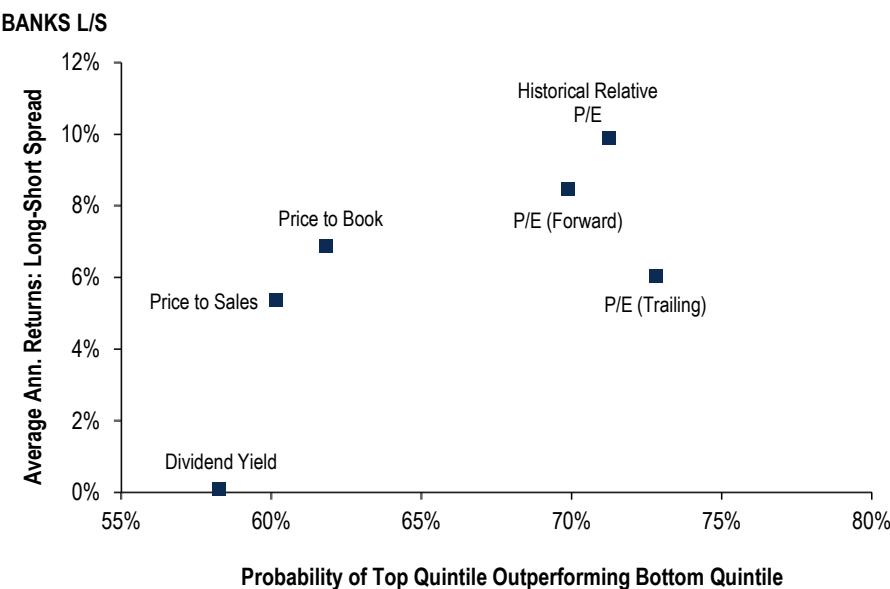
Chart 337: Quality Strategies for Banks: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

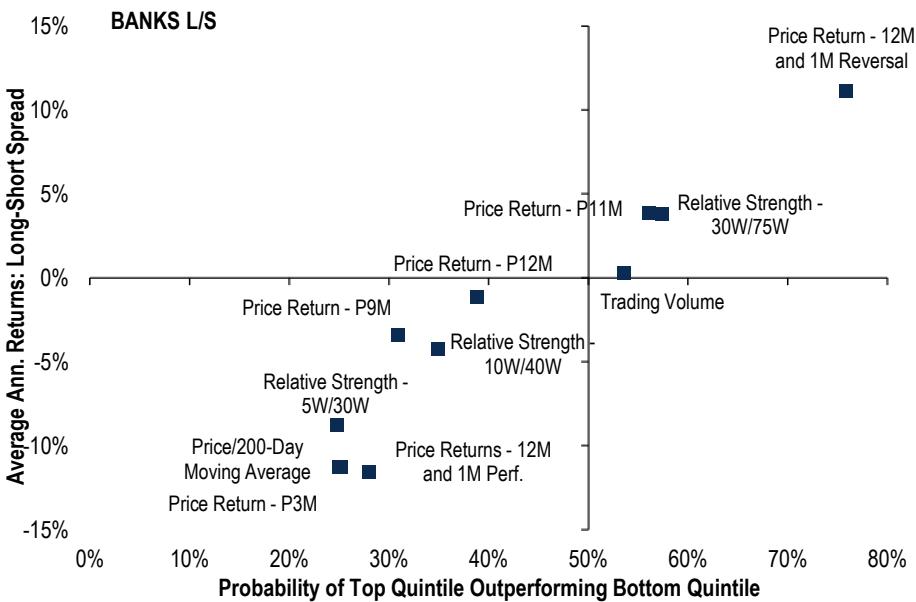
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 338: Valuation Strategies for Banks: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



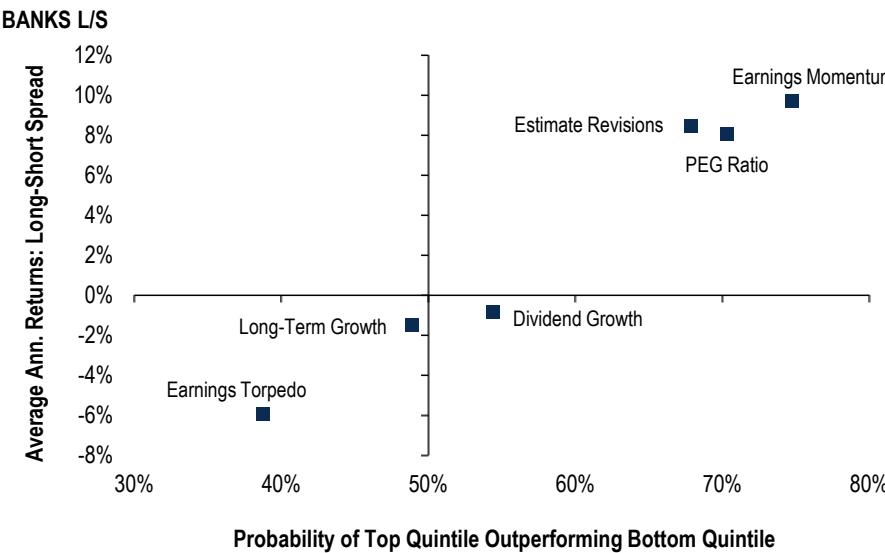
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 339: Momentum Strategies for Banks: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



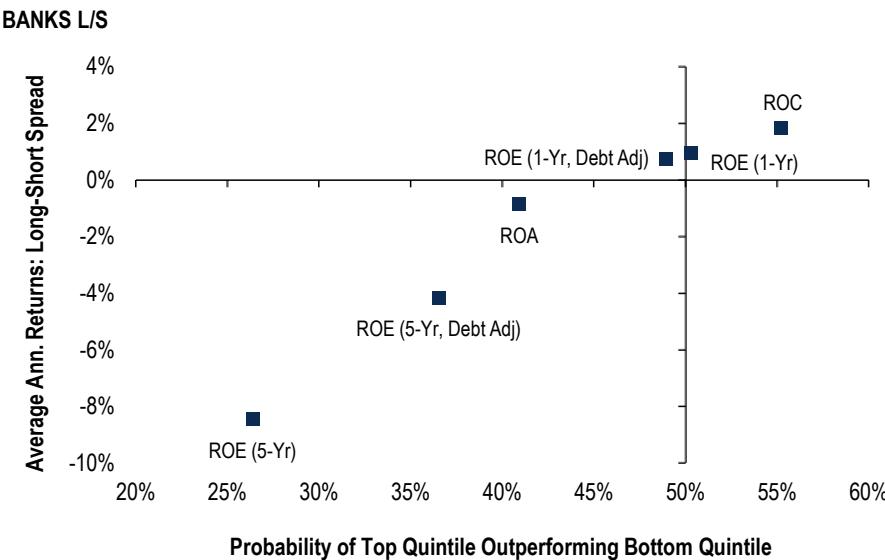
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 340: Growth Strategies for Banks: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 341: Quality Strategies for Banks: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

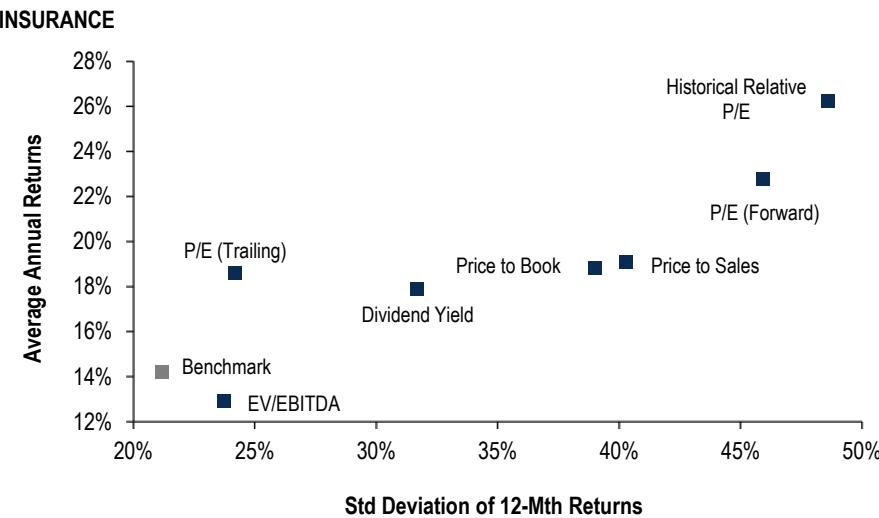


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Financials: Insurance

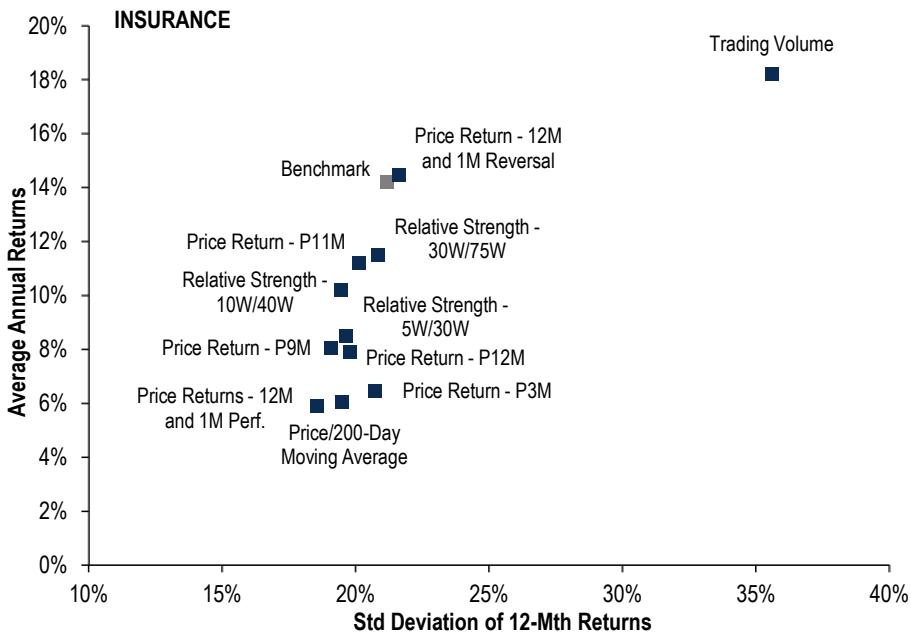
Long only: Top Quintile Performance

Chart 342: Valuation Strategies for Insurance: Top Quintile Returns (1985 to 2016)



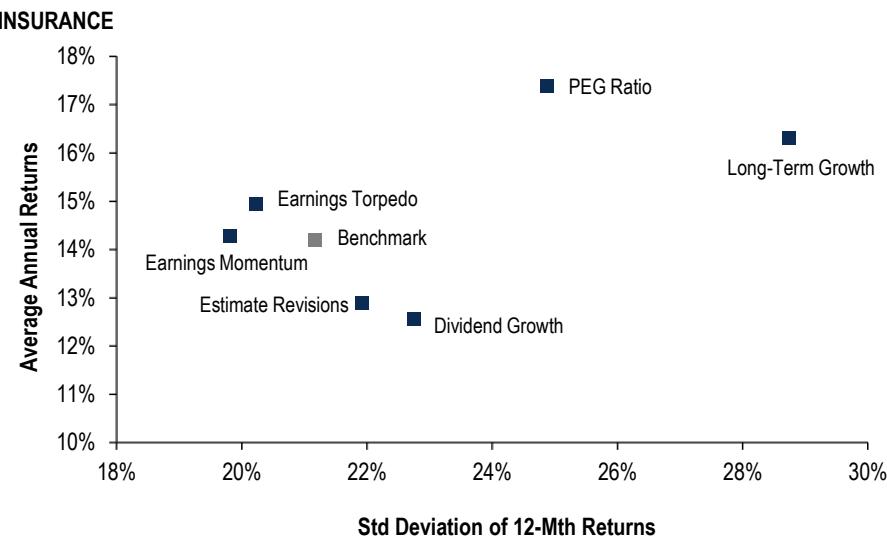
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 343: Momentum Strategies for Insurance: Top Quintile Returns (1985 to 2016)



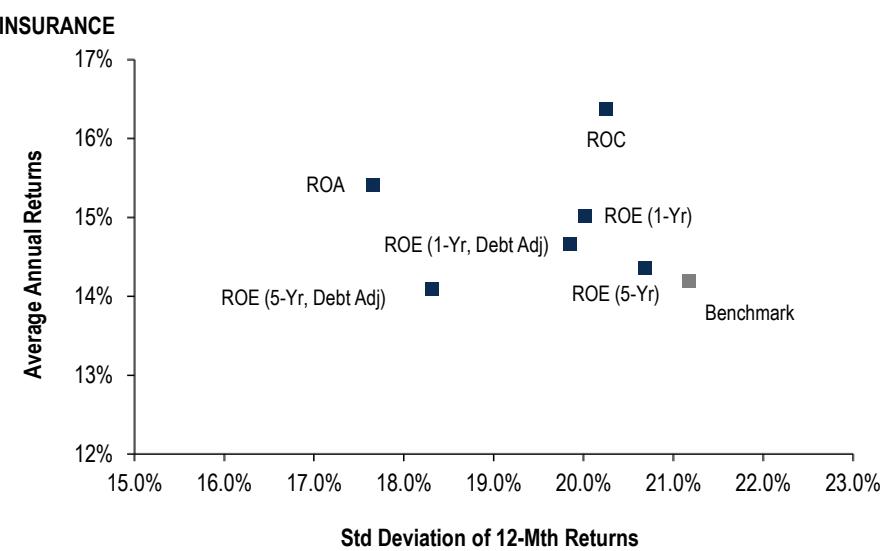
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 344: Growth Strategies for Insurance: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 345: Quality Strategies for Insurance: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Long-Short: Quintile 1 / Quintile 5 Spread

Chart 346: Valuation Strategies for Insurance: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

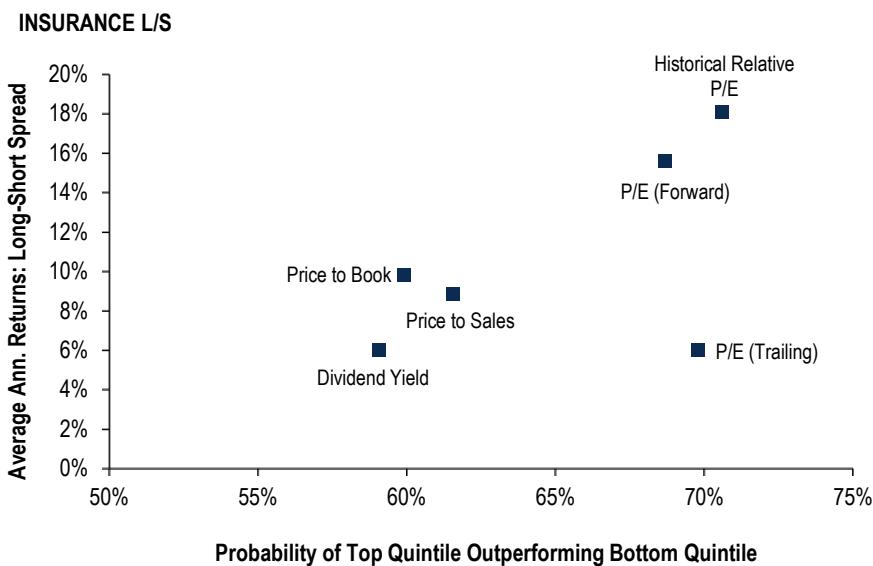


Chart 347: Momentum Strategies for Insurance: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

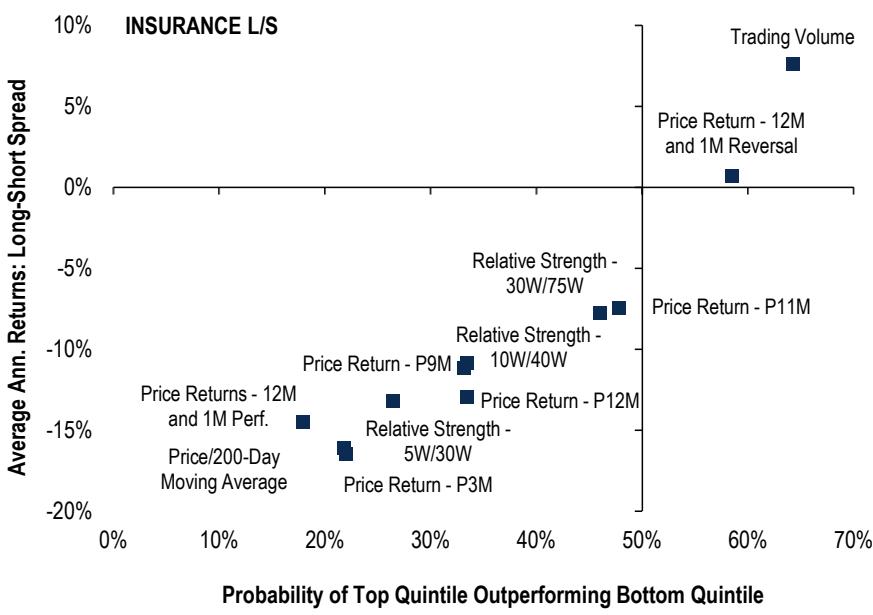
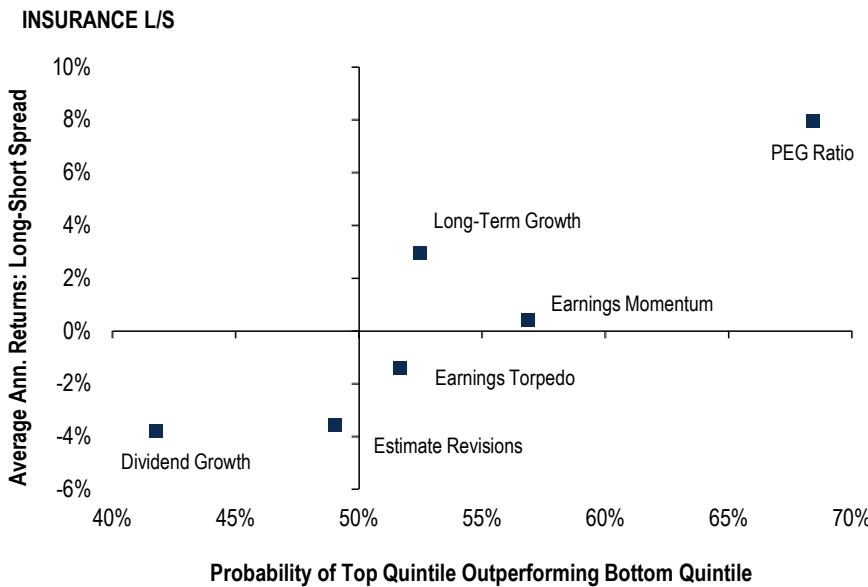
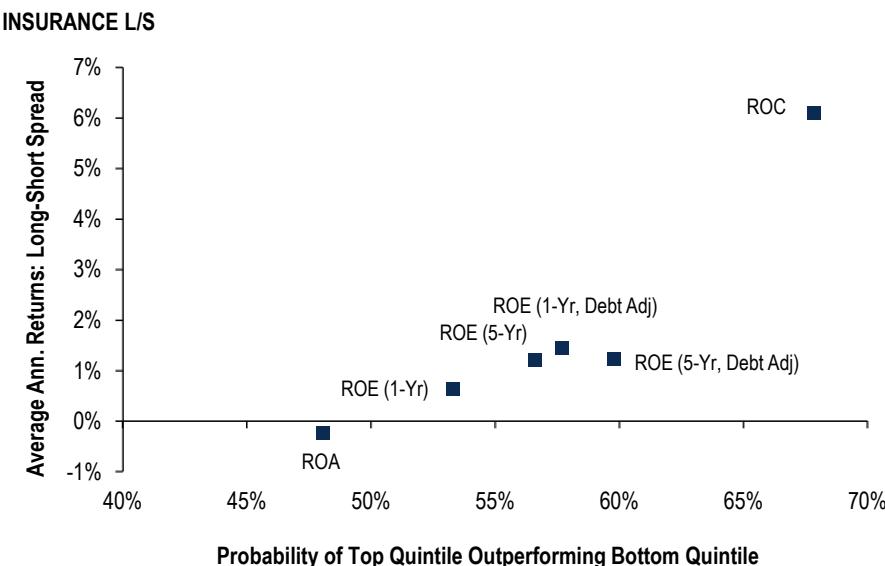


Chart 348: Growth Strategies for Insurance: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 349: Quality Strategies for Insurance: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

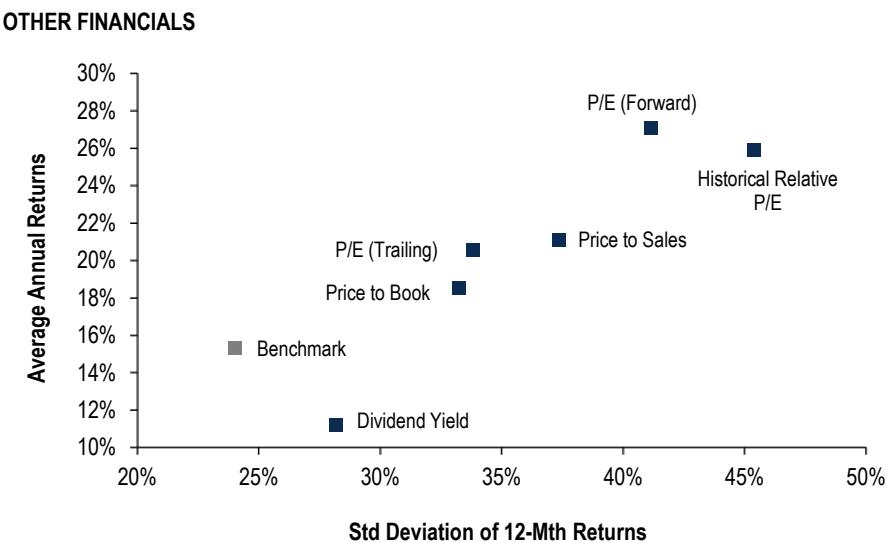


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Other Financials (REITs, Diversified)

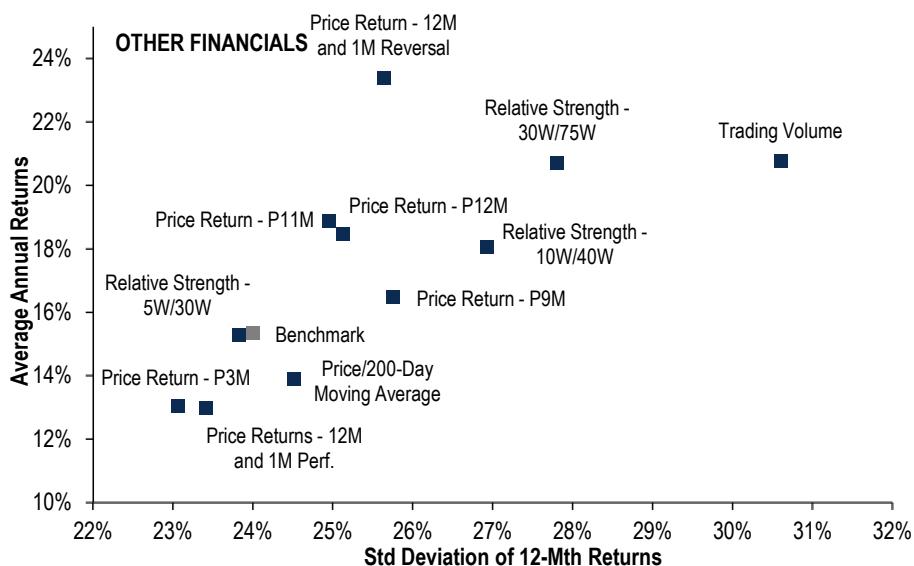
Long only: Top Quintile Performance

Chart 350: Valuation Strategies for other Financials: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

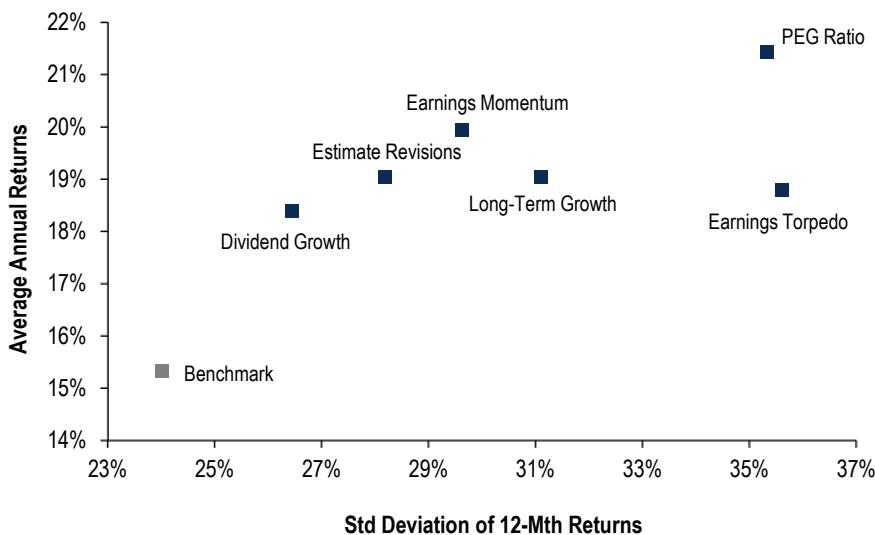
Chart 351: Momentum Strategies for Other Financials: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 352: Growth Strategies for Other Financials: Top Quintile Returns (1985 to 2016)

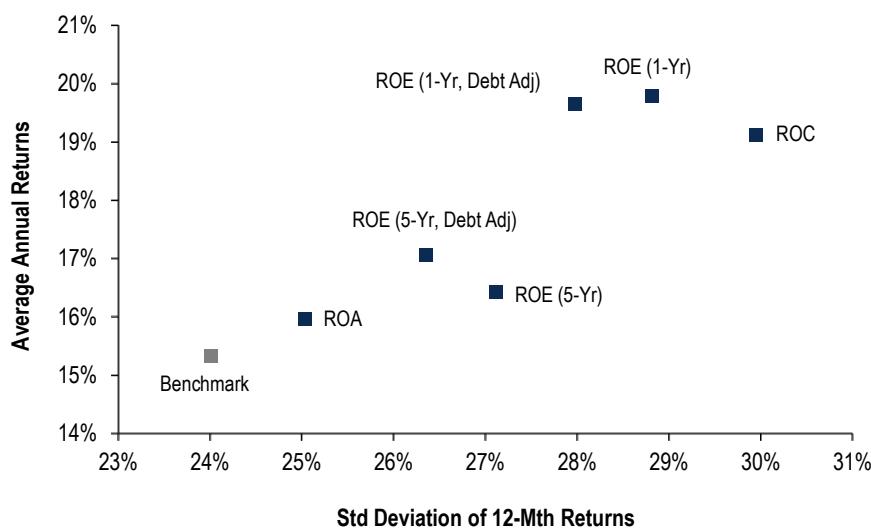
OTHER FINANCIALS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 353: Quality Strategies for Other Financials: Top Quintile Returns (1985 to 2016)

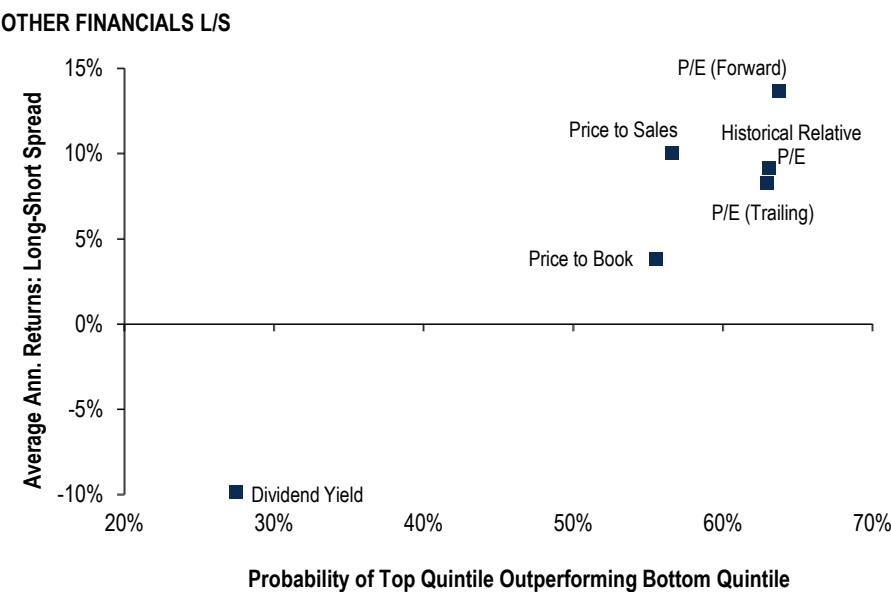
OTHER FINANCIALS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

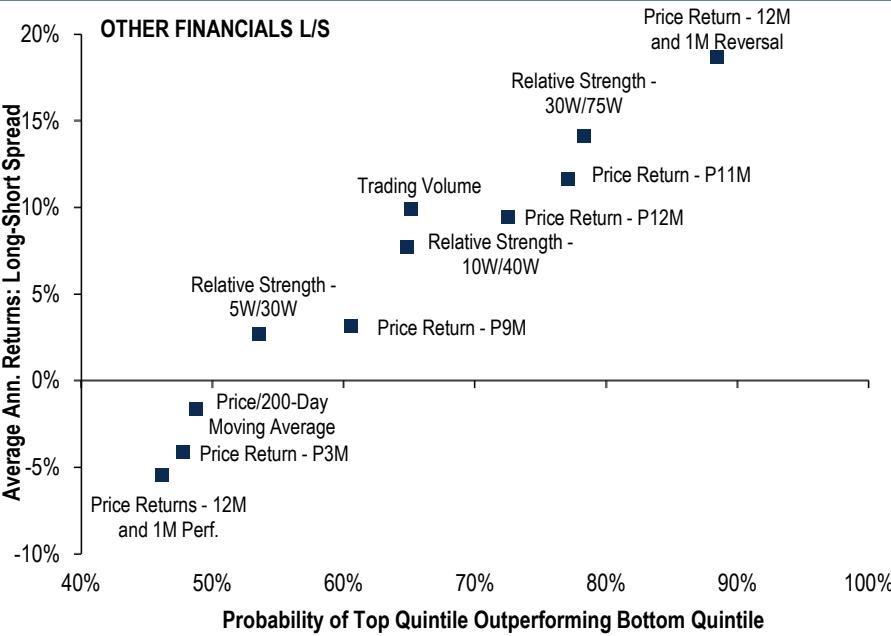
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 354: Valuation Strategies for Other Financials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

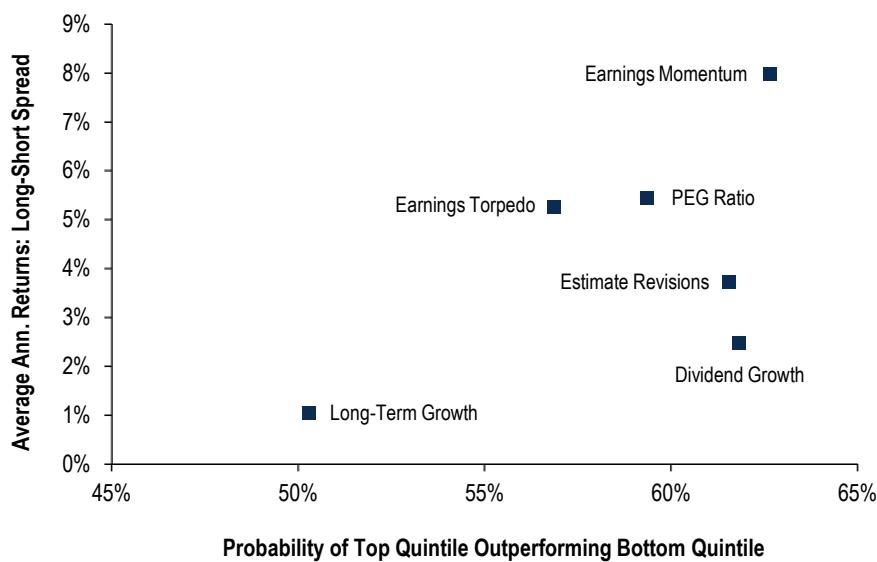
Chart 355: Momentum Strategies for Other Financials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 356: Growth Strategies for Other Financials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

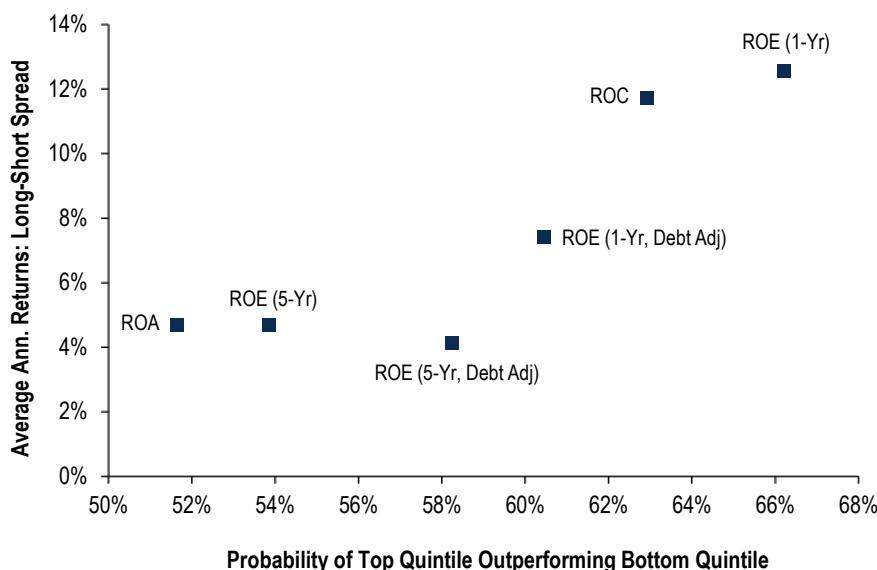
OTHER FINANCIALS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 357: Quality Strategies for Other Financials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

OTHER FINANCIALS L/S

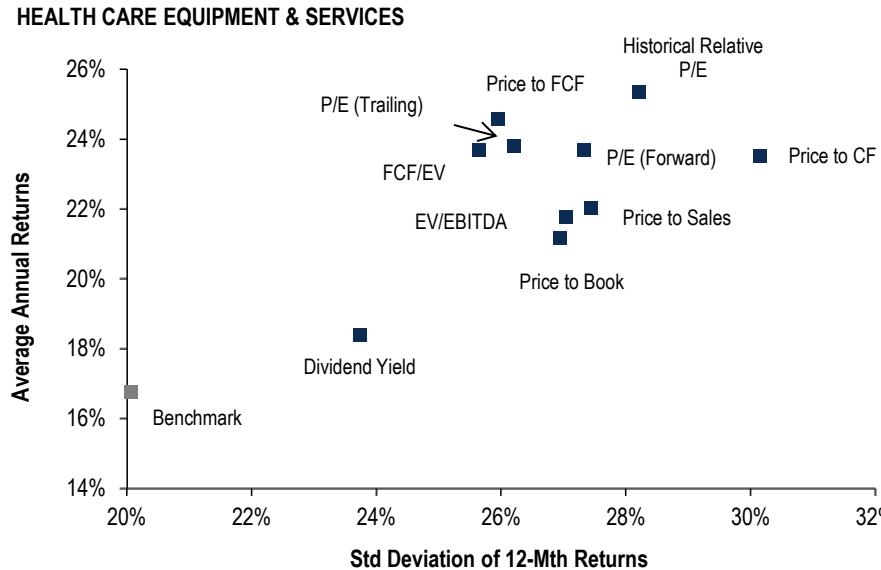


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Health Care: Health Care Equipment & Svcs

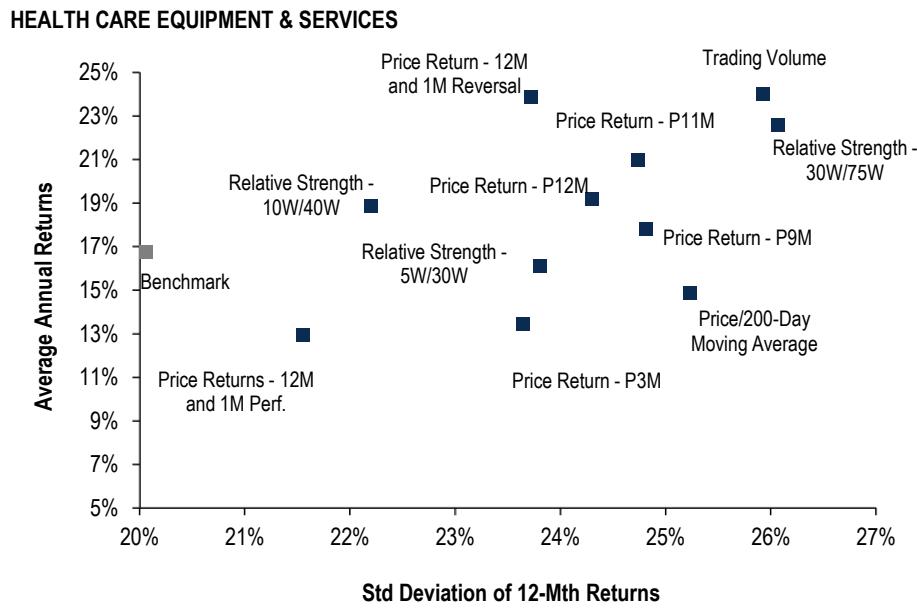
Long only: Top Quintile Performance

Chart 358: Valuation Strategies for Health Care Equipment & Services: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

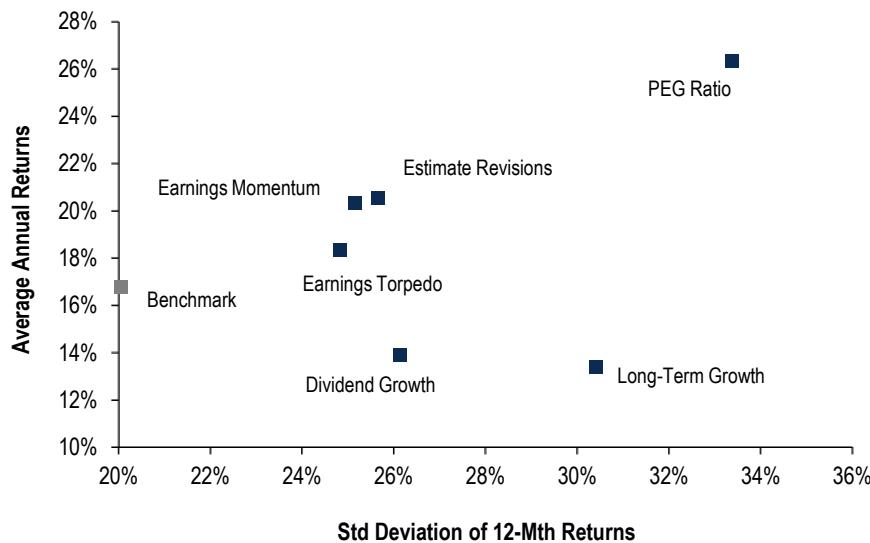
Chart 359: Momentum Strategies for Health Care Equipment & Services: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 360: Growth Strategies for Health Care Equipment & Services: Top Quintile Returns (1985 to 2016)

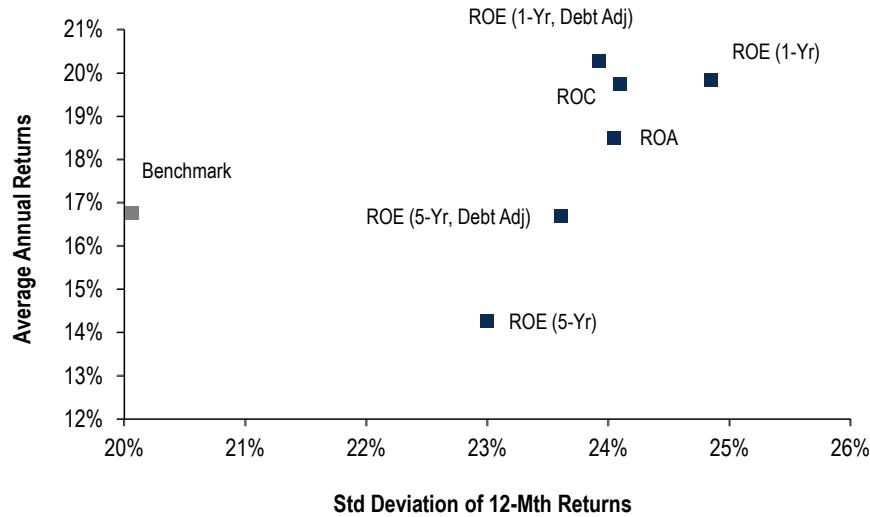
HEALTH CARE EQUIPMENT & SERVICES



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 361: Quality Strategies for Health Care Equipment & Services: Top Quintile Returns (1985 to 2016)

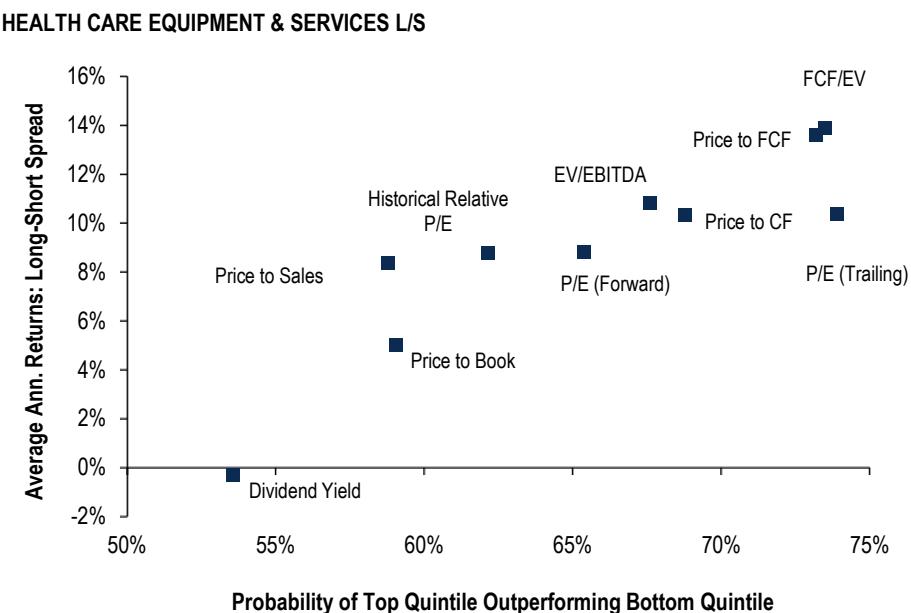
HEALTH CARE EQUIPMENT & SERVICES



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

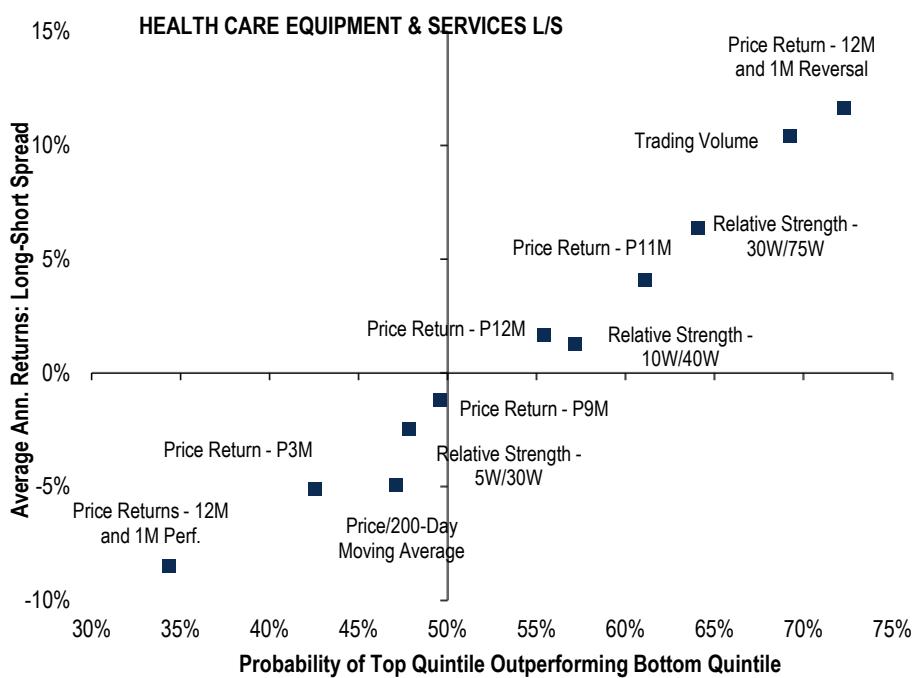
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 362: Valuation Strategies for Health Care Equipment & Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

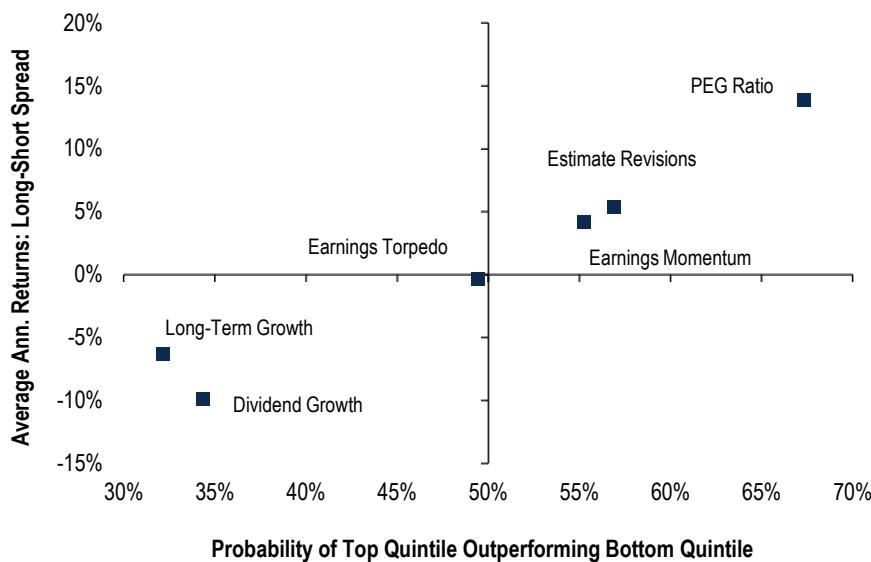
Chart 363: Momentum Strategies for Health Care Equipment & Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 364: Growth Strategies for Health Care Equipment & Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

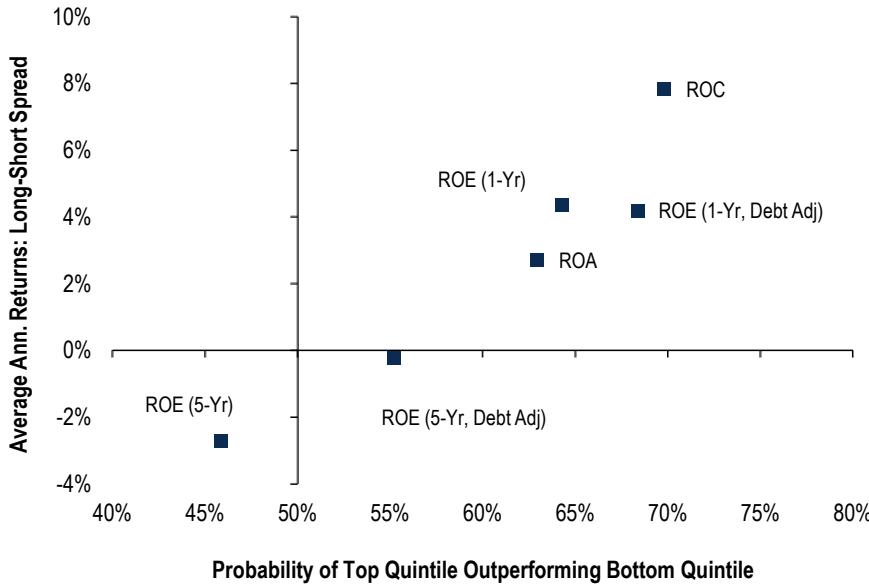
HEALTH CARE EQUIPMENT & SERVICES L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 365: Quality Strategies for Health Care Equipment & Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

HEALTH CARE EQUIPMENT & SERVICES L/S

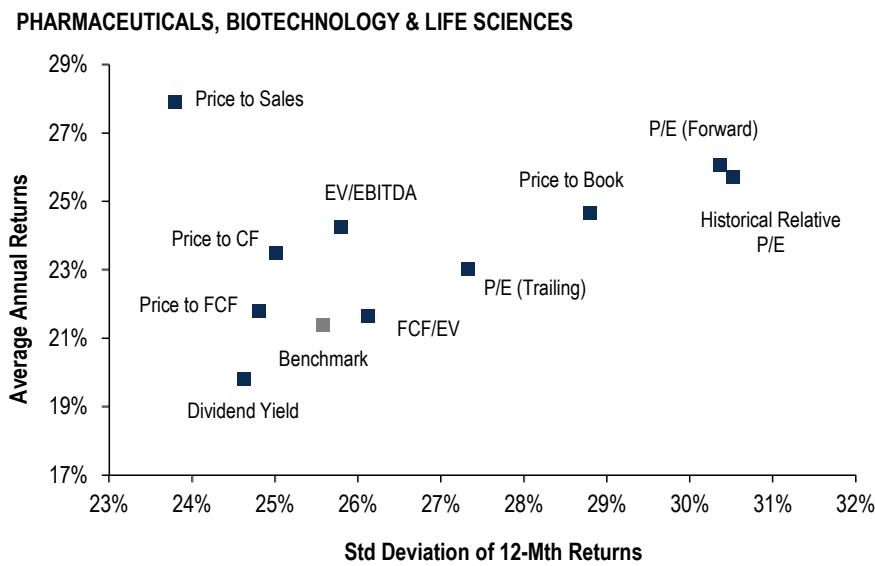


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Health Care: Pharmaceuticals Biotechnology & Life Sciences

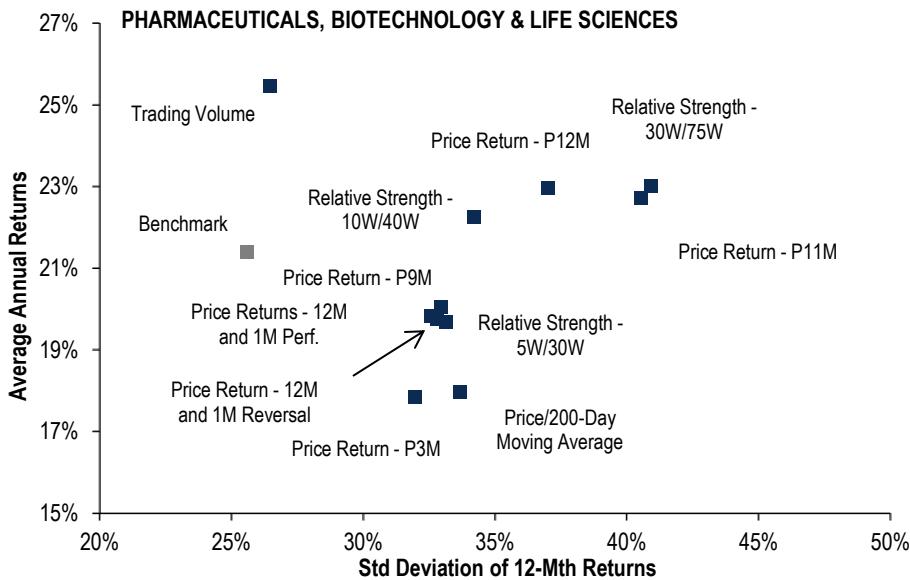
Long only: Top Quintile Performance

Chart 366: Valuation Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

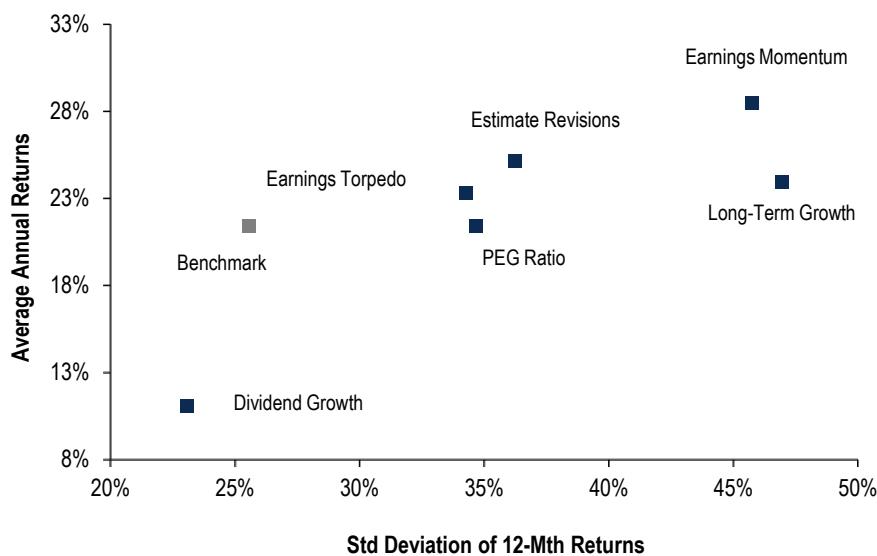
Chart 367: Momentum Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 368: Growth Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Top Quintile Returns (1985 to 2016)

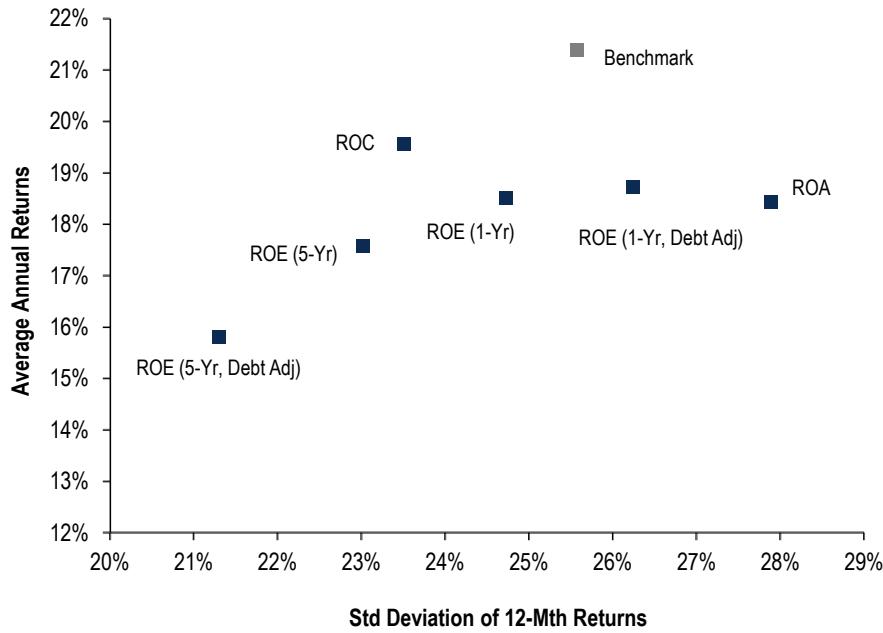
PHARMACEUTICALS, BIOTECHNOLOGY & LIFE SCIENCES



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 369: Quality Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Top Quintile Returns (1985 to 2016)

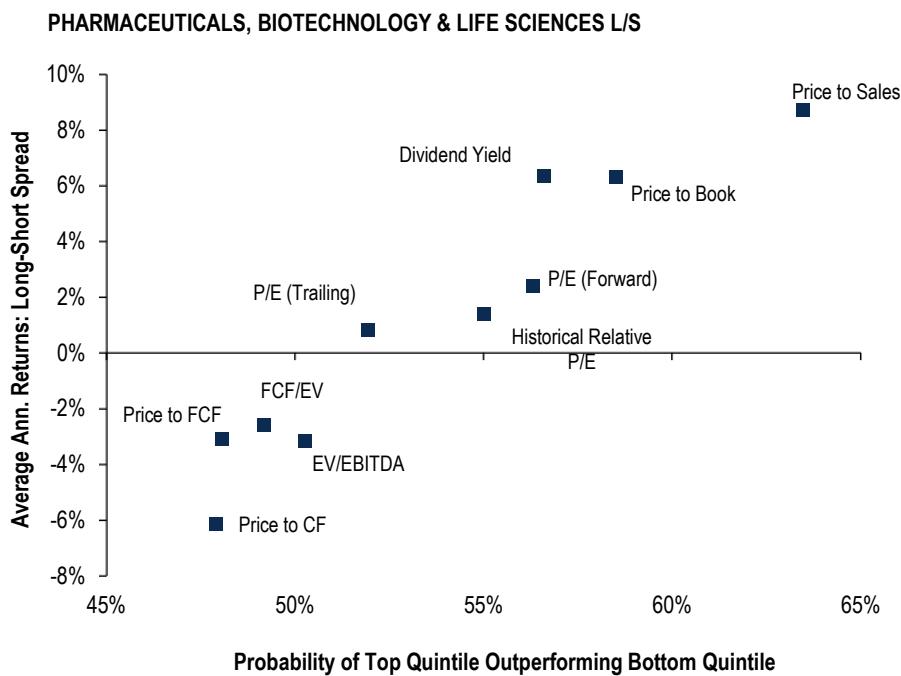
PHARMACEUTICALS, BIOTECHNOLOGY & LIFE SCIENCES



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

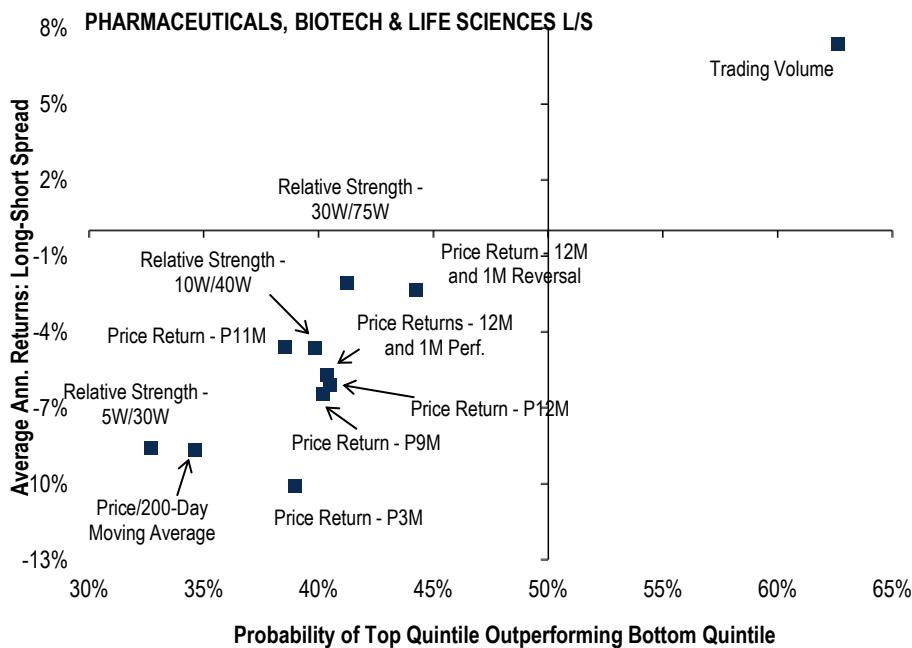
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 370: Valuation Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



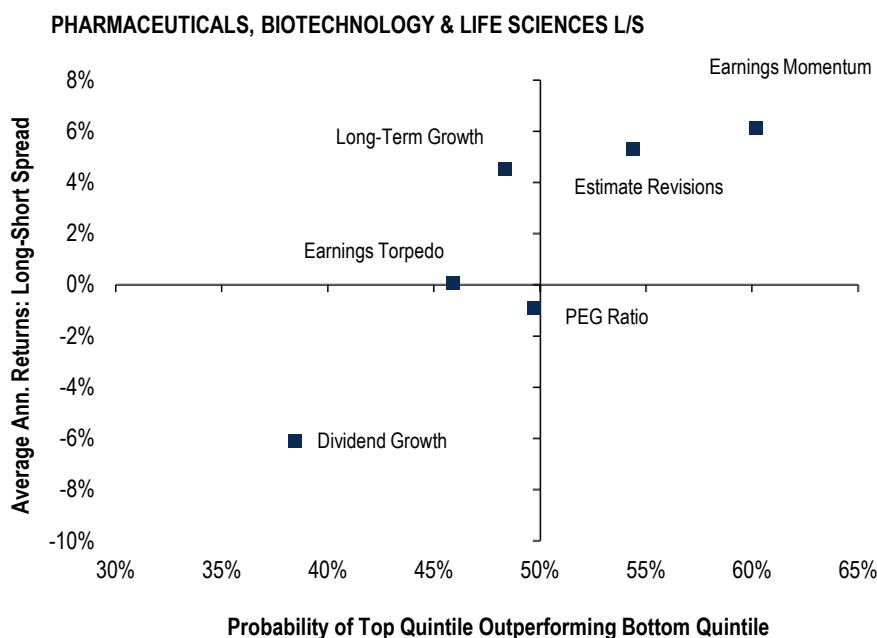
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 371: Momentum Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



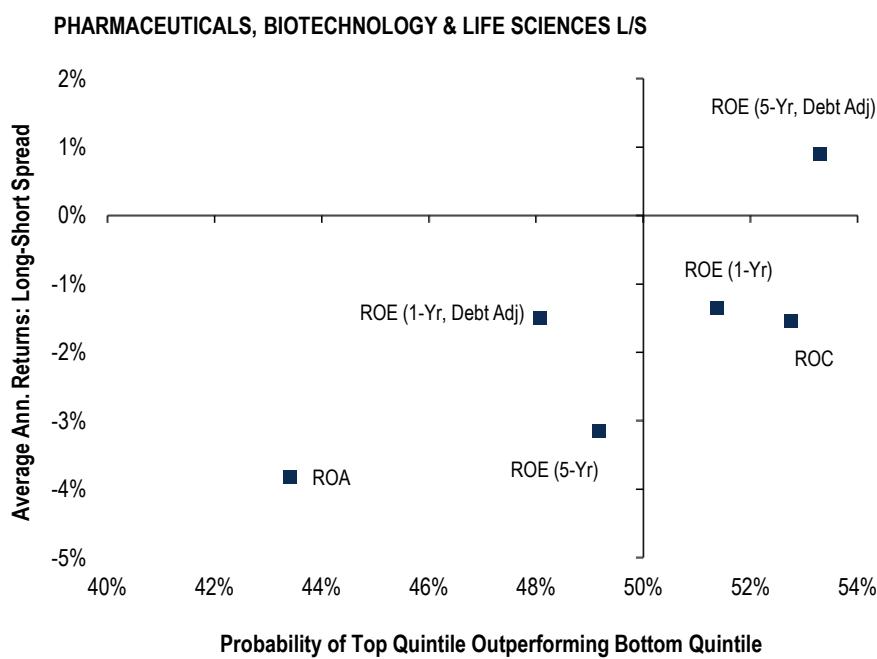
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 372: Growth Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 373: Quality Strategies for Pharmaceuticals, Biotechnology & Life Sciences: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

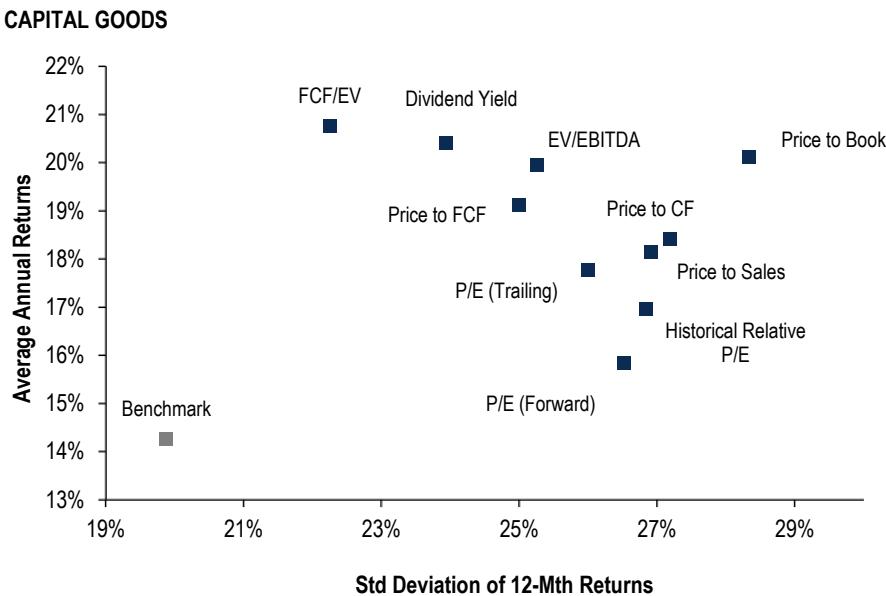


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Industrials: Capital Goods

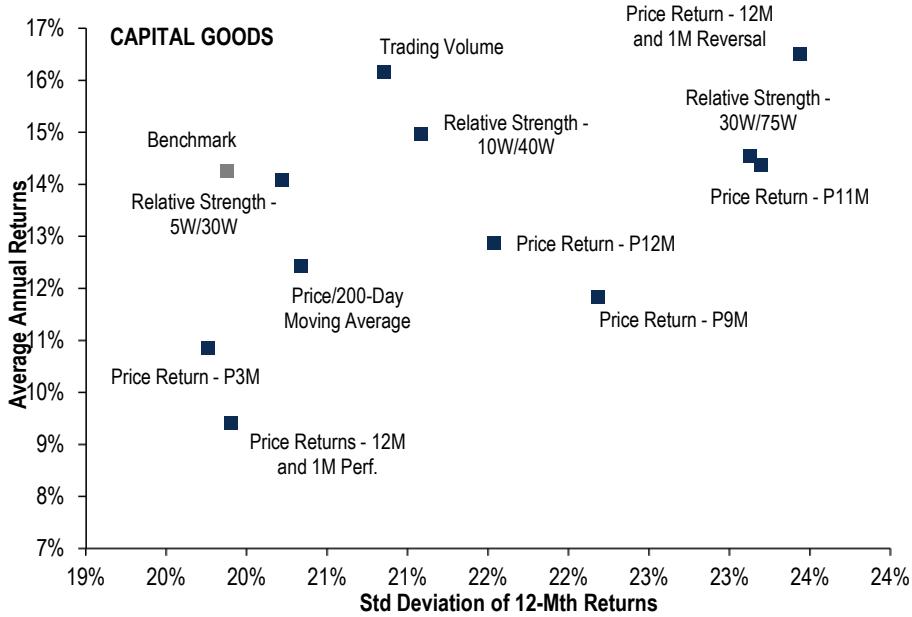
Long only: Top Quintile Performance

Chart 374: Valuation Strategies for Capital Goods: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

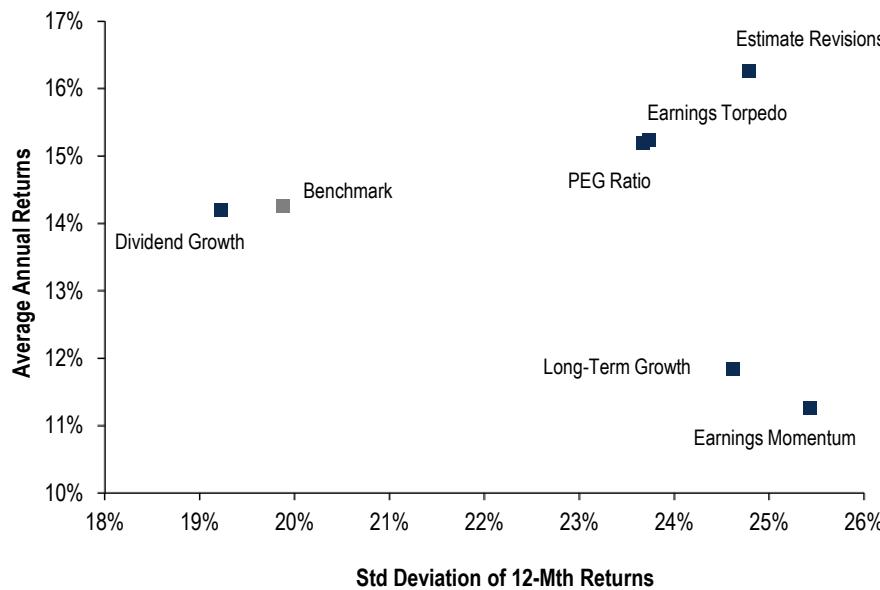
Chart 375: Momentum Strategies for Capital Goods: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 376: Growth Strategies for Capital Goods: Top Quintile Returns (1985 to 2016)

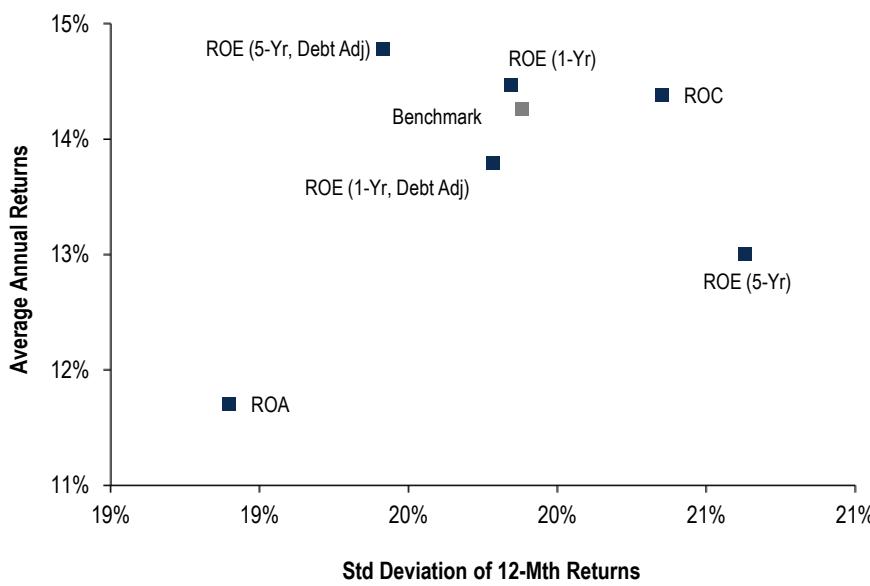
CAPITAL GOODS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 377: Quality Strategies for Capital Goods: Top Quintile Returns (1985 to 2016)

CAPITAL GOODS

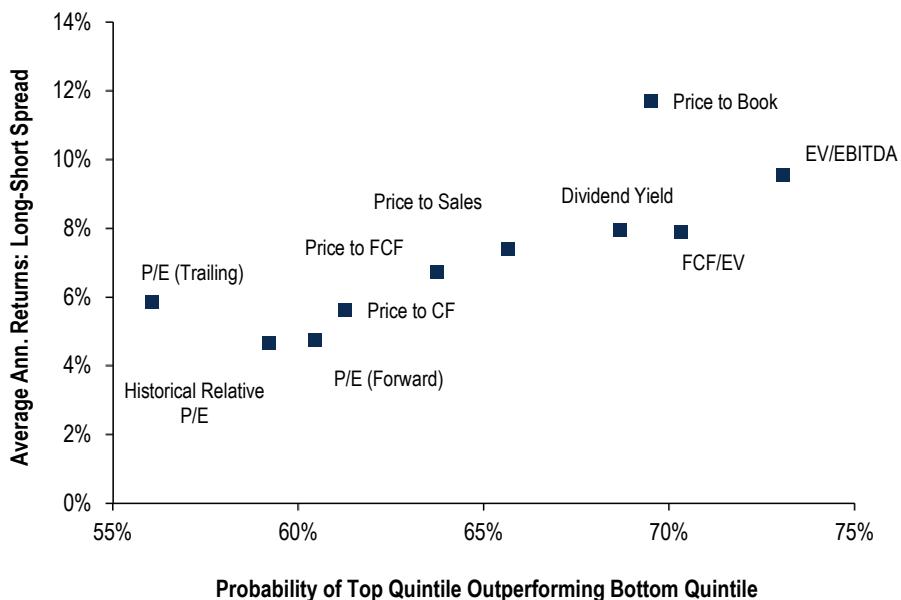


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Long-Short: Quintile 1 / Quintile 5 Spread

Chart 378: Valuation Strategies for Capital Goods: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

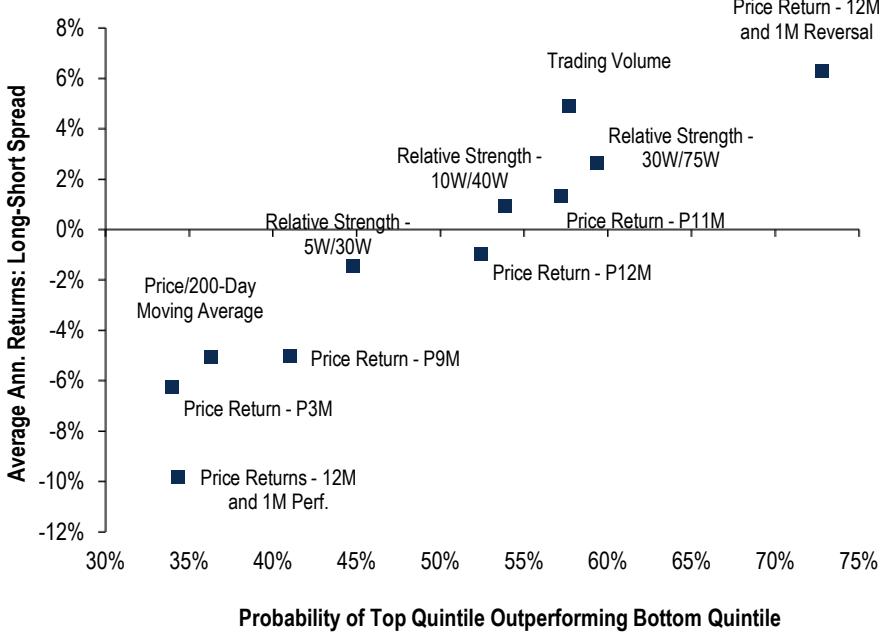
CAPITAL GOODS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

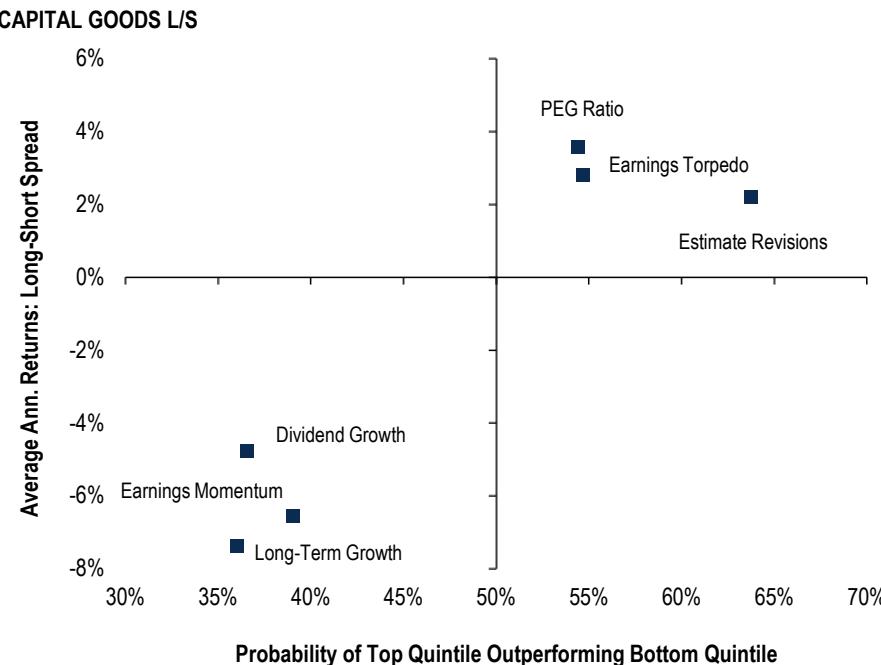
Chart 379: Momentum Strategies for Capital Goods: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

CAPITAL GOODS L/S



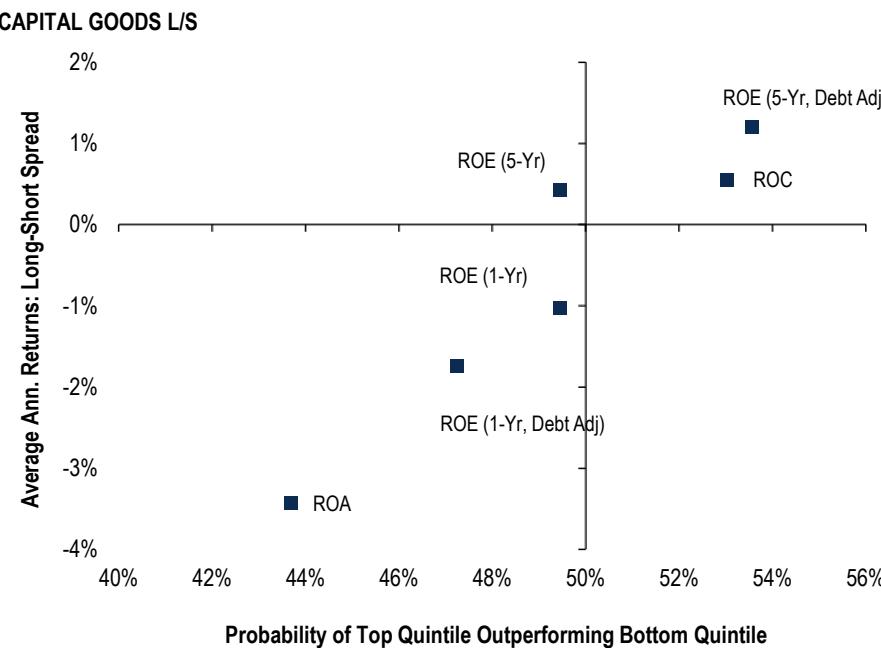
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 380: Growth Strategies for Capital Goods: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 381: Quality Strategies for Capital Goods: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

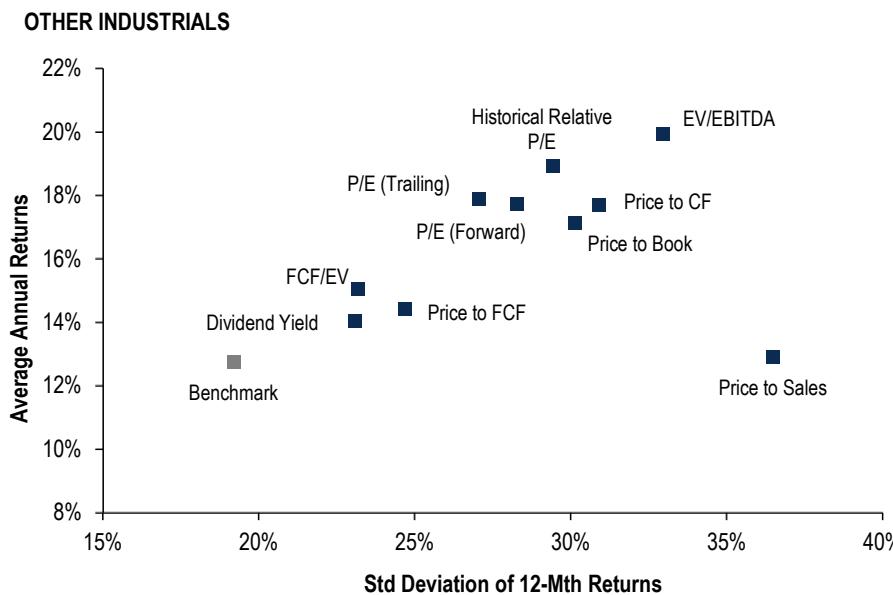


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Other Industrials (Services, Transports)

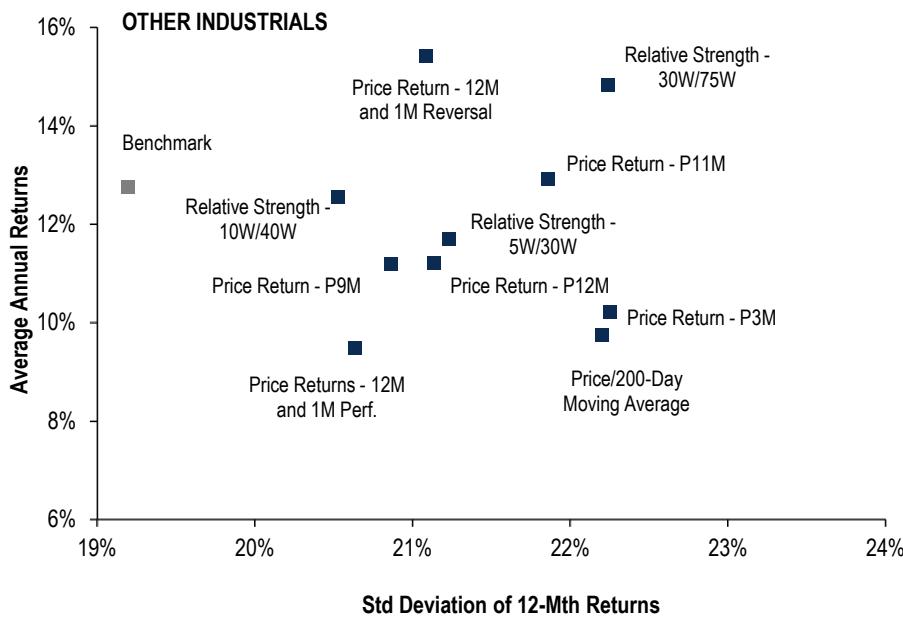
Long only: Top Quintile Performance

Chart 382: Valuation Strategies for Commercial Services, Transports: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

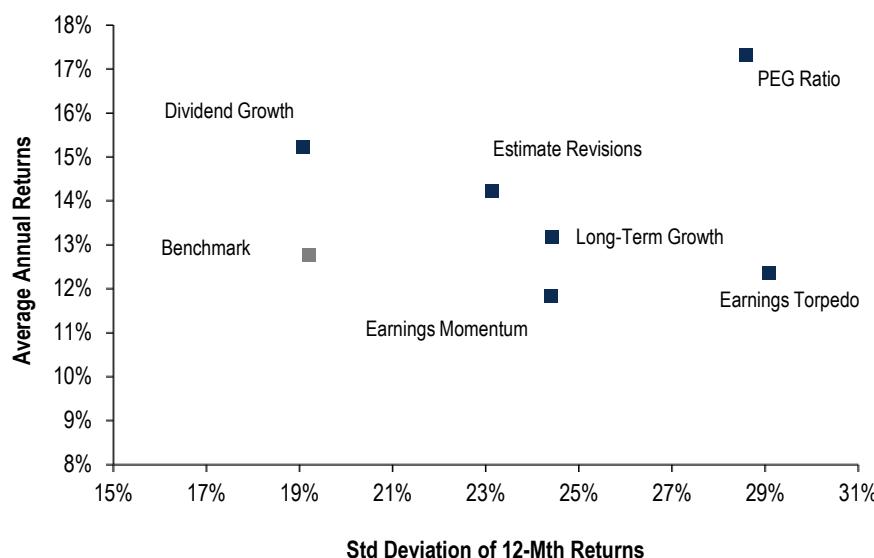
Chart 383: Momentum Strategies for Commercial Services, Transports: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 384: Growth Strategies for Commercial Services, Transports: Top Quintile Returns (1985 to 2016)

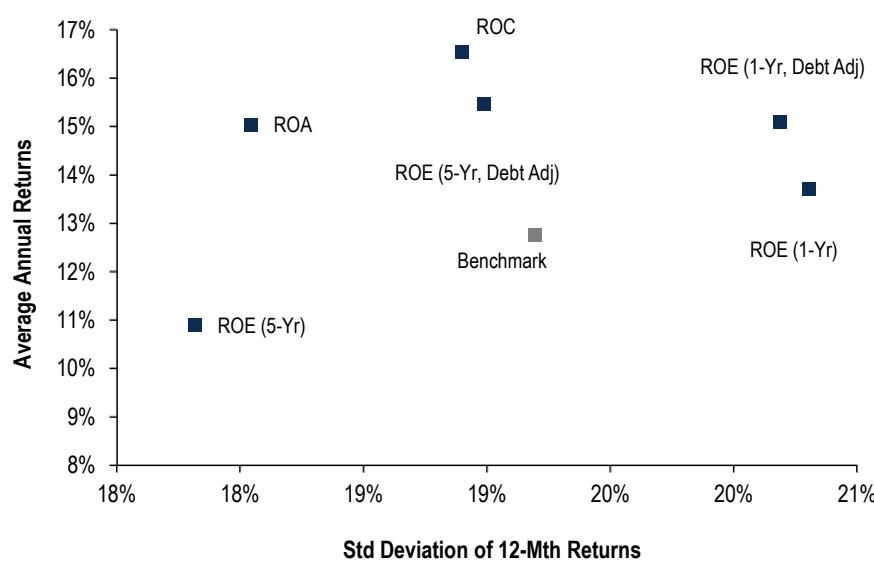
OTHER INDUSTRIALS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 385: Quality Strategies for Commercial Services, Transports: Top Quintile Returns (1985 to 2016)

OTHER INDUSTRIALS

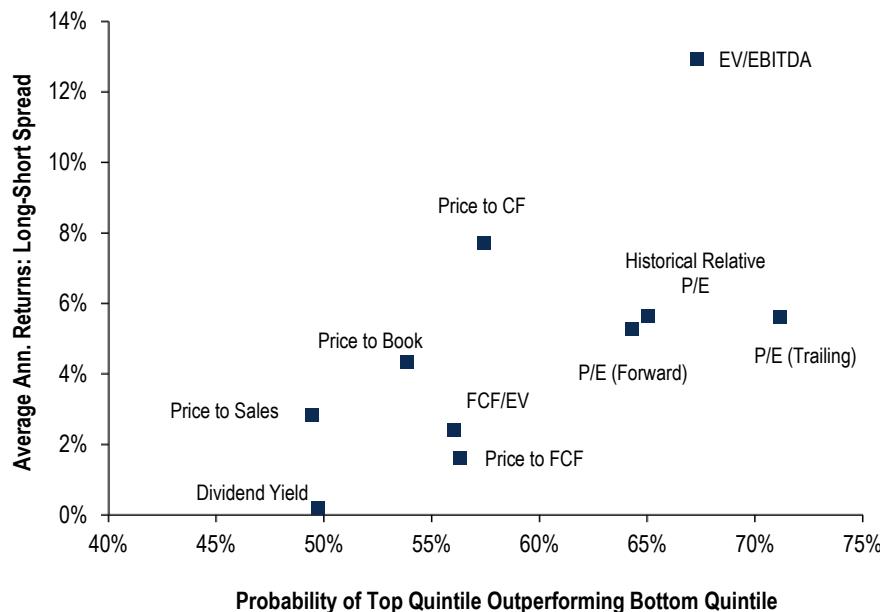


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Long-Short: Quintile 1 / Quintile 5 Spread

Chart 386: Valuation Strategies for Commercial Services, Transports: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

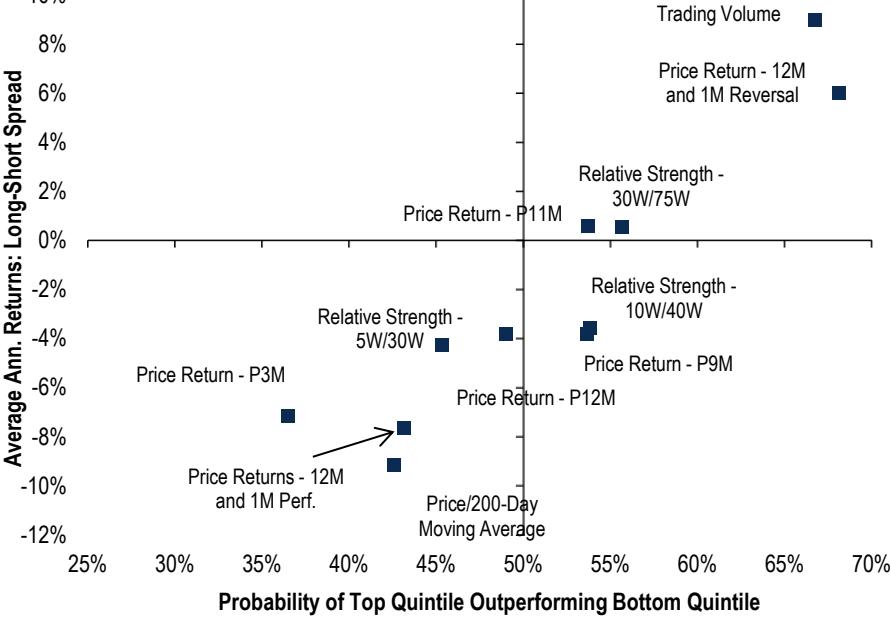
OTHER INDUSTRIALS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 387: Momentum Strategies for Commercial Services, Transports: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

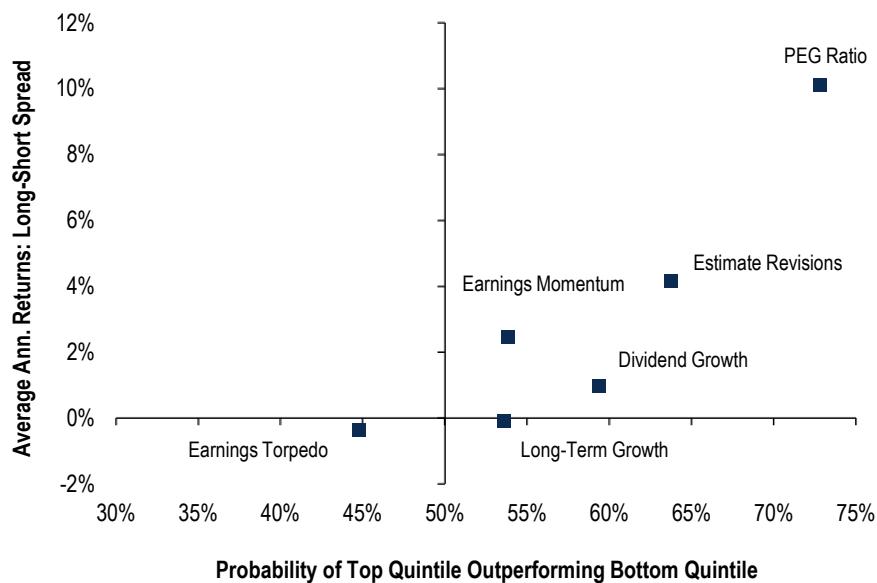
OTHER INDUSTRIALS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 388: Growth Strategies for Commercial Services, Transports: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

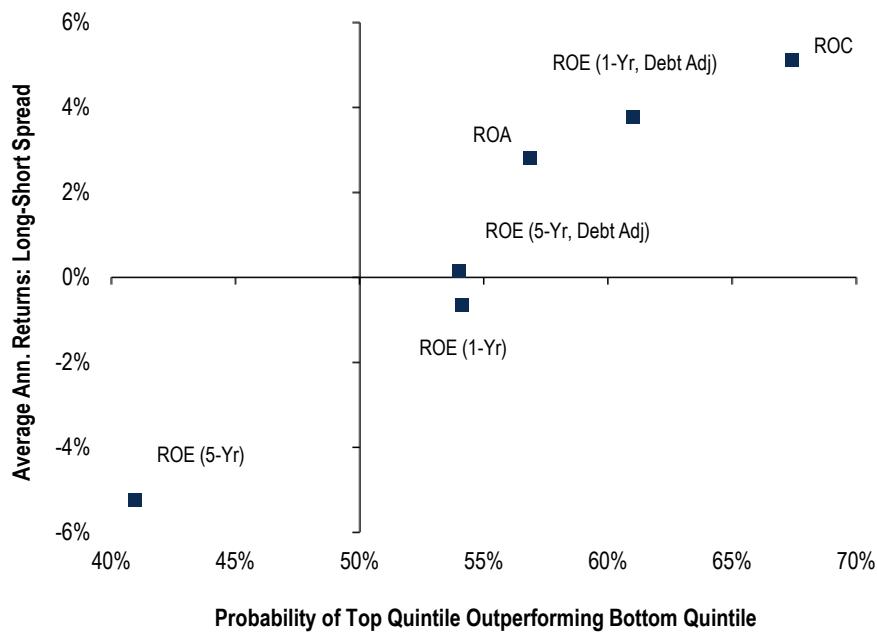
OTHER INDUSTRIALS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 389: Quality Strategies for Commercial Services, Transports: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

OTHER INDUSTRIALS L/S

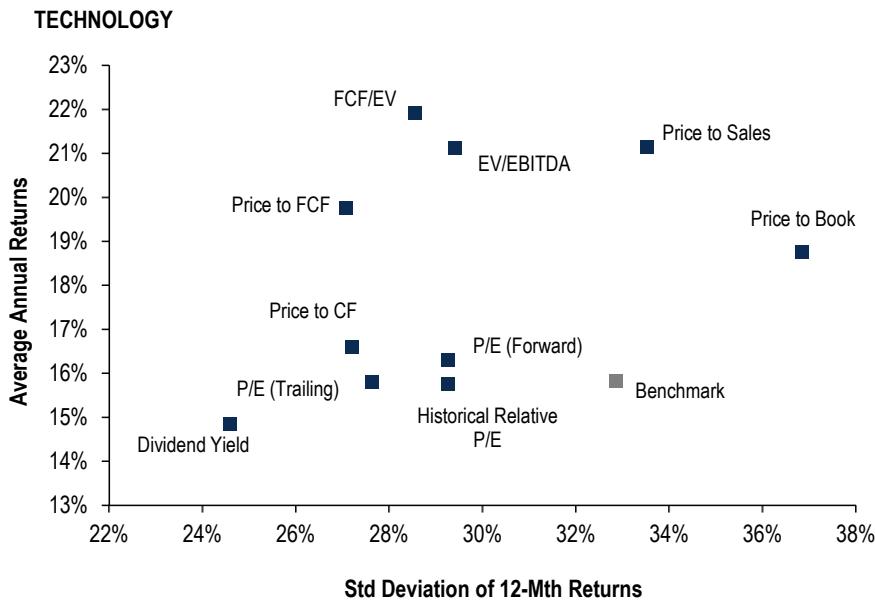


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Information Technology

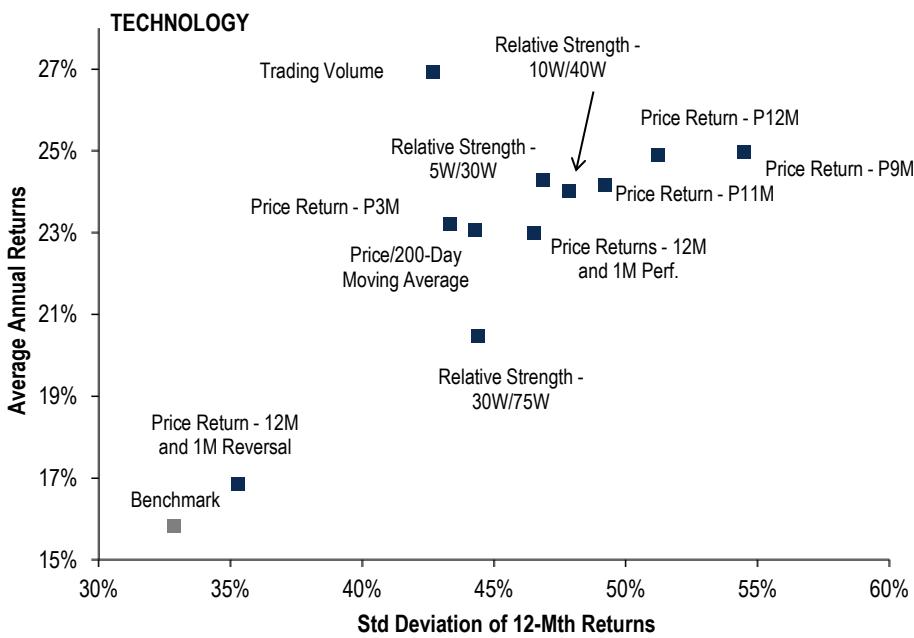
Long only: Top Quintile Performance

Chart 390: Valuation Strategies for Information Technology: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

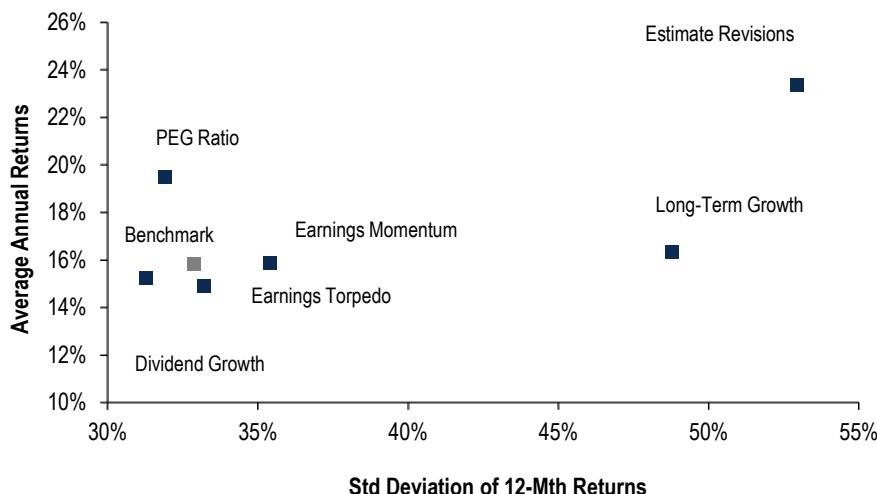
Chart 391: Momentum Strategies for Information Technology: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 392: Growth Strategies for Information Technology: Top Quintile Returns (1985 to 2016)

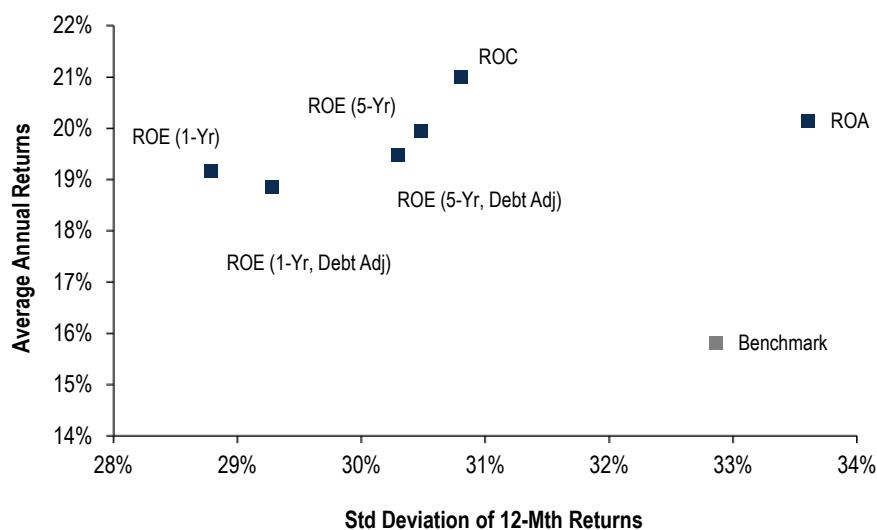
TECHNOLOGY



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 393: Quality Strategies for Information Technology: Top Quintile Returns (1985 to 2016)

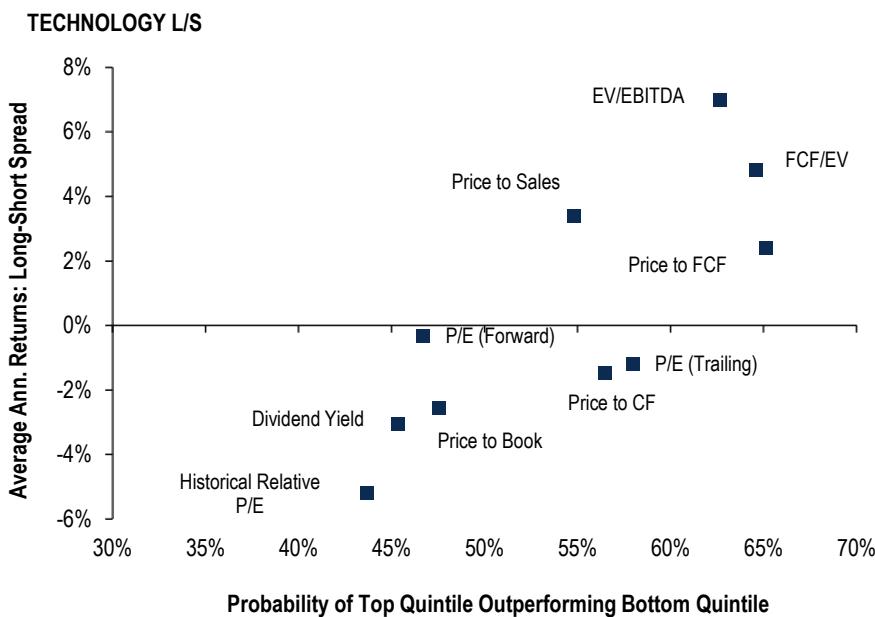
TECHNOLOGY



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

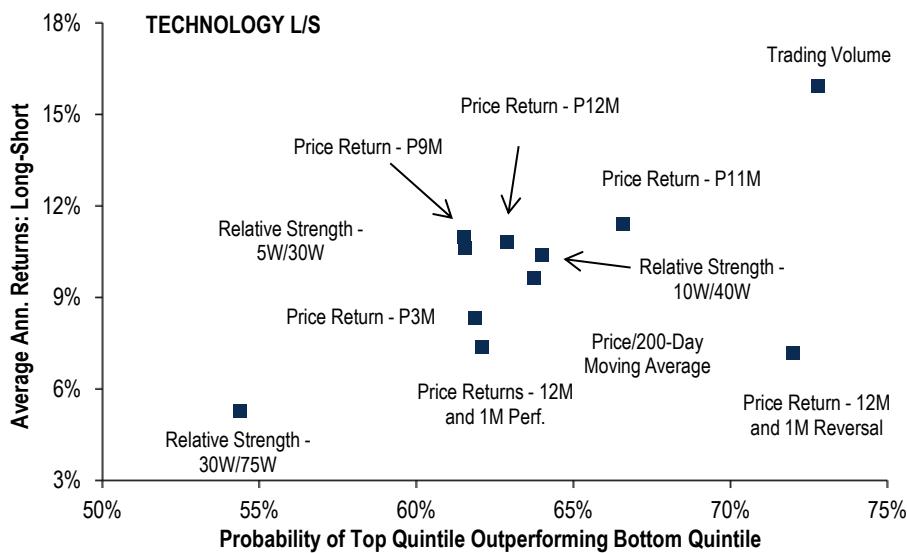
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 394: Valuation Strategies for Information Technology: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



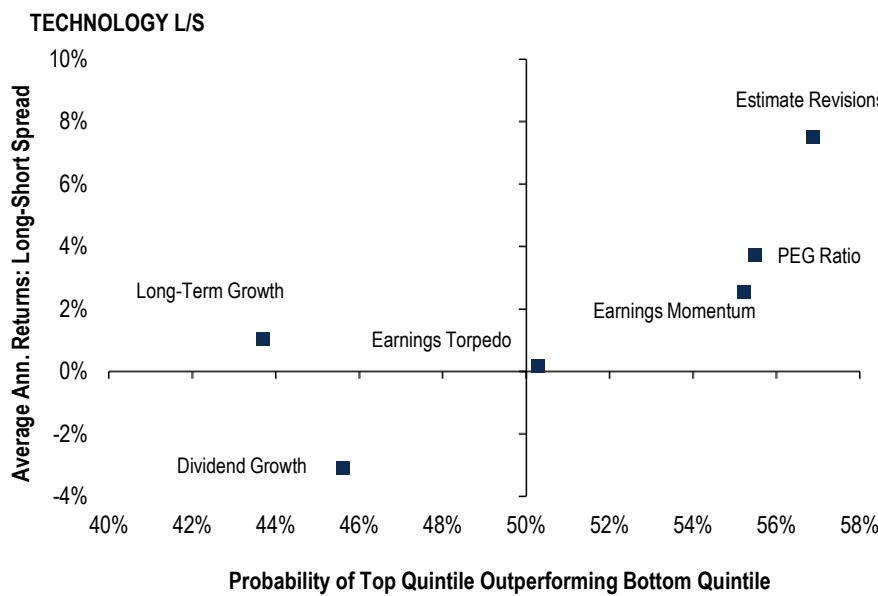
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 395: Momentum Strategies for Information Technology: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



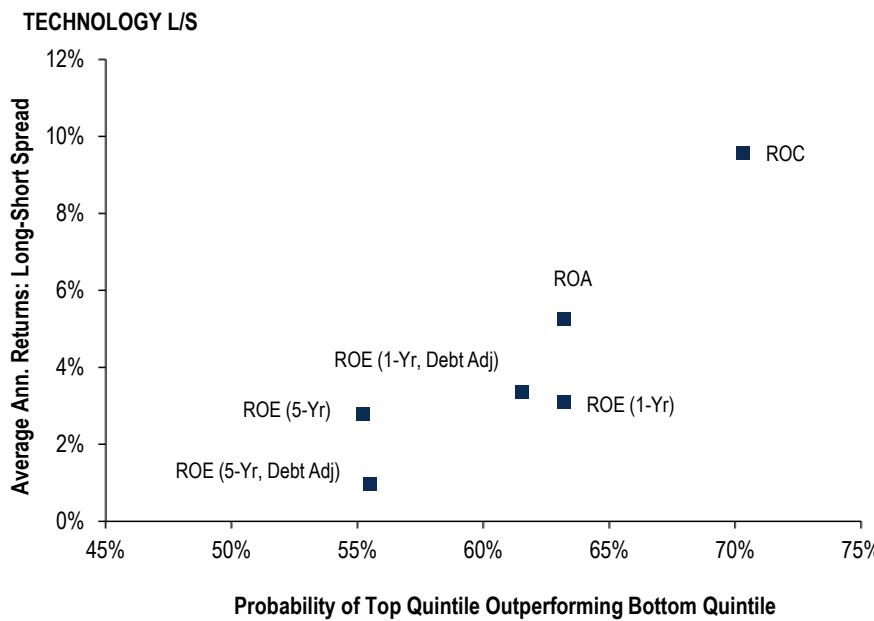
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 396: Growth Strategies for Information Technology: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 397: Quality Strategies for Information Technology: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

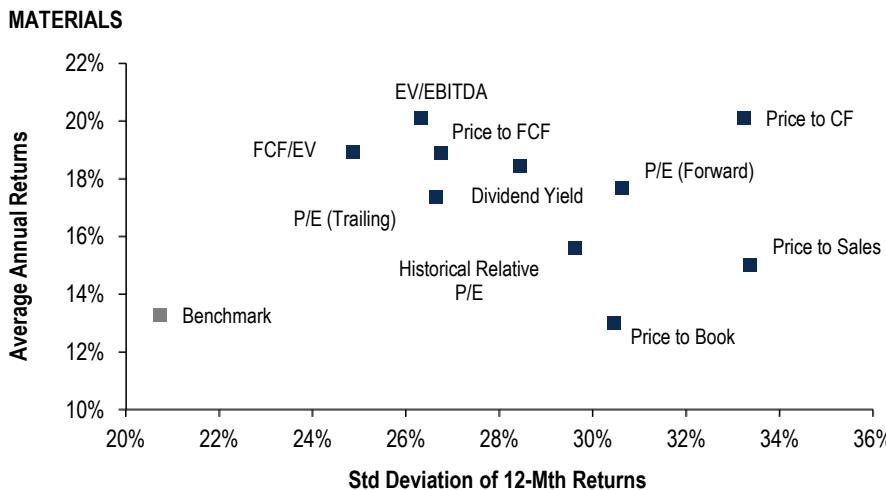


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Materials

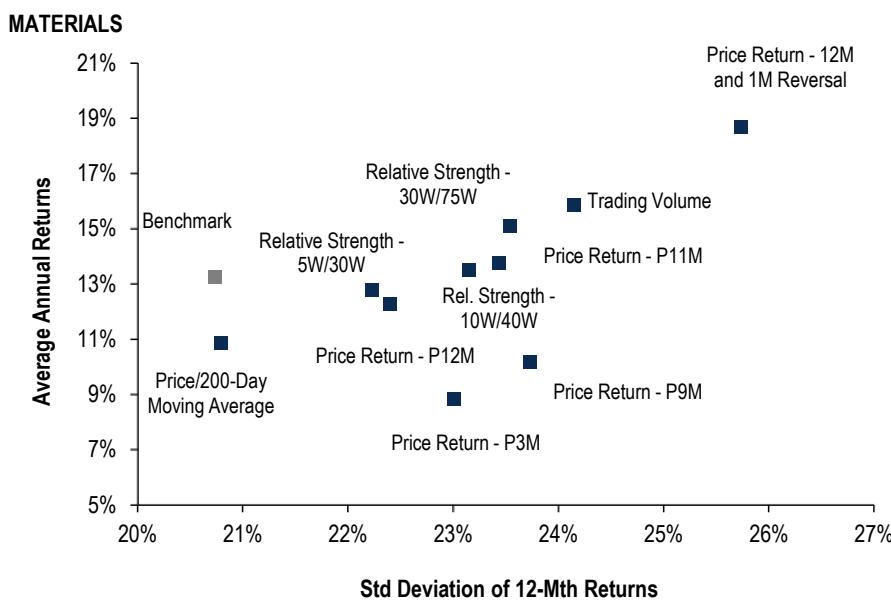
Long only: Top Quintile Performance

Chart 398: Valuation Strategies for Materials: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

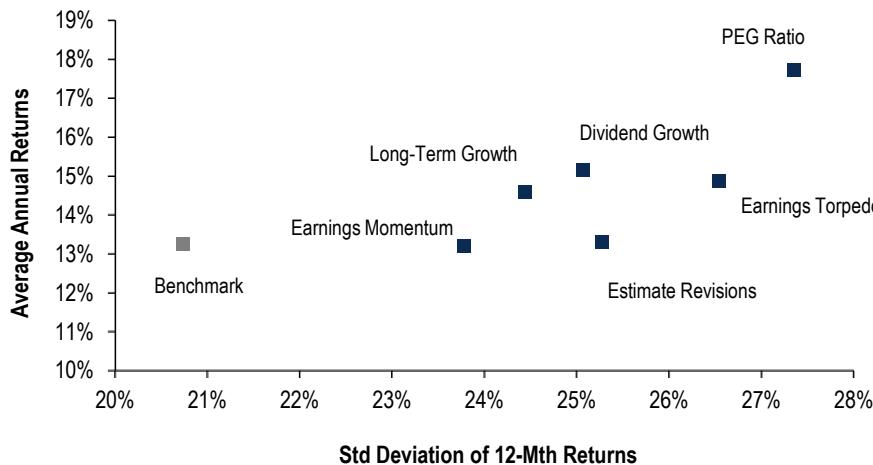
Chart 399: Momentum Strategies for Materials: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 400: Growth Strategies for Materials: Top Quintile Returns (1985 to 2016)

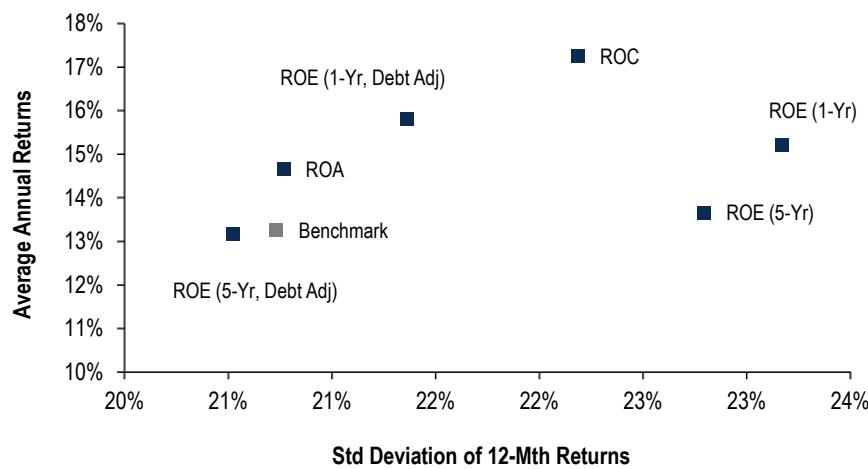
MATERIALS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 401: Quality Strategies for Materials: Top Quintile Returns (1985 to 2016)

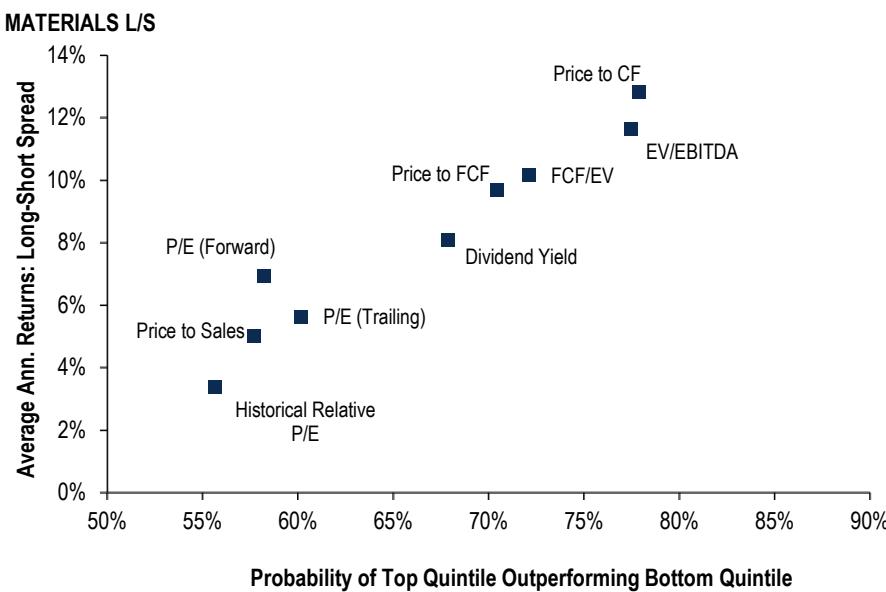
MATERIALS



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

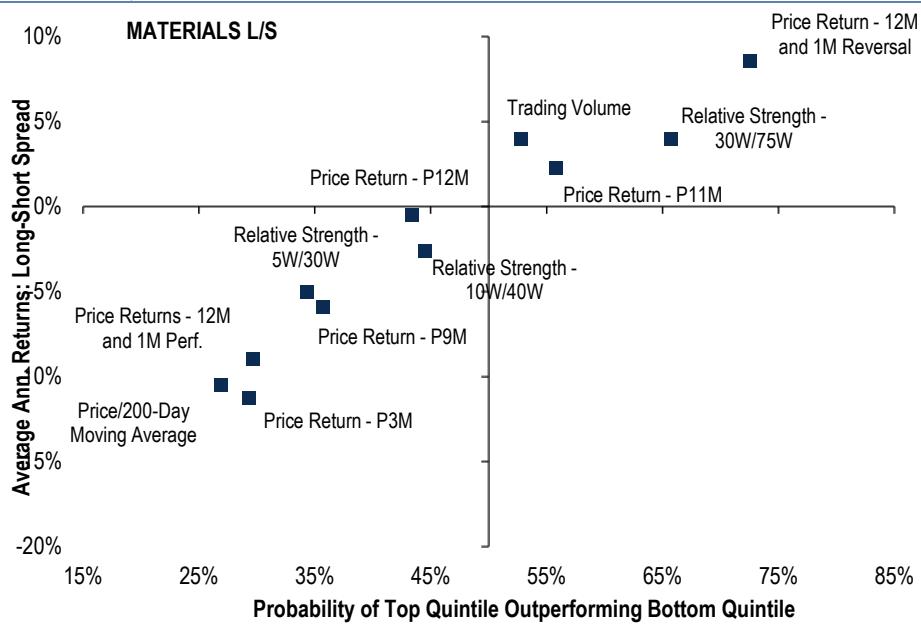
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 402: Valuation Strategies for Materials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

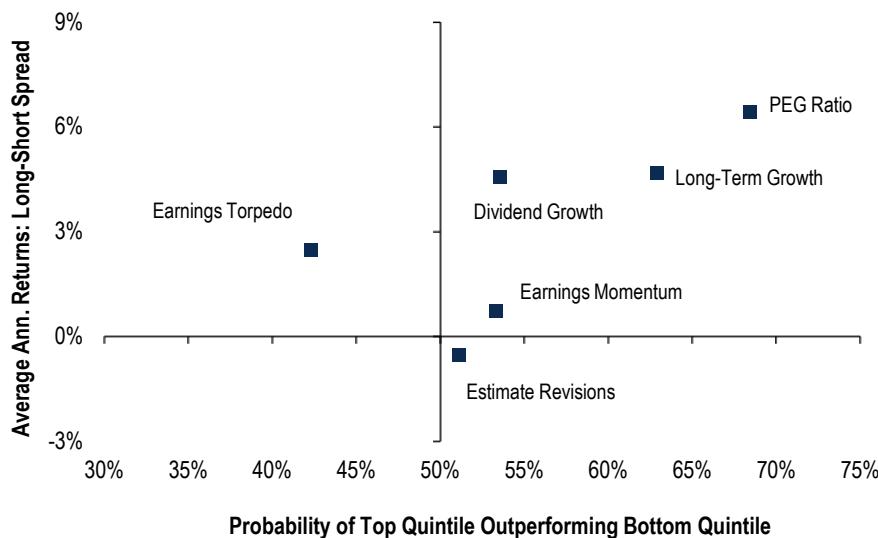
Chart 403: Momentum Strategies for Materials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 404: Growth Strategies for Materials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

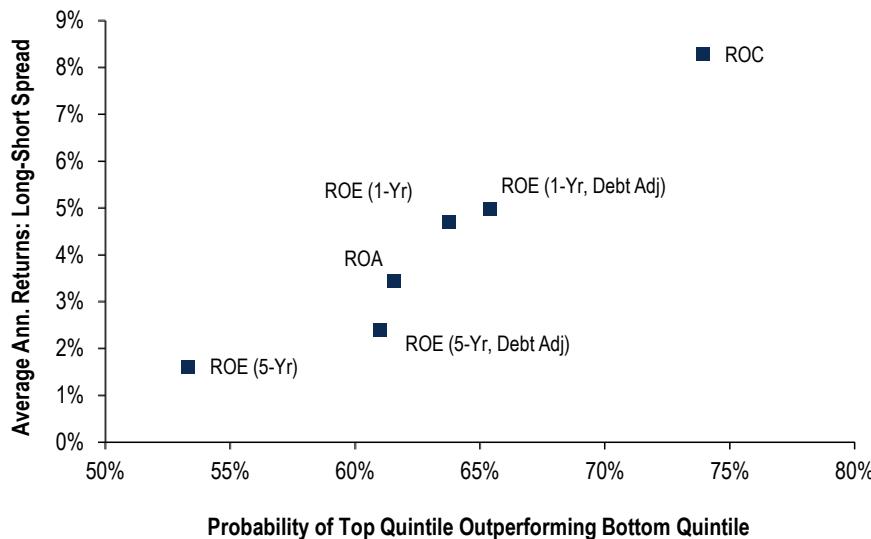
MATERIALS L/S



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 405: Quality Strategies for Materials: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

MATERIALS L/S

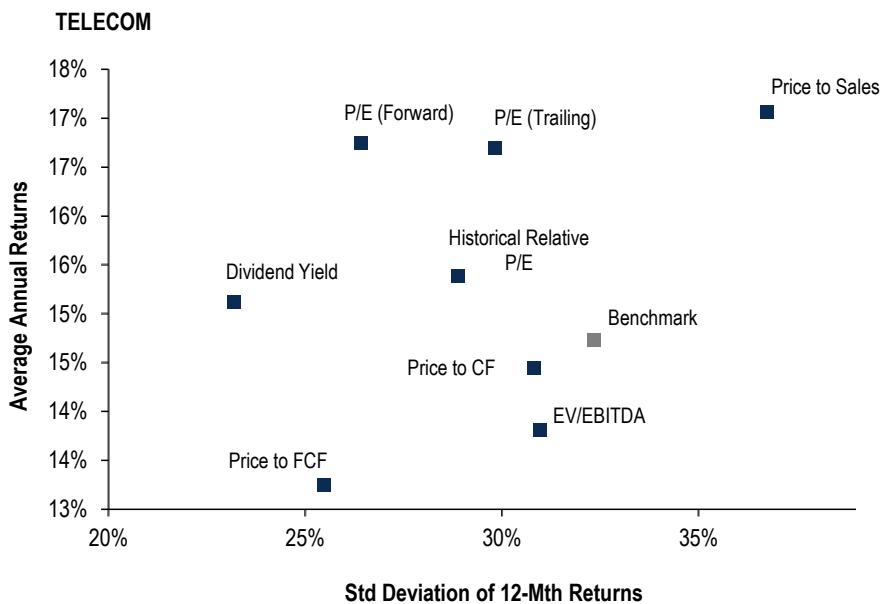


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Telecommunication Services

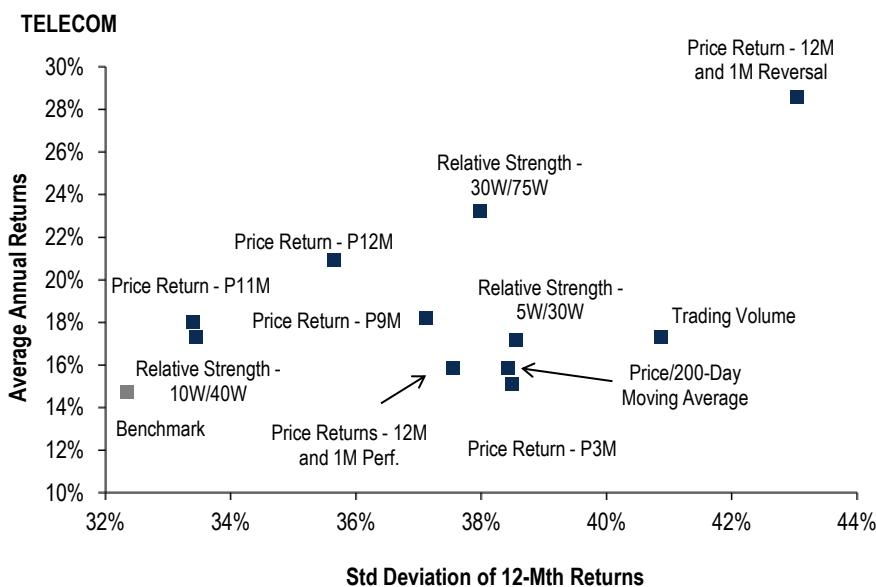
Long only: Top Quintile Performance

Chart 406: Valuation Strategies for Telecommunication Services: Top Quintile Returns (1985 to 2016)



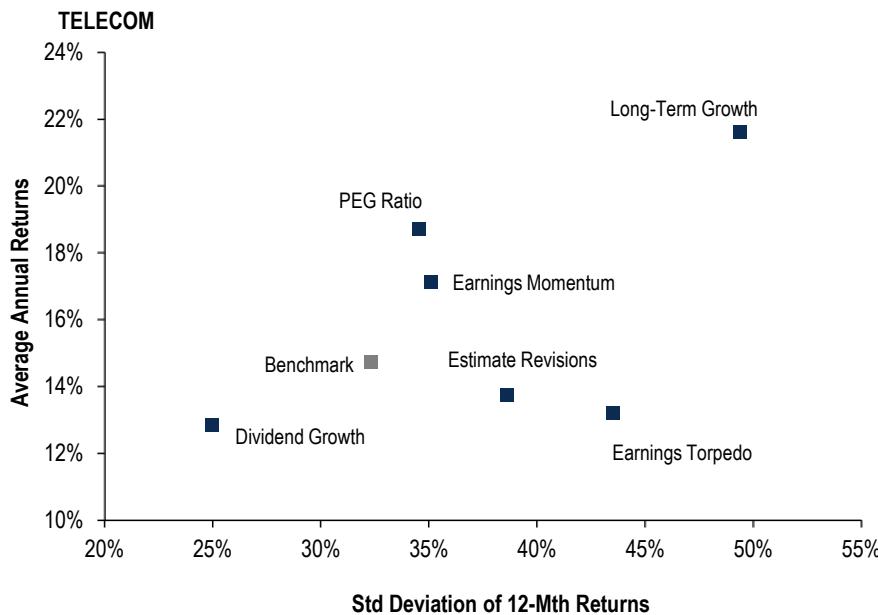
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 407: Momentum Strategies for Telecommunication Services: Top Quintile Returns (1985 to 2016)



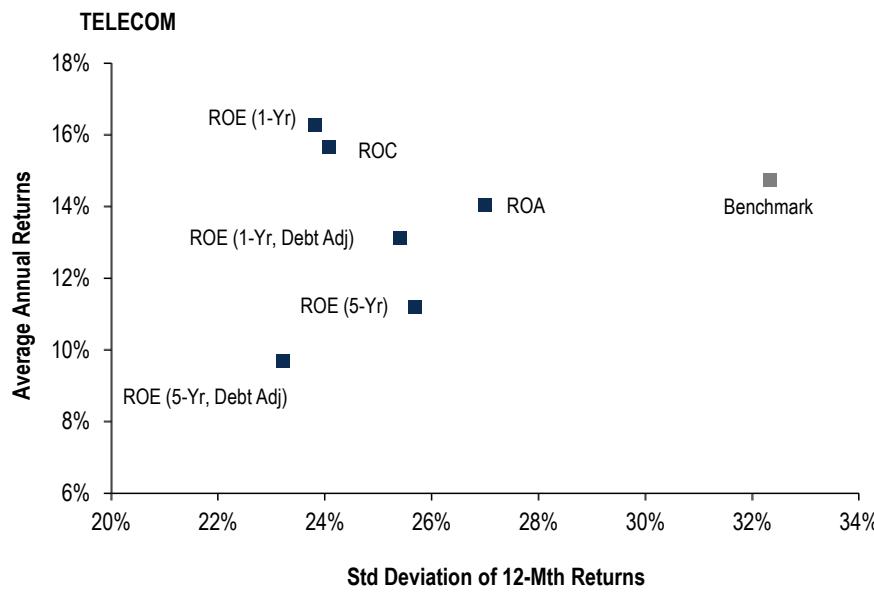
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 408: Growth Strategies for Telecommunication Services: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

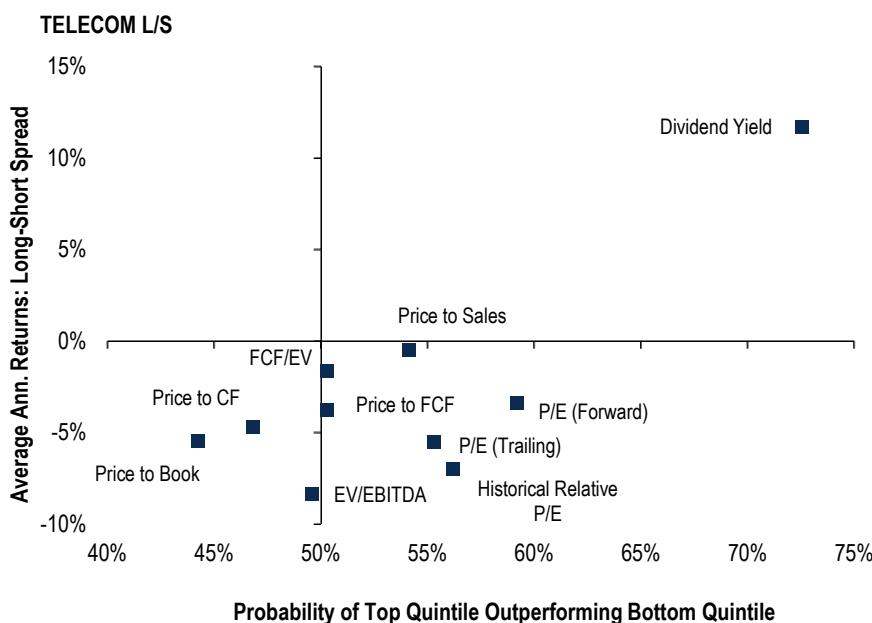
Chart 409: Quality Strategies for Telecommunication Services: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

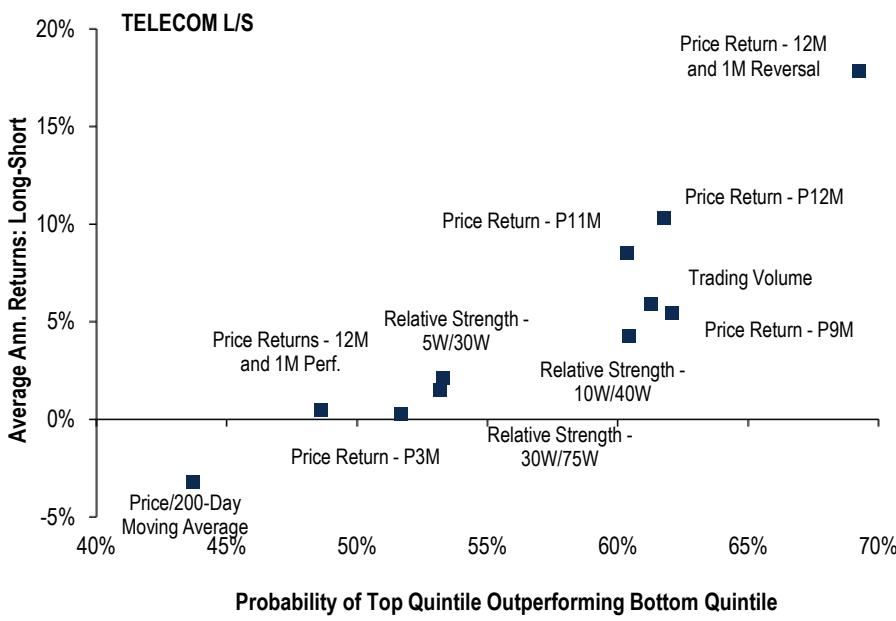
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 410: Valuation Strategies for Telecommunication Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



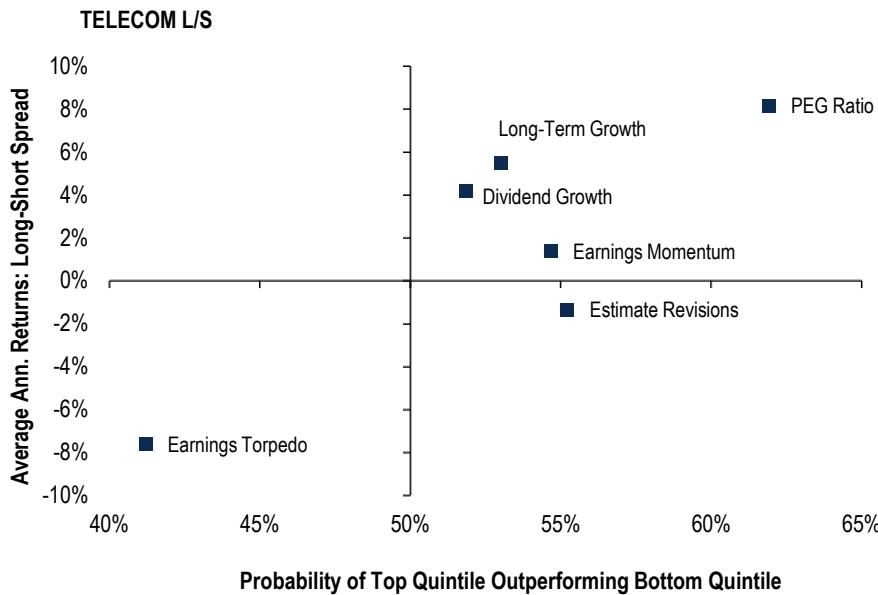
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 411: Momentum Strategies for Telecommunication Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



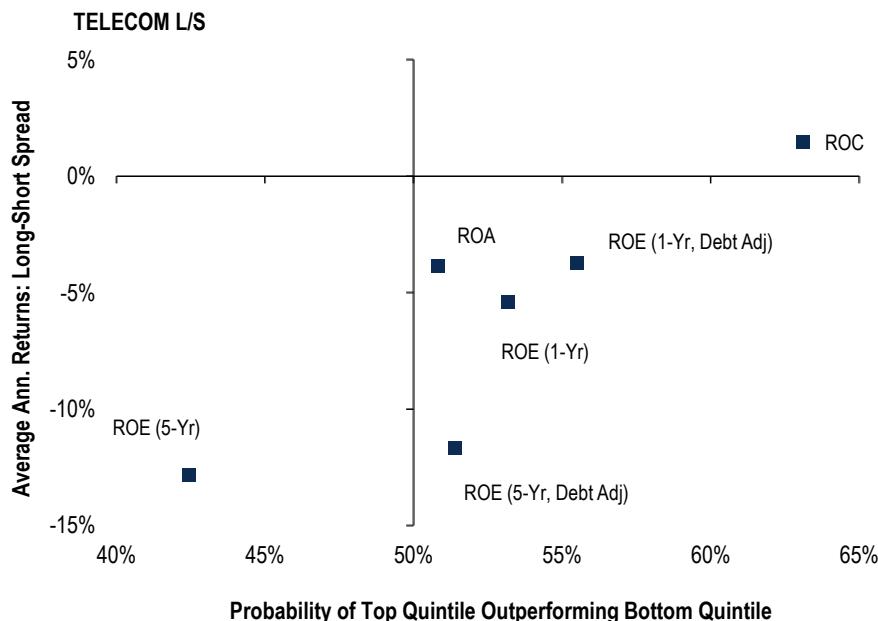
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 412: Growth Strategies for Telecommunication Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 413: Quality Strategies for Telecommunication Services: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)

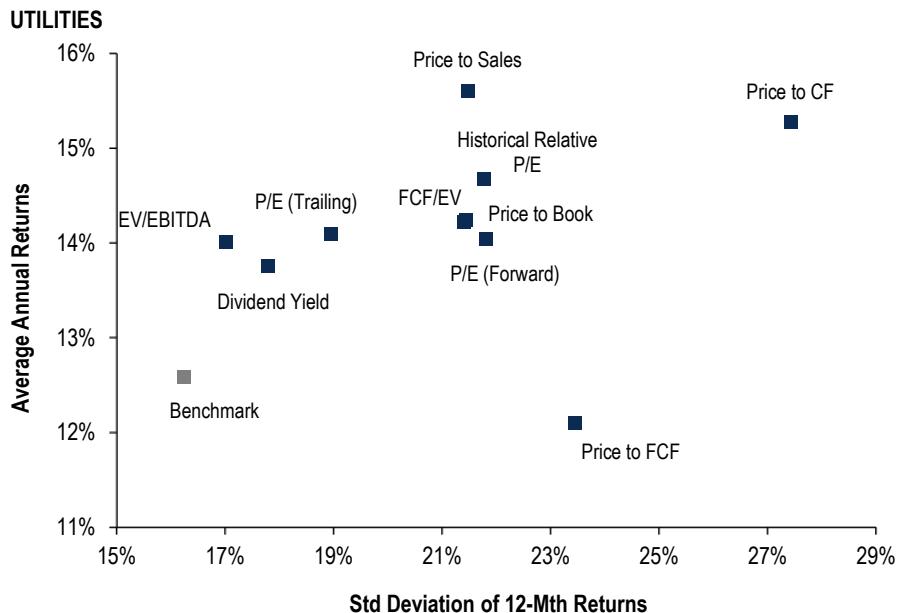


Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Utilities

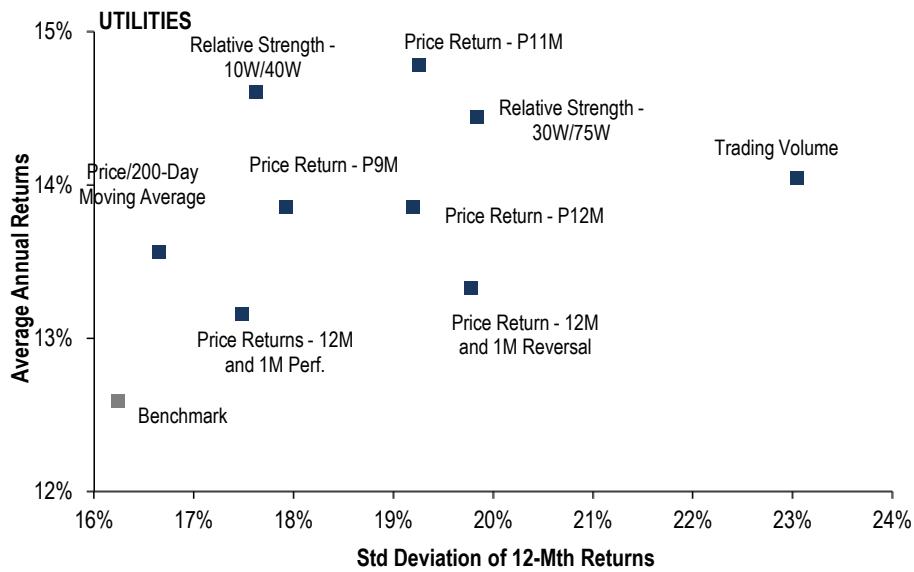
Long only: Top Quintile Performance

Chart 414: Valuation Strategies for Utilities: Top Quintile Returns (1985 to 2016)



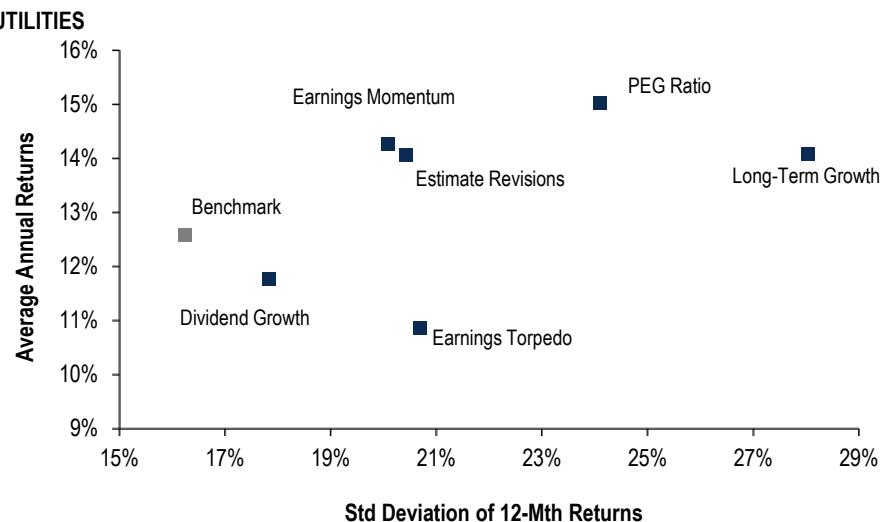
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 415: Momentum Strategies for Utilities: Top Quintile Returns (1985 to 2016)



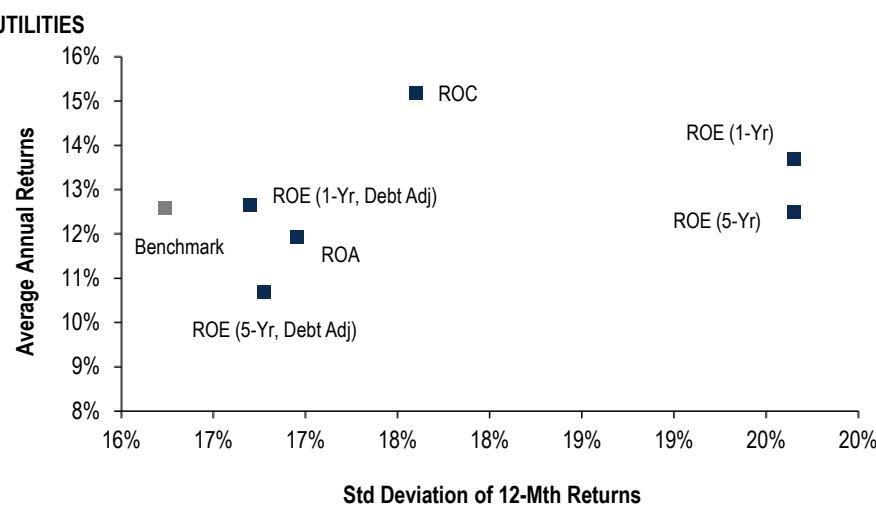
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 416: Growth Strategies for Utilities: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

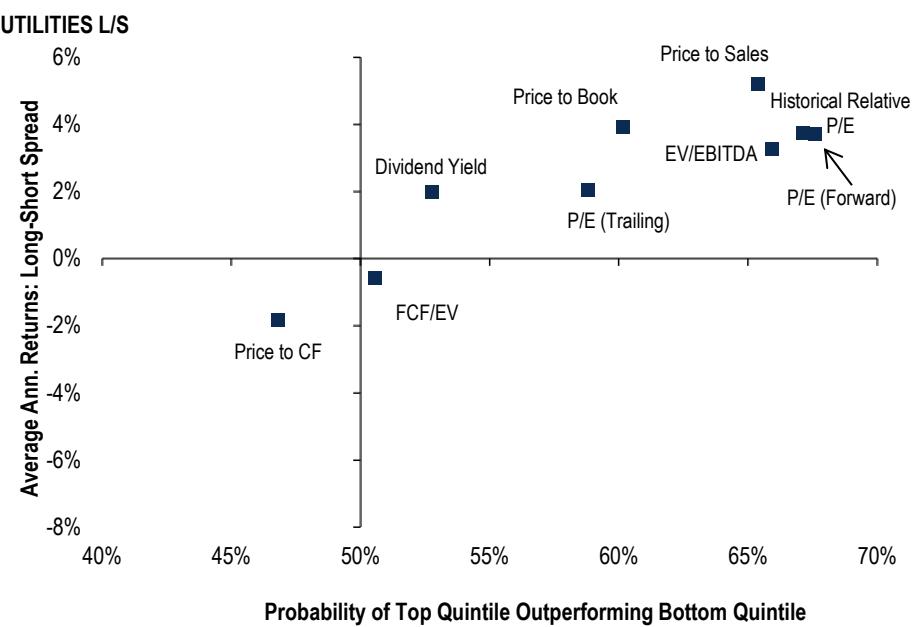
Chart 417: Quality Strategies for Utilities: Top Quintile Returns (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

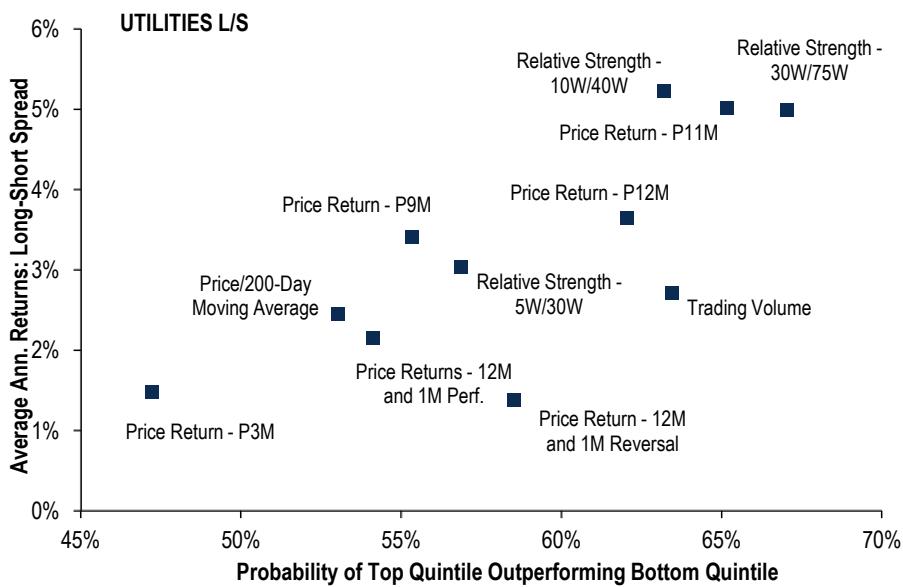
Long-Short: Quintile 1 / Quintile 5 Spread

Chart 418: Valuation Strategies for Utilities: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



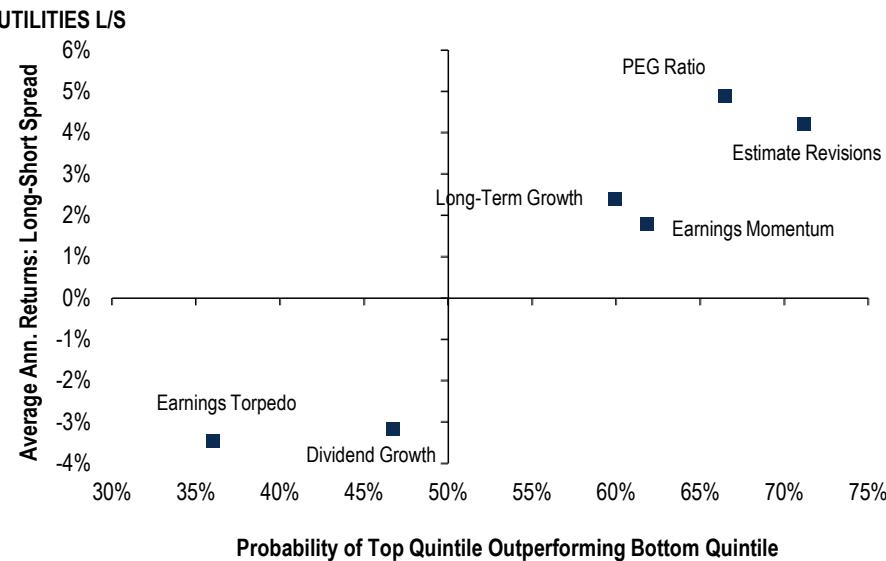
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 419: Momentum Strategies for Utilities: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



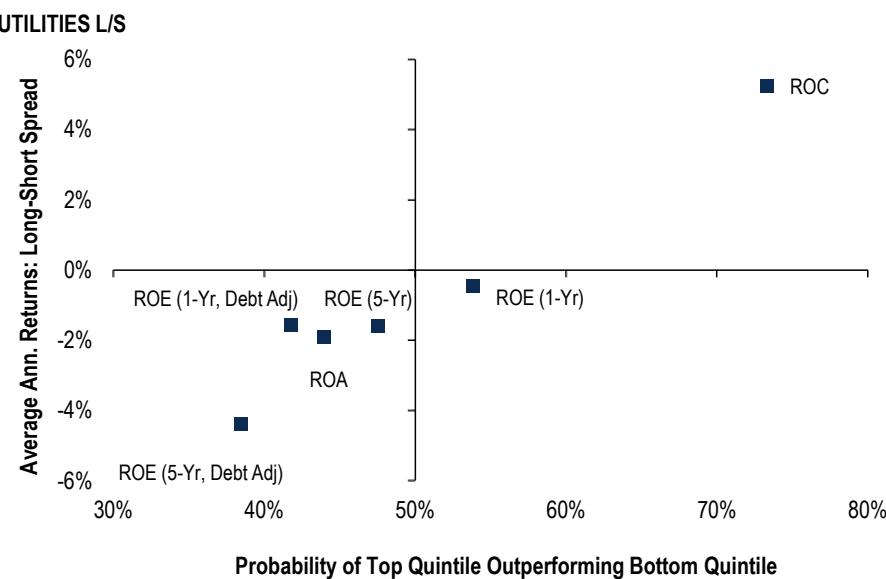
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 420: Growth Strategies for Utilities: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 421: Quality Strategies for Utilities: Avg Long-Short Spreads vs. Consistency of Spreads (1985 to 2016)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Backtesting methodology

We created top and bottom quintile stock screens for various factors that we follow for companies in the Russell 1000 Index GICS industry groups. The backtesting methodology for stock screens is identical for each factor except where noted. At the end of each month, each of our factors was applied to the index. Companies for which there was either no data or insufficient data were excluded from the analysis. We then created two screens showing stocks in the top and bottom quintiles. We tracked the output of these screens for the subsequent month.

We use Global Industry Classification Standard (GICS) level 2 industry groups, which was developed by MSCI and Standard & Poor's (S&P). The GICS structure consists of 10 sectors (Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Telecommunication Services, and Utilities) and 24 Industry Groups.

Note that no adjustment was made to remove stocks that were on the firm's restricted list from our backtest analysis.

Returns Calculation

For each of the factors analyzed, rebalancing and performance calculations for the backtesting were conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The results of each screen were computed on the total return basis. The hypothetical total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested.

The results of the quantitative screens used in our analysis may differ from the historical Russell 1000 index in that they are significantly less diversified, and, as such, are more exposed to specific stock or sector results. Because of this, the performance of the screens may be more volatile.

The hypothetical total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested.

Our backtest results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the results would have been lower. The results of individuals replicating the analysis presented here may differ from the results contained in this report for a variety of reasons, including different assumptions related to incurring transaction costs and/or investment advisory fees, as well as differences in pricing of securities that were acquired and disposed of, and differences in the weighting of such securities. The results may also differ based on differences in assumptions of treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

Backtesting is hypothetical in nature and reflects application of the screen at a time when it did not exist. It is not indicative of how the screen would perform if it is used going forward. Past performance should not and cannot be viewed as an indicator of future performance.

Section IV: Stock Strategies for Growth and Value Managers

Growth

Value Strategies
Momentum Strategies
Growth Strategies
Quality Strategies
Risk Strategies
Miscellaneous Strategies

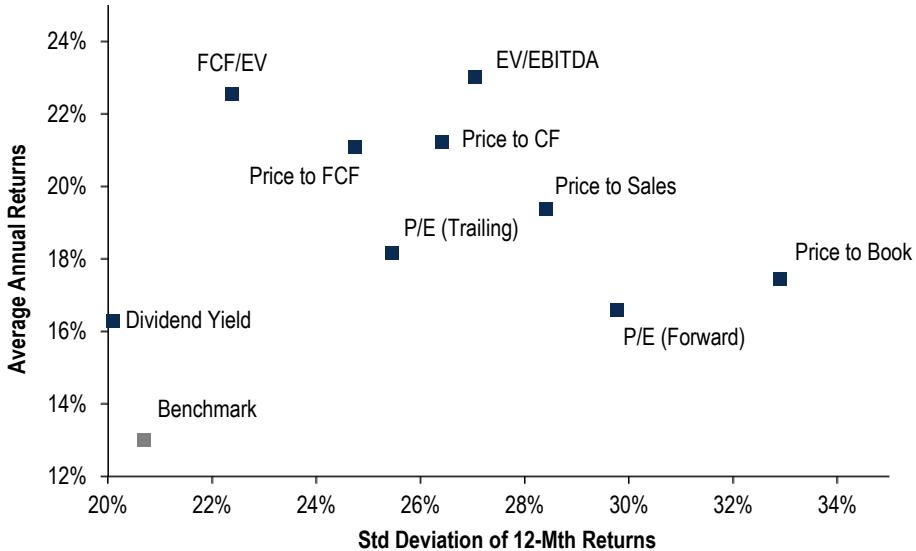
Value

Value Strategies
Momentum Strategies
Growth Strategies
Quality Strategies
Risk Strategies
Miscellaneous Strategies

Note: All charts in this section are based on backtested results during the period from month end Jan 1986 to month end March 2016. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of how the screen would perform if used going forward..

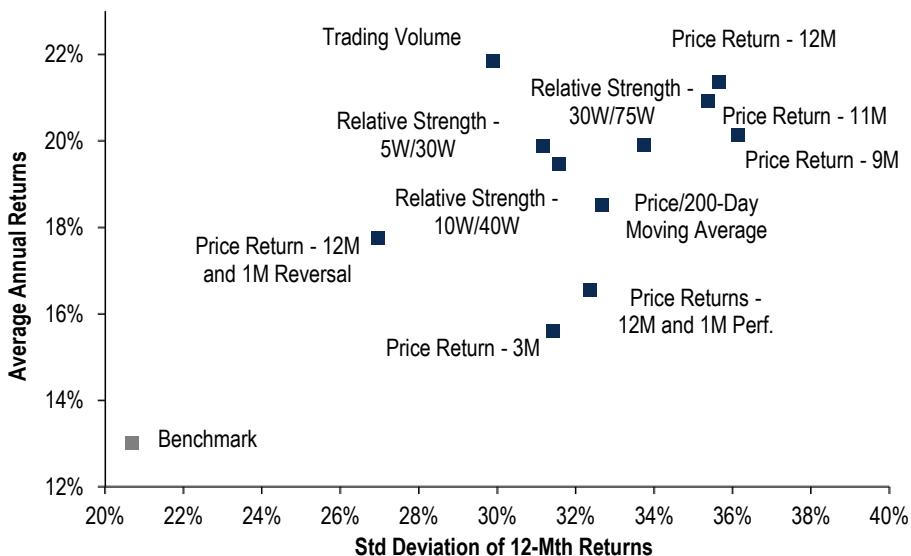
Growth

Chart 422: Value Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



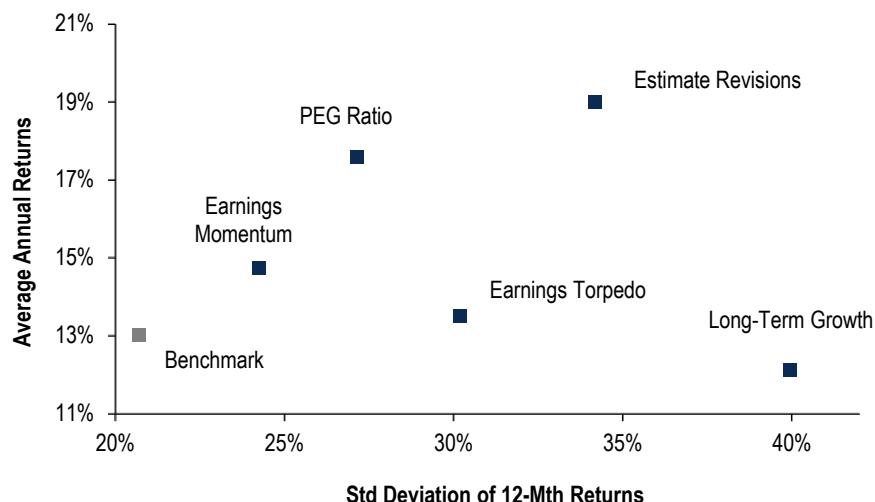
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 423: Momentum Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



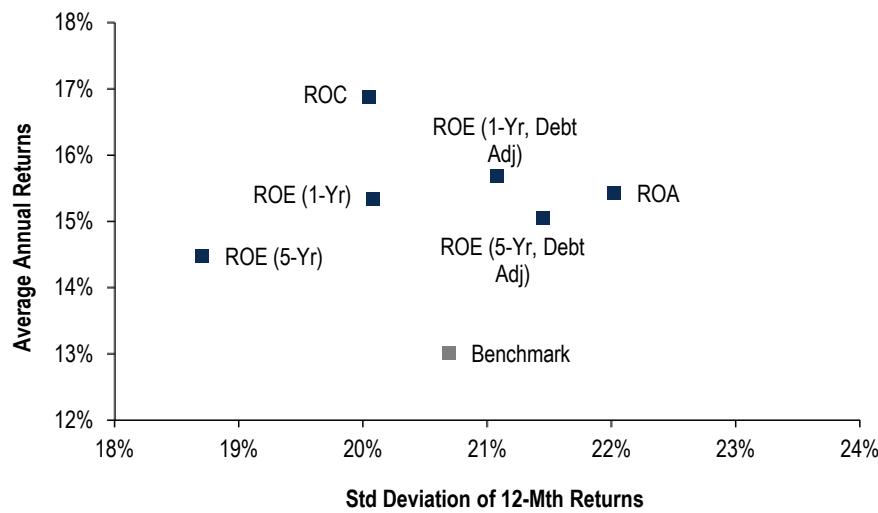
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 424: Growth Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



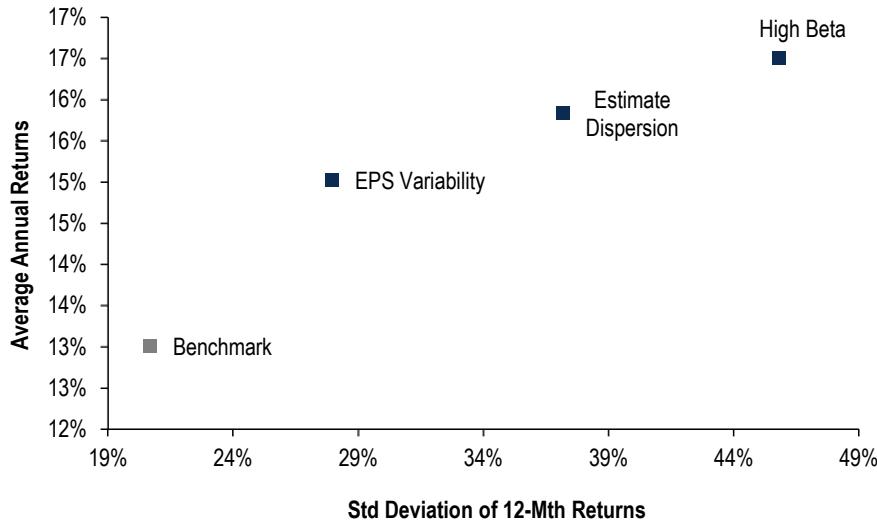
Source: BofA Merrill Lynch US Equity & Quantitative Strategy. See Backtesting Methodology at the end of this section.

Chart 425: Quality Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



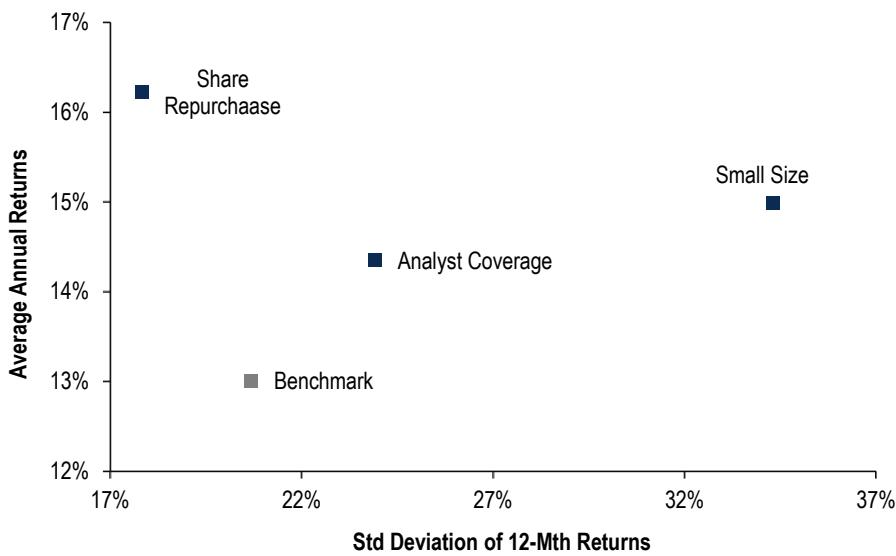
Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 426: Risk Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

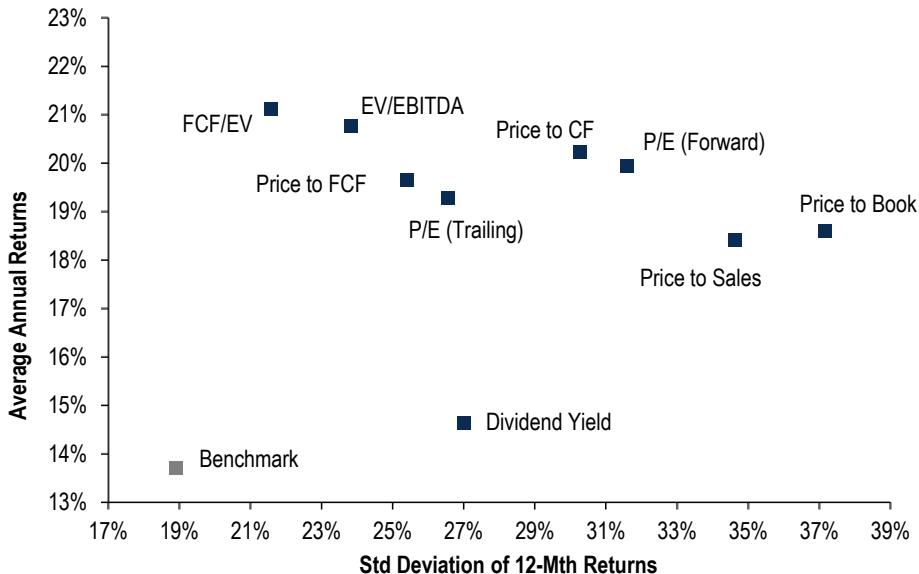
Chart 427: Miscellaneous Strategies for Russell 1000 Growth: Top Decile Returns from 1985 to 2016



Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

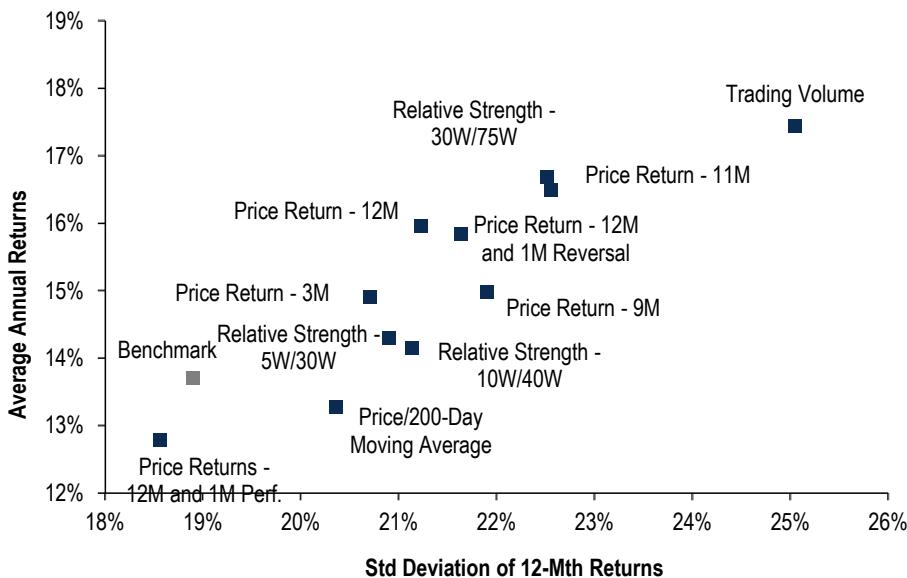
Value

Chart 428: Value Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



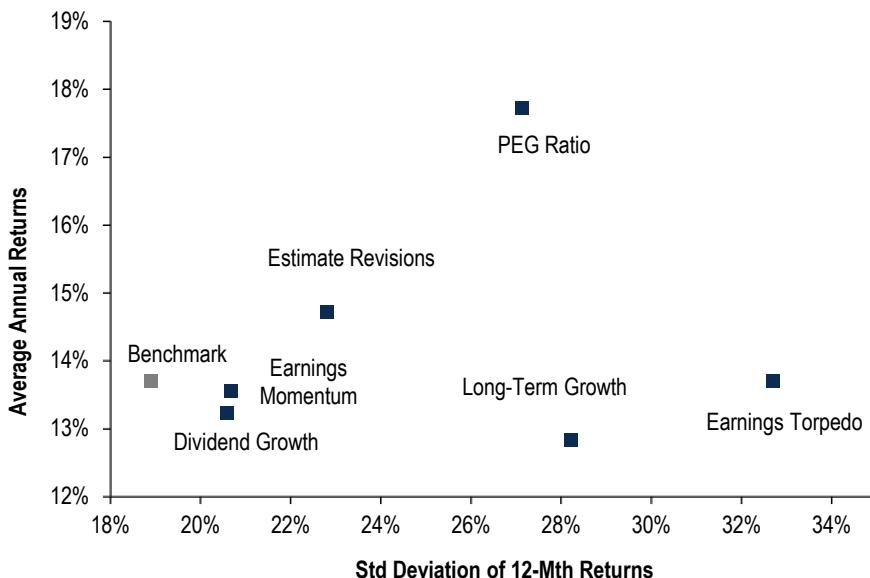
Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 429: Momentum Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



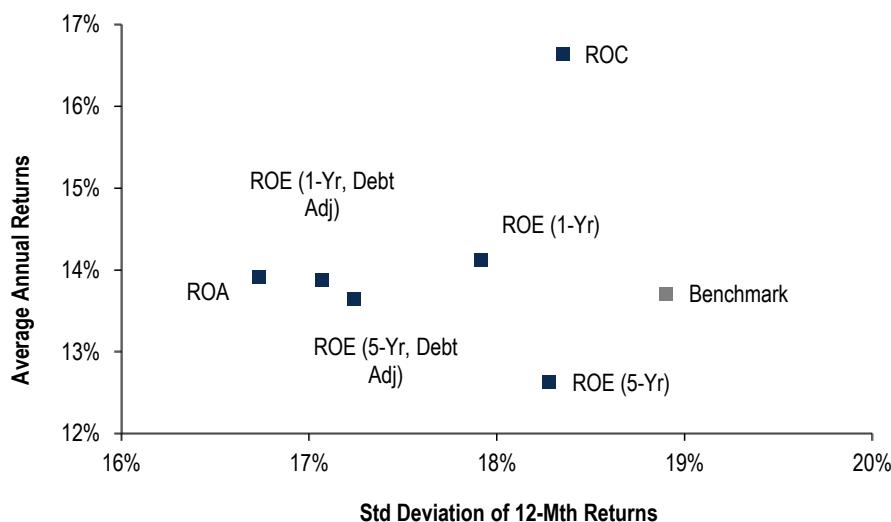
Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 430: Growth Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



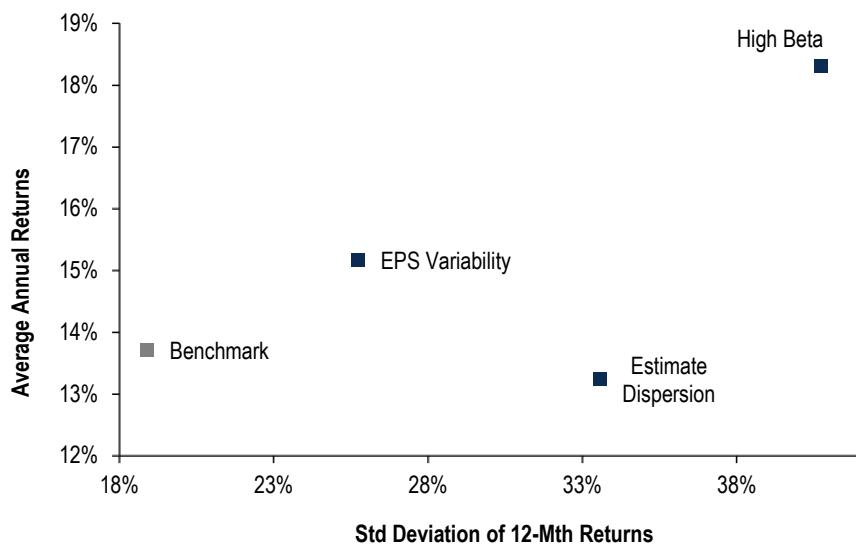
Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 431: Quality Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



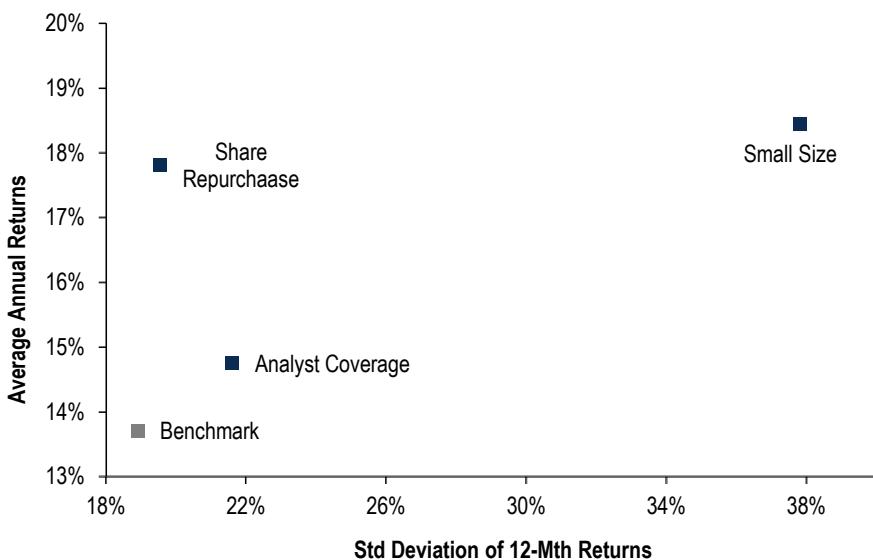
Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 432: Risk Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Chart 433: Miscellaneous Strategies for Russell 1000 Value: Top Decile Returns from 1985 to 2016



Source: BofA Merrill Lynch US Equity & Quantitative Strategy . See Backtesting Methodology at the end of this section.

Backtesting Methodology

We created top and bottom decile stock screens for various factors that we follow for companies in the Russell 1000 Growth Index and Russell 1000 Value index. The backtesting methodology for stock screens is identical for each factor except where noted. At the end of each month, each of our factors was applied to the index.

Companies for which there was either no data or insufficient data were excluded from the analysis. We then created two screens showing stocks in the top and bottom deciles. We tracked the output of these screens for the subsequent month.

Note that no adjustment was made to remove stocks that were on the firm's restricted list from our backtest analysis.

Returns Calculation

For each of the factors analyzed, rebalancing and performance calculations for the backtesting were conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The results of each screen were computed on the total return basis. The hypothetical total return performance calculation assumes that dividends paid on securities in a portfolio are deposited in a cash account on the ex-dividend date, and are not reinvested.

The results of the quantitative screens used in our analysis may differ from the historical Russell 1000 Growth index and the Russell 1000 Value index in that they are significantly less diversified, and, as such, are more exposed to specific stock or sector results. Because of this, the performance of the screens may be more volatile.

Our backtest results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the results would have been lower. The results of individuals replicating the analysis presented here may differ from the results contained in this report for a variety of reasons, including different assumptions related to incurring transaction costs and/or investment advisory fees, as well as differences in pricing of securities that were acquired and disposed of, and differences in the weighting of such securities. The results may also differ based on differences in assumptions of treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

Backtesting is hypothetical in nature and reflects application of the screen at a time when it did not exist. It is not indicative of how the screen would perform if it is used going forward. Past performance should not and cannot be viewed as an indicator of future performance.

Section V: BofAML Quality Strategies

The reasons to stick with Quality

Quality Risk/Reward Profile

Performance Charts

Note: The shaded area in performance charts shows back tested results during the period from month end Jan 1986 to month end December 1988. The unshaded portion represents actual performance since January 1989. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance. All scatter plots in this section are based on actual performance data after the screens were introduced.

The reasons to stick with Quality

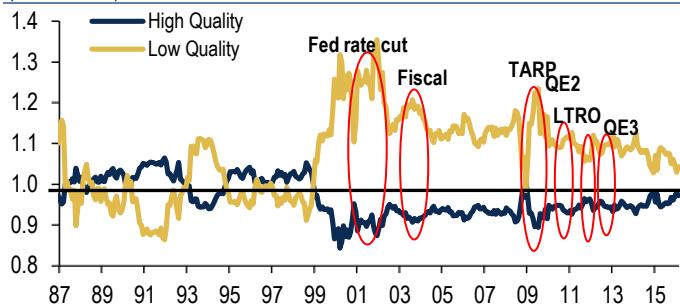
Over the years, we have written extensively on the topic of [quality](#), and it continues to be one of our key themes, not just for the next 12 months, but for the next 12 years as well. Below, we lay out key facts that investors should know about Quality:

Table 6: Relative price performance of B+ or Better vs. B or Worse stocks

Period	Performance Spread (ppt)
3 months	9.9
6 months	14.4
12 months	16.7
Year to date	8.7
2 years	26.2
3 years	25.9
5 years	40.5
10 years	21.6
15 years	55.4

Source: BofA Merrill Lynch US Quantitative Strategy, Standard & Poor's
As of February 29, 2016

Chart 434: Relative Fwd. P/E high quality (B+ or better) and low quality (B or worse) stocks



Source: S&P, BofA Merrill Lynch US Equity & US Quant Strategy

Table 7: Price performance during prior bear markets (including latest correction)

Period	B + or Better (annualized)	B or Worse (annualized)	Relative Performance: B+ or Better vs B or Worse (annualized)
	B + or Better (annualized)	B or Worse (annualized)	B+ or Better vs B or Worse (annualized)
Aug '87 - Nov '87	-74.9%	-79.2%	4.3%
Jun '90 - Oct '90	-53.1%	-61.7%	8.6%
Mar '00 - Sep '02	2.8%	-20.8%	23.6%
Oct '07 - Feb '09	-42.2%	-48.2%	6.0%
May '15 – Feb '16	-8.5%	-31.0%	22.5%
Average	-35.2%	-48.2%	13.0%
Median	-42.2%	-48.2%	8.6%

Source: BofA Merrill Lynch US Quantitative Strategy, Standard & Poor's. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

QUALITY HAS BEEN A LONG TERM OUTPERFORMER

High quality (B+ or higher) stocks have outperformed low quality (B or lower) stocks year to date and over the past one, two, five, 10 and 15 years.

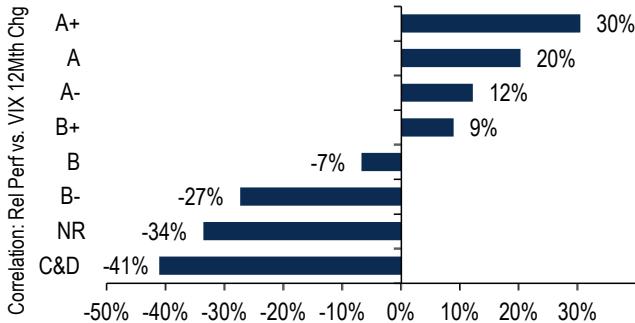
...BUT IT'S STILL CHEAP

As a result of the outperformance, the valuation gap has been closing, but High Quality still remains cheap relative to Low Quality.

....AND IS A GOOD BEAR MARKET HEDGE

High quality stocks have consistently outperformed in each of the last four bear markets and during the most recent market correction.

Chart 435: BofAML Quality Indices 12m Performance Correlation to 12m Changes in CBOE VIX (1986 to present)

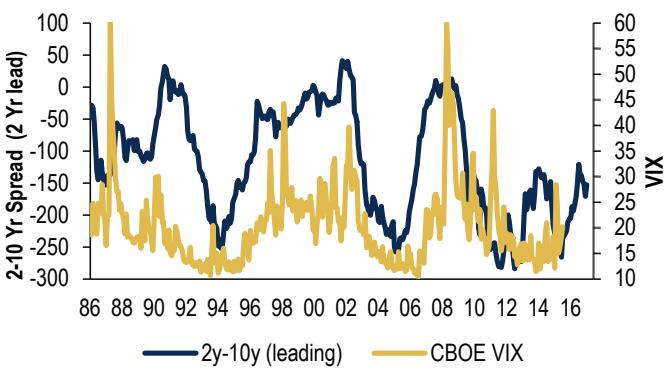


Source: BofA Merrill Lynch US Equity and Quantitative Strategy, Standard & Poor's.. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

...AND THE BEST HEDGE AGAINST VOLATILITY

High Quality is the best hedge against rising volatility...

Chart 436: CBOE VIX and Inverted Slope of Yield Curve (1986 to present)

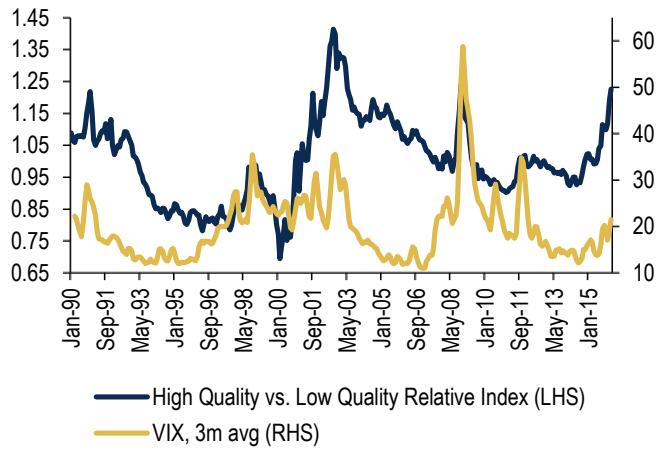


Source: CBOE, BEA, BofA Merrill Lynch US Equity & US Quantitative Strategy

VOLATILITY MIGHT BE ON THE HORIZON

...and the yield curve suggests that volatility will continue to trend higher over the next year or two.

Chart 437: B+ or Higher vs. B or Lower and 3m Avg VIX



Source: BofAML US Equity & Quant Strategy, S&P, FactSet, CBOE

...AND THIS FAVORS HIGHER QUALITY

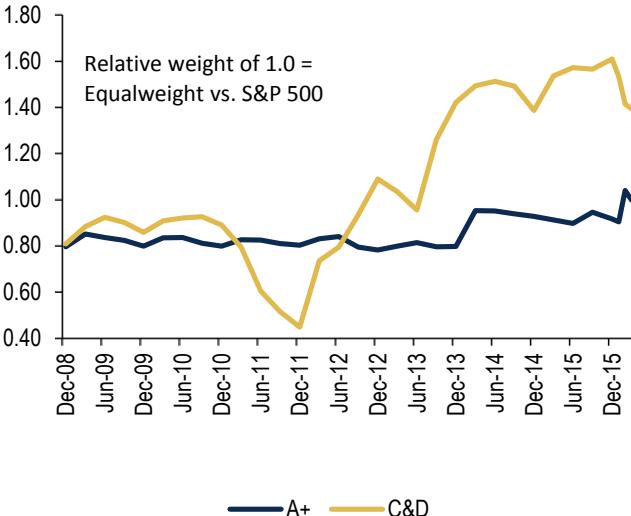
Quality has behaved in line with historical trends over the last few years, with nearly every spike in volatility coinciding with the outperformance of higher quality stocks. This relationship has held true over the last 5 and 10 years.

Table 8: High Quality vs. Low Quality and 3-month average VIX

	Correlation
Since 1990	25.6%
Last 10 years	38.7%
Last 5 years	28.8%

Source: BofAML US Equity & Quant Strategy, S&P, FactSet, CBOE.. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

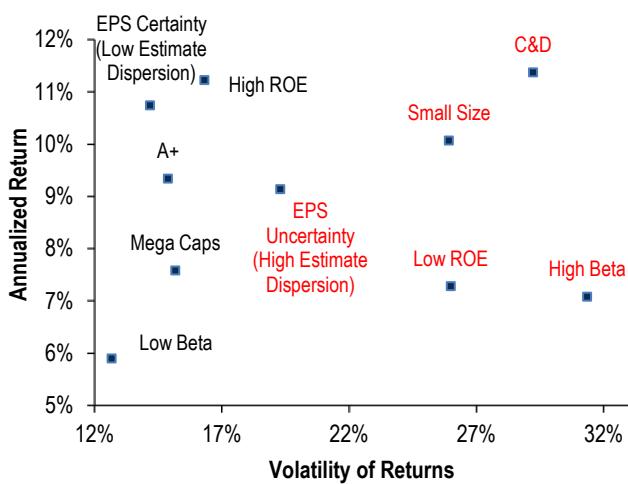
Chart 438: Relative fund positioning of stocks with A+ and C&D ratings



Source: BofA Merrill Lynch US Equity & US Quant Strategy, Lionshares, Standard & Poor's

Low beta has historically had a much weaker risk-return profile than other high quality/low risk factors.

Chart 439: High and Low Quality Strategies Reward vs. Risk
Average annualized return vs. annualized volatility (standard deviation) of returns (3/31/86-12/31/15)

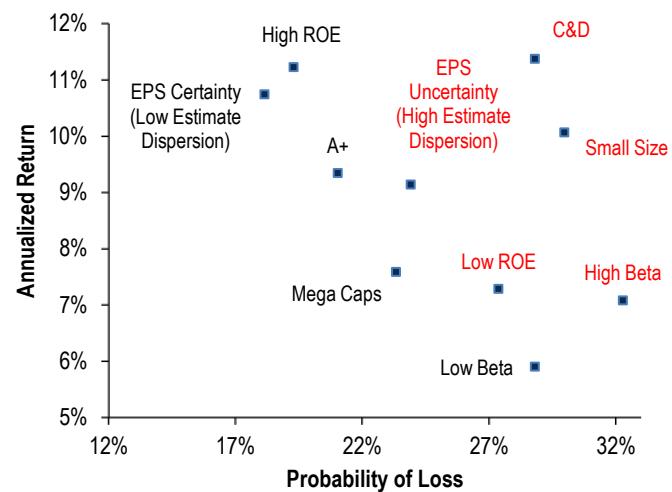


Source: BofA Merrill Lynch US Equity and Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

YET INVESTORS ARE OVERWEIGHT LOW QUALITY

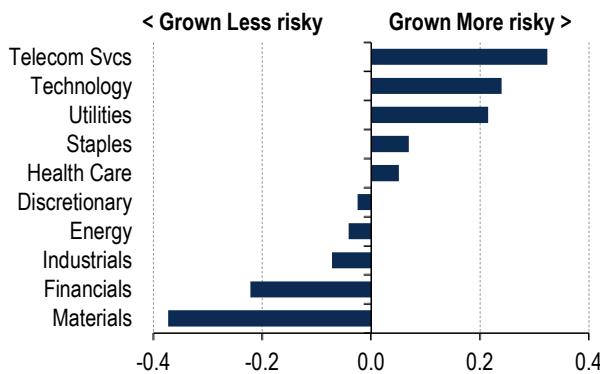
Despite the outperformance of High Quality, large cap fund managers have become increasingly overweight Low Quality.

Chart 440: High and Low Quality Strategies Reward vs. Downside Risk
Average annualized return vs. probability of loss (3/31/86-12/31/15)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 441: Difference between 1-year vs. 5-year beta for S&P 500 sectors

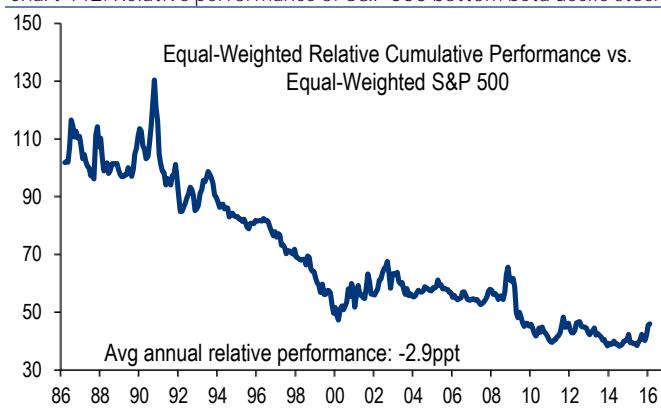


Source: Factset, BofA Merrill Lynch US Equity & US Quant Strategy

BETA IS A LESS CONSISTENT FACTOR

Beta tends to be inconsistent and volatile over the course of a cycle, making it a less reliable defensive factor.

Chart 442: Relative performance of S&P 500 bottom beta decile stocks



Source: BofA Merrill Lynch US Equity & US Quant Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

...AND LOW BETA TENDS TO UNDERPERFORM

Low beta strategies tend to underperform most of the time.

Table 9: Quality (fundamental stability) vs. Low Beta (price stability)

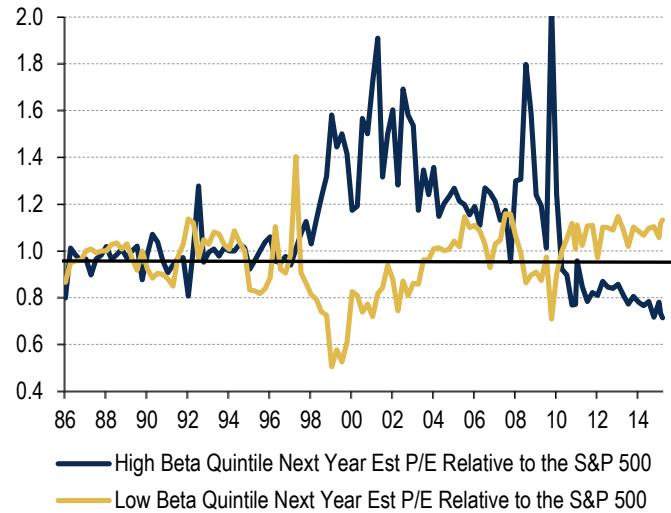
Metric	Beta (Lowest Decile Median)	B+ or Better (Median)	Diff (%)
EPS Volatility	27%	20%	34.9%
EPS Stability (lower = more stable)	17.5	13.3	31.6%
DPS Vol	3%	9%	-68.3%
Max 5-yr EPS Decline	30%	11%	181.6%
Max 5-yr Price Decline	16%	18%	-14.7%
Net Debt/EBITDA	3.21	1.31	145.0%
ROCE	5%	11%	-55.7%
ROE	10%	19%	-46.6%
Beta	0.49	0.94	-47.7%
Quality Score (lower = higher quality)	4.00	3.00	33.3%

Source: BofA Merrill Lynch US Equity & US Quant Strategy, S&P, Compustat

LOW BETA ≠ QUALITY

Stocks with the lowest beta tend to have higher earnings volatility, more leverage and lower returns on investment than those based on fundamental beta.

Chart 443: Relative Fwd. P/E of S&P 500 Low Beta and High Beta Quintiles

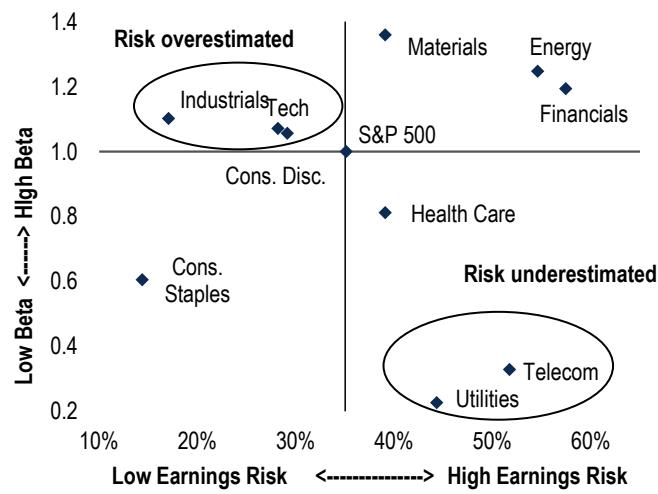


Source: BofA Merrill Lynch US Equity & US Quant Strategy

LOW VS HIGH BETA AT EXTREMES

In contrast to High Quality, the valuation premium on Low Beta relative to High Beta is at a record high.

Chart 444: Price risk (5yr beta) vs. earnings risk (market-weighted % of low quality stocks) for S&P 500 sectors (as of 2/29/16)



Note: Earnings risk based on S&P Quality Ranks (stocks ranked B or worse classified as low quality) based on last 10 years

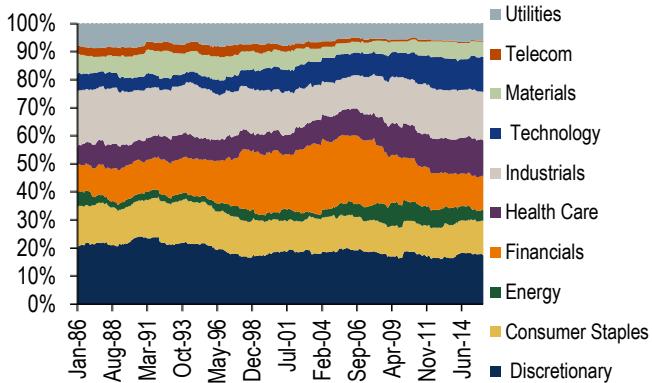
Source: S&P BofA Merrill Lynch US Equity & US Quant Strategy

...AND MISPRICES THE RISK

A fundamental mispricing of risk: Quality ≠ Defensive

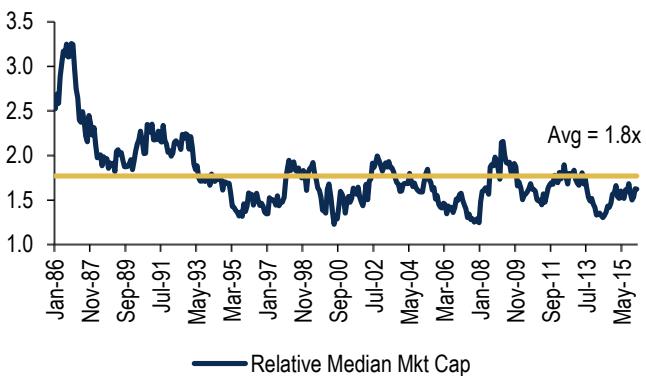
In the wake of the Financial Crisis, we have seen a substantial shift in the sector composition of stocks rated B+ or higher. In particular, the percentage of Technology stocks is the highest in our data history (13%), while Health Care is just off the all-time highs, also at 13%. Additionally, Industrials is now tied with Consumer Discretionary for the sector with the most high quality stocks, a title that the Financials held until 2009.

Chart 445: B+ or Better sector exposure over time based on number of cos



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, S&P

Chart 447: S&P 500 relative median mkt cap: B+ or Higher vs. B or Lower



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, S&P

Table 10: Median B+ or Higher attributes vs. historical average since July 1990

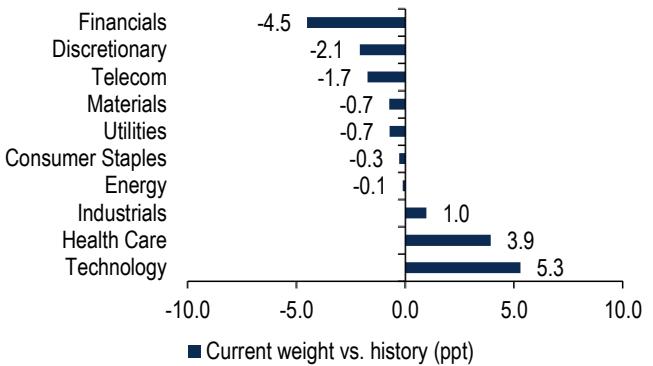
	B+ or Better	Historical Avg	Diff
EPS Volatility	20%	26%	-6%
EPS Stability (lower = more stable)	13.3	18.4	-5.1
DPS Vol	9%	6%	3%
Max 5-yr EPS Decline	11%	9%	1%
Max 5-yr Price Decline	18%	25%	-7%
Net Debt/EBITDA	1.31	1.12	0.19
ROCE	11%	12%	0%
ROE	19%	17%	2%
Beta	0.94	0.91	0.03
5-yr Proforma vs. GAAP EPS	5.7%	5.5%	0.2%
5-yr Proforma vs. FCFE/Sh	9.6%	40.6%	-30.9%
Quality Score (low = high quality)	3.00	2.93	0.07

Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, Compustat, IBES, S&P

Relative to Low Quality stocks, High Quality stocks have higher returns on investment and EPS stability, lower leverage, lower beta and lower EPS volatility (Chart 448).

Compared to history, the relative ROE and quality of earnings of High Quality vs. Low Quality stocks is higher today (Chart 449).

Chart 446: B+ or Better current sector weight vs. historical avg (ppt)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, S&P

HIGHER QUALITY IS USUALLY BIGGER

Since 1992, the median High Quality stock has generally had a market cap between 1.3x and 2.1x the size of the median Low Quality stock.

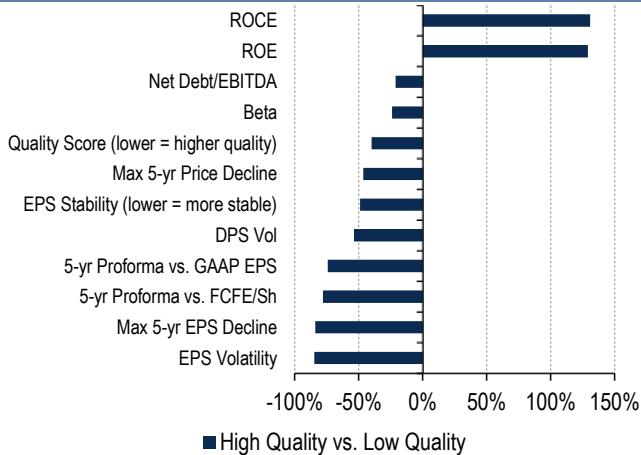
At 1.6x, the relative median market cap is slightly below the middle of that range.

...AND CONSISTENT OVER TIME

Relative to its historical average (since 1990), the median ROE has increased despite a drop in earnings volatility and leverage.

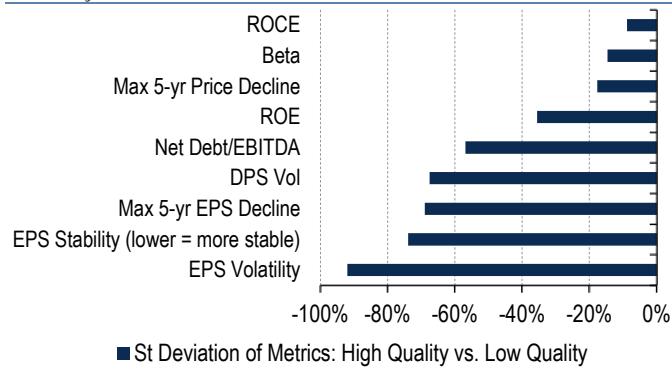
Meanwhile, the beta and dividend volatility have increased a bit, while the average quality rating has dipped.

Chart 448: Current B+ or Higher vs. B or Lower attributes (relative)



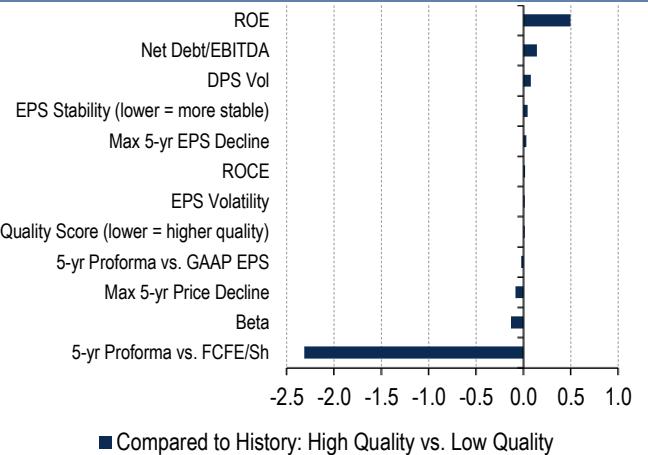
Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, Compustat, IBES, S&P

Chart 450: B+ or Higher vs. B or Lower standard deviation of attributes since July 1990



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, Compustat, IBES, S&P

Chart 449: B+ or Higher vs. B or Lower attributes (relative) vs. history



Source: BofA Merrill Lynch US Equity and Quantitative Strategy, FactSet, Compustat, IBES, S&P

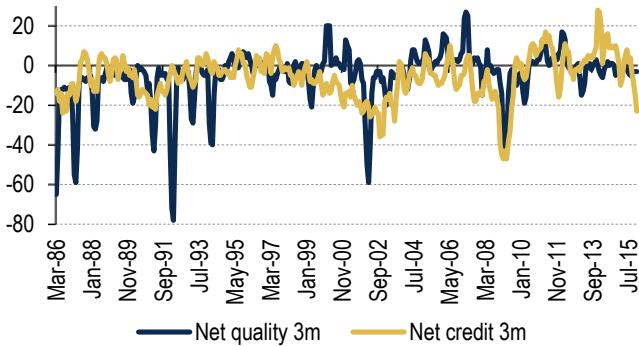
....IN CONTRAST TO LOWER QUALITY

Most importantly, the characteristics of the high quality basket have been remarkably consistent over time, particularly relative to the lower quality basket, which sees its earnings volatility, leverage and earnings quality fluctuate significantly over the course of the cycle.

Quality ratings vs. credit ratings

In examining the relationship between credit and quality ratings, we found that there is a relationship in that both are impacted by the underlying fundamentals of the companies. If the profits decline meaningfully, it can reduce the earnings and dividend stability of the company as well as the company's ability to meet their financial obligations. In aggregate, we did see a coincident relationship between overall credit and quality rating changes.

Chart 451: Net quality and credit rating upgrades/downgrades

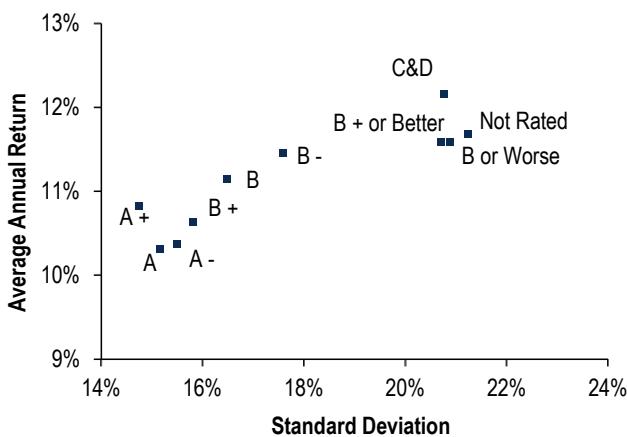


Source: BofAML US Equity & Quant Strategy, S&P

Quality Risk/Reward Profile

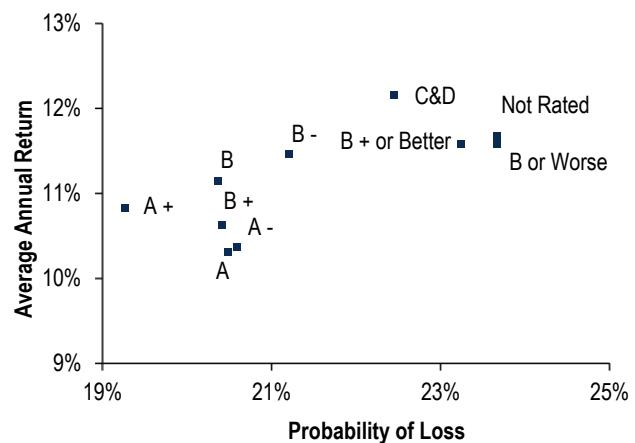
Below we show the risk to reward, using two measures of risk, of high and low quality stocks based on various measures of quality. This includes the S&P Common Stock Ranks (our preferred measure of quality) as well as Earnings Estimate Dispersion, ROE, Size, and Beta.

Chart 452: Risk Reward Characteristics (1986 to 2016)



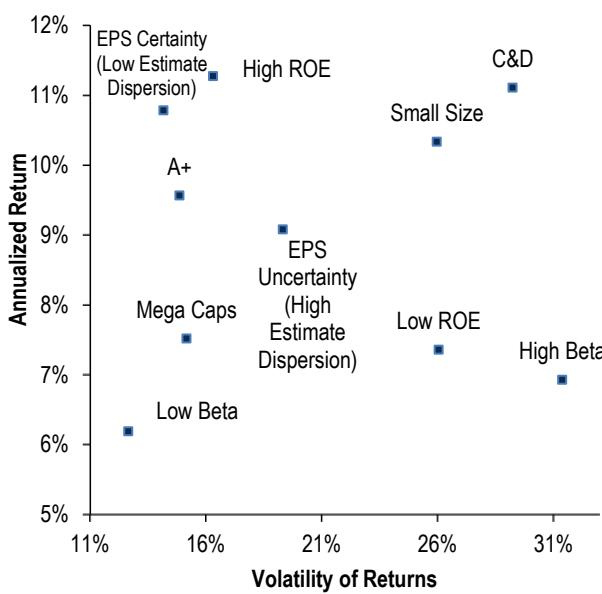
Source: BofA Merrill Lynch US Quantitative Strategy . Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 453: Downside Risk Reward Characteristics (1986 to 2016)



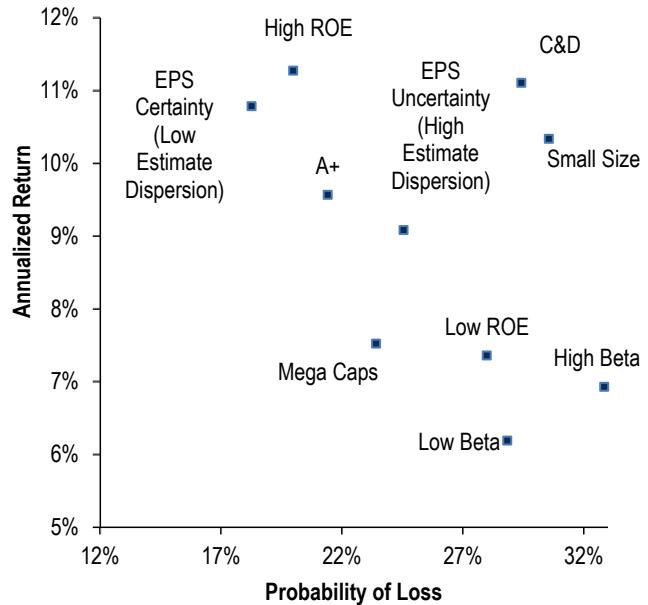
Source: BofA Merrill Lynch US Quantitative Strategy . Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 454: High and Low Quality Strategies Reward vs. Risk
Average annual return vs. annualized volatility (standard deviation) of returns
(3/31/86-3/31/16)



Source: BofA Merrill Lynch US Equity and Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 455: High and Low Quality Strategies Reward vs. Downside Risk
Average annual return vs. probability of loss (3/31/86-3/31/16)

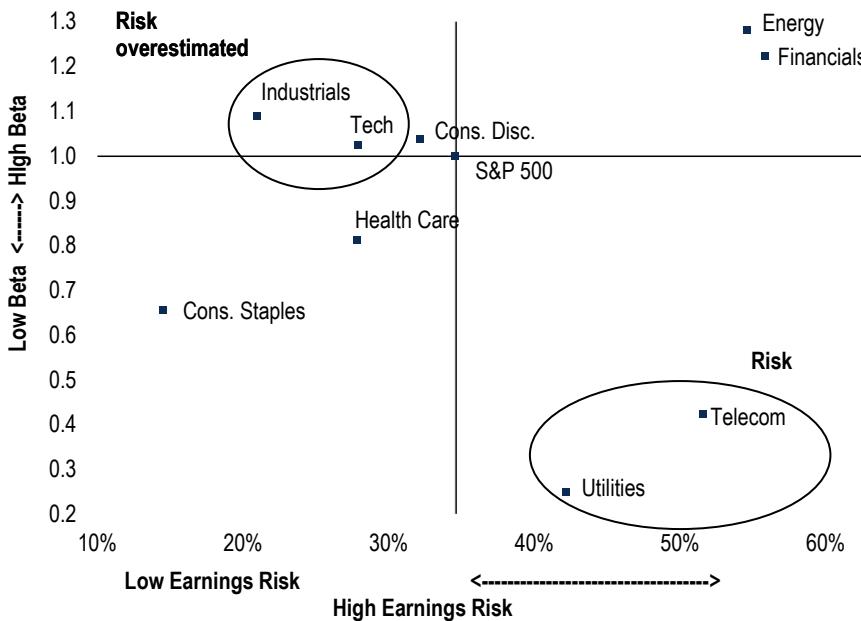


Source: BofA Merrill Lynch US Equity and Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Comparing “fundamental beta” to price beta

While many investors use low beta as another measure of quality, we recommend assessing earnings volatility (“fundamental beta”) instead of price volatility. When classifying a stock as “safe”, we think investors should care more about the underlying earnings risk, as well as balance sheet quality, sustainability of dividends, and a host of other factors that play into the safety of an investment. Investors that equate low beta with earnings stability may be surprised to find that sectors that are penalized for being too cyclical, and thus trade at higher betas, have actually exhibited far more earnings stability over the last cycle than some of their lower beta counterparts, key examples being Industrials and Tech vs. Utilities and Telecom, respectively.

Chart 456: Price Risk (5-year beta) vs. Earnings Risk (cap-weighted proportion of stocks ranked B or worse by S&P quality rank) of S&P 500 GICS sectors



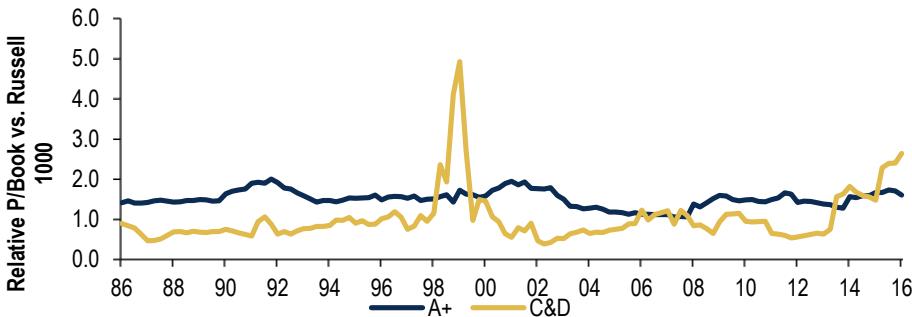
Source: BofA Merrill Lynch US Equity & Quant Strategy, Standard & Poor's

Valuations

High quality stocks are historically inexpensive based on a wide variety of valuation metrics.

High quality seems historically inexpensive on book value: high quality stocks trade in line with low quality stocks on book value, where they have normally traded at a steep premium.

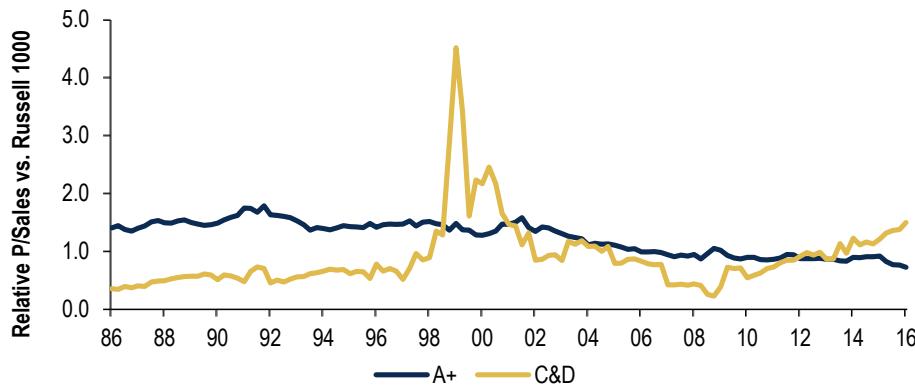
Chart 457: A+ vs. C&D Price to Book relative to Benchmark (1986 to present)



BofA Merrill Lynch US Equity & US Quantitative Strategy

Low quality is historically expensive on sales: on price to sales, low quality stocks are more expensive than high quality stocks, again where they have normally traded at a discount.

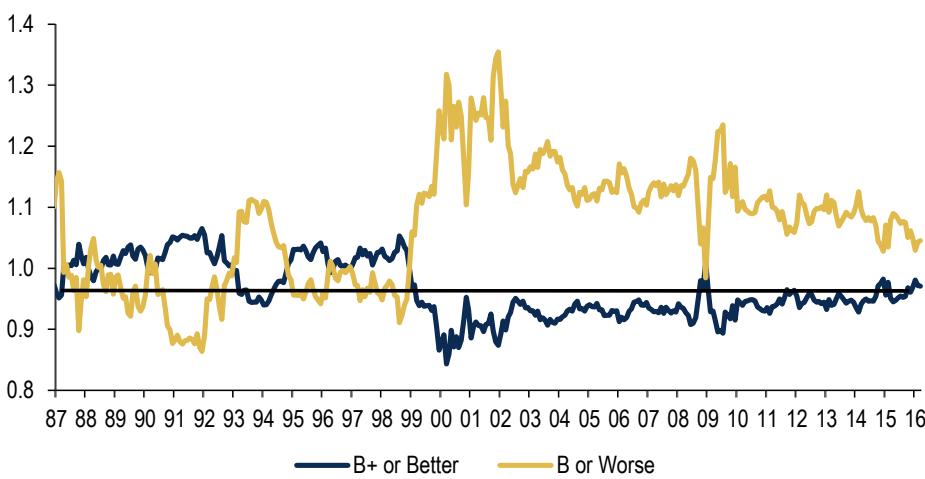
Chart 458: A+ vs. C&D Price to Sales relative to Benchmark (1986 to present)



BofA Merrill Lynch US Equity & US Quantitative Strategy

On earnings, low quality is still expensive and high quality is still cheap. But mean reversion has begun, and we think, will continue.

Chart 459: "B+ or Better" vs. "B or Worse" Forward P/E relative to Benchmark (1986 to present)

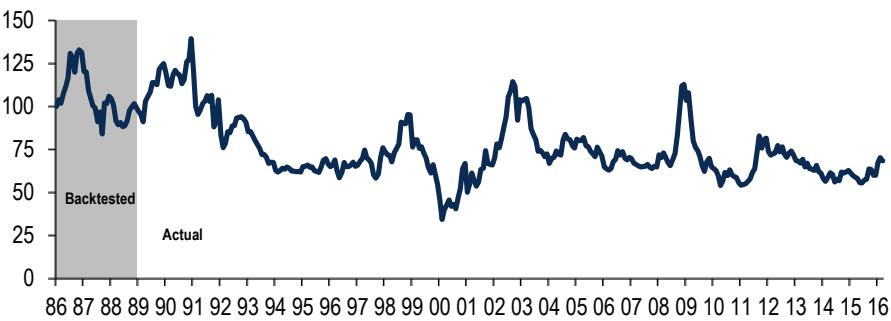


Source: BofA Merrill Lynch US Equity & US Quantitative Strategy

NB: we use B+ or Better vs. B or Worse as our definitions of high and low quality in Chart 14 because C&D rated companies had many months of negative aggregated earnings forecasts.

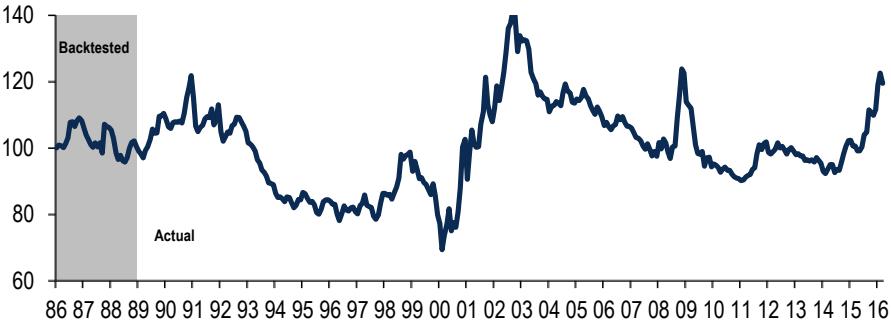
Performance Charts

Chart 460: A+ vs C&D



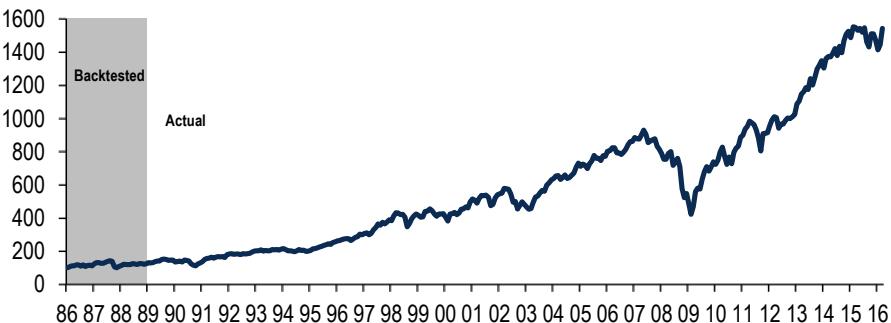
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 461: B+ or Better vs. B or Worse



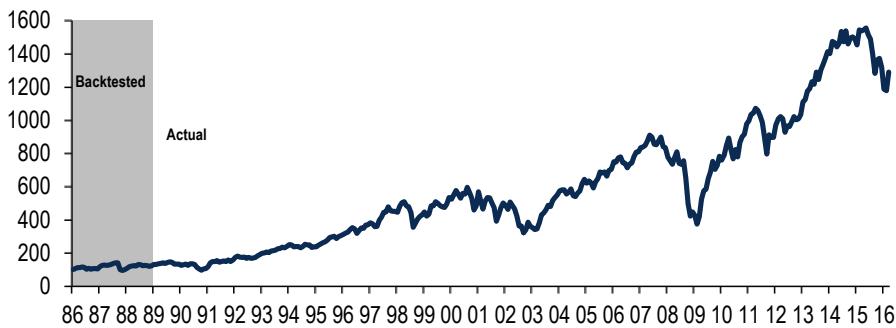
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 462: B+ or Better



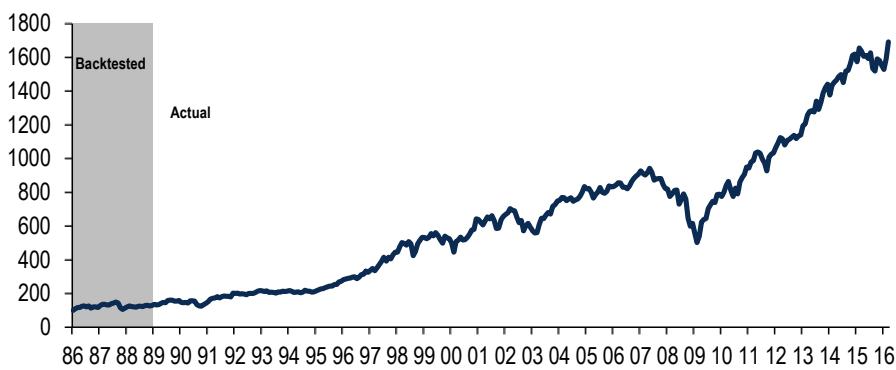
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 463: B or Worse



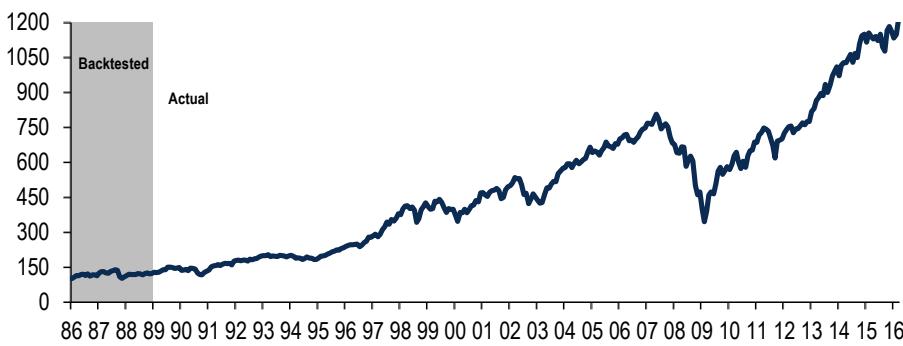
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 464: A+



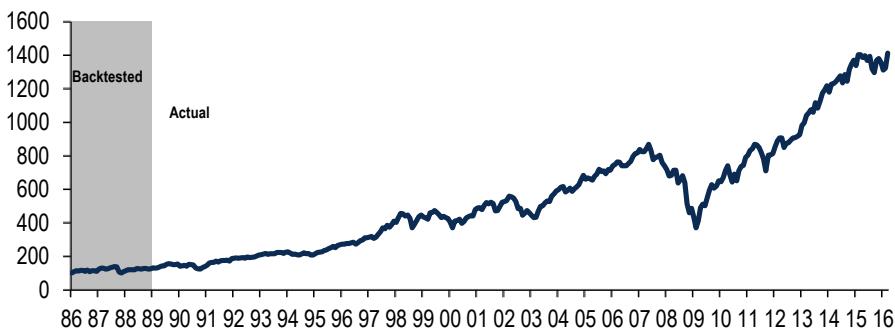
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 465: A



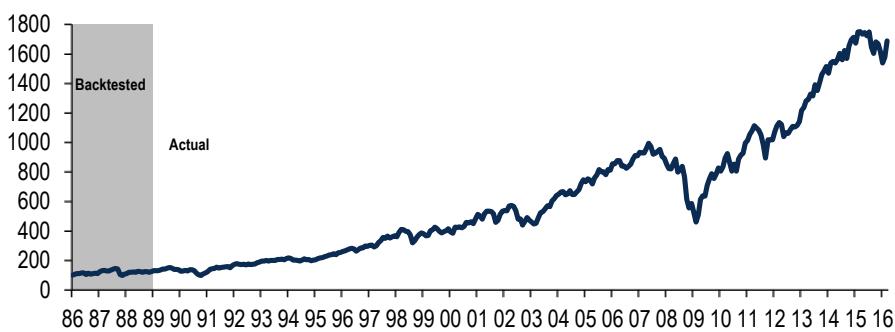
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 466: A-



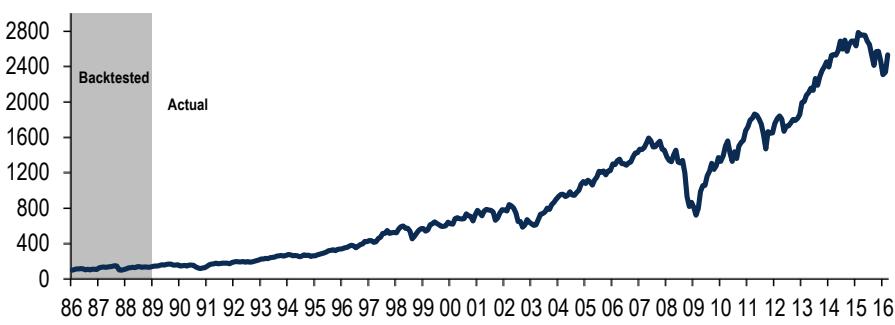
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 467: B+



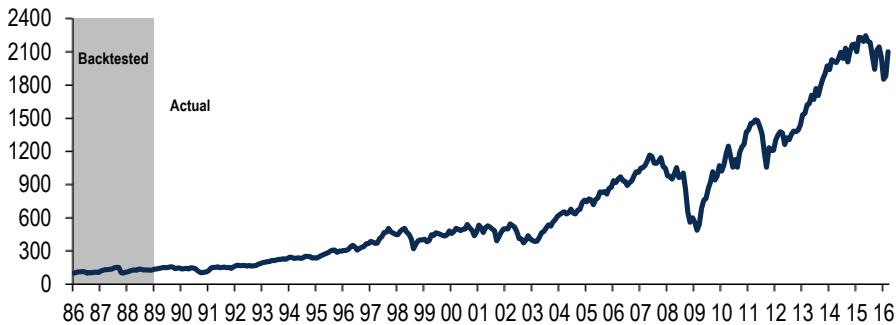
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 468: B



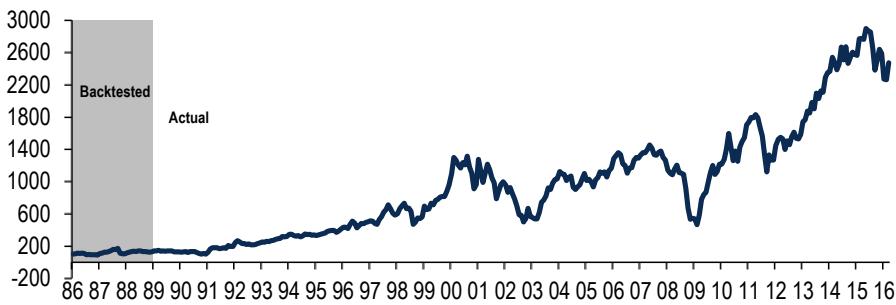
Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 469: B-



Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Chart 470: C&D



Source: BofA Merrill Lynch US Quantitative Strategy. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not intended to be indicative of future performance.

Definitions of quality metrics

- “A+” vs. “C&D”: Highest vs. lowest quality stocks within the BofAML US coverage universe based on the S&P Common Stock Rankings. These rankings are based on a quantitative assessment of long-term growth and the stability of a company’s earnings and dividends over a 10-year period.
- Note: we also sometimes define high quality vs. low quality in our work as “B+ or Better” vs. “B or Worse” ranked stocks when a broader sample of stocks is needed.
- **ROE:** Top and bottom deciles of the S&P 500 on Trailing 4-quarter return on equity where return is measured as trailing twelve month earnings, equity is measured by book value.
- **Beta:** Top and bottom deciles of the S&P 500 based on five-year (60-month) adjusted beta vs. S&P 500.
- **Earnings Certainty:** Bottom decile of the S&P 500 based on dispersion of next year’s consensus estimates, where low dispersion or clustered estimates suggest a higher level of certainty. **Earnings Uncertainty:** Top decile of the S&P 500 based on

dispersion of next year's consensus estimates, where most dispersed estimates suggest a lower level of certainty.

- **Nifty 50 / Small Size:** Top and bottom deciles of the S&P 500 based on current market capitalization.

Strategies of investing in quality by various measures have generally behaved similarly over time.

As the table below illustrates, baskets of high and low quality stocks corresponding to each of these measures generally behave similarly over time based on correlations of monthly returns. Whereas some strategies are more similar than others, most display reasonably high correlations in returns.

Exhibit 9: Correlation between High-Low Quality Performance Spreads (1989 to 3/2016)

	High ROE vs. Low ROE	Low Beta vs. High Beta	Certain vs Uncertain Earnings	Nifty 50 vs. Small Size	"A+" vs. "C&D"
High vs. Low ROE	100.0%				
Low s. High Beta	63.7%	100.0%			
Certain vs Uncertain Earnings	61.0%	64.8%	100.0%		
Nifty 50 vs. Small Size	65.2%	48.1%	53.9%	100.0%	
"A+" vs. "C&D"	60.3%	64.4%	64.7%	39.5%	100.0%

Source: BofA Merrill Lynch US Equity and US Quantitative Strategy

Note: while we track the performance of Debt to Equity and Altman Z-Scores, which may be considered quality measures as well, we excluded them from this analysis as they behave quite differently from the other measures we examine, and appear to have different drivers for returns. Moreover, Altman Z-Scores exclude Financials, so comparisons would be unfair.

Methodology

For the BofAML Quality indices, we created stock screens by using Standard and Poor's quality ranking for companies in the BofA Merrill Lynch research coverage. At the end of each month, the companies in the universe are grouped by their quality rankings. We then created quality ranking screens showing stocks in quality rank. We tracked the output of these screens for the subsequent month.

Note that no adjustment was made to remove stocks that were on the firm's restricted list from our backtest analysis.

Returns Calculation

For each of the factors analyzed, rebalancing and performance calculations were conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. The results of each screen were computed on the basis of price return.

Our backtest results do not reflect transaction costs, tax withholdings or any investment advisory fees. Had these costs been reflected, the results would have been lower. The results of individuals replicating the analysis presented here may differ from the results contained in this report for a variety of reasons, including different assumptions related to incurring transaction costs and/or investment advisory fees, as well as differences in the time and price that securities were acquired and disposed of, and differences in the weighting of such securities. The results may also differ based on differences in assumptions of treatment of dividends received, including the amount received and whether and when such dividends were reinvested.

Backtesting is hypothetical in nature and reflects application of the screen at a time when it did not exist. It is not indicative of how the screen would perform if it is used going forward. Past performance should not and cannot be viewed as an indicator of future performance.

Section VI: Relative Valuation for Industries

Consumer Discretionary

Consumer Staples

Energy

Financials

Health Care

Industrials

Information Technology

Materials

Telecommunication Services

Utilities

Relative valuation: industries

The below charts illustrate the absolute and relative Price/Book, Price/Operating Cash Flow, and Forward (NTM) P/E of the S&P 500 industries from 1986-March 2013. Industries with less than 10 years of valuation history are excluded.

Consumer Discretionary

Chart 471: Auto Components: P/B

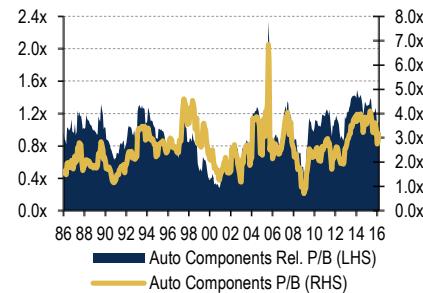


Chart 472: Auto Components: P/OCF

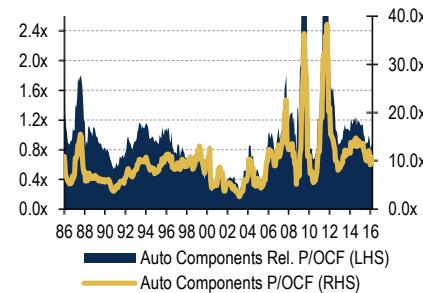


Chart 473: Auto Components: Fwd. P/E

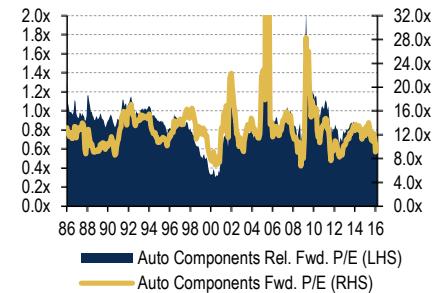


Chart 474: Hotels Restaurants & Leisure: P/B

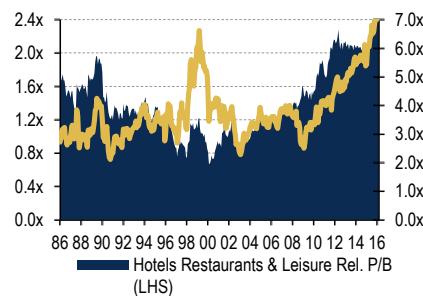


Chart 475: Hotels Restaurants & Leisure: P/OCF

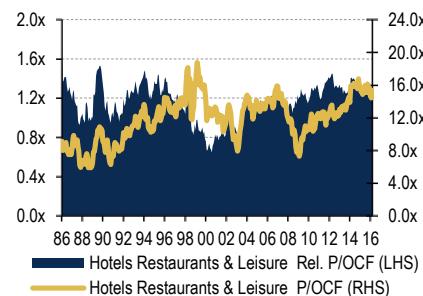


Chart 476: Hotels Restaurants & Leisure: Fwd. P/E

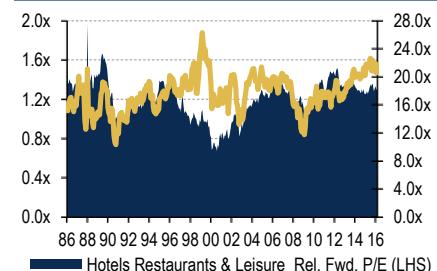


Chart 477: Household Durables: P/B

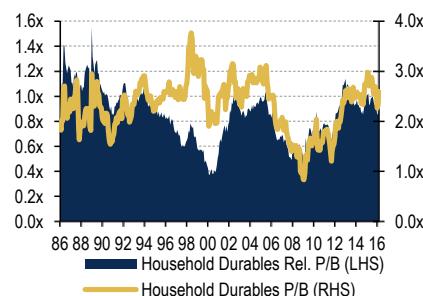


Chart 478: Household Durables: P/OCF

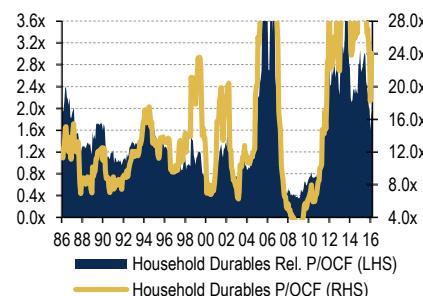


Chart 479: Household Durables: Fwd. P/E

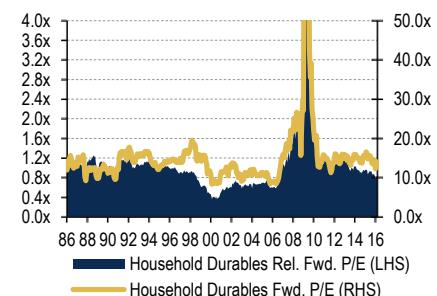


Chart 480: Internet & Catalog Retail: P/B

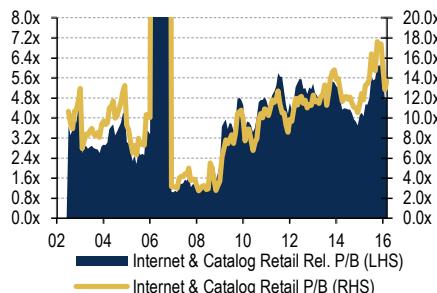


Chart 481: Internet & Catalog Retail: P/OCF

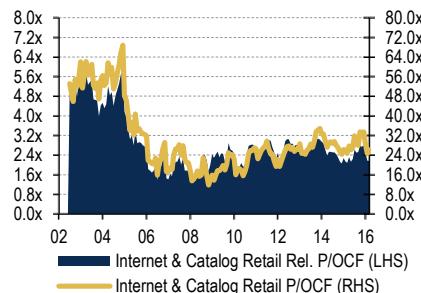


Chart 482: Internet & Catalog Retail: Fwd. P/E

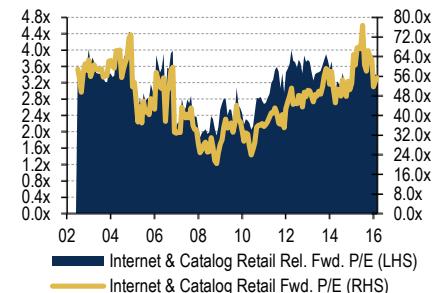


Chart 483: Leisure Equipment & Products: P/B

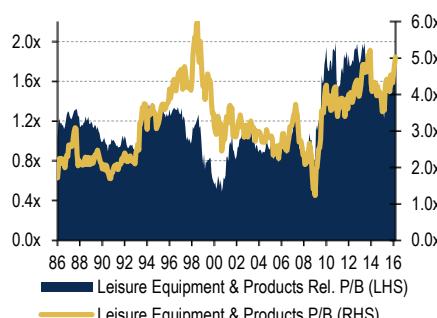


Chart 484: Leisure Equipment & Products: P/OCF

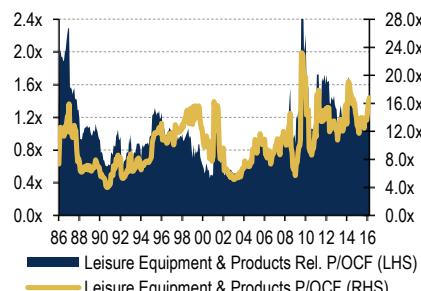


Chart 485: Leisure Equipment & Products: Fwd. P/E

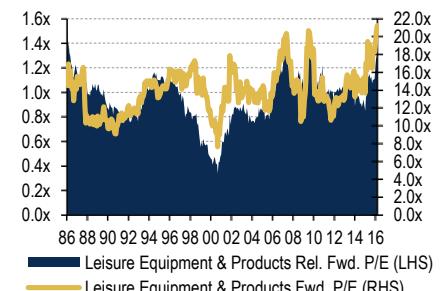


Chart 486: Media: P/B

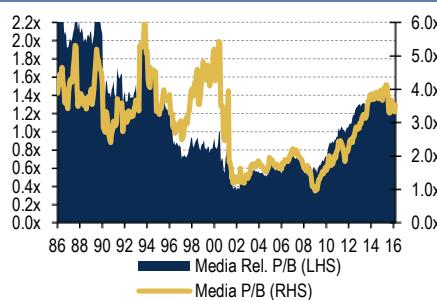


Chart 487: Media: P/OCF

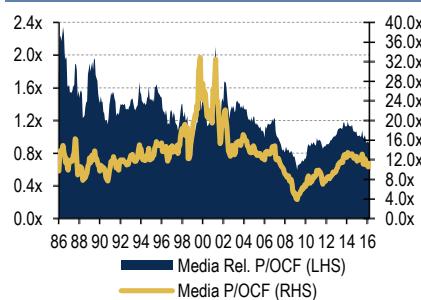


Chart 488: Media: Fwd. P/E

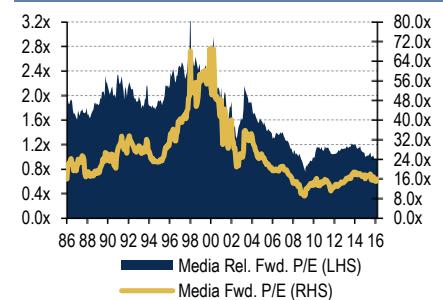
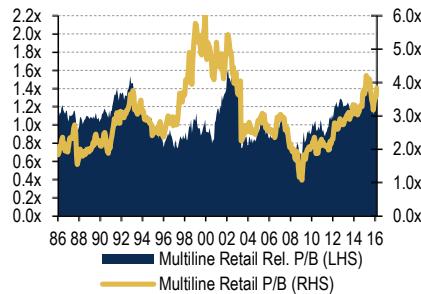
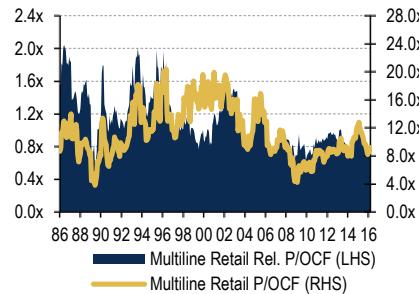


Chart 489: Multiline Retail: P/B



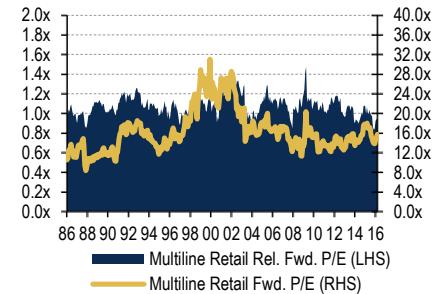
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 490: Multiline Retail: P/OCF



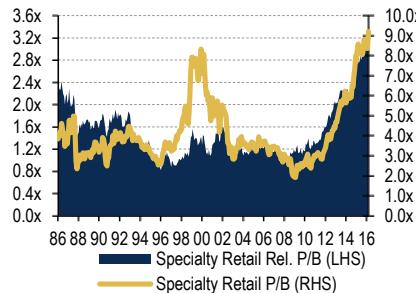
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 491: Multiline Retail: Fwd. P/E



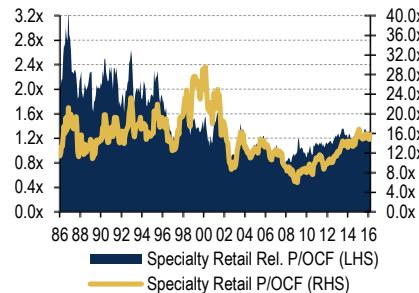
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 492: Specialty Retail: P/B



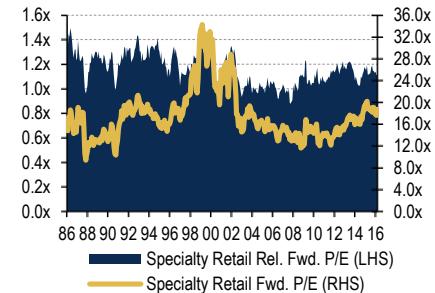
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 493: Specialty Retail: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 494: Specialty Retail: Fwd. P/E



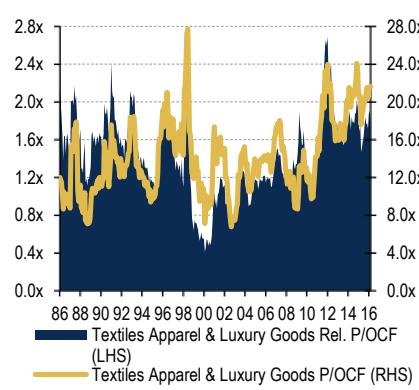
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 495: Textiles Apparel & Luxury Goods: P/B



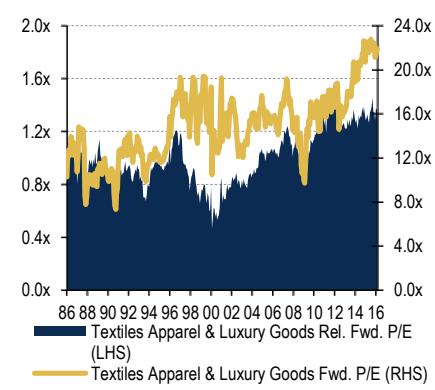
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 496: Textiles Apparel & Luxury Goods: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

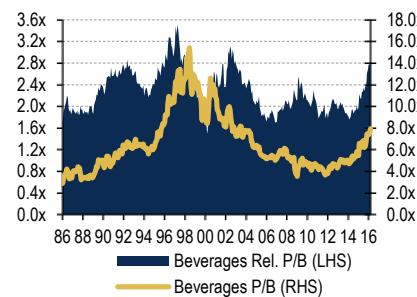
Chart 497: Textiles Apparel & Luxury Goods: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

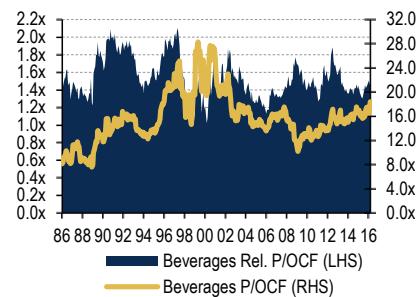
Consumer Staples

Chart 498: Beverages: P/B



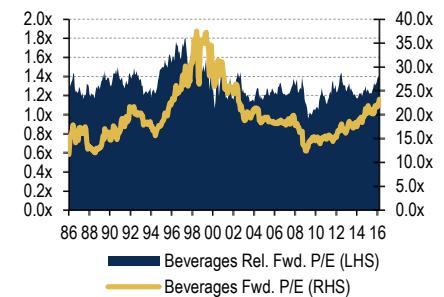
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 499: Beverages: P/OCF



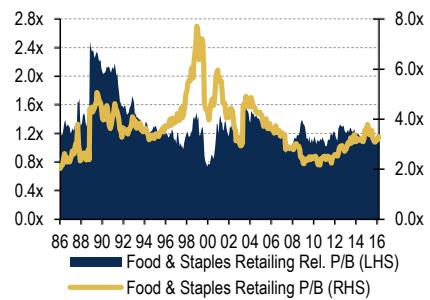
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 500: Beverages Fwd. P/E



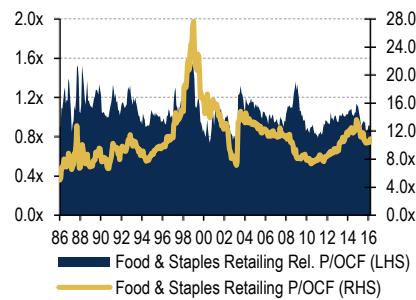
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 501: Food & Staples Retailing: P/B



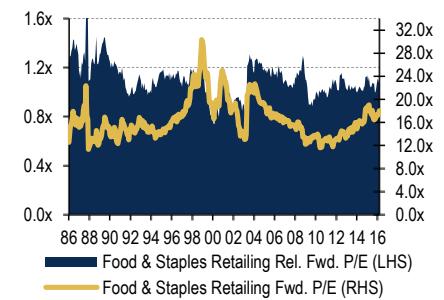
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 502: Food & Staples Retailing: P/OCF



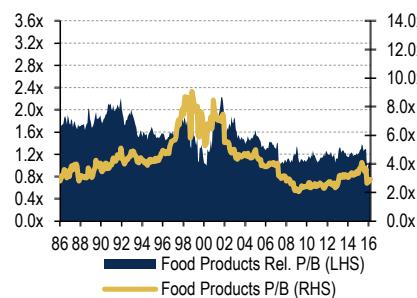
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 503: Food & Staples Retailing: Fwd. P/E



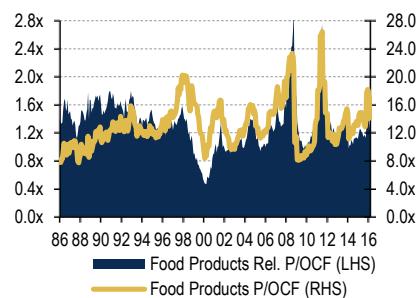
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 504: Food Products: P/B



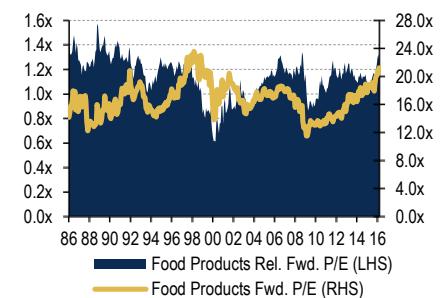
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 505: Food Products: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 506: Food Products: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 507: Household Products: P/B

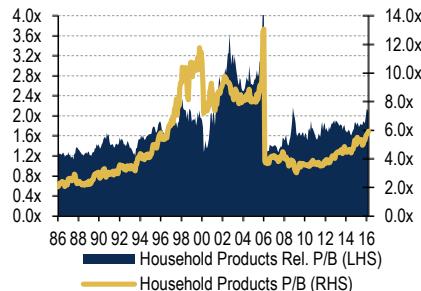


Chart 508: Household Products: P/OCF

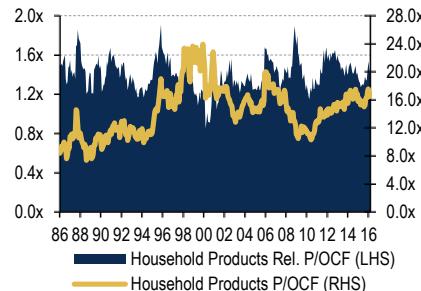


Chart 509: Household Products: Fwd. P/E

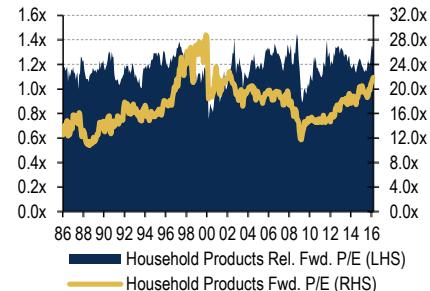


Chart 510: Tobacco: P/B

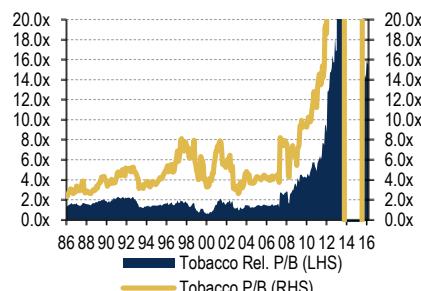


Chart 511: Tobacco: P/OCF

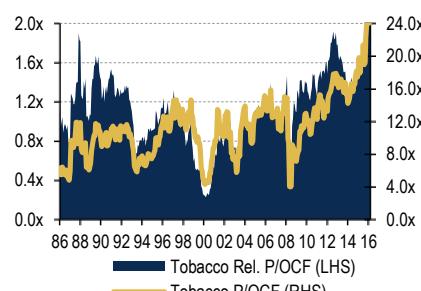
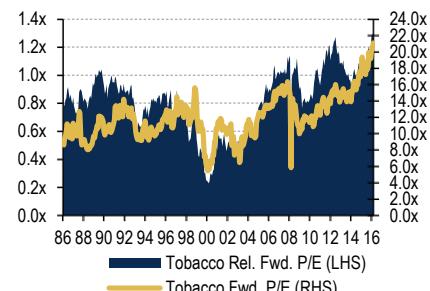


Chart 512: Tobacco: Fwd. P/E



Energy

Chart 513: Energy Equipment & Services: P/B

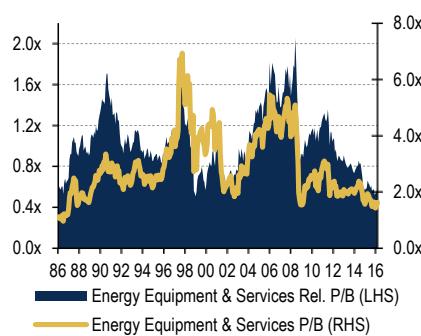


Chart 514: Energy Equipment & Services: P/OCF

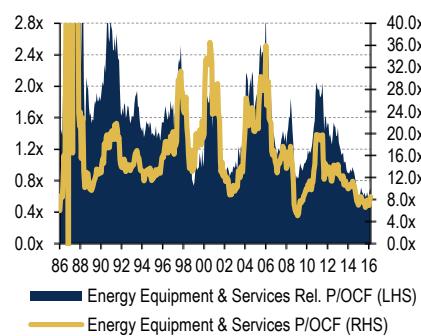


Chart 515: Energy Equipment & Services: Fwd. P/E

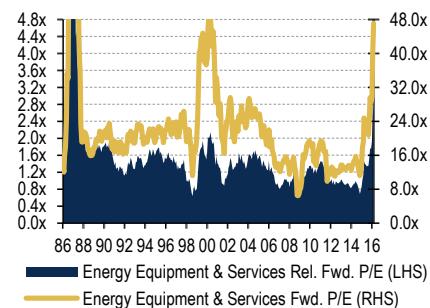


Chart 516: Oil Gas & Consumable Fuels: P/B

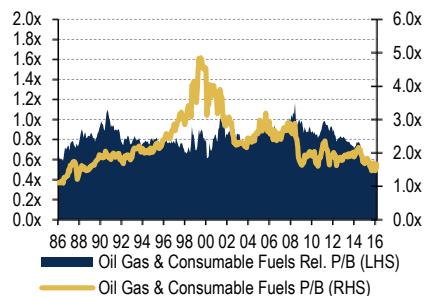


Chart 517: Oil Gas & Consumable Fuels: P/OCF

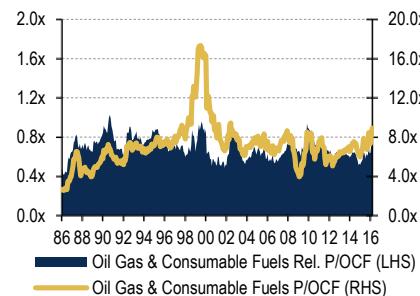
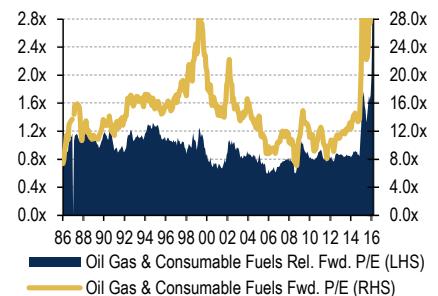


Chart 518: Oil Gas & Consumable Fuels: Fwd. P/E



Financials

Chart 519: Banks: P/B

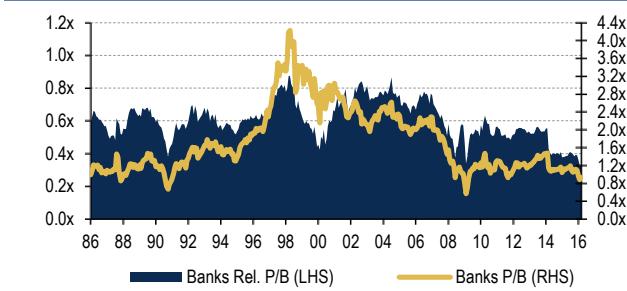


Chart 520: Banks: Fwd. P/E

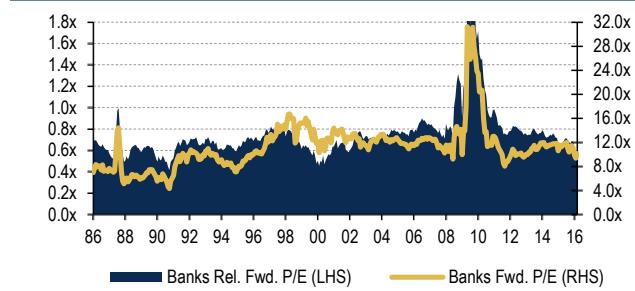


Chart 521: Consumer Finance: P/B

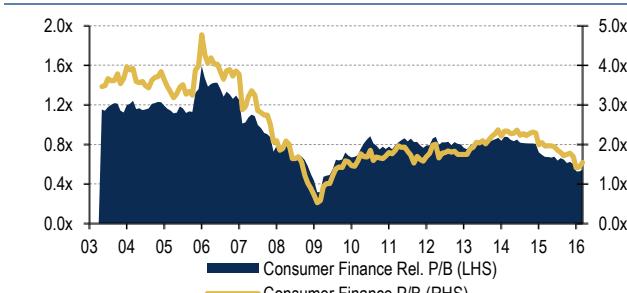


Chart 522: Consumer Finance: Fwd. P/E

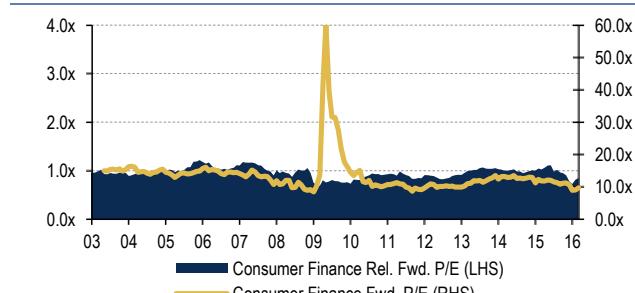
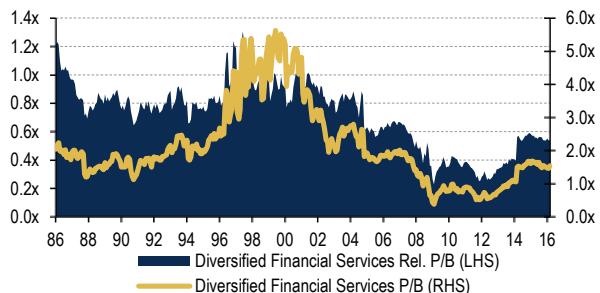
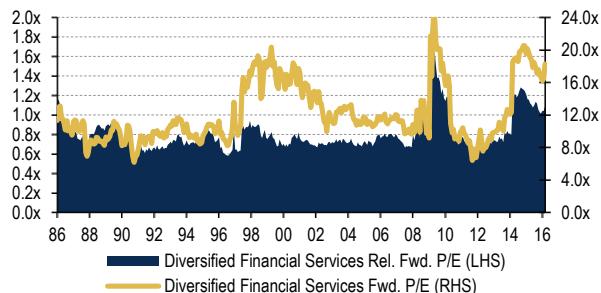


Chart 523: Diversified Financial Services Consumer Finance: P/B



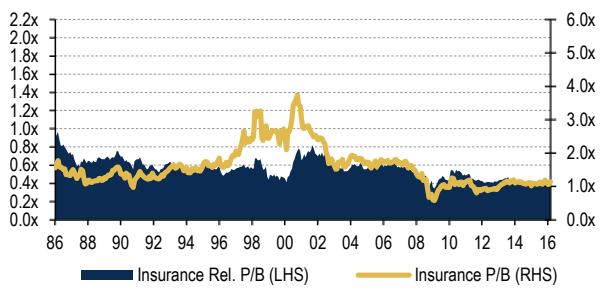
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 524: Diversified Financial Services: Fwd. P/E



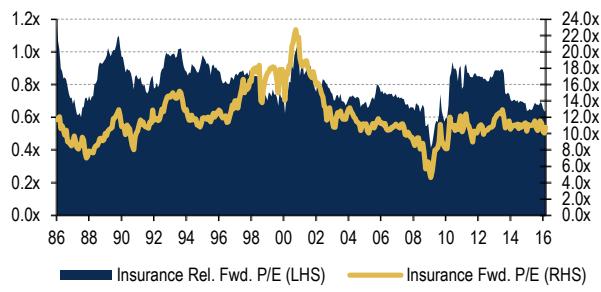
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 525: Insurance: P/B



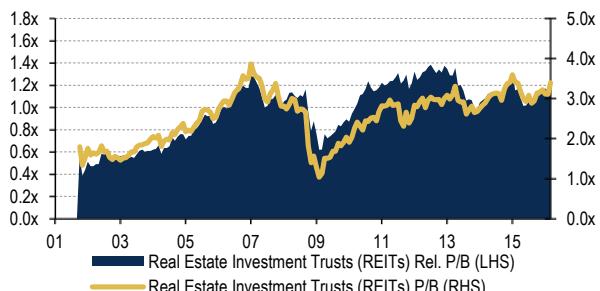
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 526: Insurance: Fwd. P/E



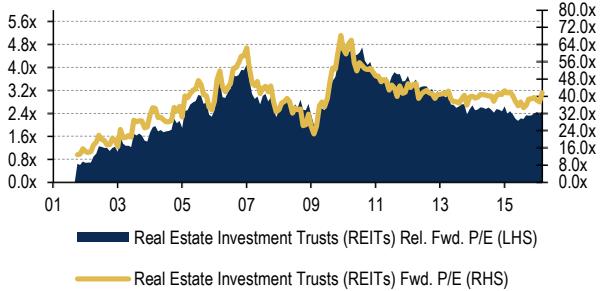
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 527: Real Estate Investment Trusts (REITs): P/B



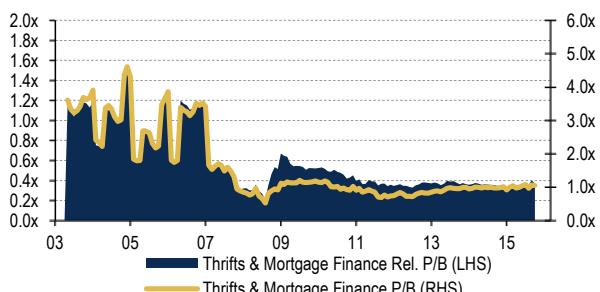
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 528: Real Estate Investment Trusts (REITs): Fwd. P/E



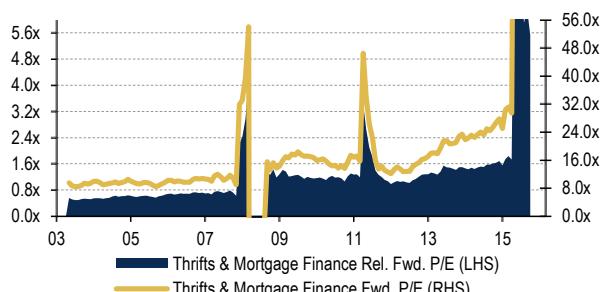
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 529: Thrifts & Mortgage Finance: P/B



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 530: Thrifts & Mortgage Finance: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Health Care

Chart 531: Biotechnology: P/B

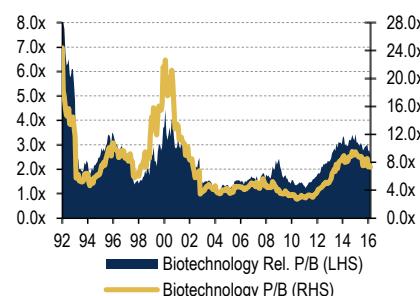


Chart 532: Biotechnology: P/OCF

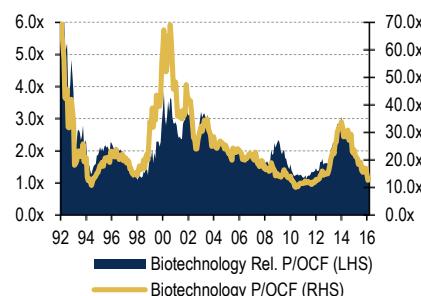


Chart 533: Biotechnology: Fwd. P/E

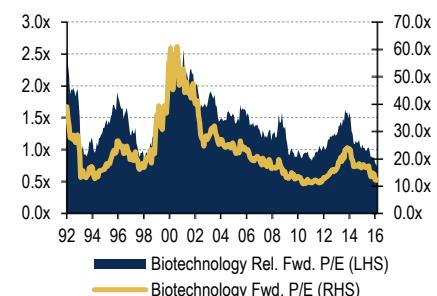


Chart 534: Health Care Equipment & Supplies: P/B

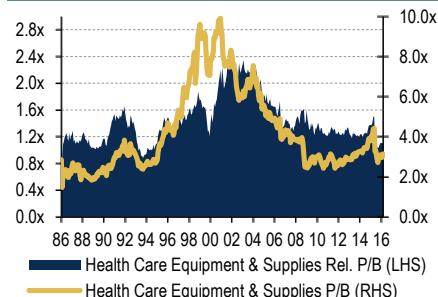


Chart 535: Health Care Equipment & Supplies: P/OCF

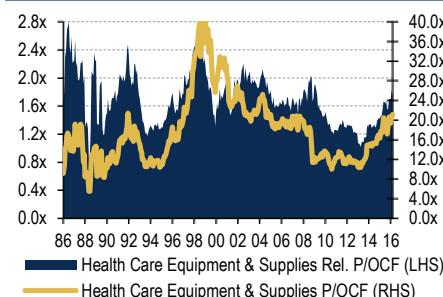


Chart 536: Health Care Equipment & Supplies: Fwd. P/E

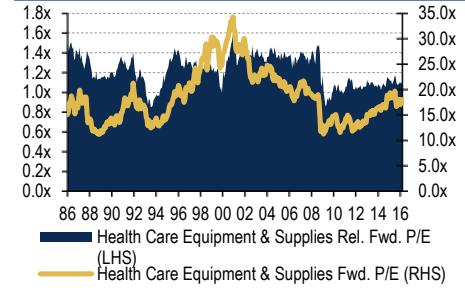


Chart 537: Health Care Providers & Services: P/B

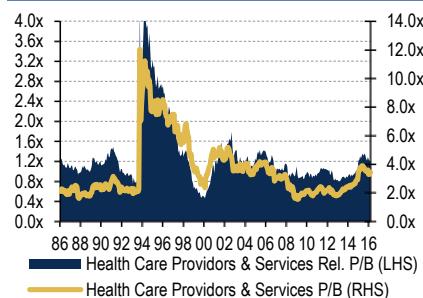


Chart 538: Health Care Providers & Services: P/OCF

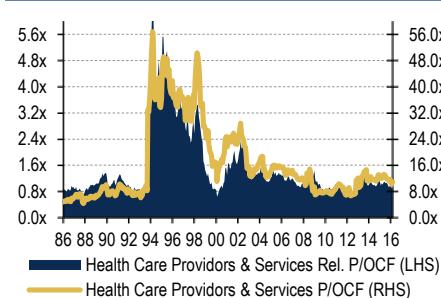


Chart 539: Health Care Providers & Services: Fwd. P/E

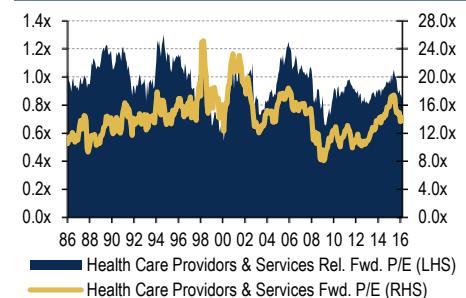


Chart 540: Pharmaceuticals: P/B

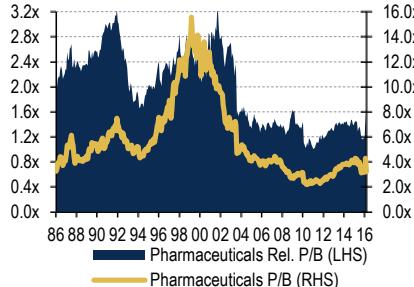


Chart 541: Pharmaceuticals: P/OCF

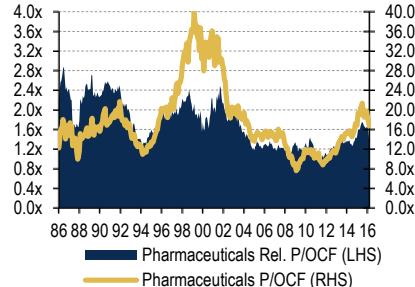
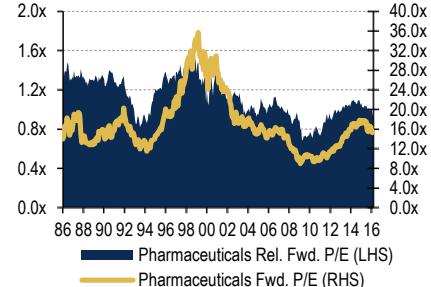


Chart 542: Pharmaceuticals: Fwd. P/E



Industrials

Chart 543: Aerospace & Defense: P/B

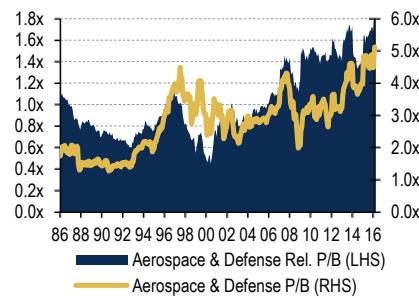


Chart 544: Aerospace & Defense: P/OCF

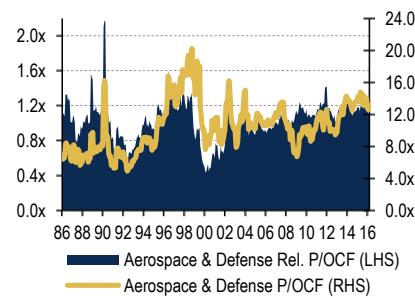


Chart 545: Aerospace & Defense: Fwd. P/E

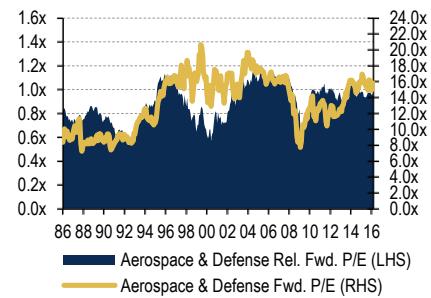


Chart 546: Air Freight & Logistics: P/B

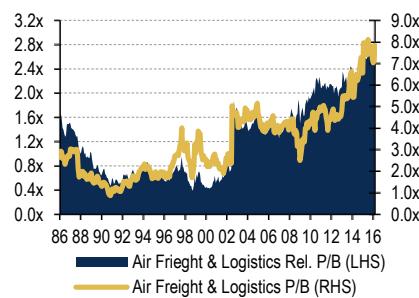


Chart 547: Air Freight & Logistics: P/OCF

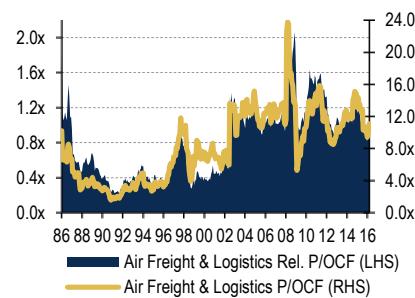


Chart 548: Air Freight & Logistics: Fwd. P/E

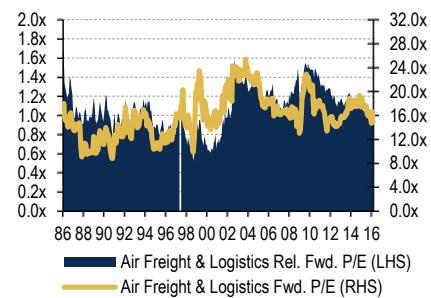
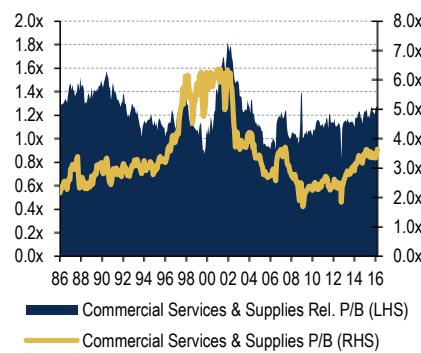
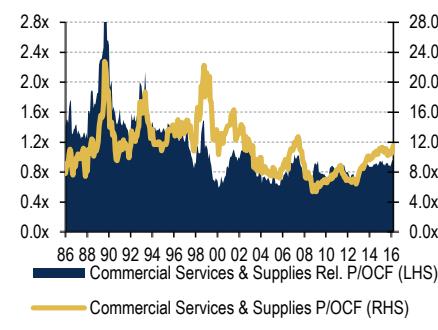


Chart 549: Commercial Services & Supplies : P/B



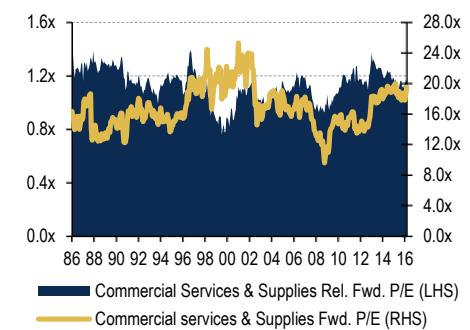
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 550: Commercial Services & Supplies : P/OCF



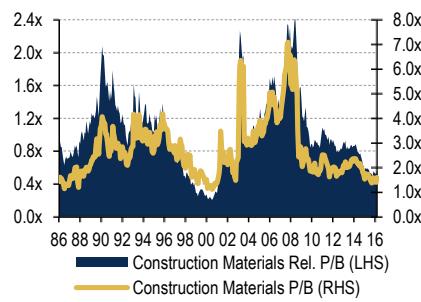
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 551: Commercial Services & Supplies : Fwd. P/E



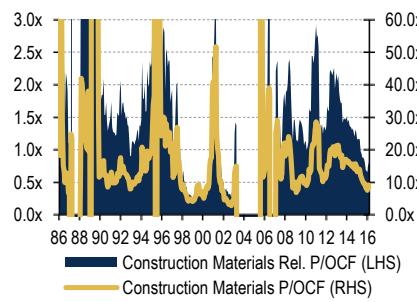
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 552: Construction & Engineering: P/B



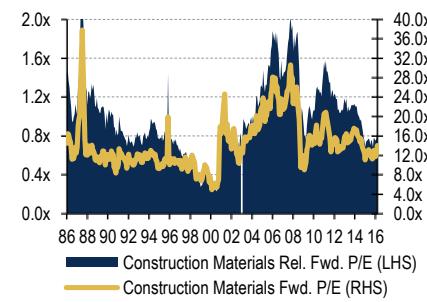
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 553: Construction & Engineering: P/OCF



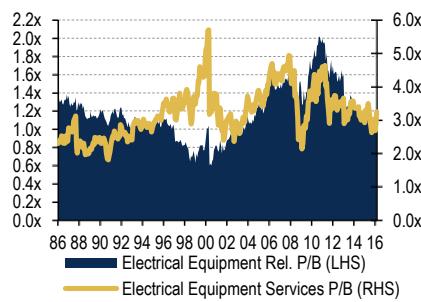
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 554: Construction & Engineering: Fwd. P/E



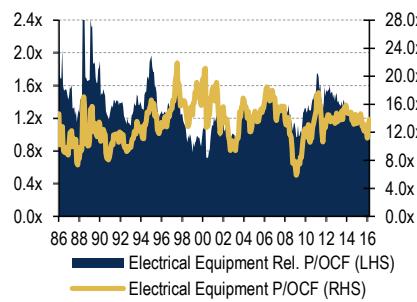
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 555: Electrical Equipment: P/B



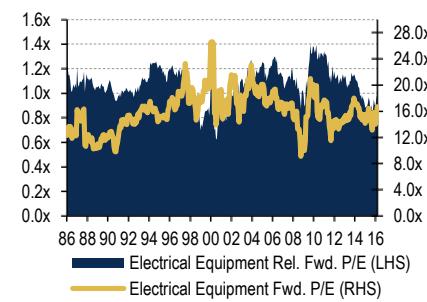
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 556: Electrical Equipment: P/OCF



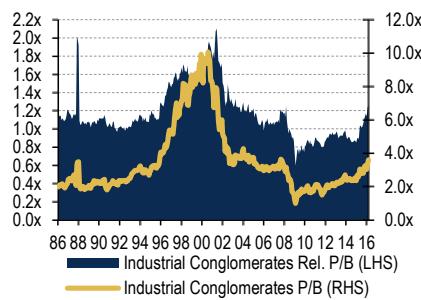
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 557: Electrical Equipment: Fwd. P/E



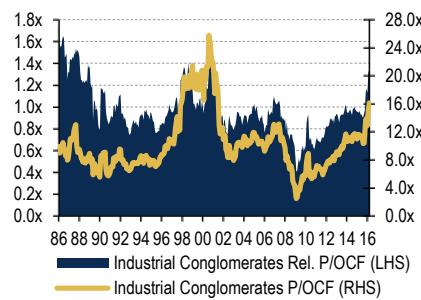
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 558: Industrial Conglomerates: P/B



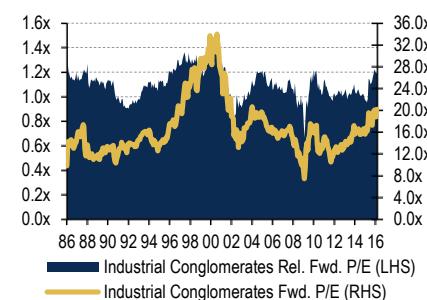
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 559: Industrial Conglomerates: P/OCF



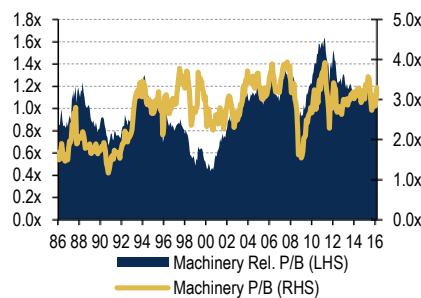
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 560: Industrial Conglomerates: Fwd. P/E



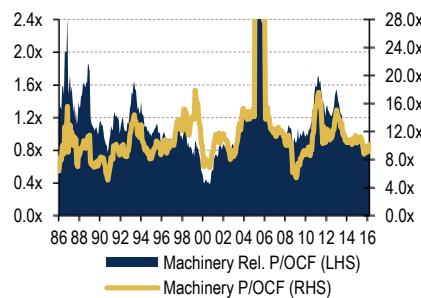
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 561: Machinery: P/B



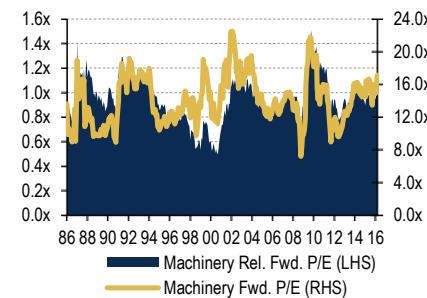
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 562: Machinery: P/OCF



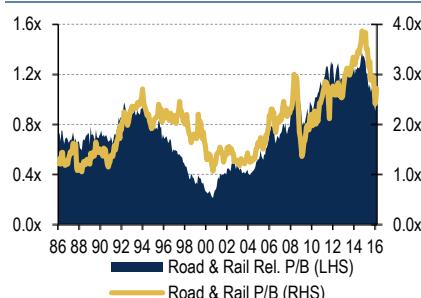
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 563: Machinery: Fwd. P/E



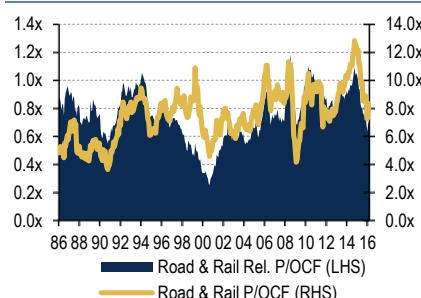
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 564: Road & Rail: P/B



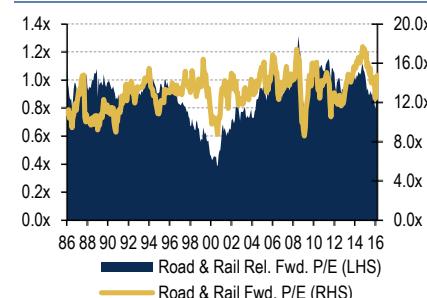
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 565: Road & Rail: P/OCF



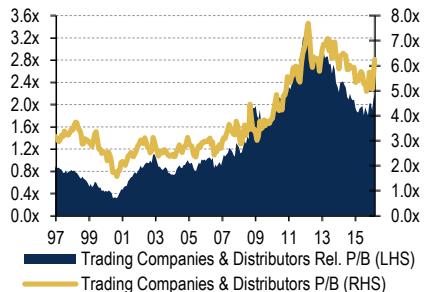
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 566: Road & Rail: Fwd. P/E



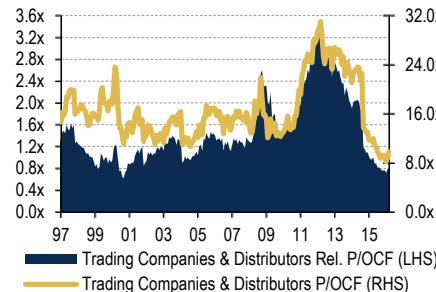
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 567: Trading Companies & Distributors:
P/B



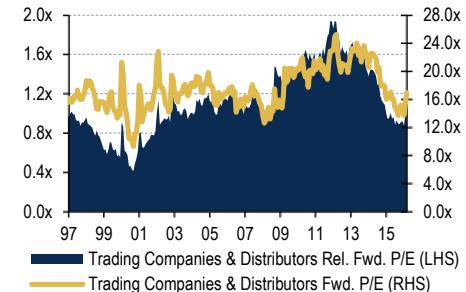
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 568: Trading Companies & Distributors:
P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

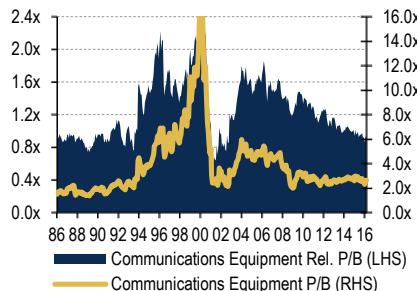
Chart 569: Trading Companies & Distributors:
Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

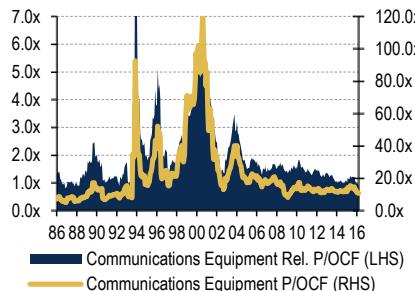
Information Technology

Chart 570: Communication Equipment: P/B



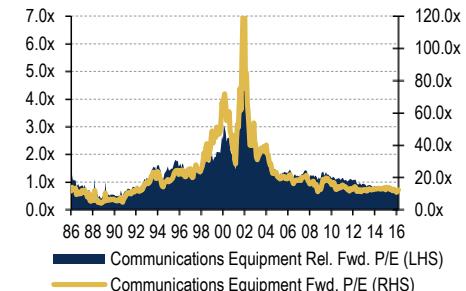
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 571: Communication Equipment: P/OCF



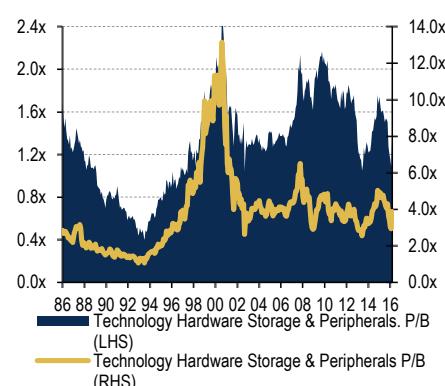
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 572: Communication Equipment: Fwd. P/E



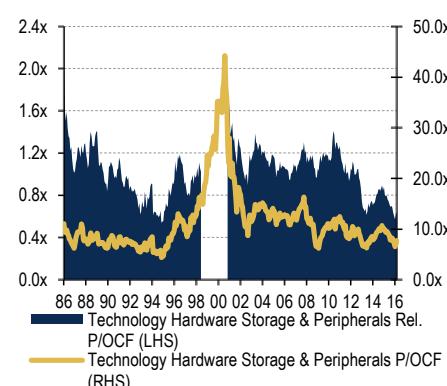
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 573: Technology Hardware Storage & Peripherals: P/B



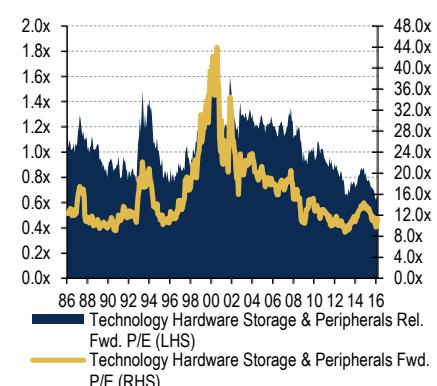
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 574: Technology Hardware Storage & Peripherals: P/OCF



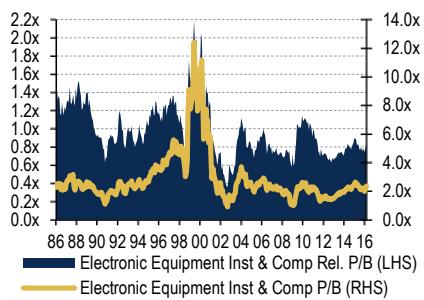
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 575: Technology Hardware Storage & Peripherals: Fwd. P/E



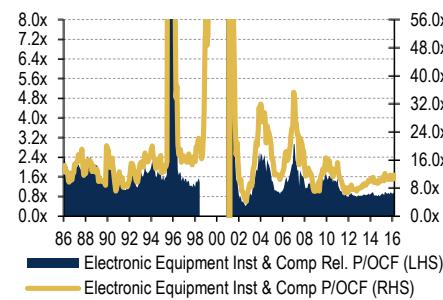
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 576: Electronic Equipment Instruments & Components: P/B



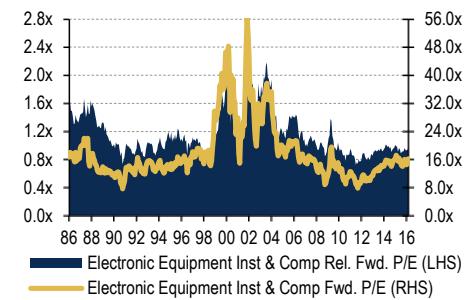
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 577: Electronic Equipment Instruments & Components: P/OCF



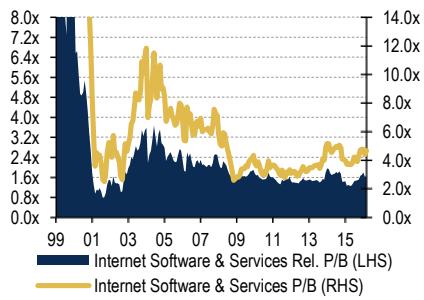
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 578: Electronic Equipment Instruments & Components: Fwd. P/E



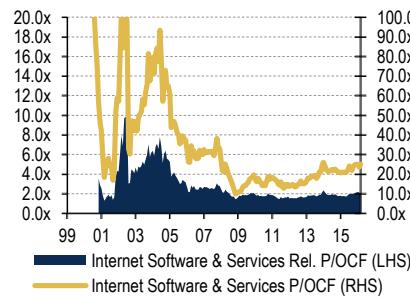
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 579: Internet Software & Services: P/B



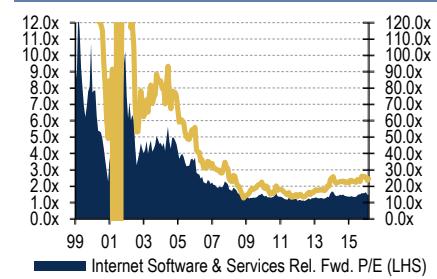
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 580: Internet Software & Services: P/OCF



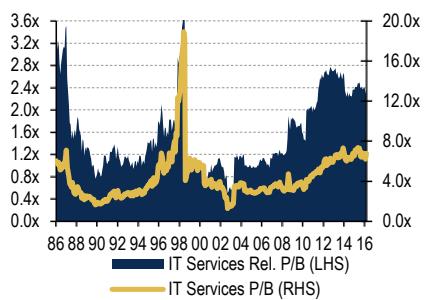
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 581: Internet Software & Services: Fwd. P/E



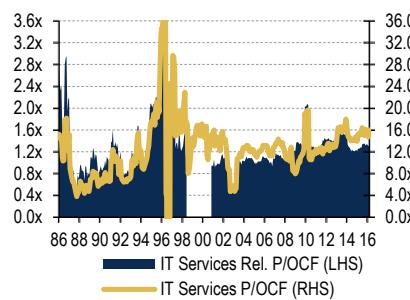
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 582: IT Services: P/B



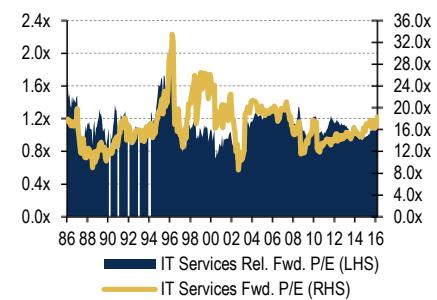
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 583: IT Services: P/OCF



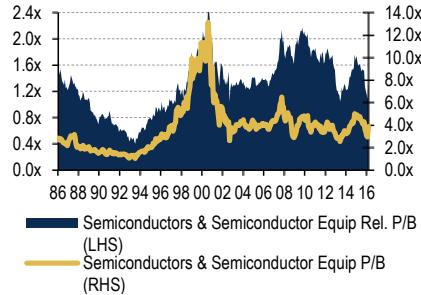
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 584: IT Services: Fwd. P/E



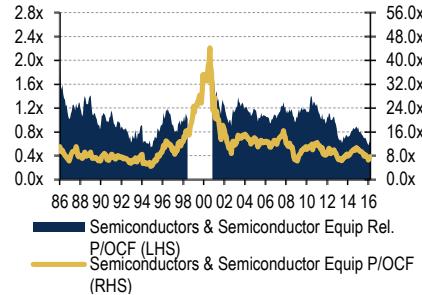
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 585: Semiconductors & Semiconductor Equipment: P/B



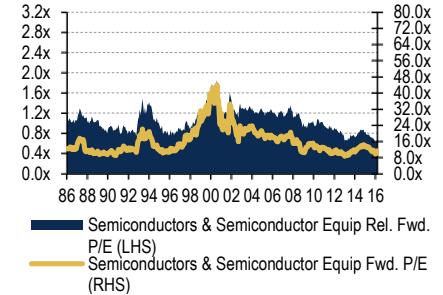
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 586: Semiconductors & Semiconductor Equipment: P/OCF



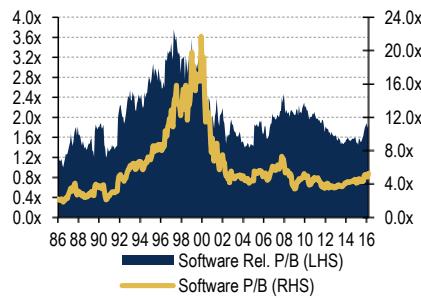
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 587: Semiconductors & Semiconductor Equipment: Fwd. P/E



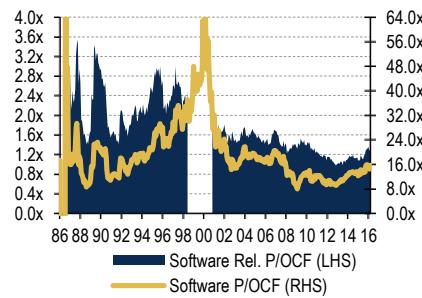
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 588: Software: P/B



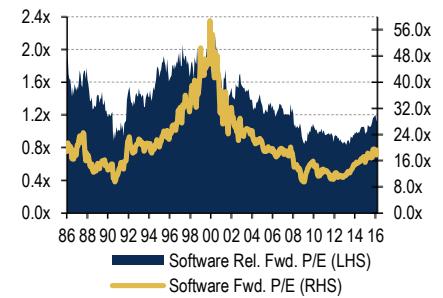
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 589: Software: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

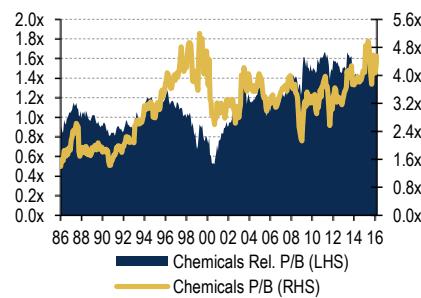
Chart 590: Software: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

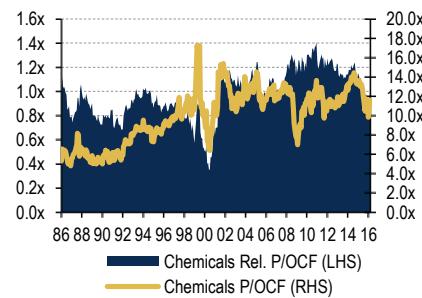
Materials

Chart 591: Chemicals: P/B



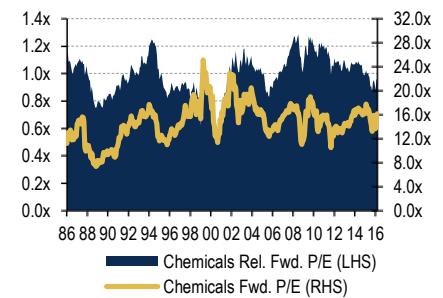
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 592: Chemicals: P/OCF



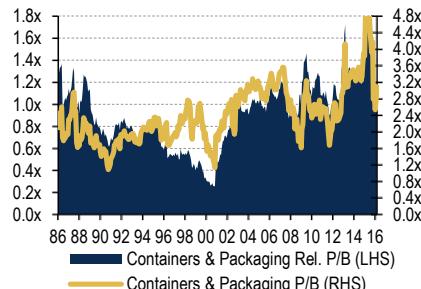
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 593: Chemicals: Fwd. P/E



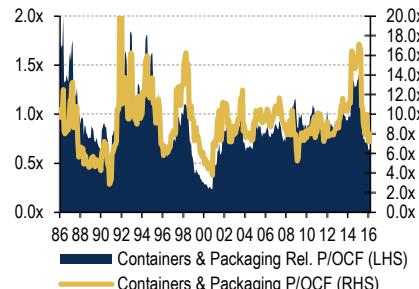
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 594: Containers & Packaging: P/B



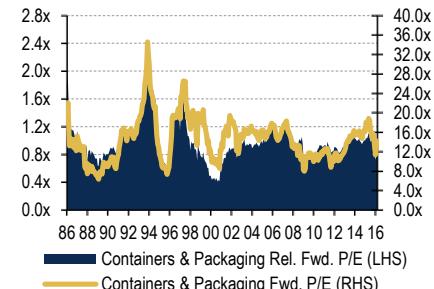
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 595: Containers & Packaging: P/OCF



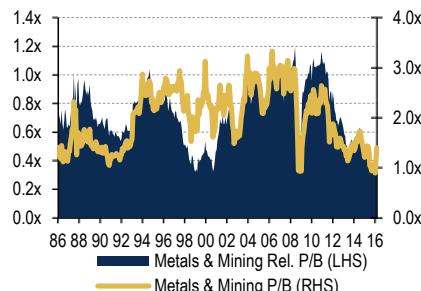
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 596: Containers & Packaging: Fwd. P/E



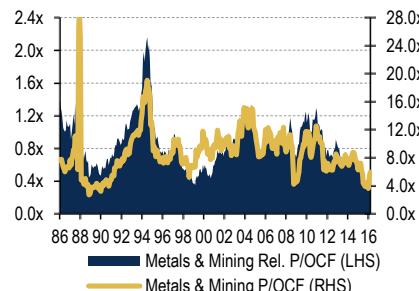
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 597: Metals & Mining: P/B



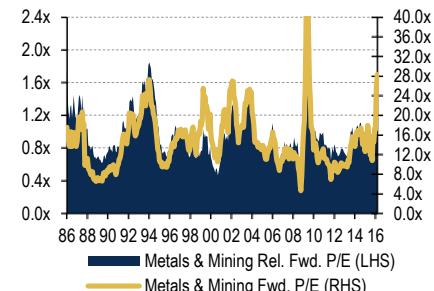
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 598: Metals & Mining: P/OCF



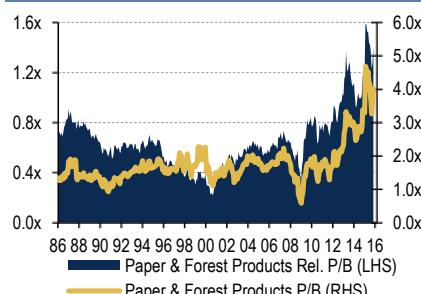
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 599: Metals & Mining: Fwd. P/E



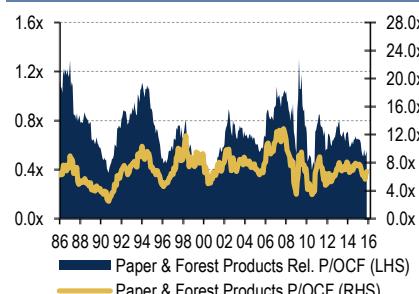
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 600: Paper & Forest Products: P/B



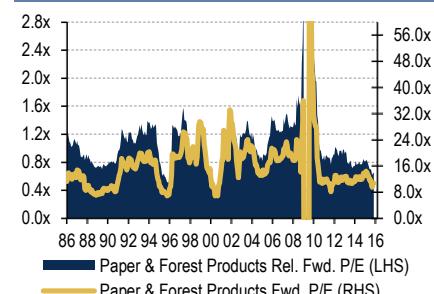
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 601: Paper & Forest Products: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

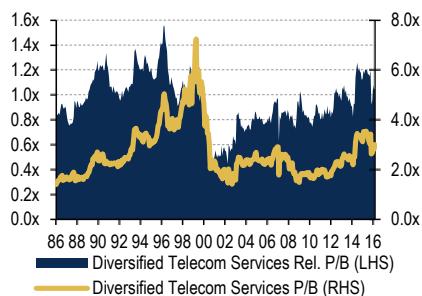
Chart 602: Paper & Forest Products: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

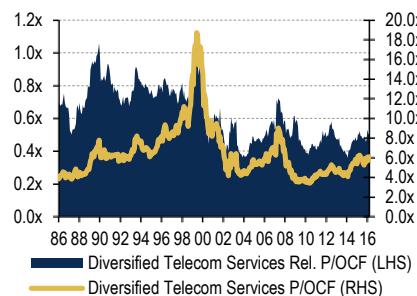
Telecom Services

Chart 603: Diversified Telecommunication Services: P/B



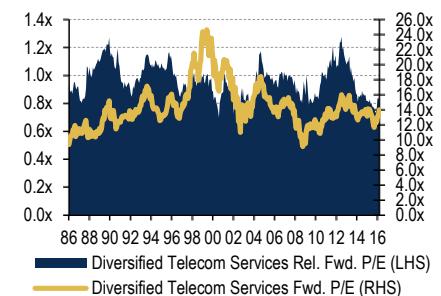
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 604: Diversified Telecommunication Services: P/OCF



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

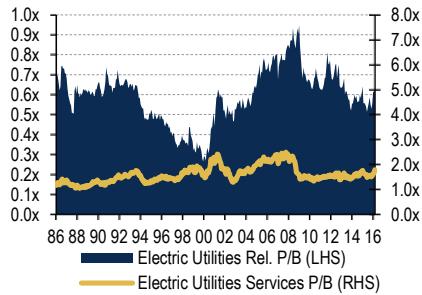
Chart 605: Diversified Telecommunication Services: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

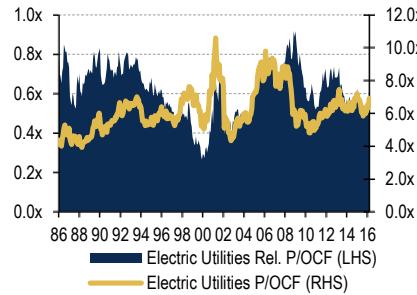
Utilities

Chart 606: Electric Utilities: P/B



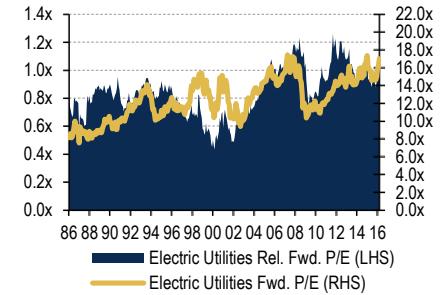
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 607: Electric Utilities: P/OCF



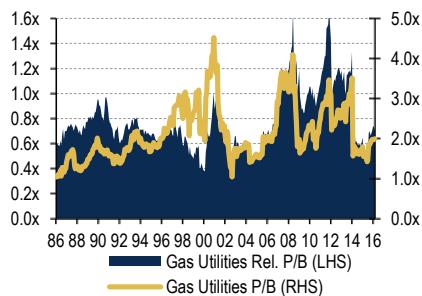
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 608: Electric Utilities: Fwd. P/E



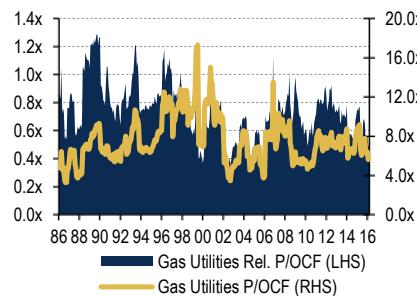
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 609: Gas Utilities: P/B



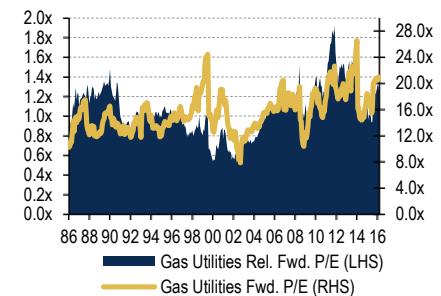
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 610: Gas Utilities: P/OCF



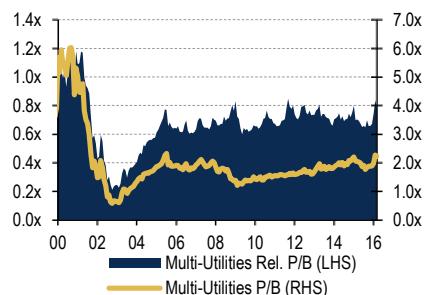
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 611: Gas Utilities: Fwd. P/E



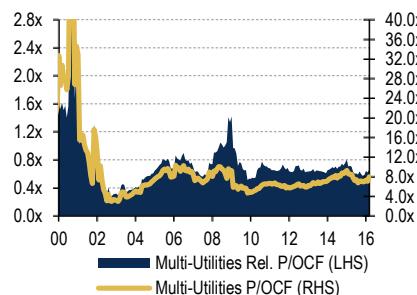
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 612: Multi-Utilities: P/B



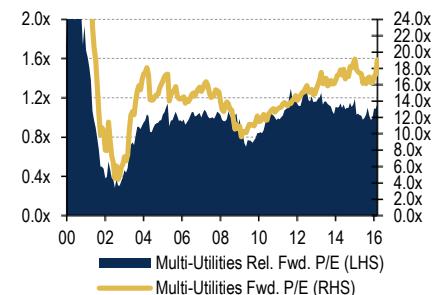
Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 613: Multi-Utilities: P/B



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 614: Multi-Utilities: Fwd. P/E



Source: I/B/E/S, BofA Merrill Lynch US Equity & US Quant Strategy

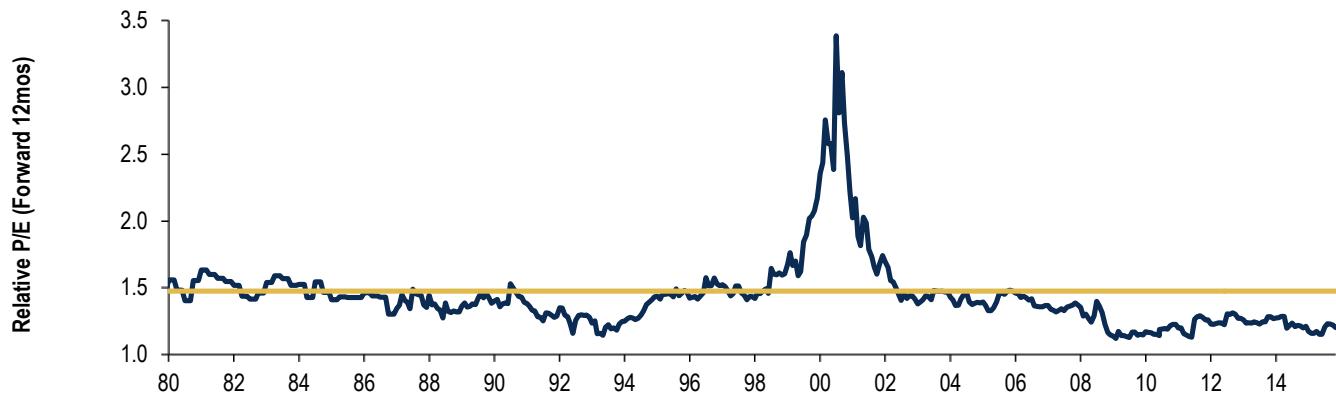
Section VII: Relative Valuation between Growth and Value Benchmarks

Fundamental Valuation

Growth Characteristics

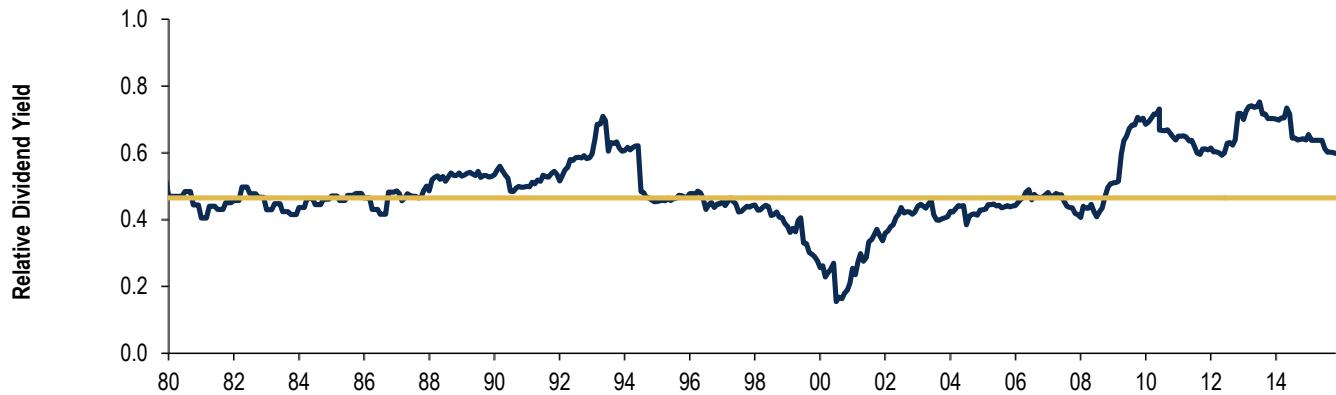
Fundamental Valuation

Chart 615: Russell 1000 Growth vs. Value Forward P/E (1978 – present)



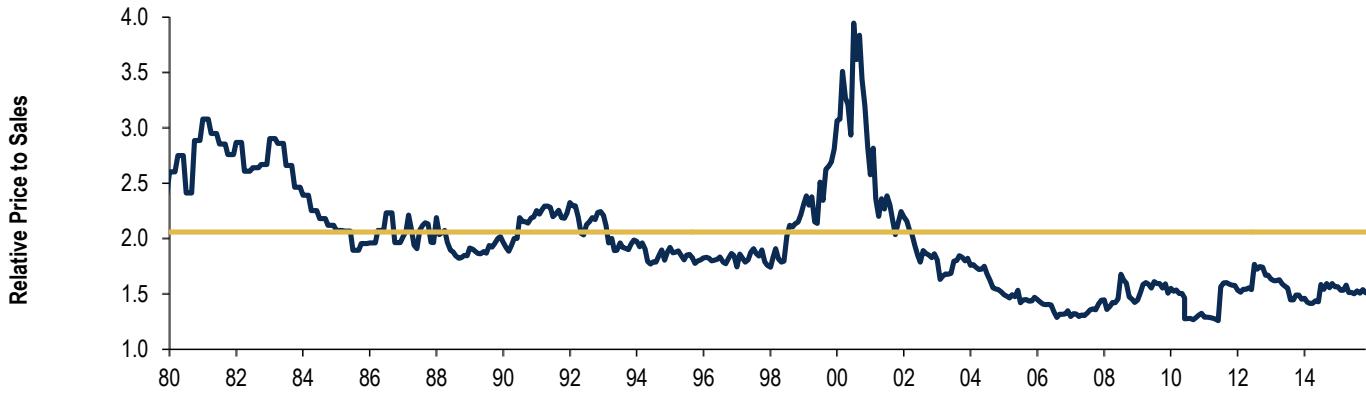
Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Chart 616: Russell 1000 Growth vs. Value Price/Book Value (1978 – present)



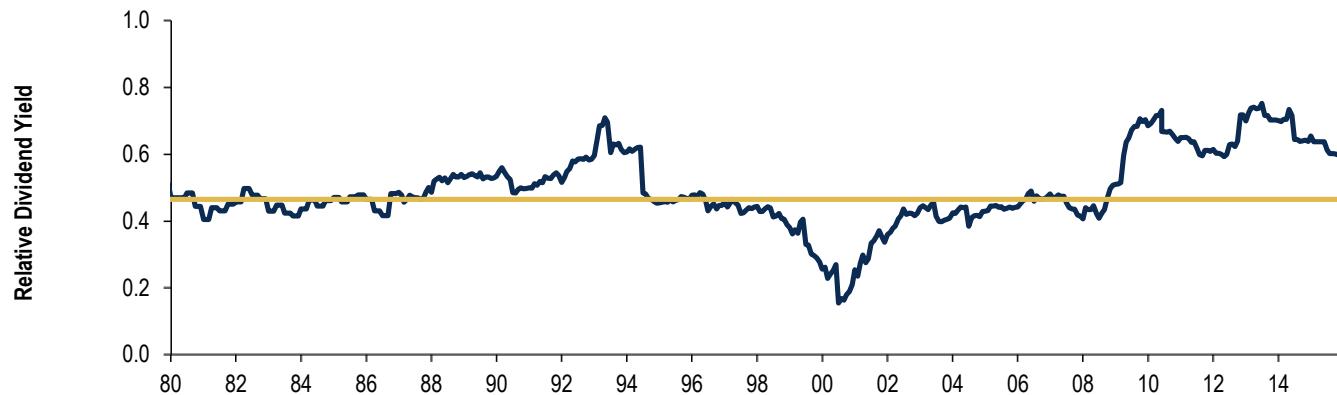
Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

Chart 617: Russell 1000 Growth vs. Value Price/Sales (1978 – present)



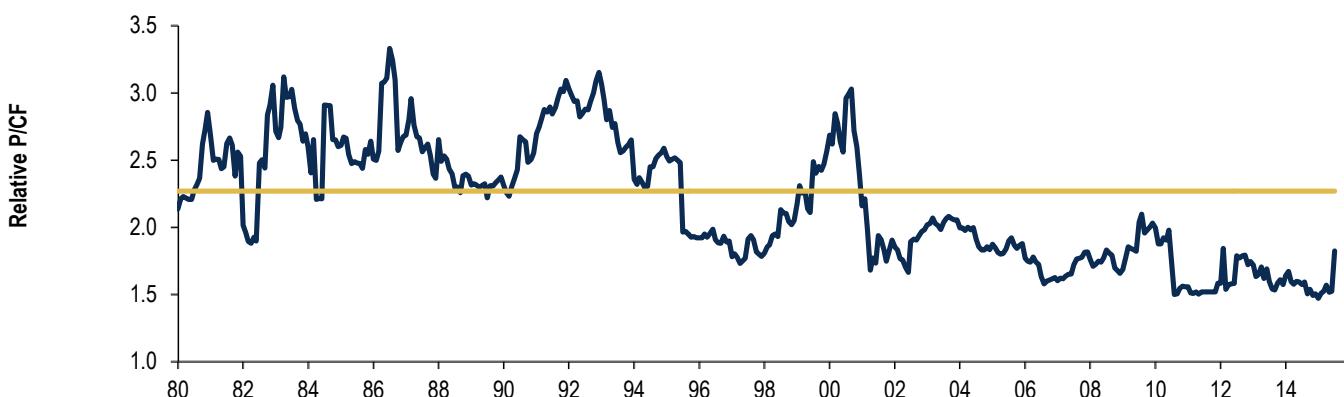
Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

Chart 618: Russell 1000 Growth vs. Value Dividend Yield (1978 – present)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

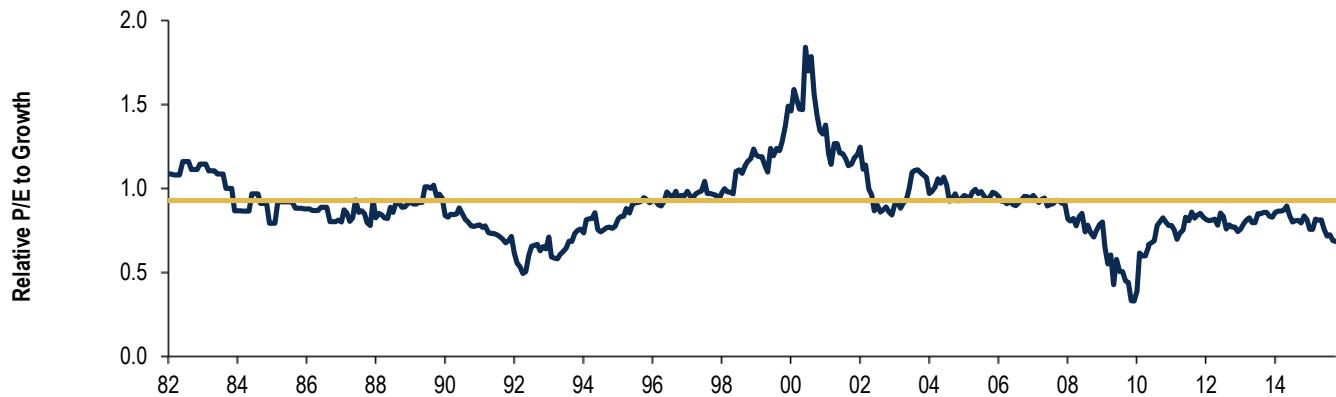
Chart 619: Russell 1000 Growth vs. Value Price/Cash Flow (1978 – present)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

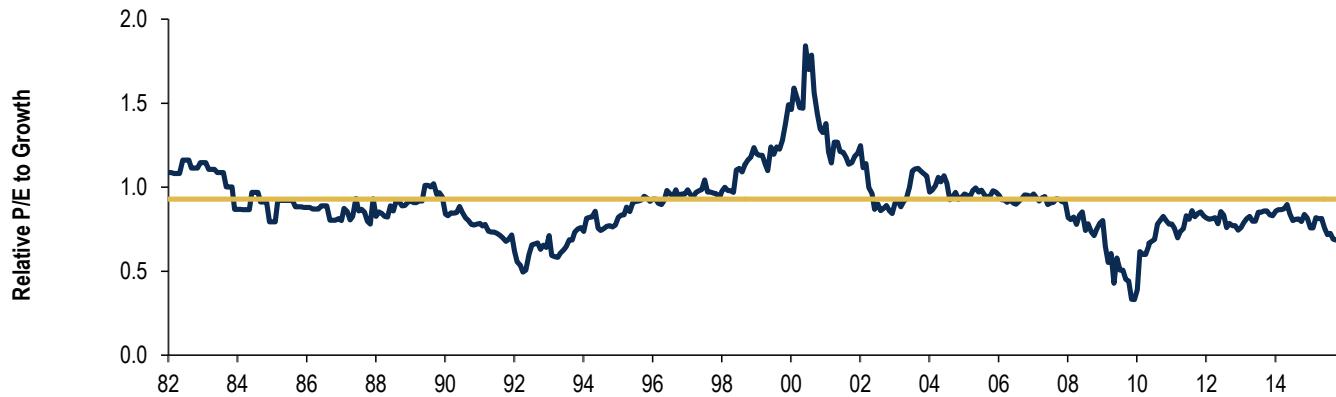
Growth Characteristics

Chart 620: Russell 1000 Growth vs. Value I/B/E/S Mean Long-Term Growth (1978 – present)



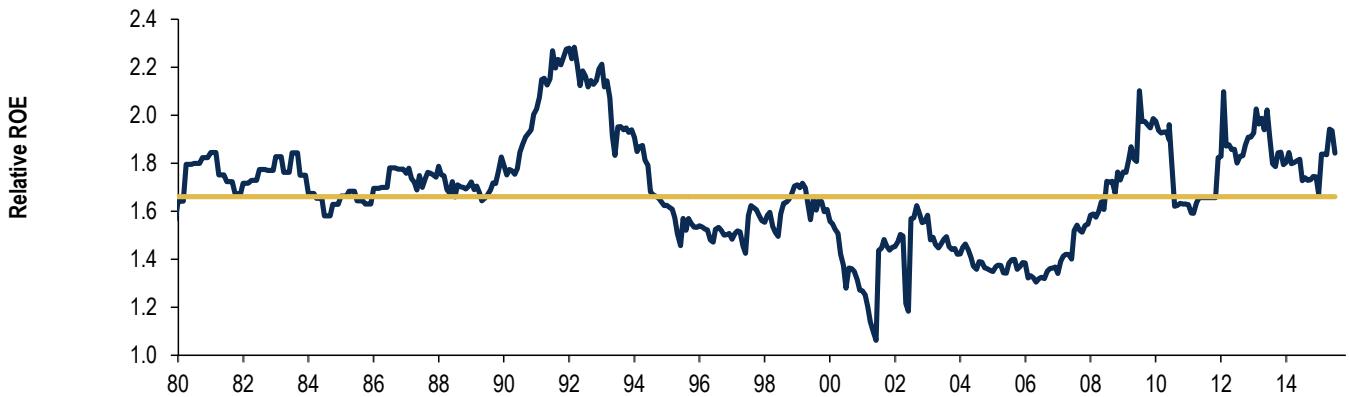
Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

Chart 621: Russell 1000 Growth vs. Value P/E to Growth (1982 – present)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

Chart 622: Russell 1000 Growth vs. Value ROE (1978 – present)



Source: BofA Merrill Lynch US Equity & Quantitative Strategy, Russell Investment Group

Section VIII: ADR Strategies

Regional Indices

Country Indices

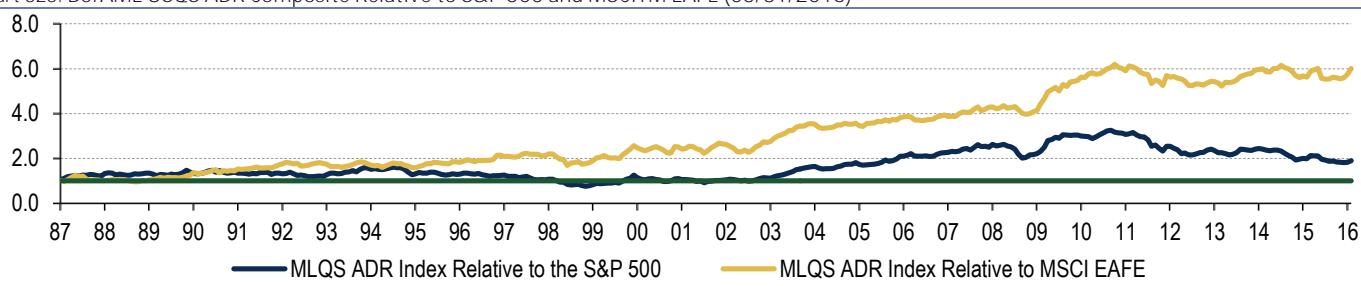
Note: All charts in this section are based on actual performance data after the screens were introduced except where noted.

Exhibit 10: BofAML Quant Strategy ADR Index Performance As of 3/31/2016

	Price Index 3/31/2016	1 M	3 M	6 M	12 M	YTD	% Change (US\$) 3yr	5yr	10yr	ADR vs. MSCI™ 1M Rel Ret	Weights
ADR COMPOSITE	1,612	10.7	4.2	8.8	-4.7	4.2	3.3	-1.0	3.5		100.0%
ADR COMPOSITE (ex Latin America)	829	8.5	0.5	6.1	-4.3	0.5	6.6	1.0	3.3		83.0%
ADR Latin America	327	21.0	23.3	22.2	-6.8	23.3	-10.7	-9.9	2.3		17.0%
ADR Asia (ex Japan)	356	8.5	-1.2	14.8	1.7	-1.2	16.6	3.5	5.0		30.6%
ADR Europe	345	6.9	0.0	-1.8	-5.2	0.0	2.1	2.7	3.9		18.5%
ADR EMU	200	10.6	-1.4	-3.1	-13.4	-1.4	0.7	-2.4	-0.2		18.5%
ADR Emerging Europe	619	8.4	3.1	-0.3	-16.8	3.1	-9.8	-12.2	2.9		4.5%
MSCI EAFE ® (re-indexed to 12/86)	269	6.0	-3.7	0.5	-10.7	-3.7	-0.5	-0.6	-1.0		
S&P 500	2,060	6.6	0.8	7.3	-0.4	0.8	9.5	9.2	4.8		
EUROPE											
ADR France	894	8.2	-3.0	3.5	-0.6	-3.0	9.5	-0.3	-1.0	2.3	5.1%
ADR Germany	331	12.8	5.3	18.3	-4.0	5.3	0.4	-1.7	2.1	2.9	2.8%
ADR Ireland	1,632	6.8	-3.8	-3.9	-6.0	-3.8	7.3	12.0	5.6	2.8	1.7%
ADR Italy	226	8.0	-9.8	-14.9	-8.5	-9.8	11.0	-1.1	-2.1	0.2	1.5%
ADR Netherlands	670	9.1	7.2	7.3	-4.6	7.2	4.9	1.7	2.0	1.1	2.6%
ADR Norway	1,250	7.2	12.2	18.8	5.1	12.2	-0.4	-2.6	5.2	1.5	1.1%
ADR Spain	335	17.5	-0.2	-20.4	-45.2	-0.2	-6.4	-12.1	-5.3	9.6	1.5%
ADR Sweden	1,881	7.9	0.1	0.3	-6.8	0.1	-1.2	2.1	3.6	1.9	1.7%
ADR Switzerland	296	5.7	-1.9	-1.2	-15.9	-1.9	-3.6	-0.3	3.2	1.9	2.8%
ADR United Kingdom	1,471	6.5	-0.2	-3.2	-3.4	-0.2	2.5	4.0	3.9	2.2	12.1%
LATIN AMERICA											
ADR Argentina	253	-1.1	8.6	32.0	-0.2	8.6	43.2	7.7	10.2	2.4	2.8%
ADR Brazil	270	36.5	33.3	26.5	-15.1	33.3	-26.1	-21.8	-4.5	6.2	7.4%
ADR Chile	328	11.5	13.2	12.7	2.5	13.2	-14.4	-7.6	5.6	1.7	2.6%
ADR Mexico	339	11.5	12.9	4.0	-2.9	12.9	-5.1	2.9	6.1	0.3	2.8%
ASIA											
ADR China	535	7.2	-4.1	16.9	7.6	-4.1	22.0	4.1	6.3	-4.7	21.7%
ADR Hong Kong	42	4.2	-7.9	-1.7	-33.5	-7.9	-4.4	-3.0	4.5	-5.1	1.7%
ADR Indonesia	146	6.2	15.2	43.5	4.3	15.2	-0.9	3.1	1.6	3.3	0.4%
ADR India	668	22.5	4.4	-0.8	-18.5	4.4	3.9	-0.9	2.3	9.7	2.3%
ADR Japan	537	5.2	-4.8	3.9	-6.2	-4.8	4.9	4.6	0.8	1.3	6.6%
ADR Korea	115	11.0	10.3	5.8	-8.0	10.3	-4.9	-5.9	-3.9	-2.9	1.9%
ADR Philippines	173	11.9	1.3	-6.2	-30.7	1.3	-15.2	-4.1	4.1	-0.5	0.2%
ADR Taiwan	456	8.1	13.3	24.3	6.4	13.3	18.3	14.0	7.3	-0.4	1.7%
OTHER											
ADR Australia	343	15.0	-0.6	-2.9	-16.2	-0.6	-16.0	-7.0	3.4	2.9	2.3%
ADR Israel	275	4.8	-4.6	-11.0	-21.4	-4.6	-6.0	-8.1	4.0	5.1	2.8%
ADR Russia	100	14.0	9.8	9.9	-14.4	9.8	-19.4	-23.8	-2.8	-0.7	1.3%
ADR South Africa	227	9.4	65.5	70.3	21.3	65.5	-13.9	-15.4	-9.2	-7.8	1.7%

Source: BofA Merrill Lynch US Quantitative Strategy

Chart 623: BofAML USQS ADR Composite Relative to S&P 500 and MSCI EAFE (03/31/2016)



Source: BofA Merrill Lynch US Quantitative Strategy

Appendix

[BofA Merrill Lynch Proprietary Models](#)

[BofA Merrill Lynch Factor Descriptions](#)

[Russell 1000 Factor Performance](#)

[Russell 1000 Factor Correlations with Macro Factors](#)

[S&P 500 Factor Efficacy](#)

BofA Merrill Lynch Proprietary Models

BofAML versus Consensus (Positive and Negative Earnings Surprise Models)

The BofAML vs. Consensus Model is designed to identify stocks with significant variations between analyst earnings expectations and actual reported earnings. Our model compares the annual earnings estimate made by BofA Merrill Lynch Fundamental Equity Research with that of the consensus.

We look for instances in which our analysts differ from consensus in a statistically significant manner. Moreover, we tend to place less value on the consensus view, since whatever recommendation the aggregate of evidence points to is likely to have already been priced into the market.

The formula for the model is:

$$\text{Surprise} = \frac{\text{(BofAML Estimate} - \text{I/B/E/S Mean Estimate)}}{\text{Standard Deviation of I/B/E/S Estimates}}$$

We use FY1 (the current unreported year) estimates throughout the initial nine months of the fiscal year and FY2 (the next unreported year) estimates during the remaining three months of the year. The results from the above formula are then used to rank the universe into deciles, where 1 represents companies where BofAML analysts are most optimistic about earnings while 10 represents companies where BofAML analysts are most pessimistic about earnings.

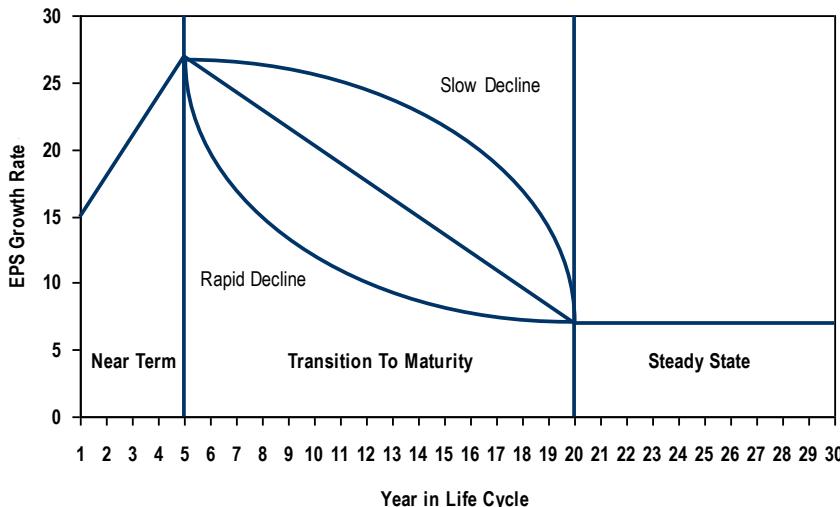
Dividend Discount Model

Our three-stage (Near Term, Transition to Maturity, and Maturity or Steady State) Dividend Discount Model (DDM) computes the discount rate that equates the current stock price to the projected stream of dividends. Data from our analysts' estimates provide the information to construct this stream. This discount rate is the "implied" or "expected" return. Since the DDM solves for the implied rate of return based on today's stock price rather than computing the discount rate as the risk-free rate plus a risk premium, the implied return must be risk-adjusted. We use the Capital Asset Pricing Model to risk-adjust the implied returns, using the 5-Year Treasury Note Yield as a proxy for the risk-free rate.

The Near-Term focuses on the next 5 years of earnings and dividend growth for the company. Estimates are needed for 5 Year EPS Growth Rate, 5th Year EPS Growth Rate and the Payout Ratio in the 5th Year. The growth rates and payout ratio allow the model to interpolate earnings and dividend estimates for this period beyond the time frame for which analysts typically provide estimates.

An additional estimate is required for companies with wide variations in earnings or for which deficits may influence growth patterns. The 5-Year Secular/Normalized EPS Growth Rate should be the analyst's estimate for log-linear or trend-line growth rate.

Chart 624: Transition to Maturity Within Valuation Model



Source: BofA Merrill Lynch US Equity and Quant Strategy

The Transition to Maturity phase of the valuation model approximates a company's slowing earnings growth rate as it gets larger. The period can be as long as the analyst believes is reasonable for the company, but the period always starts in the fifth year of the life cycle. The first piece of necessary data is how many years this portion of the life cycle will last (Years to Maturity/Steady State).

For example, if an analyst expected this portion to last 15 years, then he would outline the dividend parameters for years 6 to 20. The second data item measures how quickly growth decreases (Transition to Maturity). In general, larger and more mature companies are likelier to have more rapid deceleration in growth, whereas younger, faster growing companies tend to have slower deceleration in growth.

The Maturity or Steady State phase is the period during which after growing at an above average rate, a company begins to mature. This is initiated when the bulk of a company's business begins to materially decelerate, and then meaningful market penetration is maximized. One should assume a growth rate close to the long-term growth rate of nominal GDP. Two projections are required for this period: EPS Growth Rate at Maturity and Payout Ratio at Maturity.

The DDM Alpha of a stock is the difference between the stock's DDM-calculated discount rate and the required rate of return calculated for each stock using a plain-vanilla Capital Asset Pricing Model.

Alpha Surprise Model

The Alpha Surprise score is a 25%/75% weighted combination of the decile scores from two proprietary models, our Dividend Discount Model (the value or "alpha" portion of the model) and our BofAML vs. Consensus Forecast Earnings Surprise Model (the growth or "surprise" portion of the model). A decile rank of 1 is most attractive, and a decile rank of 10 is least attractive.

Model rank calculation example

As an example, if a stock received a decile rank of 1 (most attractive) in the Dividend Discount Model, but a decile rank of 10 (least attractive) in the BofAML vs. Consensus

Forecast Earnings Surprise Model, the Alpha Surprise model score would be 7.75, which is simply $0.25 \times 1 + 0.75 \times 10$.

Screening universe

BofA Merrill Lynch's current coverage universe of the S&P 500 for which analysts also have estimates for earnings, dividends, long-term growth rates, dividend growth rates that are used in the BofAML vs. Consensus model as well as the Dividend Discount Models. Stocks in the firm's restricted list at the time of the month-end analysis are excluded from the analysis.

Alpha Surprise Model screen results

To generate the screen, we use the following inclusion rule: we select the 50 stocks with the most attractive (lowest) Alpha Surprise scores. In the case of a tie in rank, the cutoff score is selected so that the number of stocks in the screen is closest to 50. For example, if there are 48 stocks that are ranked 2.0 or lower, and 53 stocks that are ranked 2.25 or lower, we select the 48 stocks with the rank of 2.0 or lower, since 48 is closer to 50 than is 53. In the case of a tie between the number of stocks, we select the lesser number of stocks. For example, if there are 49 stocks that are ranked 2.0 or lower, and 51 stocks that are ranked 2.25 or lower, we select the 49 stocks with the rank of 2.0 or lower, since 49 is the lesser of 49 and 51.

High Quality & Dividend Yield

The screen seeks to quantitatively screen for stocks that are of higher quality and have a relatively secure dividend yield. The stocks are selected from the S&P 500 using the following criteria, and exclude Financials stocks due to metric incomparability with other sectors.

1. S&P Common Stock Rank of A+, A, or A-. The S&P Common Stock Rankings are our main measure of quality. These rankings are based primarily on the growth and stability of earnings and dividends over a 10-year period.
2. Return on Equity (ROE) greater than that of the S&P 500 ROE.
3. Debt/Equity lower than that of the S&P 500.
4. Dividend Yield greater than that of the S&P 500.
5. BofAML opinion indicates "Buy" or "Neutral" as well as the likelihood that the dividend will remain the same or be increased (i.e., a dividend rating of "7").
6. The ratio of the last 12-months' free cash flow to dividends (FCF/Div) must be greater than 1.0.

The High Quality Dividend Yield screen is not a diversified portfolio, and thus, should be considered only within the context of a well-diversified investment strategy.

Growth 10 and Value 10

The portfolios are quantitatively generated and are based on our proprietary BofA Merrill Lynch vs. Consensus Earnings Surprise Model plus three additional screening criteria. The universe we use is the S&P 500.

As their names imply, the Growth 10 portfolio includes the ten most attractive growth stocks according to our screening methodology, while the Value portfolio 10 includes the ten most attractive value stocks according to our screening methodology. A review of the screening criteria used to formulate these portfolios is below. For the Growth10 portfolio, if one of the four sell criteria is triggered, the stock is replaced by one that satisfies the first three buy criteria and has highest 5-Yr Proj. EPS growth rate. For the Value 10 portfolio, the stock is replaced by one that satisfies the first three buy criteria and has lowest trailing 12-Month P/E.

Note that no changes are made to the portfolios after the 15th of a month, with new additions/deletions then being added at the beginning of the following month. **The Growth 10 and Value 10 portfolios are not diversified portfolios, and thus, should be considered only within the context of a well-diversified investment strategy.**

Stock Selection Criteria

"Growth 10"	"Value 10"
Buy Criteria:	Buy Criteria:
(1) BofAML vs. Cons. EPS Surprise Rating of "1"	(1) BofAML vs. Cons. EPS Surprise Rating of "1"
(2) BofAML "BUY" Opinion	(2) BofAML "BUY" Opinion
(3) Must be rated "1 or 2" by BofAML vs. Cons. EPS Surprise Model for < 10 mos.	(3) Must be rated "1 or 2" by BofAML vs. Cons. EPS Surprise Model for < 10 mos.
(4) Select 10 Stocks with highest 5-Yr. Proj. EPS growth rate	(4) Select 10 Stocks with lowest trailing 12-Month P/E
Sell Criteria:	Sell Criteria:
(1) BofAML vs. Cons. EPS Surprise Rating falls below 5	(1) BofAML vs. Cons. EPS Surprise Rating falls below 5
(2) BofAML QRQ falls below "BUY" Opinion	(2) BofAML QRQ falls below "BUY" Opinion
(3) Stocks removed from the S&P 500	(3) Stocks removed from the S&P 500
(4) Stock no longer covered by BofAML research	(4) Stock no longer covered by BofAML research

Source: BofA Merrill Lynch US Quantitative Strategy

Industry relative valuation model

In this model, we calculate the price momentum, earnings momentum, and valuation ranks for S&P500 GICS Level 3 industries relative to the S&P 500. The charts are in Section III.

Price Momentum

Price momentum of each industry is the change in its relative price over the last three months. Relative price is the ratio of the month-end price of a given industry divided by the index level of the S&P500. Industries are ranked from 1 to 10, with 10 exhibiting the strongest price momentum.

Earnings Momentum

Earnings momentum of an industry is the change in its relative EPS over the last three months. Relative EPS is the ratio of the total 12-month rolling forward IBES consensus earnings forecasts of the industry divided by that of the S&P500. Industries are ranked from 1 to 10, with 10 indicating strongest momentum.

Valuation

Earnings Yield (EY) of an industry is the ratio of current relative forecast EPS divided by current relative Price. We use EY, the inverse of P/E, to accommodate cases in which industries have negative earnings. We compare the relative EY to the industry's own historical average by calculating the percentage spread between the two. Industries are then assigned a Valuation Rank from 1 to 10, with 10 being the most undervalued.

How to read the charts

Prospective EPS Relative (Earnings Line)

The Prospective EPS line indicates the direction and magnitude of earnings estimate revisions relative to those of the S&P 500. Revisions to earnings over the last 3 months are ranked from 1 to 10 (1 = biggest downgrade, 10 = biggest upgrade).

Price Relative (Price Line)

The Price Relative line indicates how the sector/industry has performed relative to the S&P500 and is based to 100 at the latest point on the chart.

Valuation

The relationship between the Price Relative and the Prospective EPS Relative indicates the P/E relative. If the Price Relative line is above the EPS Relative line, the sector/industry has an above-market P/E. If the Price Relative line is below the EPS Relative line, the sector/industry has a below-market P/E. More specifically, divide the current value of the Relative Price by that of the EPS Relative to get the relative P/E. For example, if the price line is at 100 and the earnings line is at 80, the P/E relative is 1.25 (100/80). The graph thus shows the historical prospective P/E of the sector/industry relative to the S&P 500 over time.

The Good Chart

- Prospective EPS Relative is rising
- Price Relative is rising
- Price Relative is below the EPS Relative
-

The Bad Chart

- Prospective EPS Relative is falling
- Price Relative is falling
- Price Relative is above the EPS Relative

BofAML ADR Strategy

The ADR Composite Strategy consists of ADRs currently listed on national exchanges (NYSE, NASD or AMEX). The basket is equal-weighted and re-balanced monthly. The strategy was first introduced in December 1993 but was reconstituted going back to December 31, 1986. The charts are in Section VIII of this book.

The country and regional indices are formed based on their claim to a significant weight in the BofAML Composite. Country and regional indices are created as of the earliest date based on data availability. Country and regional indices are equal-weighted, rebalanced monthly, and benchmarked against their corresponding MSCI counterpart indices:

The charts depicted are representative of our strategy offerings. They consist of the ADR Composite and its regional and individual country models. Each screen's equal-weighted price performance versus the appropriate local market index is shown, using U.S. dollars as the common currency, along with the correlation between the BofAML ADR strategy and its MSCI counterpart. Each of the BofAML ADR baskets is updated on a monthly basis.

BofA Merrill Lynch Factor Descriptions

Each month, we publish performance statistics, sector weights and stock lists for almost forty factors that we follow. These factors are listed and defined below. The methodology for these factors are identical except where noted. At the end of each month, for each factor, we form an equal-weighted portfolio of the top 50 stocks in the S&P 500 according to their factor values. We track the performance of these portfolios for the subsequent month versus that of the equal-weighted S&P 500. We then rebalance at the end of the subsequent month. Most of the factors that we follow have been running out of sample since 1989. The charts are in Section II of this book.

Absolute return: Calculated based on monthly returns and reflects simple price appreciation (depreciation) over the stated period of the screened stocks. For purposes of this calculation, the stocks in the screen are assumed to be equally weighted. Returns do not reflect dividends or costs.

Dividend Discount Model Alpha: The implied return from the BofAML Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.

Dividend Yield: Indicated dividend divided by month-end price.

Price/Book Value: Month-end price divided by latest reported book value per share.

Price/Cash Flow: Month-end price divided by latest reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.

Price/Free Cash Flow: Month-end price divided by latest reported free cash flow. Free Cash flow is defined as earnings post extraordinary items plus depreciation minus capital expenditures.

Price/Sales: Month-end market value divided by reported sales.

EV/EBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest – Cash & Cash Equivalents) divided by EBITDA (Reported Net Income + Special Items – Minority Interest + Interest Expense + Income Tax Expense + Depreciation and Amortization).

Relative Strength: The ratio of the 30-week moving average of price to the 75-week moving average.

Most Active: Stocks have the highest monthly share trading volume.

Low Price: Absolute price level of the stock at month-end.

5Wk/30-Week Moving Average: The ratio between the average daily closing price of a stock over five weeks versus that over thirty weeks.

10-Week/40-Week Moving Average: The ratio between the average daily closing price of a stock over ten weeks versus that over forty weeks.

Price/200-Day Moving Average: A ratio between month-end closing price and average closing price over the last 200 days.

Price Return – 12Mth: Absolute price return over the last twelve months.

Price Return – 11Mth: Absolute price return from one year ago, ignoring the most recent month.

Price Return – 9Mth: Absolute price return over the last nine months.

Price Return – 3Mth: Absolute price return over the last three months.

Price Return – 12th and 1Mth: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) highest price return over the most recently ended month.

Price Return – 12th and 1Mth Reversal: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) lowest price return over the last one month.

Earnings Momentum: The difference between 12-month trailing EPS and year-ago 12-month trailing EPS divided by year-ago 12-month trailing EPS.

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If a BofAML estimate does not exist, the I/B/E/S Mean Long Term Growth Estimate is used.

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.

Earnings Surprise: A forecast earnings surprise variable which compares BofAML Lynch estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, BofAML relative to the consensus, 10 being among the most pessimistic, BofAML. Consensus estimated earnings data are courtesy of I/B/E/S.

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of I/B/E/S FY1 estimate of three months ago.

Beta: A measure of non-diversifiable risk. It is calculated using a regression strategy incorporating 60 months of price performance versus that of the S&P 500.

Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1, with 10 being the most variable.

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 estimates. Presented as a decile rank.

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.

Neglect-Institutional Ownership: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.

Neglect-Analyst Coverage: Those companies with the lowest number of analysts submitting ratings to FirstCall.

Firm Size: Month-end market value.

Foreign Exposure: The ratio of foreign sales to total sales.

Equity Duration: An adaptation of our Dividend Discount Model which measures the interest-rate sensitivity of a stock. Longer durations (higher numbers) suggest more interest-rate sensitivity.

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofAML Fundamental Equity Research. If a BofAML estimate does not exist, then the I/B/E/S Mean Long Term Growth Estimate is used.

Return on Equity One-Year Average: Net income divided by average equity provided.

Return on Equity Five-Year Average: Five-year average return on equity.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of long-term debt, preferred stock, common equity, and minority interest.

Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Return on Equity Five-Year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Short Interest 12-mth Z-Score: (Most recent number of short shares – 12mth average of short shares)/ 12-mth standard deviation of short shares.

Russell 1000 factor performance

Exhibit 11: Russell 1000 factors

Factor performance 1986 to present (Analyst Coverage since 1994; Institutional Ownership since 1999, Short Interest since 1993).

Factor	Avg.		Probability of underperforming Russell 1000	Volatility (Ann'zed)	Max Drawdown	Downside Volatility, Ann'zed
	12m Average Annualized Return	Excess Return vs. Russell 1000				
EV/ EBITDA	17.7%	7.3%	0.71	0.82	15.9%	23.0%
Free Cash Flow/ EV	17.1%	5.7%	0.71	0.94	13.9%	22.7%
Price/ Free Cash Flow	16.1%	5.1%	0.65	0.73	15.9%	25.3%
Short Interest	15.7%	4.4%	0.74	1.07	12.9%	13.3%
Price/ Cash Flow	15.3%	4.8%	0.60	0.50	19.0%	33.0%
Earnings Yield	15.2%	4.5%	0.63	0.55	19.3%	37.2%
Forward Earnings Yield	15.2%	5.1%	0.58	0.45	20.7%	34.7%
Most Active	15.0%	4.7%	0.57	0.53	22.4%	31.5%
ROC	14.9%	3.2%	0.64	0.55	15.9%	26.7%
Price/ Sales	14.7%	4.8%	0.53	0.39	21.6%	34.4%
Share Repurchase	14.7%	2.9%	0.66	0.45	14.2%	31.3%
Price Return - 11-mth Perf.	14.6%	4.0%	0.58	0.23	19.9%	31.0%
Price Return - 12-mth Perf.	14.0%	3.3%	0.56	0.17	19.6%	35.2%
Price Return - 12-mth and 1-mth Reversal	14.0%	3.0%	0.56	0.26	18.2%	28.7%
Price/ Book Value	14.0%	4.2%	0.51	0.31	20.2%	34.4%
Relative Strength - 30wk/75wk MA	13.8%	3.2%	0.53	0.20	21.0%	38.4%
P/E-to-Growth	13.7%	3.4%	0.50	0.36	20.2%	40.1%
1yr ROE	13.4%	1.7%	0.55	0.33	17.9%	34.4%
Relative Strength - 5wk/30wk MA	13.1%	2.0%	0.54	0.09	18.8%	41.5%
1yr ROE Adj	13.0%	1.2%	0.53	0.23	18.5%	42.3%
Relative Strength - 10wk/40wk MA	12.8%	1.7%	0.51	0.07	21.6%	44.0%
5yr ROE Adj	12.8%	1.1%	0.52	0.24	20.7%	43.2%
Dividend Yield	12.8%	1.3%	0.52	0.04	18.8%	53.1%
ROA	12.8%	1.0%	0.51	0.18	18.2%	48.3%
Price Return - 9-mth Perf.	12.5%	1.7%	0.49	0.04	21.9%	42.9%
Size	12.3%	2.0%	0.42	0.16	24.7%	54.8%
5y ROE	12.1%	0.4%	0.48	0.10	20.5%	40.9%
Price to Moving Average (200 day)	11.9%	0.7%	0.47	-0.03	22.2%	52.0%
Price Return - 3-mth Perf.	11.9%	0.6%	0.47	-0.02	20.5%	54.3%
Earning Momentum	11.8%	0.8%	0.43	0.10	24.1%	44.6%
Low Price	11.8%	2.5%	0.38	0.12	23.9%	48.0%
EPS Estimate Revisions	11.7%	1.5%	0.43	0.06	22.7%	36.4%
Eq. Wtd. Russell 1000	11.6%	na	0.45	na	21.6%	na
Dividend Growth	11.5%	-0.1%	0.46	-0.06	23.6%	47.7%
High Leverage	11.4%	0.7%	0.42	0.00	23.6%	46.9%
Price Return - 12-mth and 1-mth Performance	11.3%	-0.1%	0.44	-0.08	21.0%	48.9%
Neglect - Analyst Coverage	11.2%	0.9%	0.48	0.17	21.7%	43.3%
Variability of Earnings	10.7%	0.7%	0.36	0.00	25.9%	48.0%
Earnings Torpedo	10.2%	-0.6%	0.35	-0.15	23.6%	60.5%
Beta	9.8%	2.1%	0.31	0.01	28.1%	50.0%
Estimate Dispersion	9.4%	0.4%	0.30	-0.08	27.6%	54.5%
Proj. 5yr EPS Growth	7.8%	-0.9%	0.24	-0.17	26.4%	56.3%
Neglect - Institutional Ownership	6.7%	-2.0%	0.26	-0.39	32.1%	67.4%

Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Russell 1000 factor correlations vs. macro factors

Table 11: Russell 1000 factors: Correlation vs. macroeconomic factors

Factor	Interest Rates		Currency	Inflation	Commodity Prices		Market Volatility	Corporate Profits	Credit Quality	
	10yr Tsy	2s10s			Economy	GDP Growth				
	10yr Nominal Yld	Real Yield	Tsy curve	Trade Wtd. USD	CPI	WTI	VIX	Profit Cycle	Credit Spread	
Earnings Yield	-0.16	-0.20	0.27	0.13	-0.05	-0.21	0.26	-0.16	-0.09	-0.21
Forward Earnings Yield	0.00	-0.15	0.26	0.04	-0.07	-0.15	0.25	-0.25	-0.06	-0.46
Dividend Yield	-0.40	-0.39	0.19	0.06	-0.14	-0.20	0.22	-0.07	-0.02	-0.24
Price/ Book Value	0.13	-0.12	0.15	-0.06	-0.15	-0.11	0.25	-0.40	-0.05	-0.67
Price/ Cash Flow	-0.07	-0.23	0.27	-0.15	0.13	0.08	0.24	-0.12	-0.05	-0.31
Price/ Free Cash Flow	-0.21	-0.29	0.25	-0.12	-0.03	-0.12	0.30	-0.06	-0.09	-0.22
Price/ Sales	0.06	-0.16	0.22	-0.03	-0.19	-0.08	0.16	-0.27	-0.13	-0.64
EV/ EBITDA	-0.02	-0.17	0.35	-0.19	0.06	-0.03	0.22	-0.20	-0.13	-0.37
Free Cash Flow/ EV	-0.22	-0.24	0.30	-0.15	0.03	-0.09	0.31	-0.02	-0.18	-0.10
Relative Strength - 30wk/75wk MA	0.23	0.19	-0.21	0.06	0.20	0.29	0.53	0.00	0.14	0.32
Relative Strength - 5wk/30wk MA	0.20	0.23	-0.10	0.12	0.17	0.38	0.45	0.19	0.09	0.41
Relative Strength - 10wk/40wk MA	0.21	0.24	-0.14	0.11	0.16	0.33	0.51	0.17	0.21	0.38
Price to Moving Average (200 day)	0.22	0.26	-0.10	0.11	0.16	0.35	0.45	0.19	0.09	0.44
Price Return - 12-mth Perf.	0.22	0.25	-0.17	0.11	0.15	0.27	0.50	0.08	0.14	0.40
Price Return - 9-mth Perf.	0.26	0.29	-0.18	0.09	0.13	0.28	0.51	0.10	0.19	0.38
Price Return - 3-mth Perf.	0.19	0.18	-0.04	0.05	0.15	0.36	0.35	0.14	-0.01	0.34
Price Return - 11-mth Perf.	0.23	0.21	-0.20	0.10	0.15	0.26	0.54	0.03	0.19	0.33
Price Return - 12-mth and 1-mth Perf.	0.14	0.24	-0.12	0.13	0.19	0.28	0.42	0.19	0.01	0.51
Price Return - 12-mth and 1-mth Reversal	0.07	0.12	-0.24	0.05	0.11	0.04	0.57	0.02	0.29	0.31
Most Active	0.45	0.31	-0.12	-0.10	0.12	0.27	0.43	-0.16	0.00	-0.09
Low Price	0.38	0.01	0.14	-0.22	-0.14	0.10	0.18	-0.43	-0.08	-0.71
Earning Momentum	0.44	0.24	-0.15	-0.25	0.29	0.37	0.43	-0.21	0.24	0.06
Proj. 5yr EPS Growth	0.50	0.28	-0.17	-0.19	0.13	0.38	0.35	-0.17	0.13	-0.06
Earnings Torpedo	0.36	0.06	-0.13	-0.17	-0.23	0.20	0.24	-0.27	-0.02	-0.55
EPS Estimate Revisions	0.36	0.27	-0.38	-0.11	0.32	0.32	0.51	-0.05	0.26	0.17
Dividend Growth	-0.52	-0.30	0.07	0.20	0.05	-0.27	0.31	0.20	-0.10	0.14
P/E-to-Growth	0.09	-0.12	0.22	0.03	0.00	-0.04	0.28	-0.28	-0.01	-0.39
High Leverage	0.09	-0.17	-0.13	0.07	-0.16	-0.10	0.31	-0.34	0.16	-0.74
1yr ROE	-0.30	-0.13	0.14	0.07	0.19	0.10	0.35	0.29	-0.21	0.50
5y ROE	-0.52	-0.30	0.22	0.05	-0.01	0.00	0.31	0.28	-0.20	0.45
1yr ROE Adj	-0.10	0.04	0.16	-0.01	0.21	0.15	0.36	0.28	-0.18	0.59
5yr ROE Adj	-0.11	0.01	0.19	-0.05	0.10	0.16	0.35	0.24	-0.20	0.51
ROA	-0.10	-0.03	0.14	-0.08	0.16	0.16	0.35	0.19	-0.17	0.51
ROC	-0.27	-0.10	0.05	0.09	0.20	0.03	0.39	0.23	-0.14	0.58
Beta	0.54	0.15	-0.06	-0.27	-0.01	0.35	0.26	-0.36	0.06	-0.48
Variability of Earnings	0.64	0.24	-0.22	-0.28	0.07	0.33	0.35	-0.37	0.16	-0.56
Estimate Dispersion	0.65	0.20	-0.06	-0.31	0.01	0.45	0.36	-0.41	0.13	-0.54
Neglect - Analyst Coverage	-0.11	-0.26	0.26	-0.16	-0.20	-0.09	0.41	-0.07	-0.15	-0.18
Neglect - Institutional Ownership	0.00	-0.13	0.25	-0.35	-0.29	0.02	0.39	0.06	-0.12	-0.23
Size	0.30	-0.10	0.24	-0.26	-0.18	0.13	0.13	-0.40	-0.12	-0.73
Share Repurchase	-0.38	-0.13	0.26	0.21	-0.04	-0.24	0.34	0.22	-0.10	0.18
Short Interest	-0.26	-0.33	0.51	-0.06	0.16	0.14	0.46	0.11	-0.17	0.09

Source: BofA Merrill Lynch US Equity & Quantitative Strategy
 Interest rates data since 1998. WTI Oil, Trade Weighted US Dollar data since 1986. GDP data since 1985. VIX data since 1991. CPI data since 1986. Profit Cycles data since 1987. Credit Spreads (Investment Grade) data since 1997.

Factor performance since 1986 (Analyst Coverage since 1994; Institutional Ownership since 1999; Short Interest since 1993)

S&P 500 factor efficacy

Table 12: S&P 500 factors: Sharpe Ratio

Boldface font indicates quintiles with the highest Sharpe ratio for each factor.

Shaded cells indicate the quintile with the lowest Sharpe ratio for each factor.

Factor performance 1986 to present (Analyst Coverage since 1994; Institutional Ownership since 1999, Short Interest since 1993).

Factor	Decile 1	D2	D3	D4	D5	D6	D7	D8	D9	D10
Earnings Yield	0.57	0.47	0.57	0.48	0.54	0.51	0.36	0.41	0.32	0.25
Forward Earnings Yield	0.47	0.58	0.50	0.60	0.45	0.47	0.45	0.47	0.27	0.21
Dividend Yield	0.42	0.56	0.53	0.60	0.56	0.43	0.38	0.38	0.38	0.36
Price/ Book Value	0.36	0.53	0.54	0.51	0.40	0.44	0.40	0.39	0.45	0.39
Price/ Cash Flow	0.47	0.52	0.56	0.46	0.52	0.48	0.41	0.44	0.31	0.32
Price/ Free Cash Flow	0.62	0.61	0.56	0.59	0.52	0.37	0.45	0.26	0.22	0.32
Price/ Sales	0.45	0.48	0.50	0.50	0.49	0.51	0.49	0.33	0.40	0.25
EV/ EBITDA	0.65	0.62	0.45	0.57	0.51	0.51	0.33	0.41	0.35	0.16
Free Cash Flow/ EV	0.74	0.56	0.56	0.60	0.48	0.32	0.44	0.29	0.27	0.29
Relative Strength - 30wk/75wk MA	0.47	0.53	0.54	0.53	0.48	0.52	0.50	0.40	0.30	0.20
Relative Strength - 5wk/30wk MA	0.48	0.40	0.32	0.38	0.51	0.60	0.56	0.53	0.42	0.21
Relative Strength - 10wk/40wk MA	0.49	0.34	0.38	0.44	0.52	0.60	0.52	0.50	0.43	0.20
Price to Moving Average (200 day)	0.45	0.37	0.43	0.41	0.47	0.56	0.49	0.51	0.45	0.25
Price Return - 12-mth Perf.	0.53	0.57	0.46	0.55	0.46	0.48	0.41	0.47	0.32	0.19
Price Return - 9-mth Perf.	0.54	0.45	0.41	0.45	0.46	0.48	0.44	0.47	0.39	0.26
Price Return - 3-mth Perf.	0.43	0.41	0.41	0.46	0.50	0.45	0.55	0.47	0.43	0.29
Price Return - 11-mth Perf.	0.53	0.57	0.51	0.52	0.48	0.49	0.45	0.43	0.35	0.15
Price Return - 12-mth and 1-mth Performance	0.46	0.45	0.50	0.50	0.34	0.47	0.47	0.50	0.45	0.28
Price Return - 12-mth and 1-mth Reversal	0.57	0.51	0.57	0.48	0.36	0.48	0.46	0.47	0.38	0.17
Most Active	0.57	0.50	0.58	0.45	0.47	0.37	0.50	0.38	0.34	0.21
Low Price	0.35	0.43	0.45	0.43	0.50	0.55	0.40	0.52	0.36	0.47
Earning Momentum	0.41	0.49	0.51	0.55	0.53	0.48	0.51	0.47	0.34	0.26
Proj. 5yr EPS Growth	0.29	0.37	0.44	0.52	0.42	0.46	0.55	0.49	0.49	0.51
Earnings Torpedo	0.37	0.38	0.50	0.56	0.59	0.58	0.53	0.41	0.37	0.30
EPS Estimate Revisions	0.41	0.50	0.53	0.36	0.52	0.54	0.46	0.44	0.42	0.23
Dividend Growth	0.45	0.47	0.37	0.43	0.50	0.55	0.46	0.52	0.49	0.45
P/E-to-Growth	0.49	0.49	0.44	0.49	0.52	0.52	0.57	0.39	0.44	0.32
High Leverage	0.38	0.49	0.41	0.45	0.54	0.44	0.46	0.52	0.39	0.36
1yr ROE	0.60	0.54	0.47	0.46	0.55	0.48	0.34	0.47	0.38	0.27
5y ROE	0.55	0.46	0.45	0.49	0.49	0.44	0.41	0.40	0.46	0.33
1yr ROE Adj	0.56	0.49	0.52	0.50	0.48	0.45	0.40	0.48	0.41	0.25
5yr ROE Adj	0.56	0.42	0.45	0.50	0.51	0.42	0.34	0.51	0.45	0.32
ROA	0.52	0.44	0.51	0.45	0.45	0.50	0.51	0.46	0.42	0.23
ROC	0.61	0.58	0.59	0.45	0.48	0.50	0.50	0.40	0.32	0.18
Beta	0.29	0.36	0.43	0.41	0.51	0.46	0.52	0.58	0.54	0.40
Variability of Earnings	0.29	0.35	0.39	0.45	0.39	0.54	0.51	0.44	0.59	0.59
Estimate Dispersion	0.24	0.41	0.46	0.45	0.44	0.42	0.43	0.50	0.59	0.64
Neglect - Analyst Coverage	0.46	0.60	0.44	0.51	0.47	0.56	0.49	0.48	0.32	0.39
Neglect - Institutional Ownership	0.28	0.42	0.45	0.45	0.35	0.42	0.31	0.39	0.43	0.45
Size	0.39	0.58	0.41	0.42	0.53	0.39	0.47	0.39	0.35	0.43
Share Repurchase	0.64	0.64	0.53	0.46	0.45	0.40	0.47	0.42	0.36	0.16
Short Interest	0.69	0.63	0.68	0.54	0.53	0.42	0.42	0.29	0.33	0.21

Source: BofA Merrill Lynch US Equity & Quantitative Strategy

Sharpe ratio is calculated as the average annualized monthly excess return vs. 10-yr Treasury yield divided by the annualized volatility (standard deviation) of monthly excess returns.

Exhibit 12: S&P 500 Factor correlations

Source: BofA Merrill Lynch US Equity & Quantitative Strategy. Bold typeface indicates correlations above one standard deviation from the average. Shaded cells indicate correlations below one standard deviation from the average.

Link to Definitions

Macro

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Underperform	N/A	≥ 20%

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