Equity Strategy Focus Point

US Corporate Cash Primer: How they spend it

19 May 2017

Equity and Quant Strategy
United States

Cash balances still high, but spending trends are changing

With a record $1.7 trillion of cash on S&P 500 non-Financial balance sheets, we update our analysis of corporate cash deployment trends and the implications for earnings and stock performance. The drivers for spending cash have changed, creating different sources of alpha for investors. For investors seeking additional information on stock screens related to dividends, buybacks, M&A and capex, see our latest quarterly Theme Screens report.

Dividend spending on the rise – invest in dividend growers

While capex has historically been the biggest use of cash (even amid the recent commodity recession), dividends are now the second largest, eclipsing net buybacks for the first time since 2013. Buybacks began to slow last year: S&P 500 companies spent $500bn on gross buybacks vs. $400bn on dividends, the narrowest spread between the two since 2013. The S&P 500 dividend payout ratio has jumped by >40% since 2011, but could continue to climb: demand is still high and dividend funds control the lion's share of actively managed AUM. But if rates rise, dividend growth should outperform high yield.

The easy money in buybacks has been made

Amid tepid sales growth, buybacks were used to boost EPS by 1-2ppt per annum for the last five years. This was uniformly rewarded in the early stages of the buyback frenzy, when valuations were low. But as buybacks became de rigueur and as valuations normalized, our buyback screen began to underperform. Alpha from buybacks could continue to wane, particularly as leverage ratios tick up. Only buybacks executed at low valuations are likely to be rewarded. While overall buybacks have slowed in recent quarters, Financials' have accelerated—here, the ability to finally return cash could boost multiples.

The reward for acquisition-driven growth has dissipated

Over the past few decades, corporates have been buying more and building less. While valuations have not historically impeded M&A, acquisitions have decreased since 2015, with fewer large deals but higher premiums. Regulation has helped deter tax-driven cross-border M&A, which could be further discouraged by tax reform. Policy uncertainty and volatility could also suppress deal activity. And the alpha is thinning out: the average post-announcement outperformance of acquirers is currently at a six-year low.

What investors want most is capex

Aging infrastructure, a secular decline in the portion of cash used on capex and near record-low capex levels relative to depreciation underscore decades of waning investment by US companies, with trends further stymied by the recent commodities recession. Capex trends will likely remain challenged given still-low capacity utilization, range-bound oil price expectations (based on the futures curve) and policy uncertainty, but most leading indicators (profits, ISM, lending standards) suggest the recent pick-up can continue. And investing in growth could be rewarded: investor demand for capex is near all-time highs.

Leverage matters – and is showing up in valuations

Debt has risen to cycle highs, outpacing both EBITDA growth and cash generation. Historically, companies that de-levered their balance sheets outperformed with remarkable consistency, and this should continue. Because even though credit conditions have recently improved, the Fed is accelerating its pace of tightening, corporate leverage ratios have risen demonstrably, and investors are shifting focus to balance sheet strength. Issuance has slowed, and spending cash to pay down debt may accelerate—particularly if tax reform includes the removal of the interest tax shield. The market is responding: levered companies are de-rating relative to cash-rich companies, and stocks with high interest expense have underperformed since the election.

BofA Merrill Lynch does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.
Refer to important disclosures on page 38 to 39. 11747591

Timestamp: 19 May 2017 12:01AM EDT

Table of Contents

3rd annual corporate cash primer	2
Investing in cash return strategies	2
How companies use their cash	2
Cash return: dividends vs. buybacks	5
How to invest in dividends	8
Share repurchases	12
Build or buy? Capex vs. M&A	18
Mergers & Acquisitions	19
Capital expenditures (capex)	22
Balance sheet repair	30
Appendix	35

Savita Subramanian
Equity & Quant Strategist
MLPF&S
+1 646 855 3878
savita.subramanian@baml.com

Dan Suzuki, CFA
Equity & Quant Strategist
MLPF&S
+1 646 855 2827
dan.suzuki@baml.com

Alex Makedon
Equity & Quant Strategist
MLPF&S
+1 646 855 5982
alex.makedon@baml.com

Jill Carey Hall, CFA
Equity & Quant Strategist
MLPF&S
+1 646 855 3327
jill.carey@baml.com

Marc Pouey
Equity & Quant Strategist
MLPF&S
+1 646 855 1142
marc.pouey@baml.com

Jimmy Bonilla
Equity & Quant Strategist
MLPF&S
+1 646 556 4179
jimmy.bonilla@baml.com

James Yeo
Equity & Quant Strategist
MLPF&S
+1 646 743 0187
james.h.yeo@baml.com

3rd annual corporate cash primer

With over $1.7 trillion of cash on S&P 500 non-Financial balance sheets, we update our analysis of corporate cash deployment trends and the implications for corporate earnings and stock performance. We examine the drivers behind companies spending cash, as well as how investors can profit from cash deployment strategies.

Investing in cash return strategies

Analyzing how companies use their cash tells investors much about how management teams view their growth opportunities and how they plan to run their businesses. Based on historical returns, our analysis suggests the following:

- Companies, in general, are not good at timing **buybacks**, and valuations suggest the easy money may already have been made. Focus on net buybacks and those done at inexpensive valuations. Biggest sector opportunity? Financials.

- **Dividends** have been, and should continue to be, a significant part of investor return, particularly as more money is allocated to income funds than any other investment style today. But current yields do not capture the whole story: focus on sustainable and growing dividends.

- Historically, valuation has not been an impediment to **M&A,** but the environment has gotten tougher despite opportunities in some sectors. Deal activity has slowed and markets have grown more skeptical of deal announcements.

- **Capex** trends in this cycle are likely to remain challenged, but capex growth has begun to pick-up, which we believe can continue (as most leading indicators point to further improvement). Investing in growth is likely to be rewarded given that investor demand for capex is near all-time highs.

- **Leverage** matters. Companies that have de-levered their balance sheets have outperformed with remarkable consistency. This trend is likely to continue over the next several years: while credit conditions have improved, the Fed is accelerating its pace of rate hikes, leverage has continued to rise, policy could result in an end to the interest tax shield and investors are increasingly honed in on balance sheet strength. Levered companies are de-rating relative to cash-rich companies.

Table 1: Cash deployment strategies: when to buy

Cash deployment strategy	When to buy
Low leverage / balance sheet repair	During recessions, when profits decline and credit is tightening
Share repurchases	When valuations are inexpensive
High dividend yield	When interest rates are low and falling, making dividend yields attractive vs. bond yields, and during periods of rising equity market volatility
High dividend growth	When growth is scarce, interest rates are low and demand for income is high
Capex beneficiaries	When capacity is tight, economic growth is accelerating and credit availability is increasing
Potential M&A beneficiaries	Acquirers: When interest rates are low, valuations are reasonable and growth is scarce. Targets: When leverage is not stretched, company has strong growth prospects and firm valuations are attractive

Source: BofA Merrill Lynch US Equity & US Quant Strategy

How companies use their cash

As companies generate profits, they must decide what to do with those profits. Companies can choose to hoard cash (earning interest income), pay down debt, make capital investments, acquire other companies, repurchase shares or pay out dividends. In order to maximize returns, companies should invest those profits to generate returns that exceed the cost of capital. Otherwise, they should return the cash to shareholders. See table below for a summary.

Table 2: Summary of uses of corporate cash

Use of cash	Definition	Benefits	Drawbacks	When to do
Capex	Investments in purchasing and maintaining the long-term physical assets supporting the business operations.	Increased capacity/efficiency, potential tax deductions.	Lowers initial FCF, can take time to build vs. buy.	The net present value of the investment is higher than alternative uses of cash.
Acquisitions	The purchases of other businesses.	Immediate growth, potential cross-selling/synergies, intellectual property/expertise.	Management retention, integration risk, overpayment.	The net present value of the acquisition (including synergies) is higher than alternative uses of cash.
Buybacks	The purchases of a company's own shares, reducing the total supply of shares outstanding.	Lowers shares outstanding, offsets stock compensation dilution, increases EPS & ROE, lowers PE.	Subjective assessment of whether stock is undervalued, the most commitment-phobic cash return mechanism.	The stock is undervalued and there is excess cash.
Dividends	Specified payments in the form of cash or stock to existing shareholders, often recurring on a periodic basis.	Attracts income-oriented investors, can increase capital discipline.	Increased capital constraint, a signal that a company has diminishing growth opportunities; double taxation	There is sustainable excess free cash flow.
Debt paydown	The retirement of existing debt obligations.	Lowers risk of default, reduction in the cost of debt.	Lower financial leverage can reduce ROE.	Unacceptably high possibility that the company may not be able to make its payments in an adverse scenario.

Source: BofA Merrill Lynch US Equity & Quant Strategy

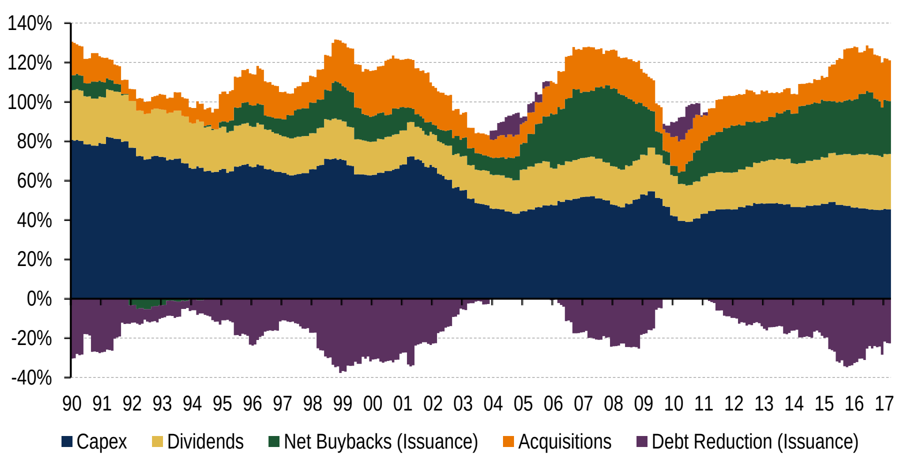
Capital allocation is cyclical

How companies allocate their capital changes substantially over the course of the business cycle. When weak profits threaten the future viability of the company, the best way to maximize future profits is first to ensure that there is a company still in existence to generate those future profits. So during profit slowdowns, companies typically hoard cash to ensure that they are able to weather the profit downturn and continue to operate their businesses. Once confidence is restored and the outlook improves, the opportunity cost of holding excess cash earning low returns and not investing in higher return opportunities increases rapidly. Companies begin putting that cash to work via capital expenditures (capex), acquisitions, share repurchases and dividends.

Dividends outpacing net buybacks, and M&A has declined

While capex tends to be the main use of corporate cash (even despite the decline in investment over the last few years), dividends have recently become the next-largest use of cash, outpacing net buybacks for the first time since 2013. Meanwhile, corporates spent less of their cash on M&A last year and this year relative to in 2015, when the proportion of cash spent on acquisitions hit its highest levels since 2000. Debt issuance has been a source of cash since 2011 and peaked in late 2015 as interest rates continued to fall (and ultimately hit lows in mid-2016). As interest rates have risen, the pace of issuance has declined.

Chart 1: Uses of Operating Flow by S&P 500 Non-Financials, 1989-present

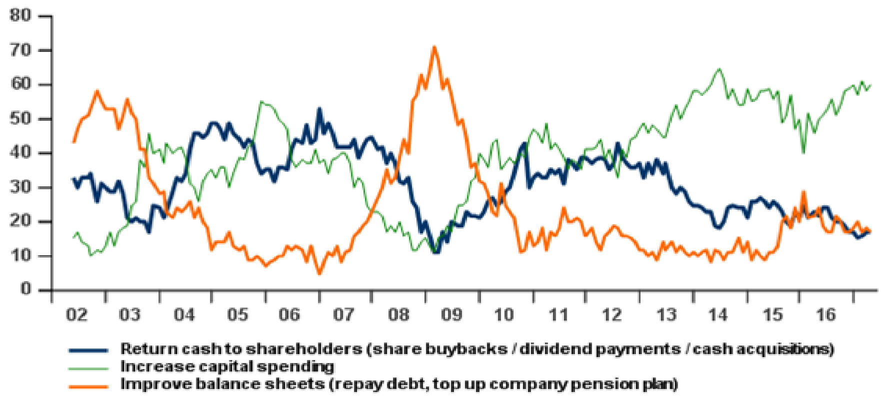


Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Investor preference for capital allocation is also cyclical

It turns out that investors and companies generally agree on how to allocate capital. During economic slowdowns, investors prefer that companies use cash flow to shore up balance sheets. When the economy starts to grow, investors generally have been indifferent between cash return to shareholders and increased capital spending as their preferred use of cash. But in this cycle, there has been a persistent and growing preference for companies' capital investment spending over returning cash to shareholders. And as profit growth slowed in 2015-2016 and leverage increased, the desire for companies to improve balance sheets (pay down debt) increased.

Exhibit 1: BofAML Global Fund Manager Survey question: What would you like to see companies do with their cash flow? (as of May 2017)



Source: BofA Merrill Lynch Global Fund Manager Survey

Companies currently favor buybacks and acquisitions

Although BofAML's Global Fund Manager survey suggests that the market has less appetite for buybacks and dividends, companies perceive buybacks as the best use of capital, along with strategic acquisitions—these two were tied in the latest (2017) BofA Merrill Lynch survey of investor relations professionals as the most effective use of capital (29% of participants each). The proportion favoring acquisitions was flat from last year, while the proportion favoring stock buybacks fell from 35% a year ago. Debt paydown and "Other" saw the biggest increases—where "Other" may reflect capital spending.

Table 3: Investor Relations Insights Survey: What do you think investors perceive is the most effective/favorable use of capital today?

	2017	2016	2015
Stock buybacks	29%	35%	33%
Strategic acquisitions	29%	29%	25%
Dividend increases	17%	19%	39%
Debt pay down	15%	13%	0%
Hedging exogenous risks (currency, oil, equity exposure)	0%	2%	NA
Other	11%	2%	4%

Source: BofA Merrill Lynch Global Research

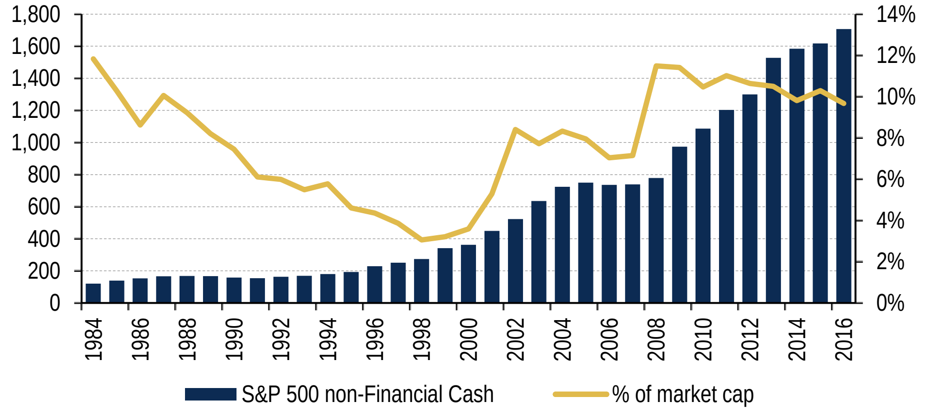
Note: Based on a survey of investor relations attendees of the BofAML Annual Investor Relations Insights Conference held in March 2017

Cash at record levels, has more than doubled since '08

In the wake of the Financial Crisis, companies initially focused on strengthening their balance sheets, especially as the potential returns for business investments and acquisitions appeared weak amid anaemic global growth. A build-up in cash has also been driven by a desire to avoid paying US taxes on foreign profits by not repatriating them. As a result, cash levels for the S&P 500 Non-Financials have more than doubled since 2008, and sit at record highs (over $1.7 trillion, or 10% of market cap).

Bank of America Merrill Lynch

Chart 2: S&P 500 Non-Financial Cash ($bn) and % of Market Cap

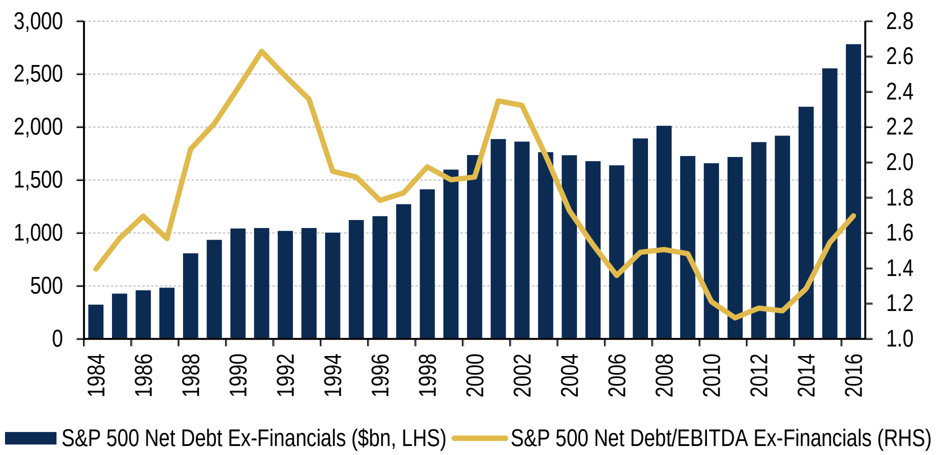


Source: BofA Merrill Lynch US Equity & Quant Strategy, Compustat
Note: Excludes Financials & Managed Care and includes AAPL's non-current marketable securities

But leverage has also been on the rise

In the last three years, debt accumulation has outpaced both EBITDA growth and cash generation, resulting in higher net debt and leverage ratios.

Chart 3: S&P 500 Ex-Financials Net Debt and Net Debt/EBITDA



Source: BofA Merrill Lynch US Equity & Quant Strategy, Compustat
Note: Excludes Financials & Managed Care

Cash return: dividends vs. buybacks

Why marry when you can date?

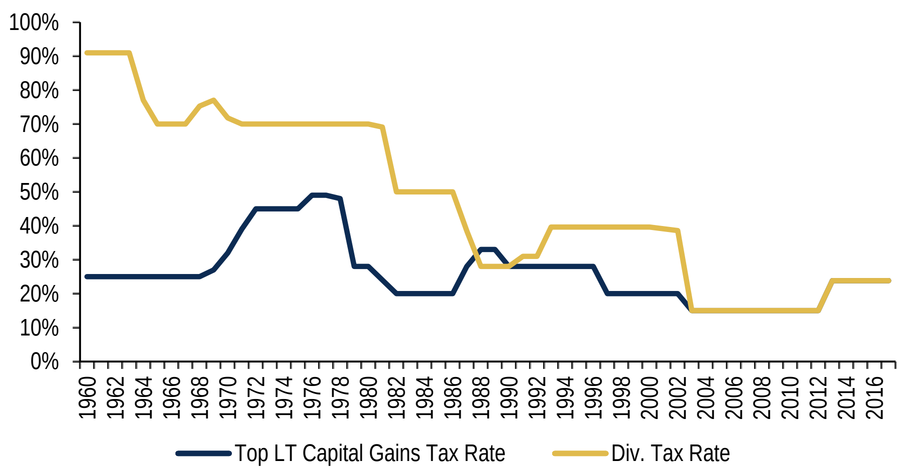
Academically, in the absence of taxes and transaction costs, the decision to return cash to shareholders via capital gains or via dividends should not change the value of the firm (Miller-Modigliani Theorem). However, in practice, we find that dividends and buybacks are perceived quite differently by the market. For some investors, dividends are perceived as a signal that a company will not grow as rapidly. For others, the commitment of regular dividends lowers the risk associated with timing buybacks (similar to the idea of dollar-cost averaging), and attracts income-seeking investors. Additionally, some investors believe that dividends instill additional capital discipline and lower the risk of misusing a company's excess cash flows.

Investment tax policy has also had a big impact on how companies return cash

In the mid-1990s, there was a big shift in capital allocation away from dividends in favor of share buybacks, as is clear in Chart 1. Companies were able to justify this shift toward a more flexible channel for cash returns based on the increasing income tax rates applied to dividends and the falling tax rates on long-term capital gains (Chart 4). Since the passing of the Bush tax cuts in 2003, the tax rate for dividends and capital gains has been the same, but companies could still justify the higher allocation toward buybacks owing to the temporary nature of the tax cuts. It was not until 2013 that the equivalence of capital gains and dividend taxes was made permanent.

Note that both the dividend and long-term capital gain tax rates of 23.8% for the top marginal tax bracket include a 3.8% Net Investment Income Tax for Medicare, which the American Health Care Act (AHCA)—which was recently passed by the House of Representatives and now goes to the Senate—would repeal.

Chart 4: Capital gains and dividend tax rates for top marginal tax bracket (1960-present)

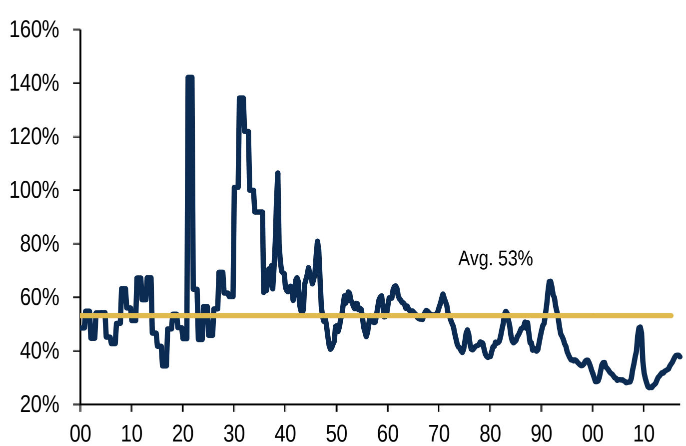


Source: BofA Merrill Lynch US Equity & Quant Strategy, IRS
Note: tax rates since 2013 include the 3.8% Net Investment Income Tax for Medicare

Dividend payout ratio has rebounded off the 2011 all-time low

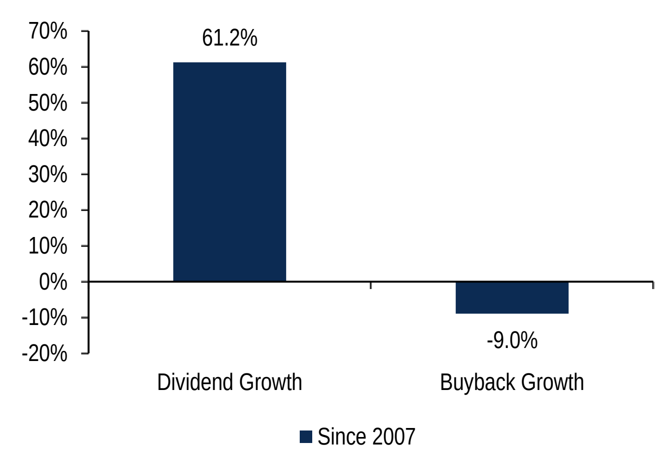
Since early 2011, the dividend payout ratio for the S&P 500 has risen from 26% to 38%. While this represents more than a 40% increase, the payout ratio remains well below the historical average of 53% (Chart 5). Since 2007, aggregate dividends have grown by 61% while spending on buybacks has fallen by 9% (Chart 6). And as noted above, dividends have outpaced *net* buybacks for the first time since 2013.

Chart 5: S&P 500 dividend payout ratio, 1900-present



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

Chart 6: S&P 500 growth in dividends and buybacks since 2007



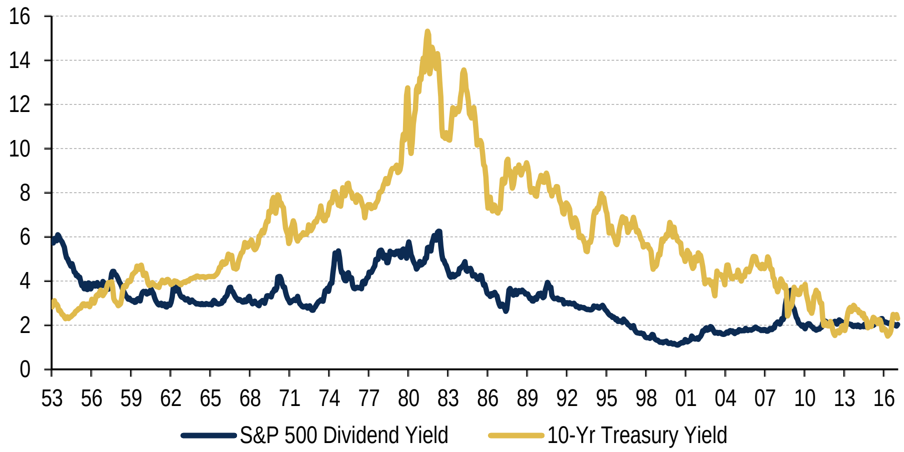
Source: S&P, BofA Merrill Lynch US Equity & US Quant Strategy

Interest rates & demographics matter

One driver of the rise in the payout ratio since 2011 was likely the increased investor appetite stemming from falling interest rates and aging demographics. The first Baby

Boomers turned 65 in 2011, and this marked the year that the 10-year Treasury yield fell below the 2% threshold for the first time in over 70 years.

Chart 7: S&P 500 dividend yield and 10-yr Treasury yield

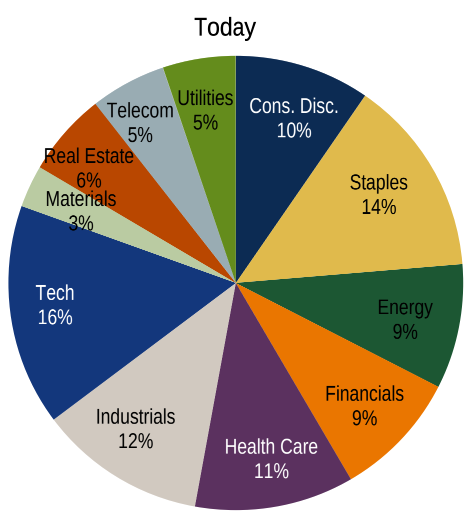


Source: BofA Merrill Lynch US Equity & Quant Strategy, Bloomberg, S&P

Even Tech firms have come around to dividends

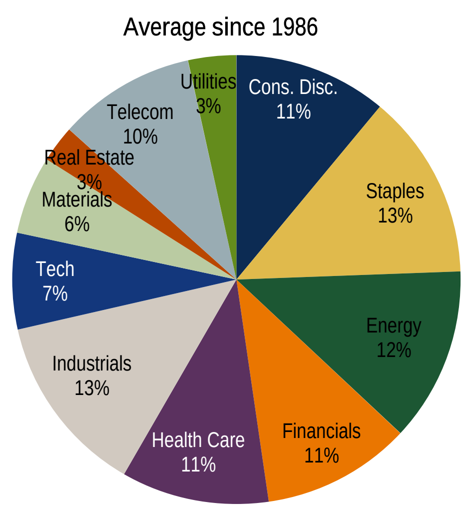
At the sector level, the biggest driver of the higher payout ratio was Tech stocks' shift toward paying dividends. Historically, Tech firms were reluctant to pay dividends out of fear of no longer being considered growth companies. But with slowing growth, ever-growing cash piles and a broadening group of discontented investors, many of the larger Tech companies started to pay more dividends. The biggest contributor to this shift was Apple, which went from zero to a $10bn+/year dividend run rate in 2012.

Chart 8: Share of S&P 500 dividend spending by sector (as of 1Q17)



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

Chart 9: Avg. share of S&P 500 dividend spending by sector since 1986

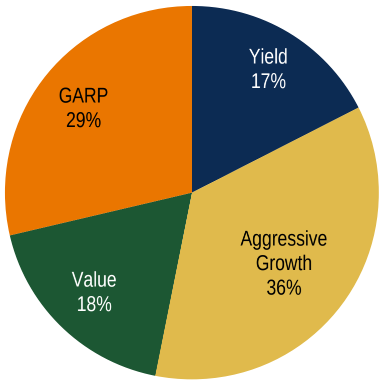


Note: Data for Real Estate since 10/2001
Source: BofA Merrill Lynch US Equity & Quant Strategy, FactSet, Compustat, S&P

Income funds are the biggest marginal buyer of stocks

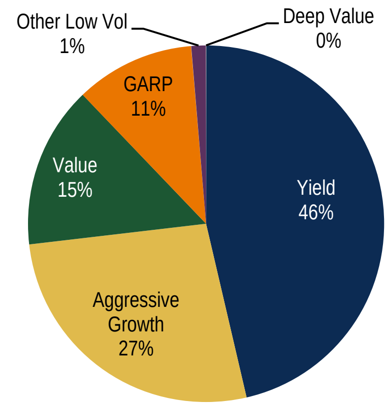
The increased appetite for equity income can been seen in the rapid market share gains of income funds. In 2010, Income funds represented 17% of the assets in actively managed funds, the smallest percentage out of the four fund categories. Today, their market share has more than doubled and accounts for nearly half of the total assets under active management, and has consistently grown despite expectations for rising interest rates and lofty valuations of high dividend-yielding sectors.

Chart 10: AUM landscape by fund category – Aug 2010



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

Chart 11: AUM landscape by fund category – Today (as of April 2017)

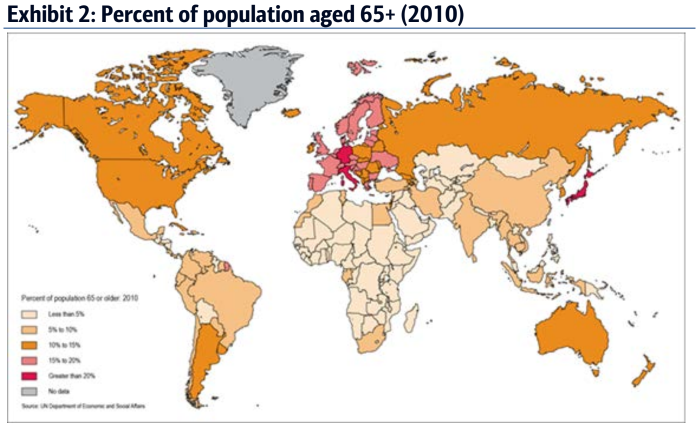


Source: BofA Merrill Lynch US Equity & US Quant Strategy, FactSet Ownership

Demand for income has long legs

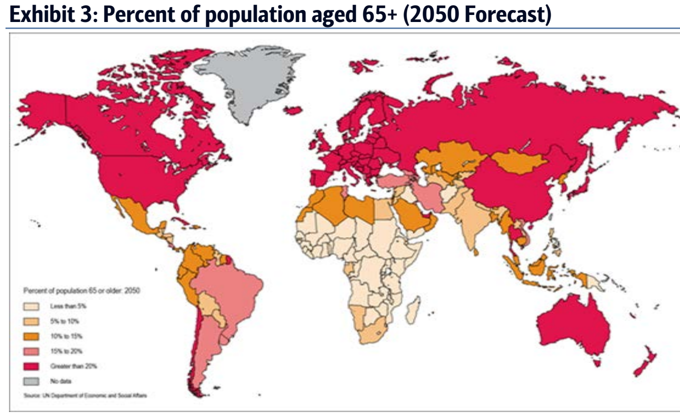
We expect continued growth in the demand for income, driven by favorable demographic trends over the next several decades.

Exhibit 2: Percent of population aged 65+ (2010)



Source: UN

Exhibit 3: Percent of population aged 65+ (2050 Forecast)



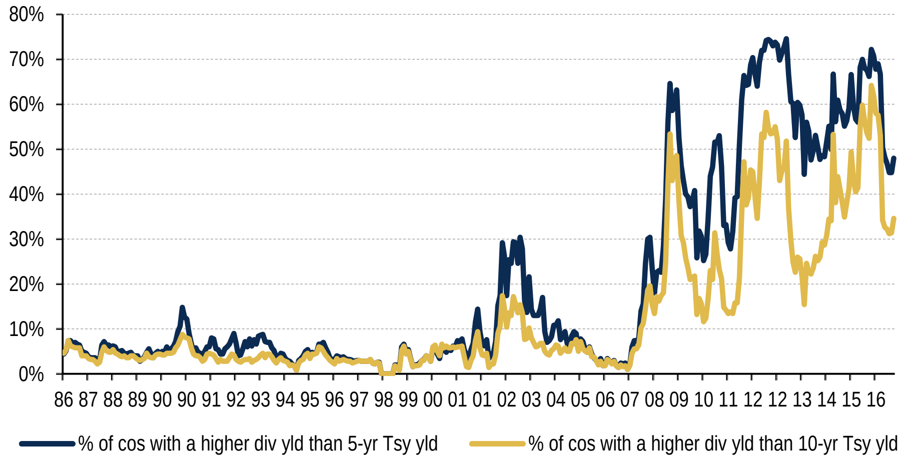
Source: UN

How to invest in dividends

Kill two birds with one stone: buy stocks

Investing in stocks and receiving income are not mutually exclusive goals. With discipline and patience, our work suggests investors can capitalize on better fundamentals of stocks relative to bonds and meet their income needs. 50% of the companies in the S&P 500 pay a higher dividend yield than the 5-year Treasury yield, and more than one-third pay a higher dividend yield than the 10-year Treasury yield (Chart 12).

Chart 12: Percentage of companies with higher dividend yield than the Treasury yield (1986-4/2017)



Source: BofA Merrill Lynch US Equity & Quant Strategy, FactSet, Federal Reserve Board, Compustat

But we caution investors against blindly seeking out the highest dividend yielding stocks, or even worse, equating high dividend yield with perceived safety. Just as with distressed bonds, some higher dividend yields could be viewed as a function of unsustainable dividends. Given that the typical high yielding stock's profile is that of slower growth and higher payout ratios, these stocks are more likely to live up to their nickname of "bond proxies": like bonds, they are vulnerable to the negative impact of rising interest rates.

Prefer sustainable/growing yields over simply high yields

Despite the decline in rates from mid-March to mid-April of this year, the 10-year Treasury yield has generally been rising ever since its July 2016 lows, and our interest rate strategists expect this to continue: they forecast 2.85% on the 10-year by year-end 2017. The first secular period of rising rates in over 30 years could introduce new challenges for income investors. Since the great recession, the scarcity of growth and yield has driven up the valuations of the fastest-growing and highest-yielding stocks. But, in our view, a new regime of rising interest rates, albeit at a modest pace, could bring about a new scarcity in tomorrow's markets that could benefit dividend growth stocks: that of income strategies not hurt by rising rates.

Dividend Growth: Less yield but much more attractive attributes

Our analysis suggests that in exchange for a little less current yield, investors generally are presented with companies that are cheaper, more globally diversified, have stronger balance sheets, solid earnings growth potential and plenty of room to increase payout ratios over time (Table 4).

Table 4: Dividend yielders vs. dividend growers (as of 4/30/17)

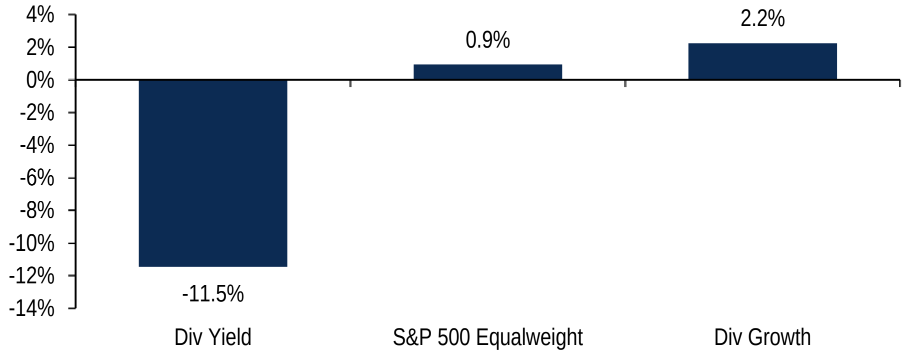
Median	S&P 500 Top Decile by Dividend Yield	S&P 500 Top Decile by Dividend Growth
Dividend Yield	4.4%	1.5%
Dividend Growth	2.6%	27.4%
Forward PE	17.3x	15.1x
Net Debt/EBITDA	3.6x	2.6x
Cash % Mkt Cap	4.9%	8.4%
Dividend Payout Ratio	65.8%	26.2%
Trailing EPS Growth	1.3%	15.8%
Consensus LT Growth	5.3%	12.1%
Foreign Sales	5%	27%

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

Not just a play on interest rates

Most importantly, the potential to grow dividends is likely to shield investors from much of the negative impact of rising rates to which other income-oriented strategies are subject. Unlike High Dividend Yield, which historically has underperformed when rates are rising, as performance is inversely correlated with interest rates, Dividend Growth has outperformed and is actually slightly positively correlated with rates. Low interest rates will likely be a pre-requisite for the significant outperformance of Dividend Yield, while Dividend Growth can do well in both rising and falling rate environments.

Chart 13: Correlation of monthly total returns vs. changes in 10-yr Treasury yields: S&P 500 top decile by dividend yield and top decile by dividend growth (1986-present)

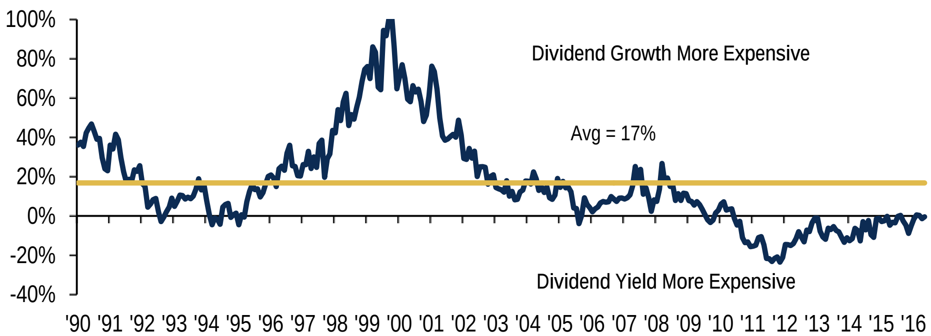


Source: BofA Merrill Lynch US Equity & Quant Strategy, Compustat, Bloomberg

Dividend Growth is still cheap vs. Dividend Yield

Dividend Growth has historically traded at a 17% premium to High Dividend Yield, but the scarcity of yield has resulted in Dividend Growth trading at a relative discount. While both strategies have performed generally in line with the market since interest rates bottomed in July, Dividend Growth has outperformed year-to-date (while Dividend Yield has lagged), and we expect this to continue.

Chart 14: Relative median forward P/E: High Dividend Growth vs. High Dividend Yield (based on S&P 500 top decile), 1990-4/30/17



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

A 100% dividend yield on what was paid 15 years ago?

Income-oriented investors often focus on current yield, as it allows for a comparison across equity and fixed income securities. While this matters when comparing fixed-rate investments or stocks with limited dividend growth, it is less useful when including companies with potential to grow dividends. A stock with a 3% dividend yield growing its dividend by 15% per year can double its yield on the original investment in just five years (Table 5 and Table 6). And while just 2% of companies have a dividend yield of more than 5% today, more than 20% have a dividend yield of more than 5% on its ten-year-ago price. Purchasing Apple's stock 15 years ago would mean a current dividend yield on the original investment of more than 100%.

Table 5: Scenario analysis: Dividend yield based on historical purchase prices (as of 5/12/17)

	Current Price	10-yr ago price	20-yr ago price
Percent of cos with div yld > 5%	2%	23%	68%
Avg div yld on original investment	2.0%	3.5%	11.3%

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

Table 6: Dividend yield of a stock with starting dividend yield of 3%

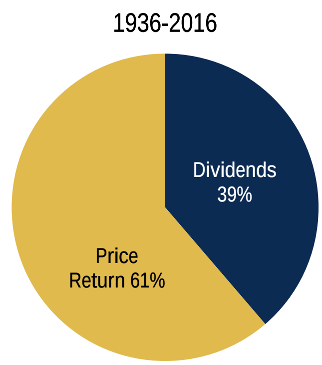
	Dividend Growth				
Years	0%	5%	10%	15%	20%
1	3.0%	3.2%	3.3%	3.5%	3.6%
2	3.0%	3.3%	3.6%	4.0%	4.3%
3	3.0%	3.5%	4.0%	4.6%	5.2%
4	3.0%	3.6%	4.4%	5.2%	6.2%
5	3.0%	3.8%	4.8%	6.0%	7.5%

Source: BofA Merrill Lynch US Equity & Quant Strategy

The power of compounding dividends

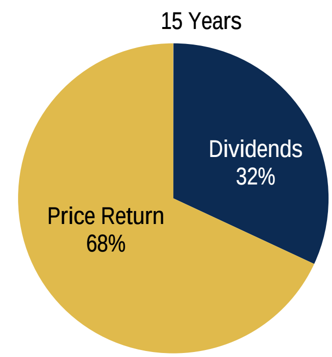
Dividends are an underappreciated component of equity returns, accounting for nearly 40% of total returns since 1936 (Chart 15). Even over the last 15 years, when payout ratios have been historically low, dividends accounted for nearly one-third of total S&P 500 returns.

Chart 15: Contribution to S&P 500 returns (1936-2016)



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

Chart 16: Contribution to S&P 500 returns (last 15 year: 2002-2016)

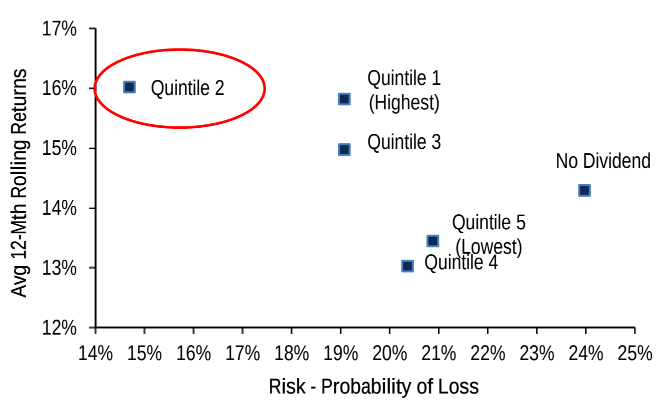


Source: BofA Merrill Lynch US Equity & Quant Strategy, Bloomberg

Quintile 2: the historical sweet spot of risk/reward

Interestingly, the highest or lowest dividend yielding stocks have not had the best returns. The best returns and the lowest probability of loss have come from the second quintile of stocks by dividend yield. Among the quantitative strategies that we follow, a strategy of buying stocks in Quintile 2 of the Russell 1000 by dividend yield offered higher total return and lower volatility of returns than all other segments (Chart 16).

Chart 17: Average 12m return vs. risk of Russell 1000 quintiles by dividend yield (1984-4/30/17)



Note: Average 12-month performance in the above chart is based on backtested results from 1/31/84 through 9/28/10. Actual performance is from 9/28/10-present. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not actual performance and is not intended to be indicative of future performance. The back-tested performance results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance, and cannot account for all financial risks that may affect the performance of the screen going forward. See Appendix for performance data and calculation methodology.
Source: Russell, BofA Merrill Lynch Research Equity Strategy & US Quant Strategy

Table 7: Quintile 2 performance (as of 4/30/17)

	Absolute	CAGR	Avg. 12m rolling	Eq. Wtd. Russell 1000 (CAGR)
Since Inception (9/28/2010)	146.2%	14.7%	14.1%	13.9%
Last 12 mth	17.6%	17.6%	16.6%	16.7%
Prior to Inception (1/31/1984-9/28/2010)	3567.2%	14.5%	16.4%	12.0%

Source:: BofA Merrill Lynch Research Equity Strategy & US Quant Strategy
Note: CAGR (the compound annual growth rate) is calculated by taking the n-th root of the cumulative total return over the period, where n is the number of years in the period being considered. Avg. 12m rolling return is the average of the monthly 12-mth rolling returns over the period considered

Share repurchases

Why companies buy back shares

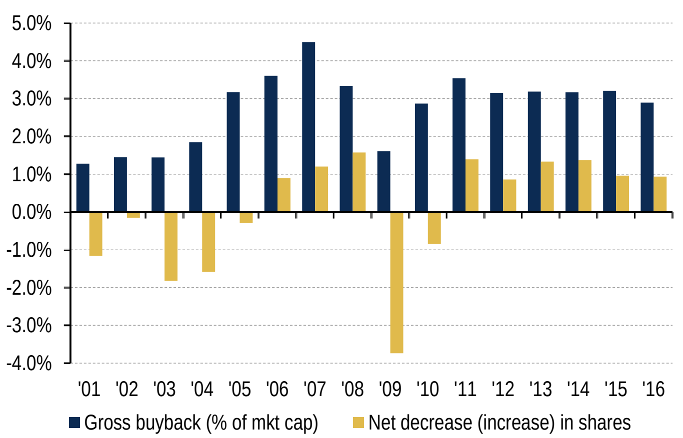
Early in a recovery, when prices are generally depressed, buying back stock allows companies to capitalize on attractive entry points. The more undervalued the stock (admittedly, a subjective decision that is often incorrectly made), the greater the expected return on the investment. When the S&P 500 was trading at 10x forward EPS in late 2011, the return on buybacks was compelling for most companies. Since 2011, valuations for the market have expanded significantly. Not only do higher valuations reduce the number of shares that can be repurchased for a given dollar amount, they also lower the cost of capital and reduce the hurdle rate for making new investments. As valuations grow fuller, buying back shares becomes less compelling and may conversely signal a lower commitment to shareholders, less confidence in continued free cash flow generation, and even a lack of more compelling opportunities.

Companies with serial share repurchase programs may be regarded by investors as self-serving (in that buybacks improve many of the "per share" metrics on which management is compensated), and can be seen as a signal that a company has a waning set of growth opportunities but lacks the confidence to initiate a dividend.

Focus on net (not gross) buybacks

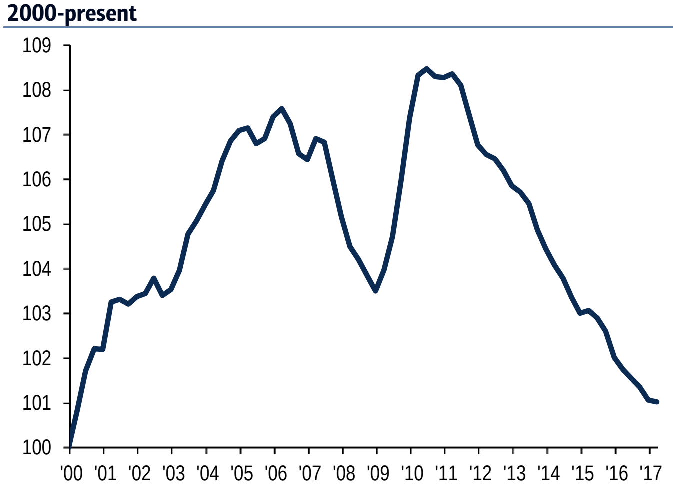
It is important to distinguish between companies that are spending a lot on buybacks and those that are actually reducing their outstanding share counts. In most years prior to 2006, share repurchases were more than offset by stock-based compensation and other forms of share dilution, resulting in an increase in the total amount of shares outstanding. Only in 2006-2008 and from 2011-present did stock repurchase activity lead to a decrease in the aggregate number of shares outstanding (Chart 18). Last year, S&P 500 companies spent $536bn on share repurchases (~3% of average market cap), but we estimate that aggregate shares fell by only about 1% (Chart 19). **For a list of S&P 500 companies with the largest net reduction in shares over the past year**, see our Share Repurchase screen in Quantitative Profiles, 07 April 2017.

Chart 18: S&P 500 aggregate share repurchases vs. estimated net change in aggregate shares, 2001-2016



Source: S&P, Compustat, BofA Merrill Lynch US Equity & US Quant Strategy
Note: Gross buyback % is based on aggregate reported share repurchase expenditures as a % of prior year avg. market cap

Chart 19: Aggregate S&P 500 shares index (indexed to 100 12/31/99), 2000-present

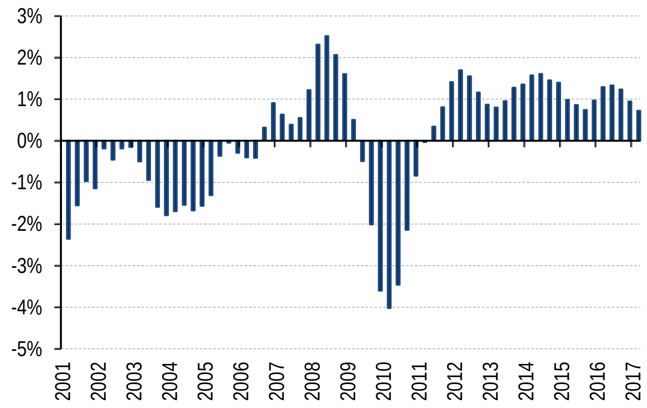


Source: BofA Merrill Lynch US Equity & US Quant Strategy, FactSet

Corporate buybacks have contributed 1-2ppt to EPS growth in recent years

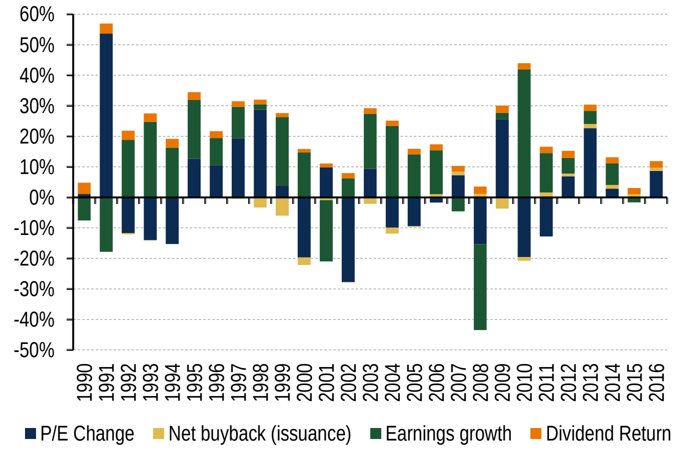
We calculate that S&P 500 net buybacks have added 1-2ppt to EPS growth over the last five years, with the contribution most recently slowing ever since mid-2016 (Chart 20). This has thus been a small proportion of S&P 500 total returns most years (Chart 21), with the exception of years when returns were flat or low (such as 2011 and 2015).

Chart 20: S&P 500 net buyback contribution to YoY EPS growth (2001-1Q17)



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

Chart 21: Decomposition of S&P 500 total returns by year, 1990-2016

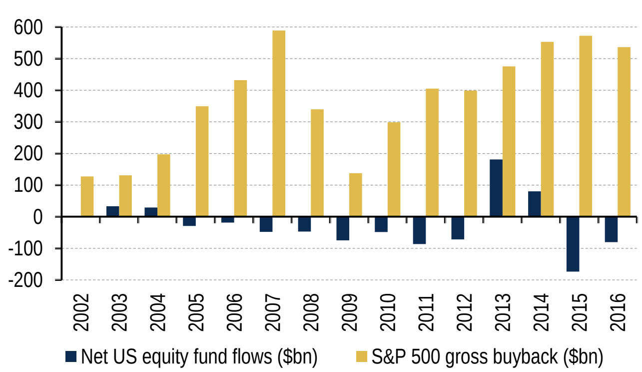


Source: BofA Merrill Lynch US Equity & US Quant Strategy, FactSet, Bloomberg

Buybacks make up a tiny percentage of trading volume

In comparing the spending on buybacks with net fund flow for US stocks over the past few years, which have been negative, some note that corporates make up a majority of the demand for stocks. We do not think that comparing the gross buybacks to net fund flows is the best way to look at the data. First, as mentioned above, if corporates are also issuing shares for stock compensation and other purposes, then some of the buyback activity is simply offsetting this share dilution. More importantly, we think that comparing buybacks to net fund flows can misrepresent their significance. It seems more accurate to compare it to total gross buying activity. On this basis, both the gross and net annual buyback spending last year represent a fraction of a basis point of total S&P 500 annual dollar volume, which is over $100 billion per day.

Chart 22: US equity net fund flows vs. S&P 500 gross buybacks, 2002-2016



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

Table 8: S&P 500 value traded vs. buyback spending

S&P 500 market cap ($bn)	21,372.4
6m avg daily trading volume of S&P 500 constituents ($bn)	125.7
2016 S&P 500 avg daily gross buybacks ($bn)	2.1

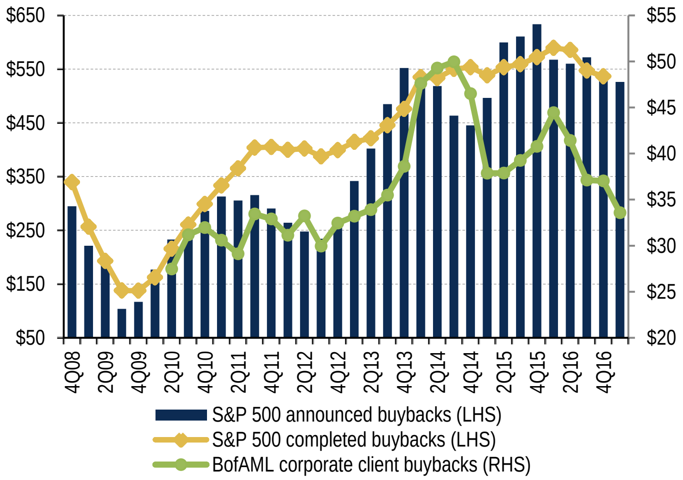
Source: BofA Merrill Lynch US Equity & Quant Strategy, Bloomberg, S&P

Buybacks today are slowing, suggesting less of an EPS boost

As of early last year, two-thirds of S&P 500 companies had reduced their share count from the prior year's levels—the most broad-based share count reduction we had seen since the all-time highs in 2007. The proportion has since fallen below 60%, and suggests fewer buybacks this year, which should result in less of a boost to EPS. Buybacks have added 1-2ppt to EPS growth on average over the last five years; this was all that kept EPS growth from falling into negative territory the past few years when EPS growth was flat. We expect a 1ppt contribution in 2017, which will make up a smaller proportion of our expected +9% YoY EPS growth.

Chart 23: Both announced and completed buybacks have slowed

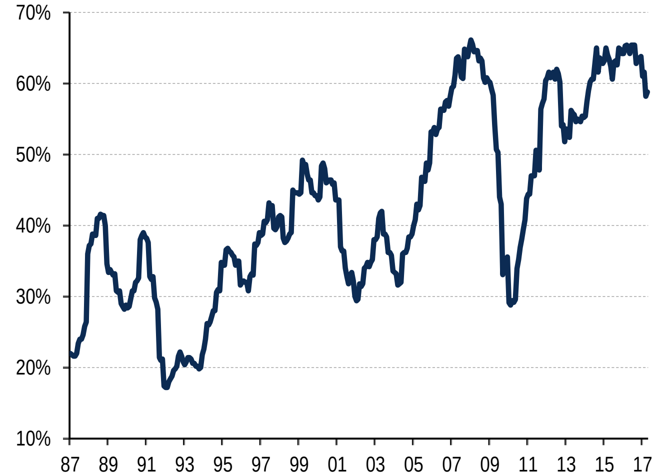
S&P 500 trailing 4-quarter announced and completed buybacks and trailing 4-quarter BofAML corporate client buybacks ($mn), 4Q08-present



Source: S&P, Bloomberg, Bank of America Merrill Lynch, BofAML US Equity & US Quant Strategy

Chart 24: The % of companies buying back shares has come off its peak

Percentage of S&P 500 companies with a YoY net reduction in shares, 1987-4/2017



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

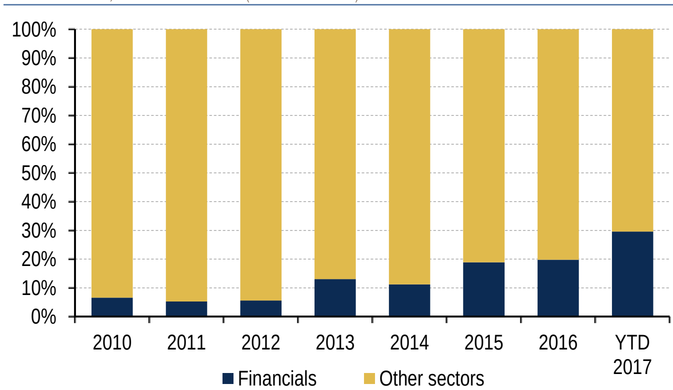
One key exception: Financials

While overall buyback activity has been slowing, one sector that is bucking the trend is Financials. Our proprietary weekly BofAML client flow data can give an early read on trends in buyback activity, and year-to-date, Financials have comprised 30% of total buybacks—the highest of any sector, and up significantly from five years ago when Financials were just 5-6% of corporate client buybacks (Chart 25). And data on announced S&P 500 buybacks so far this year suggest that buybacks by Financials companies have averaged 8% of the sector's market cap – the highest of any sector (Table 9).

Not only should a pick-up in Financials buybacks help boost the sector's EPS, but it may also help spur multiple re-rating as the sector has finally begun to increase payouts to shareholders via dividends and repurchases. As we've written previously, Financials enjoyed P/B multiples that were double today's levels back when payout ratios were higher pre-crisis. Buyback and total cash returns yields for Financials are now among the highest of all eleven sectors (Chart 26), and near all-time highs vs. history (Chart 27).

Chart 25: Financials have comprised 30% of BofAML's corporate clients' buybacks YTD

BofAML corporate clients buybacks by year: Financials vs. Non-Financial sectors as a share of total, 2011-YTD 2017 (as of 4/21/17)



Source: Bank of America Merrill Lynch

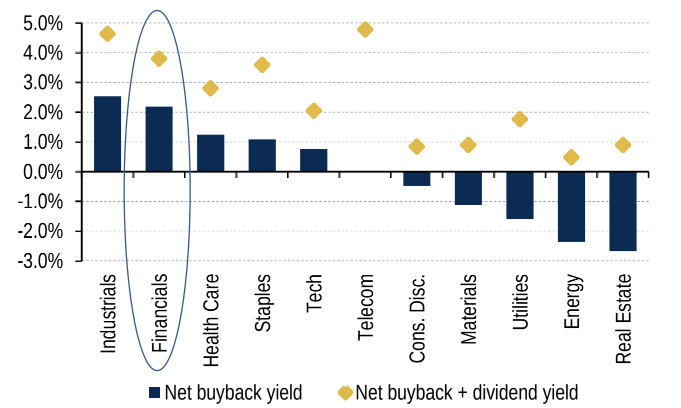
Table 9: Buyback announcements YTD represent the largest % of mkt cap w/in Financials

Announced buybacks by S&P 500 companies YTD (as of 4/25/17)

Sector	Announced Buybacks (#)	Announced Buybacks ($mn)	Avg. % of market cap
Financials	9	31,177	8%
Health Care	7	16,725	7%
Cons. Disc.	20	50,435	6%
Industrials	9	9,559	5%
Tech	13	19,041	4%
Cons. Staples	4	3,500	2%

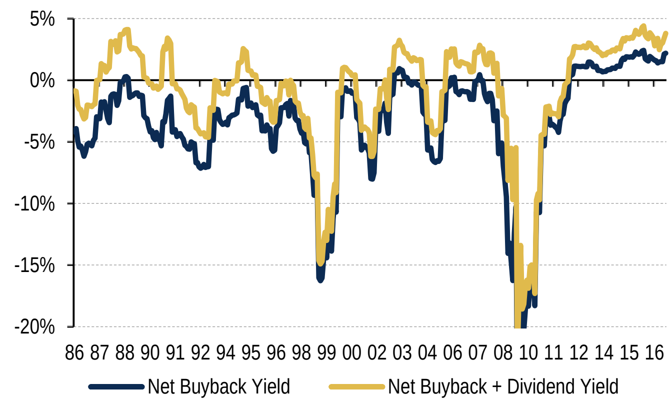
Note: excludes data for sectors with 2 or less announced buybacks YTD.
Source: Bloomberg, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 26: Net buyback yield and total cash return yield by sector (trailing 12m as of 4/30/17)



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

Chart 27: Financials: net buyback yield and total cash return yield (trailing 12m, 1986-4/30/17)



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

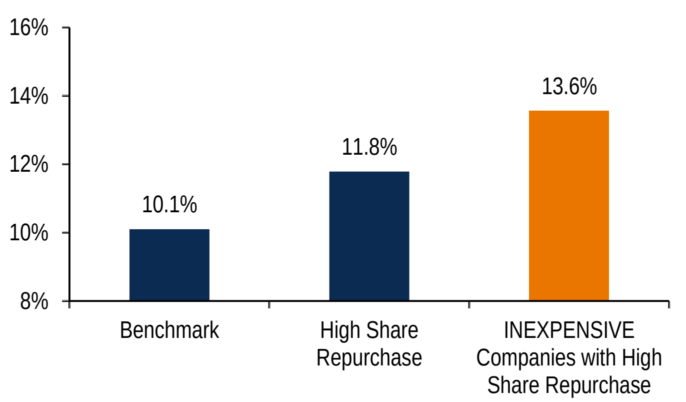
Buybacks may now signal a lack of better options

Valuations are expensive, and investors want capex over cash return

With buybacks becoming the rule rather than the exception, and with equities having grown expensive, investors have become more selective about rewarding buybacks. After outperforming the market handily from 2011 through mid-2014, a strategy of buying companies executing the largest buybacks has significantly underperformed over the last few years, as P/Es for these stocks have expanded. Buybacks tend to offer no alpha when stocks are expensive (as in the late 1980s to mid-1990s and mid-2000s (see Chart 29)), and conversely have tended to outperform when done at inexpensive valuations (Chart 28).

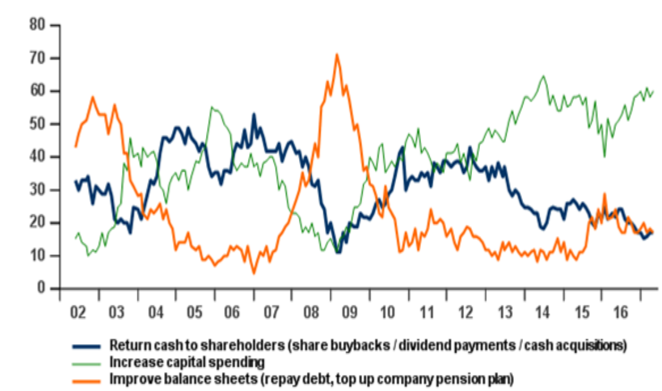
Investors have also grown increasingly less enamored with companies using their excess cash for share repurchases rather than investing in growth. According to BofAML's Global Fund Manager Survey, the proportion of investors who want companies to use their excess cash for buybacks and dividends has fallen to its lowest levels post-crisis, while the proportion who want companies to use cash for capex is at near an all-time high of around 60% (Exhibit 4).

Chart 28: Avg. annual return of Russell 1000 (ex-Financials) top quintile factors (high share repurchase and high share repurchase + high FCF/Price), 1986-3/31/17



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

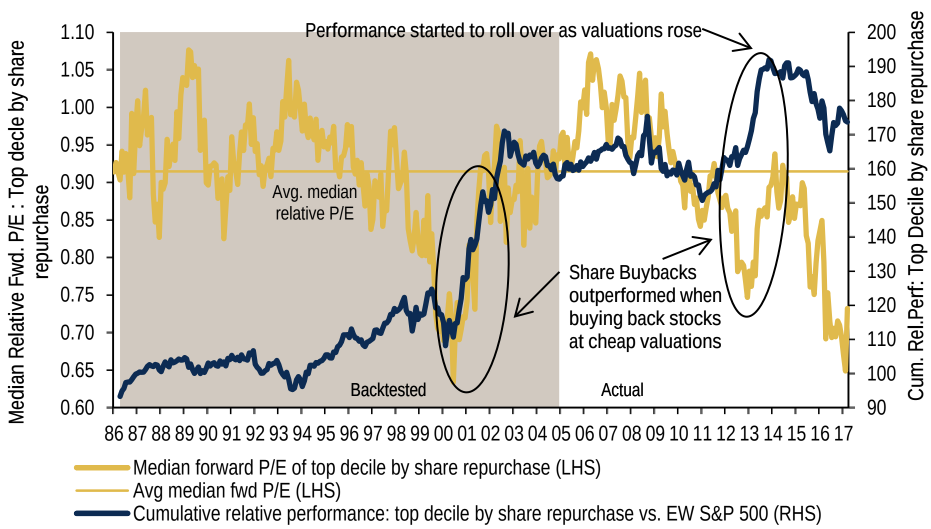
Exhibit 4: BofAML Global Fund Manager Survey question: What would you like to see companies do with their cash flow? (as of May 2017)



Source: BofA Merrill Lynch Global Fund Manager Survey

An analysis of our Share Repurchase factor suggests that corporates may recently have grown more prudent, with the largest buybacks being executed at increasingly cheaper relative multiples (vs. the S&P 500 multiple) over the last few years. This could help explain the outperformance of our Share Repurchase factor from mid to late 2016.

Chart 29: Valuation of S&P 500 top decile by Share Repurchase (median relative fwd. P/E) vs. its cumulative relative performance (vs. EW S&P 500)



Note: The shaded area shows back tested results during the period from month end March 1986 to month end December 2004. The unshaded portion represents actual performance since January 2005. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance. The backtested performance results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected performance, and cannot account for all financial risks that may affect the performance of the screen going forward. See Appendix for performance data and calculation methodology.
Source: BofA Merrill Lynch US Equity & US Quant Strategy

What could boost buybacks: a repatriation holiday

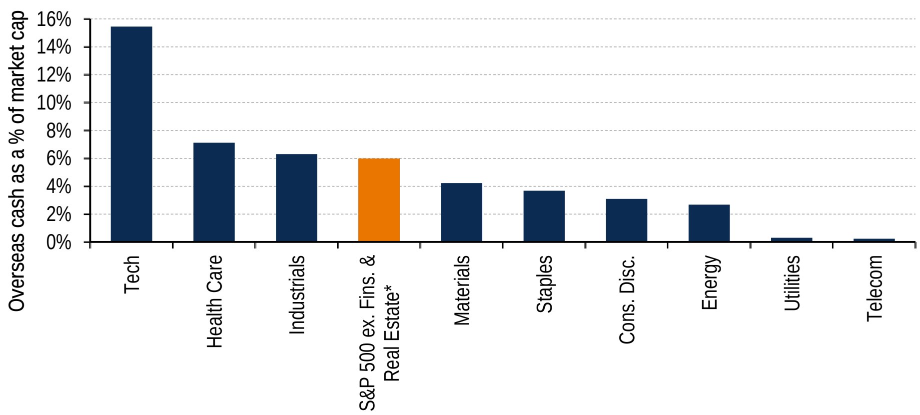
$1.2 trillion of cash sits overseas that could come back to the US

The US currently operates under a tax system in which the domestic earnings of US corporates are taxed at the federal US corporate rate (35%) and any overseas earnings that are repatriated are taxed at this rate less a credit for foreign taxes paid on those same earnings. This "repatriation tax" has resulted in a substantial cash build-up overseas, which we estimate amounts to $1.2tn for the S&P 500 non-Financials. At the sector level, Tech and Health Care hold the largest proportions of their market caps in overseas cash (Chart 30). Companies have been reluctant to repatriate foreign profits either on the hope that (1) they may eventually need to invest it overseas; (2) the tax burden will be reduced through corporate tax reform and/or a repatriation holiday; or (3) that they will be able to re-domicile or otherwise move to a new tax jurisdiction—although governments have increasingly been cracking down on this.

Corporate tax reform including a repatriation holiday now may be likely under President Trump, where both Trump and the House (under Paul Ryan) have proposed a mandatory tax of overseas earnings of US firms' foreign subsidiaries at reduced rates, such that this cash can be brought back and put to work in the US. Under the House Blueprint, accumulated overseas earnings will be subject to a transition tax of 8.75%[1] (for those held in cash/cash equivalents) or 3.5% (for all other holdings), with companies able to pay the tax liability over an eight-year period. This would be part of broader tax reform, where a proposed territorial tax system would exempt companies' foreign income from US taxes and prevent future buildup of overseas profits, as companies would be free to bring them home. Trump's plan calls for a one-time deemed repatriation of overseas corporate profits at a 10% tax rate.

[1] Note: The effective tax rates of 8.75% and 3.5% under the Blueprint are based on an allowable deduction of 75% (for deferred earnings held in cash/liquid assets) or 90% (for the non-cash portion), with the remainder taxed at the US corporate tax rate, i.e. 35%(1-75%) = 8.75% and 35%(1-90%) = 3.5%. This methodology was proposed by Chairman Camp's Tax Reform Act of 2014.

Chart 30: Estimated overseas cash as a % of mkt. cap by sector for the S&P 500 (excludes Financials and Real Estate)



Note: Overseas cash based on company disclosures where available, BofAML analyst estimates, and BofAML US Equity & Quant Strategy estimates using overseas sales as a guide where the former two were not available. For some companies, analyst estimates are for total accumulated overseas profits (which may not all be in cash). *S&P ex. Fins. & Real Estate cash is as a % of total S&P 500 market cap
Source: Bloomberg, FactSet, BofA Merrill Lynch US Equity & US Quant Strategy, BofA Merrill Lynch Global Research

Fewer buybacks likely vs. '04 – but 50% of cash for buybacks seems reasonable

In 2004, the last time the US had a repatriation holiday (which was optional rather than mandatory), US corporates brought back $300bn, of which the National Bureau of Economic Research (NBER) estimates[2] that approximately 80% was used on buybacks. We suspect that a pick-up in buybacks would be likely, but that a lower proportion will be used for buybacks today than during the last repatriation holiday for several reasons:

- Valuations were generally more attractive in 2004-2005 on most metrics, and as discussed above, companies executing the largest buybacks have underperformed in recent years as investors have increasingly agitated for capex.
- Companies may also feel less pressure to bolster per share metrics by reducing share count if top line is recovering and organic growth is finally materializing—which finally appears to be the case today.
- If leverage loses its tax benefit (where leverage ratios are already high—see Balance sheet repair section) companies may be less likely to reduce their equity capital base, as that would marginally increase their weighted average cost of capital, and may be more inclined to institute special dividends or pay down debt.

Below we lay out various assumptions for the impact to S&P 500 pro forma EPS based on how much of repatriated cash is used for buybacks. In our base case assumption of 50%, this could lead to a 3% EPS benefit (+$4 to 2018 EPS—where Tech, Health Care and Industrials would see the biggest benefits). Mandatory repatriation would also result in a one-time hit to GAAP EPS of $8-9. For more details, see our report: Equity Strategy Focus Point: Death and tax reform 29 January 2017.

Table 10: Impact to S&P 500 EPS based on various buyback scenarios

% used for buybacks:	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Trump (10% tax)	1%	1%	2%	2%	3%	3%	4%	4%	5%	6%
Blueprint (8.75% tax)	1%	1%	2%	2%	3%	3%	4%	5%	5%	6%
Benefit to 2017 EPS:	$1	$1	$2	$3	$4	$4	$5	$6	$7	$7
Benefit to 2018 EPS:	$1	$1	$2	$3	$4	$5	$5	$6	$7	$8

Assumes 100% of overseas cash is brought back (given tax is mandatory)
Source: FactSet, Bloomberg, BofA Merrill Lynch Global Research estimates, BofA Merrill Lynch US Equity & US Quant Strategy

[2] Dhammika Dharmapala, C. Fritz Foley, and Kristin J. Forbes: "Watch What I Do, Not What I Say: The Unintended Consequences of the Homeland Investment Act", NBER Working Paper No. 15023, June 2009, http://www.nber.org/papers/w15023.pdf.

Table 11: Impact to sector EPS from buyback scenarios under Blueprint (8.75% tax rate)

	% used for buybacks:									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Cons. Disc.	0%	1%	1%	1%	1%	2%	2%	2%	3%	3%
Staples	0%	1%	1%	1%	2%	2%	2%	3%	3%	3%
Energy	0%	0%	1%	1%	1%	1%	2%	2%	2%	3%
Health Care	1%	1%	2%	3%	3%	4%	5%	5%	6%	7%
Industrials	1%	1%	2%	2%	3%	4%	4%	5%	5%	6%
Tech	1%	3%	4%	6%	8%	9%	11%	13%	15%	16%
Materials	0%	1%	1%	2%	2%	2%	3%	3%	4%	4%
Telecom	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Utilities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

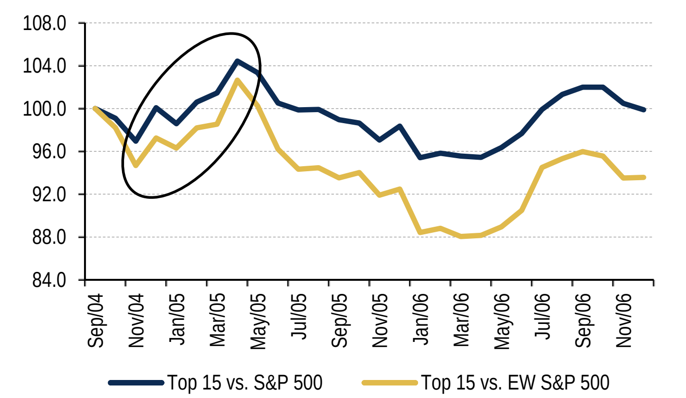
Assumes 100% of overseas cash is brought back (given tax is mandatory)
Source: FactSet, Bloomberg, BofA Merrill Lynch Global Research estimates, BofA Merrill Lynch US Equity & US Quant Strategy

For a list of potential beneficiaries of repatriation, see our Equity Strategy Theme Screens 30 March 2017.

Repatriation may not add alpha or boost multiples

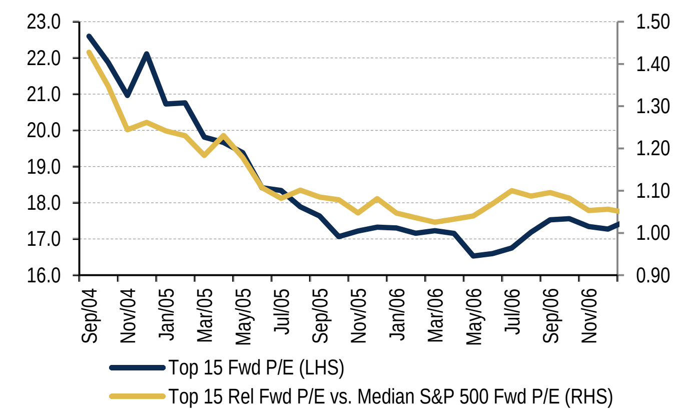
Our analysis of the top 15 repatriating companies during the 2004-05 tax holiday suggests that while these companies initially outperformed both the S&P 500 and equal-weighted benchmark from Nov. 2004-April 2005 (by 6ppt and 5ppt, respectively), they subsequently underperformed during the remainder of 2005 and early 2006 (Chart 31). From the end of September 2004 through year-end 2006, these stocks were up 27% on average, in line with the overall S&P 500, and below the equal-weighted benchmark's 36% return. And multiples for these stocks compressed over the majority of this period, both on an absolute basis and relative to the benchmark (Chart 32).

Chart 31: Cumulative relative performance (equal-weighted) vs. S&P 500 and EW S&P 500 of Top 15 repatriating companies, 9/30/04-12/31/06



Source: U.S. Senate Permanent Subcommittee on Investigations survey (for Top 15 repatriating stocks), FactSet, Bloomberg, BofA Merrill Lynch US Equity & US Quant Strategy
Note: Top 15 repatriation companies: Pfizer, Merck, Hewlett Packard, Johnson & Johnson, IBM, Schering-Plough, Bristol Myers, Eli Lily, DuPont, Pepsi, Intel, Coca-Cola, Altria, Procter & Gamble and Oracle.

Chart 32: Fwd. P/E of Top 15 repatriating companies – absolute and relative to the S&P 500 median fwd. P/E, 9/30/04-12/31/06



Source: U.S. Senate Permanent Subcommittee on Investigations survey (for Top 15 repatriating stocks), FactSet, BofA Merrill Lynch US Equity & US Quant Strategy
Note: Top 15 repatriation companies: Pfizer, Merck, Hewlett Packard, Johnson & Johnson, IBM, Schering-Plough, Bristol Myers, Eli Lily, DuPont, Pepsi, Intel, Coca-Cola, Altria, Procter & Gamble and Oracle.

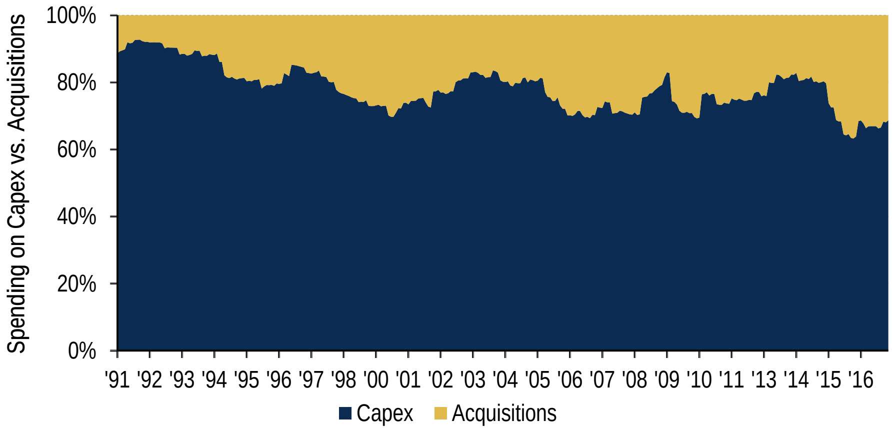
Build or buy? Capex vs. M&A

The decision of whether to spend on acquisitions or capital expenditures is similar in the sense that, for both, the benefits to the company's cash flows need to be weighed against the cost (both monetary and opportunity cost) and riskiness of the investment. Acquisitions can provide faster growth than organic expansion, but come with additional risks associated with management retention, integration and the potential to overpay for the business. In contrast, building a new manufacturing facility or expanding operations into new markets organically can take much longer than acquiring another business and is not without its own risks (operational risk, cost overruns, lack of efficiency due to initial overcapacity, etc.).

Companies have been buying more and building less

Over the last decade or two, there has been a shift in capital allocation from capex to acquisitions. This could be a function of increasing short-termism as companies seek more immediate impacts, and/or the increased demand for new growth businesses to offset the slowing of mature core businesses. More recently, the drop in capex in 2015 was chiefly due to the decline in oil prices.

Chart 33: S&P 500 spending on capital expenditures vs. acquisitions



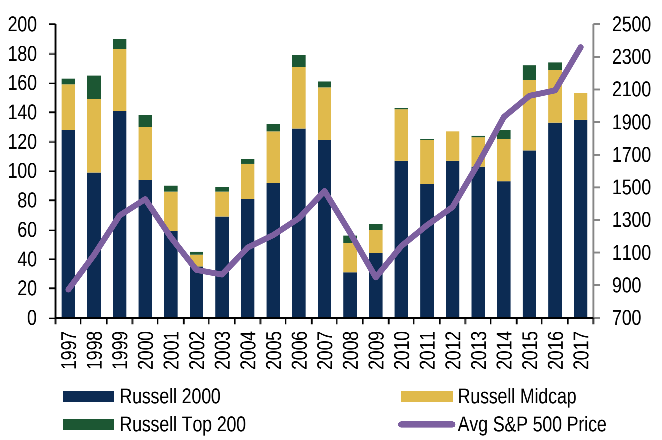
Source: BofA Merrill Lynch US Equity & Quant Strategy, Compustat, S&P, FactSet

Mergers & Acquisitions

M&A activity still healthy, but slowing & fewer big deals

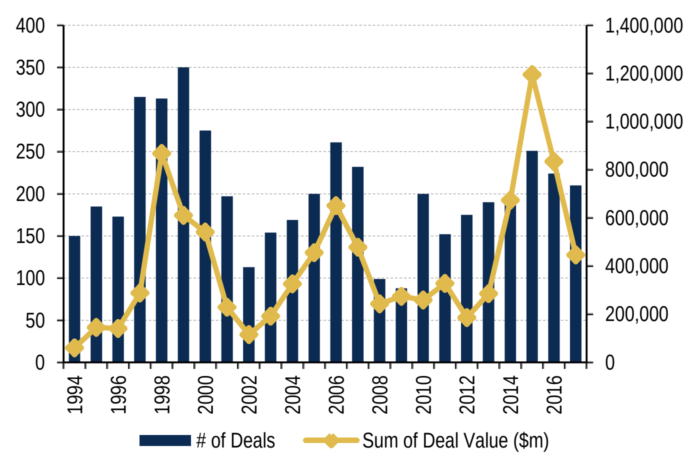
Although equity valuations are quite elevated today, valuations have historically not been an impediment to M&A activity. In the past, we saw M&A activity peaking when the market peaked, like in 1999/2000 and 2006/2007, and deal activity climbed with valuations in 2015-2016 (Chart 34). Year-to-date, the annualized pace of deals remains healthy but is tracking below 2015 and 2016 levels. Deals have generally been smaller, as evident by both the lack of deals in the Russell Top 200 this year so far (Chart 34) and the smaller size of deals both this year and last year vs. 2015 (Chart 35).

Chart 34: M&A deals by size segment vs. S&P 500 average annual price since 1997 (annualized rate for 2017 deals as of 4/30/17)



Note: Deals for 2017 = 45 in Russell 2000 and 6 in Russell Midcap for total of 51, annualized for YTD 2017 data point in chart.
Source: Mergerstat; Russell Investment Group; BofA Merrill Lynch US Equity and US Quant Strategy

Chart 35: Overall US M&A activity: 1994-YTD 2017 (annualized, as of 4/30/17)



Note: 70 deals and deal value of $148,692mn are shown as annualized figures for YTD 2017
Source: FactSet, BofA Merrill Lynch US Equity & US Quant Strategy

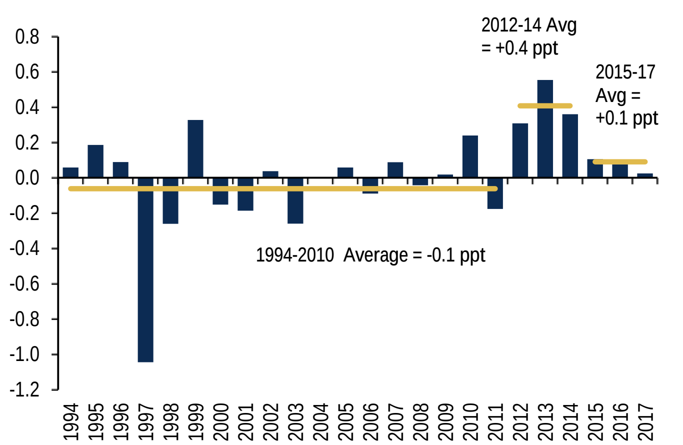
M&A: headwinds & opportunities

- **Regulation:** One headwind to M&A in recent years is the fact that governments have cracked down on multinationals' efforts to minimize tax expense through redomiciling abroad and/or shifting expenses between regions. Corporate tax reform could also reduce these efforts via a lower corporate tax rate and a move to a territorial system that makes US companies more competitive with their global counterparts.
- **Credit conditions**: The current credit backdrop is a mixed bag for M&A. Interest rates are still low, but rising, and corporate leverage is elevated, particularly for smaller companies, where leverage sits at all-time highs (see Chart 60 and Chart 61 later in this report). But credit conditions—which were previously tightening—have seen some recent improvement, with a pause in the tightening of lending standards, narrowing high yield spreads and a tick-down in defaults.
- **Uncertainty/volatility**: While equity volatility is currently at multi-decade lows, we expect it could pick up for a number of reasons, including contentions over how to fund tax reform, a deceleration in the rate of growth, geopolitical risk, elections abroad, etc. —where an uncertain macro backdrop can cause acquisitions to be greeted with less certainty.
- **Repatriation**: While buybacks could still be a primary use of cash in the event of a repatriation holiday, companies may choose to use some of their repatriated cash to make acquisitions. Others may pay down debt or issue special dividends.

Investing in M&A: no more universal reward for acquirers

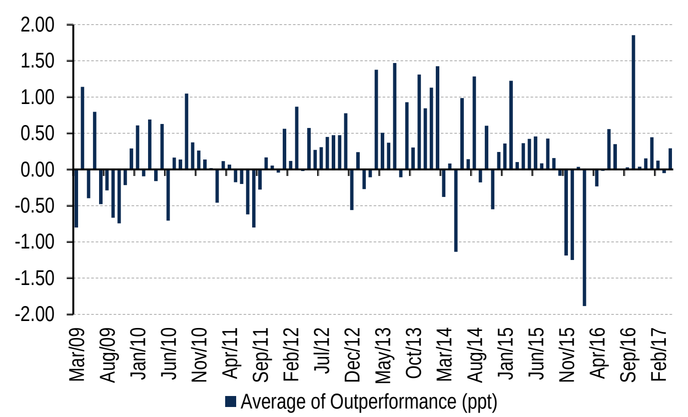
For several years, companies that announced acquisitions outperformed the market immediately following the announcement. But that trend has been losing steam since mid-2015, stemming from some of the issues above as well as the fact that (1) acquirers have been paying higher premiums for deals over the last several years (Chart 38) and (2) investors have increasingly wanted companies to use their cash to invest in growth—where at first buying growth was rewarded, but now organic growth/capex may be most desired (see Exhibit 4 earlier in this report). Acquirers were underperforming the market following deal announcements for much of early 2016, and while relative performance has returned to positive territory, it remains muted, with average post-announcement outperformance the smallest in six years.

Chart 36: Avg. 1-day relative performance of Russell 1000 acquirers post deal announcement, 1994-April 2017



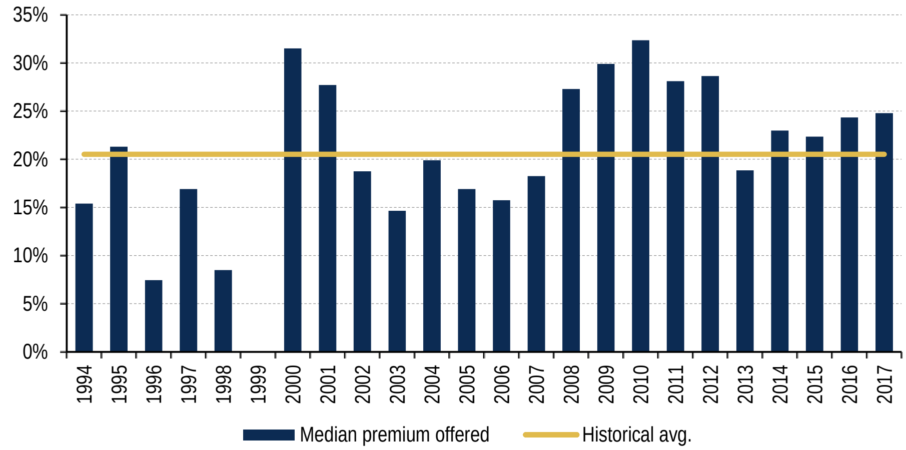
Source: BofA Merrill Lynch US Equity & Quant Strategy, FactSet

Chart 37: Russell 1000 acquirers relative average 1-day performance post-deal announcement, March 2009-April 2017



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

Chart 38: Russell 1000 deals: median premium offered by year, 1994-April 2017



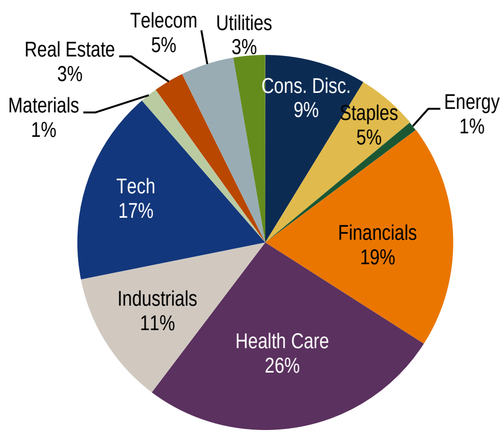
Source: BofA Merrill Lynch US Equity & Quant Strategy, FactSet

In terms of potential targets, **please see our latest Theme Screens report for screens of potential large cap and small cap M&A candidates**.

Sector trends in M&A

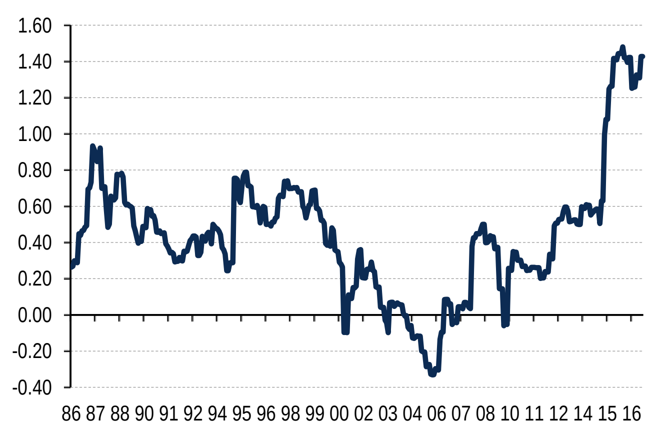
Health Care still dominates deals; more M&A likely in areas like Banks, Staples: Health Care has been the biggest driver of the pick-up in acquisition activity in recent years, making up over one-fourth all S&P 500 acquisition spending in 2016 (Chart 39)—though down from just under half in 2015. As a result of the pick-up in acquisitions within the sector, Health Care has gone from net cash to record leverage in the past decade (Chart 40). But increased regulatory scrutiny over tax avoidance and pricing issues could result in higher hurdles for future deals. Financials saw the second-largest proportion of acquisition spending last year, and this could continue: our Banks team believes that a pick-up in bank sector consolidation is likely.

Chart 39: Breakdown of S&P 500 acquisition spending by sector: 2016



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

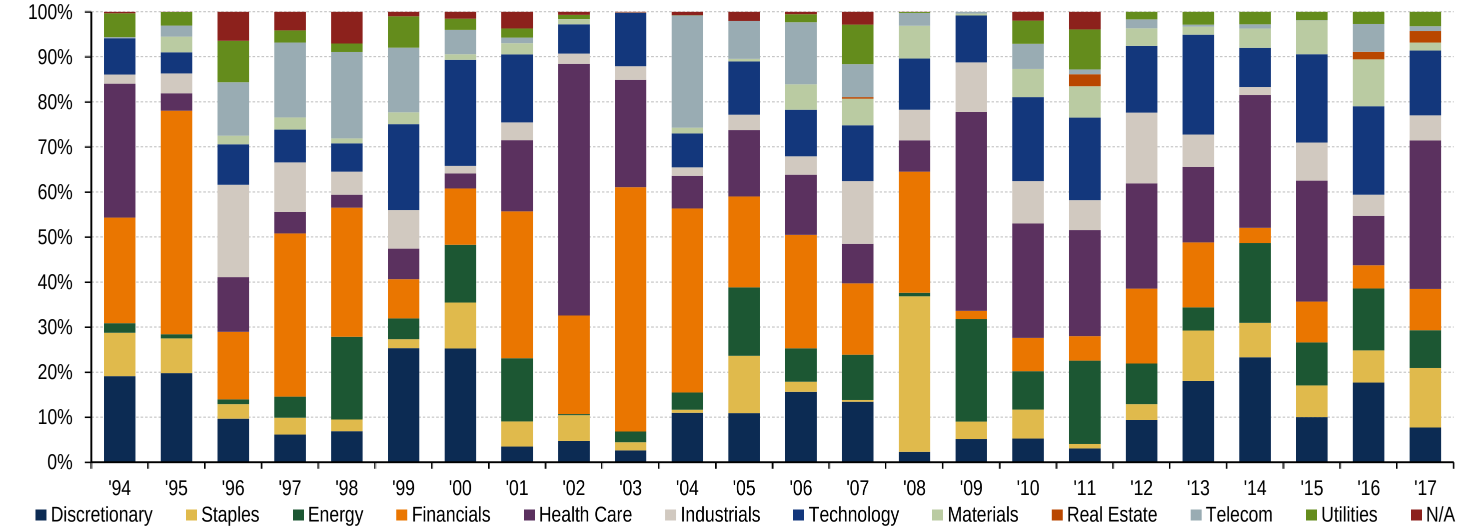
Chart 40: Health Care Net Debt/EBITDA, 1986-4/2017



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

Below we provide a historical context of the breakdown of total US M&A based on the target's GICS sector. Health Care acquisitions have dominated 2017 deal activity, followed by Tech. Staples has seen the third-largest proportion, and a larger share than recent years, where our analysts expect continued consolidation in Staples given stagnant sales and a lack of further cost-cutting opportunities.

Chart 41: Historical US M&A by GICS sector (% of total deal value, based on seller's sector), 1994-YTD 2017 (as of 4/30/17)



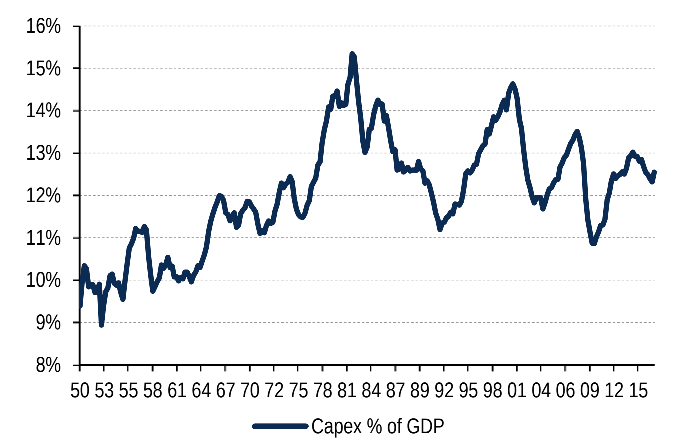
Source: FactSet, BofA Merrill Lynch US Equity & US Quant Strategy

Capital expenditures (capex)

Current capex cycle is similar to the last…

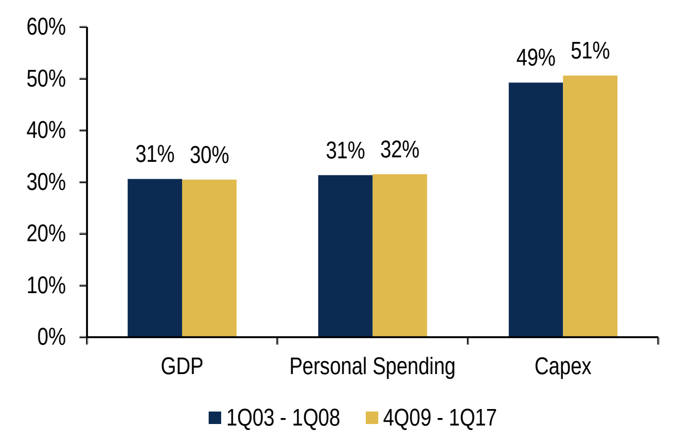
Though there has been no capex boom in this recovery, this capex cycle has been no worse than the last one. Since 2009, capex (as measured by US private non-residential fixed investment) has grown by 50%, more than the growth in consumption and in GDP overall. And cumulative growth in all three is now similar to the prior cycle.

Chart 42: Private non-residential fixed investment % of GDP, 1950-now



Source: BofA Merrill Lynch US Equity & Quant Strategy, Bureau of Economic Analysis

Chart 43: Capex growth in this cycle vs. last cycle

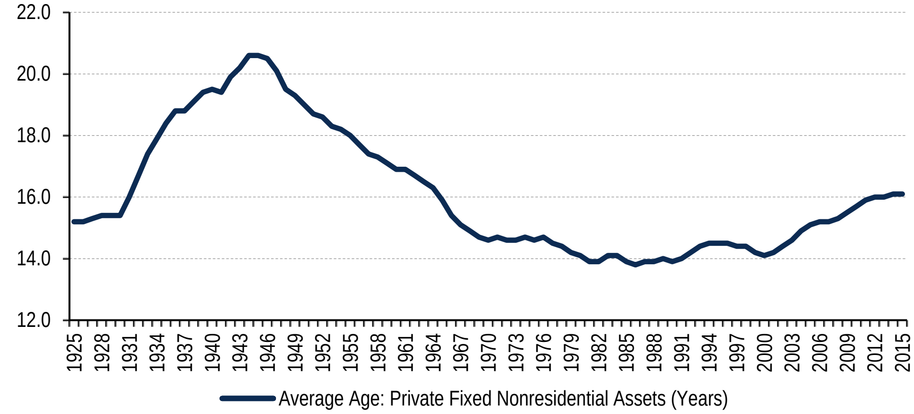


Source: BofA Merrill Lynch US Equity & Quant Strategy, Bureau of Economic Analysis

…but companies have been underinvesting for an extended period

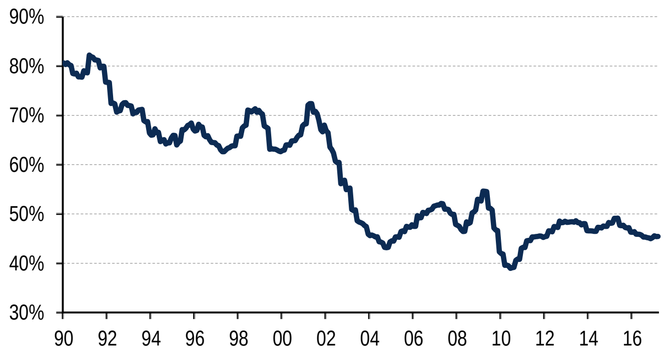
Aging infrastructure/equipment (Chart 44), a secular decline in the portion of corporate cash used on capex (Chart 45), and low levels of capex relative to depreciation and amortization (Chart 46) underscore that corporates have been underinvesting for decades and suggest a need for investment today.

Chart 44: Average age of US private nonresidential fixed assets (years), 1295-2015



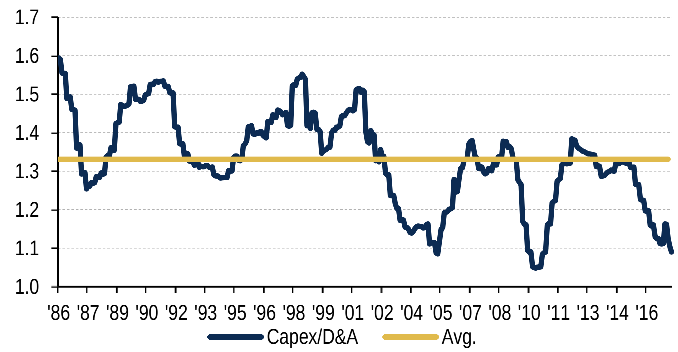
Source: BEA, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 45: Percentage of S&P 500 (ex. Fin.) operating cash flow spent on capex, 1990-present



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

Chart 46: S&P 500 capital expenditure to depreciation & amortization ratio, 1986-present

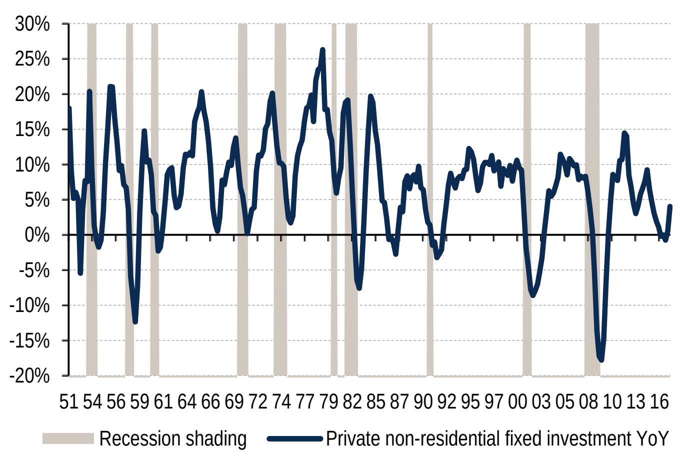


Source: BofA Merrill Lynch US Equity & Quant Strategy, FactSet

Growth starting to improve after recent cyclical downturn

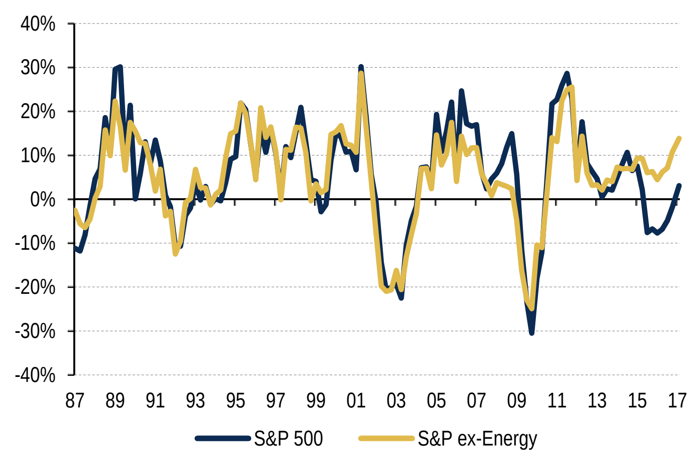
While capex has been challenged by the recession in the commodity complex—where private non-residential fixed investment spending growth dipped into negative territory last year—it has begun to recover, which we expect can continue given the pick-up in overall demand growth. We discuss trends we are monitoring in more detail below.

Chart 47: US private non-residential fixed investment YoY, 1951-1Q17



Source: BEA, NBER, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 48: S&P 500 and ex-Energy quarterly YoY capex, 1987-4Q16



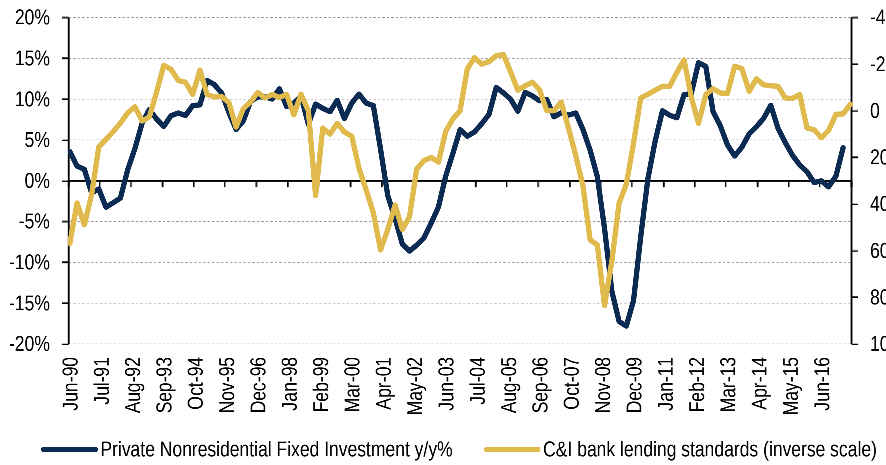
Source: FactSet, BofA Merrill Lynch US Equity & US Quant Strategy

Most indicators point to further improvement in capex

Trends are mixed, but most suggest the pick-up in capex growth can continue

- **Easier credit conditions benefit capex**: There is a strong historical relationship between access to credit and business investment, with credit conditions actually leading capex growth by several quarters (Chart 49). The Fed's senior loan officer survey suggests that while banks had been tightening lending standards for six quarters beginning in late 2015, lending standards have recently begun to ease.

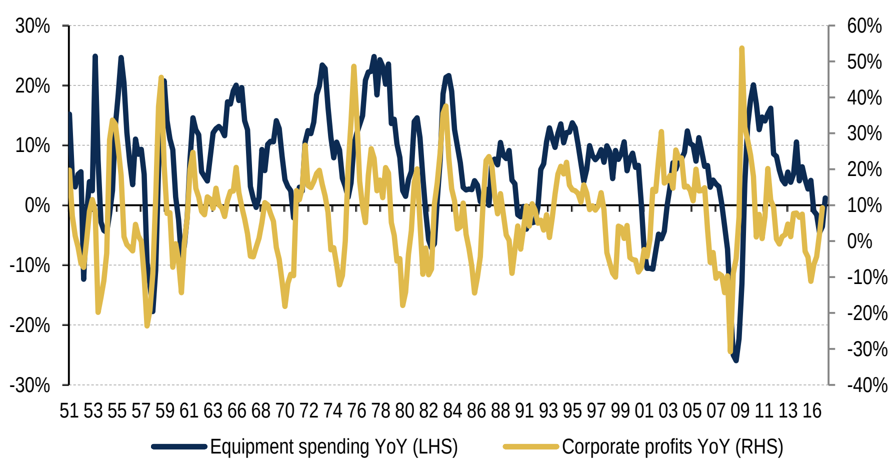
Chart 49: Capex growth vs. US bank lending standards (inverse scale), 1990-present



Source: BofA Merrill Lynch US Equity & Quant Strategy, BEA, FRB

- **Improving corporate profits bode well for capex:** Companies are more likely to make investments when profit trends are strong and cut investments when profits are falling. Given the steep profit declines in 2015, it is understandable that capex slowed (Chart 50). However, profits growth has improved since bottoming in late 2015, and we expect 1Q17 to mark a peak in quarterly YoY profits growth. Thus, the improvement in capex growth is likely to continue, given the best historical relationship is with a two-quarter lead. But given that we expect profits growth to slow from here (though still remain healthy), capex could slow later this year.

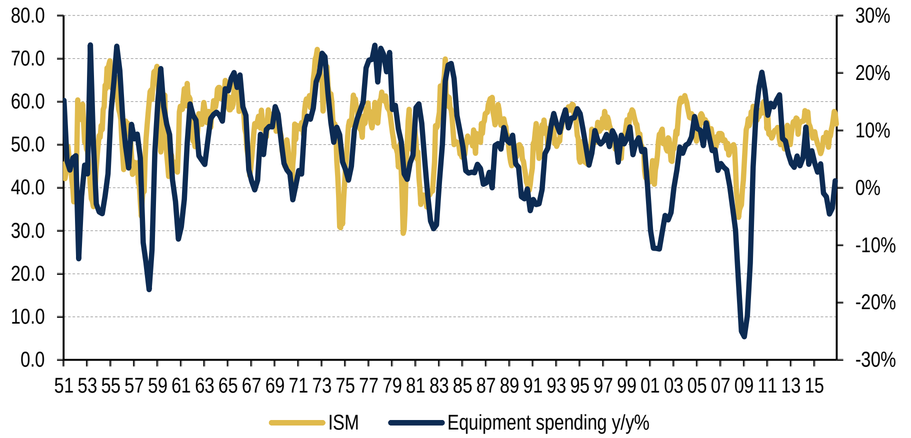
Chart 50: Equipment capex vs. NIPA corporate profit growth



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

- **Business confidence healthy (but could be rolling over)**: The ISM survey of manufacturing activity has a strong historical relationship with capex spending, with a one- to two-quarter lead. Since hitting a cycle low of 48 in Dec. 2015, the indicator has rebounded back above the 50 level that indicates expansion, to a high of 57.7 in Feb. 2017 (Chart 51), a positive sign for near-term capex improvement. The indicator has come down slightly since then, with the latest reading of 55 in April, which bears watching—global PMIs have begun to roll over as well in regions outside of Europe and Japan.

Chart 51: ISM manufacturing index vs. equipment capex growth

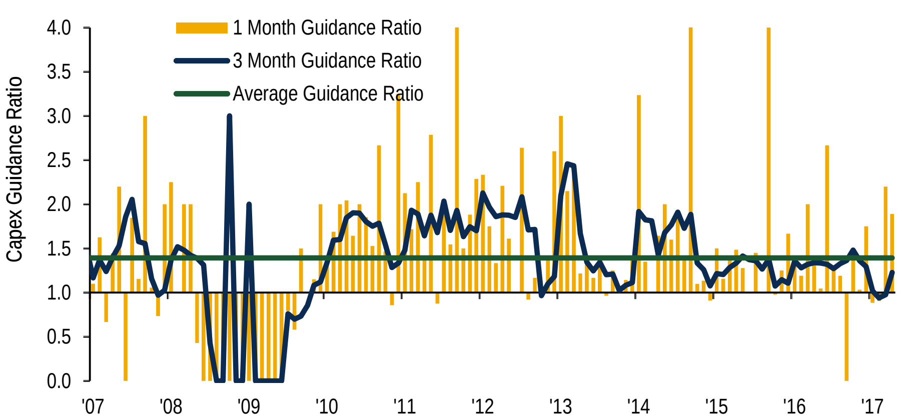


Source: BofA Merrill Lynch US Equity & Quant Strategy, BEA, ISM

- **Full capex expensing as part of tax reform could lead to a pick-up**: Both Trump and the House Blueprint have proposed full expensing of capex as part of corporate tax reform, in tandem with the fact that interest expense would no longer be tax deductible (Trump's plan has offered a choice between full capex expensing and interest deductibility). The full expensing of any new investments could be an added incentive to do capex—which as we highlighted earlier, investors are already clamoring for. Full capex expensing should provide a near-term reduction in cash taxes paid and deferral in timing of tax payments. For full details, see: Equity Strategy Focus Point: Death and tax reform 29 January 2017.

- **Management is growing more positive on capex plans:** The three-month capex guidance ratio—which tracks instances of above-consensus vs. below-consensus guidance on planned capex—has remained below its long-term average for most of the period since early 2015. But the ratio has ticked up for the last two months, and the more volatile one-month ratio was well above average in both March and April. This suggests managements becoming more positive on capex plans.

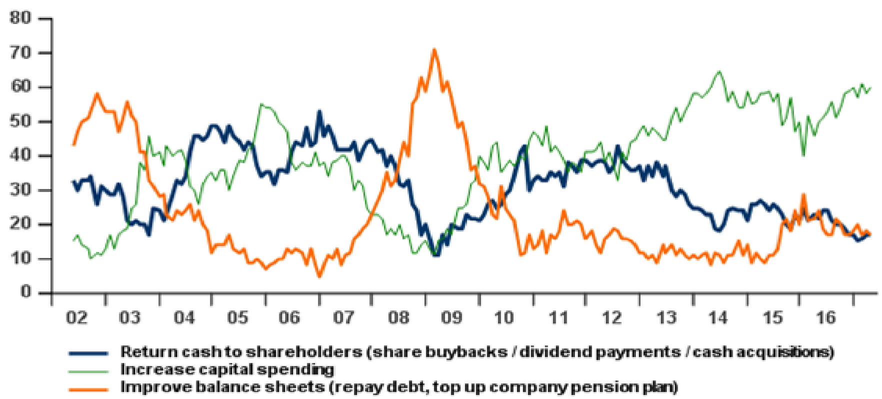
Chart 52: S&P 500 Capex Guidance Ratio (# above consensus / # below consensus) 4/2017



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

- **Investors are looking for companies investing in capex:** As highlighted earlier, in this cycle there has been increasing investor preference for capital investment spending over returning cash to shareholders, with the proportion of investors seeking the later now near all-time highs in our Global Fund Manager Survey data history. We view this as a sign that (1) investors have grown tired of companies using cash primarily to buy back shares; (2) investors may be concerned about how much companies are paying for acquisitions (see the post-M&A announcement performance in the previous section); and (3) investors may desire to invest in companies whose fundamentals are strong enough to warrant the need for further capacity.

Exhibit 5: BofAML Global Fund Manager Survey question: What would you like to see companies do with their cash flow? (as of May 2017)



Source: BofA Merrill Lynch Global Fund Manager Survey

- **Our economists expect capex growth to improve in 2017 and 2018:** Following negative growth in 2016, our economists expect nonresidential investment in both structures and equipment to be back in positive territory in 2017 and further accelerate in 2018.

Table 12: US Economic Forecasts: Capex spending (shaded areas index forecasts)

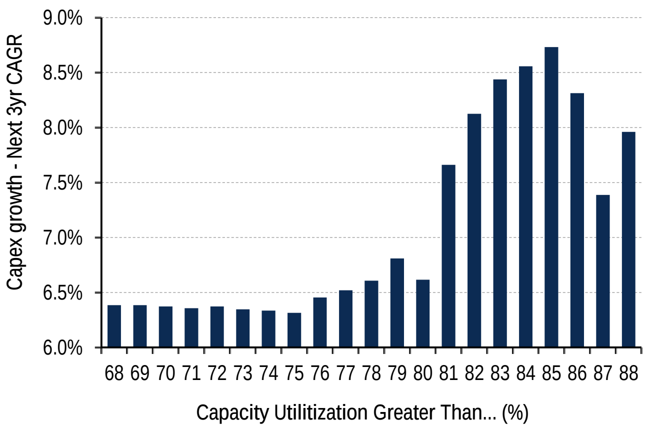
Real Economic Activity, % SAAR	2015	2016	2017	2018
Nonresidential Investment	2.1	-0.5	4.2	5.3
Structures	-4.4	-2.9	7.6	4.7
Equipment	3.5	-2.9	3.2	4.7
Intellectual Property	4.8	4.7	3.3	6.5

Source: BofA Merrill Lynch Global Research

But some secular headwinds to capex this cycle remain

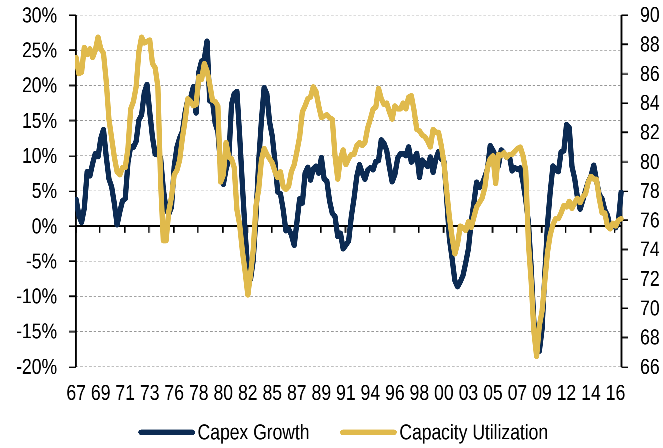
- **Excess capacity**: When there is excess capacity, companies can accommodate any pick-up in demand without expanding their existing infrastructure. Thus, when economic growth is slow and capacity utilization levels are low, there is less need for capex. Historically, capacity utilization of 81% has been the sweet spot where capex growth over the subsequent three years has averaged 7-10% (Chart 53). However, since peaking at 79% in 2014, capacity utilization fell to 75% in early 2016, and has so far only recovered slightly to 76%. This suggests little need for capacity expansions, except in certain pockets of the economy (Chart 54). Global capacity utilization also remains low (Chart 55).

Chart 53: Capacity utilization vs. subsequent 3-year capex growth (CAGR), 1967-present



Source: FRB, BEA, BofA Merrill Lynch US Equity & US Quant Strategy

Chart 54: Capex cycles occur when capacity is tight (1976-1Q17)



Source: FRB, BEA, BofA Merrill Lynch US Equity & Quant Strategy

Chart 55: Global capacity utilization, 1985-4Q16

Source: BofA Merrill Lynch Global Research, IMF

- **Range-bound commodity prices could hinder capex**: Although oil prices have rebounded significantly from their February 2016 lows, they are still more than 50% below levels that presaged the drop in mid-2014, and nearly 70% below the peak of $145 in 2008. Based on oil futures, commodity prices are expected to remain in the $50/bbl range for the foreseeable future, which would give producers little incentive to invest in new production.

Chart 56: WTI crude oil prices 2007-present & futures implied prices through 2024

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

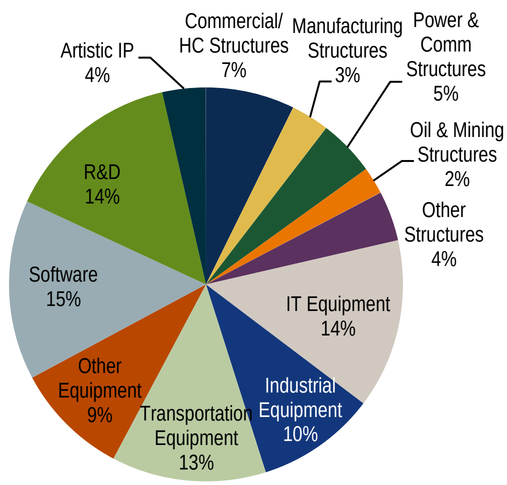
- **Volatility/uncertainty deter spending:** In addition to uncertainty around commodity prices, elevated uncertainty around policy, regulation and/or economic growth can serve as damper on companies' appetites for making new investments. A volatile market and uncertain macro backdrop would result in lower capex.

Who benefits from capex? Tech and Industrials

The US spends over $2tn on domestic private nonresidential fixed investment annually, most of which is for information technology equipment, software & infrastructure or industrial & manufacturing equipment & factories (Chart 57). Thus, a pick-up in capital investment would have the most direct benefit for Tech and Industrials. Empirical evidence bears this out, as sales have generally increased for these sectors during accelerating capex cycles in excess of the lift associated with an economic recovery.

S&P 500 industries that may benefit most from a pick-up in capex are in Table 13 — historically, Energy Equipment & Services, Trading Companies & Distributors, Oil Gas & Consumable Fuels, Construction & Engineering and Metals & Mining have had the strongest sales sensitivity to changes in capex.

Chart 57: US Private Non-Residential Fixed Investment By Type (2016)



Source: Bureau of Economic Analysis, BofA Merrill Lynch US Equity & Quant Strategy

Table 13: S&P 500 industries with the highest sales sensitivity to capex spending

Industry	Capex Beta:
Energy Equipment & Services	0.96
Trading Companies & Distributors	0.73
Oil Gas & Consumable Fuels	0.61
Construction & Engineering	0.56
Metals & Mining	0.49
Electrical Equipment	0.40
Machinery	0.37
Road & Rail	0.35
Distributors	0.35
Personal Products	0.34
Industrial Conglomerates	0.19

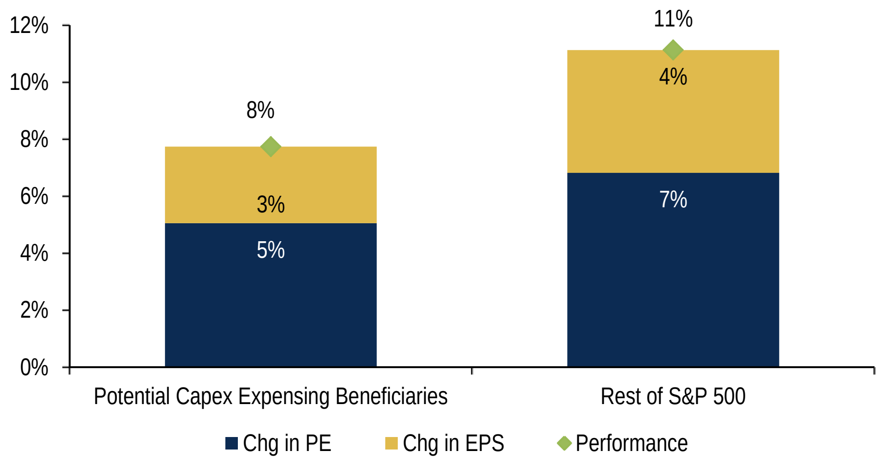
Note: Based on multifactor regression from 1986-4Q16 of quarterly YoY industry sales as the dependent variable vs. 1). quarterly YoY growth in US nominal GDP as the first independent variable and 2) quarterly YoY growth in nominal private non-residential fixed investment (aka Capex) as the second independent variable. Only industries with at least 10 years of data and statistically significant capex betas (slopes) are shown.

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

What's priced in? Capex expensing may not be discounted

As noted above, both Trump and the House Blueprint have proposed full expensing of capex as part of corporate tax reform, in tandem with the fact that interest expense would no longer be tax deductible (although Trump's plan has offered a choice between full capex expensing and interest deductibility). But this may not be priced in: potential beneficiaries of capex expensing have underperformed the market since the election, with less multiple expansion (Chart 58). Some of this performance, however, may be due to the fact that many beneficiaries of capex expensing are Energy companies, which have been the worst performers this year.

Chart 58: Performance since the election of potential beneficiaries of capex expensing* vs. rest of the S&P 500, decomposed into forward P/E change vs. forward EPS change (11/8/17-5/12/17)



*Note: Based on top decile of S&P 500 ex. REITs and Utilities by high capex/market cap and foreign sales <10%, as published in Equity and Quant Strategy: Equity Strategy Theme Screens 30 March 2017.
Source: BofA Merrill Lynch US Equity & US Quant Strategy, FactSet

For a list of S&P 500 companies which could benefit from the ability to fully expense capex, please see: Equity and Quant Strategy: Equity Strategy Theme Screens 30 March 2017.

Balance sheet repair

Low leverage is rewarded during recessions

As we highlighted earlier in this report, during the recessionary stage of the business cycle when weak or negative profits threaten the viability of the company, companies tend to hoard cash or reduce leverage in order to ensure their survival. Below we show the performance of our three cash deployment strategies (Top Decile of the S&P 500 by Share Repurchase, High Dividend Yield, and High Dividend Growth) and the performance of the top quintile of the S&P 500 by Low Net Debt/Total Assets during the last three recessions. S&P 500 companies with the lowest Net Debt/Assets outperformed the market during each of the previous three recessions, with average outperformance of 3.7ppt. None of the three cash deployment strategies that we track outperformed during all three recessions and none outperformed during the Financial Crisis.

Table 14: Relative performance (ppt) of cash deployment strategies and the relative performance (ppt) of Low Net Debt/Assets during the previous three recessions

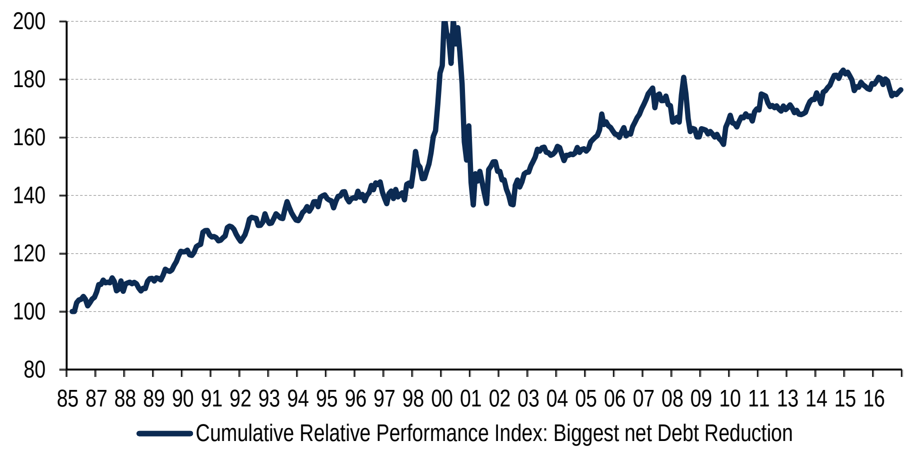
Recession	Largest Share Buybacks	High Dividend Yield	High Dividend Growth	Low Net Debt / Assets
1990-91	0.4	0.7	0.4	7.2
2001	8.4	4.6	(10.7)	2.1
2008-09	(0.2)	(7.9)	(0.3)	1.8
Average	2.8	(0.9)	(3.5)	3.7

Note: Relative performance vs. S&P 500 equal-weighted price return for Share Buybacks and Low Net Debt/Assets and vs. the S&P 500 equal-weighted total return for High Dividend Yield and High Dividend Growth. Performance during recessions based on 7/31/90-3/31/91, 3/31/01-11/30/01, and 12/31/07-6/30/09. Performance for our cash deployment strategies is based on actual results for Share Buybacks, High Dividend Yield, and High Dividend Growth for the 2009 recession, and additionally for High Dividend Yield during the 1990-91 and 2001 recessions. Performance is based on backtested results for High Dividend Growth and Share Buybacks during the 1990-91 and 2001 recessions. Back tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future performance.
Note: Performance for Low Net Debt/Assets is based on the top quintile of the S&P 500 by low net debt (debt-cash)/assets as of the latest fiscal quarter (lagged 90 days for conservatism) each month, rebalanced monthly.
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

Net debt reduction has been consistently rewarded

We also examined the companies that reduced their net debt the most (top quintile of the S&P 500). Since February 1986, aside from very early in economic recoveries, these companies have consistently outperformed the equal-weighted S&P 500 benchmark (Chart 59).

Chart 59: Top quintile of S&P 500 by net debt reduction: cumulative relative price performance vs. equal-weighted S&P 500 price performance index (2/28/1986-4/30/2017)



Note: Based on top quintile of S&P 500 by largest net debt reduction on a three-month (90-day) basis, rebalanced monthly.
Source: Compustat, BofA Merrill Lynch US Equity & US Quant Strategy

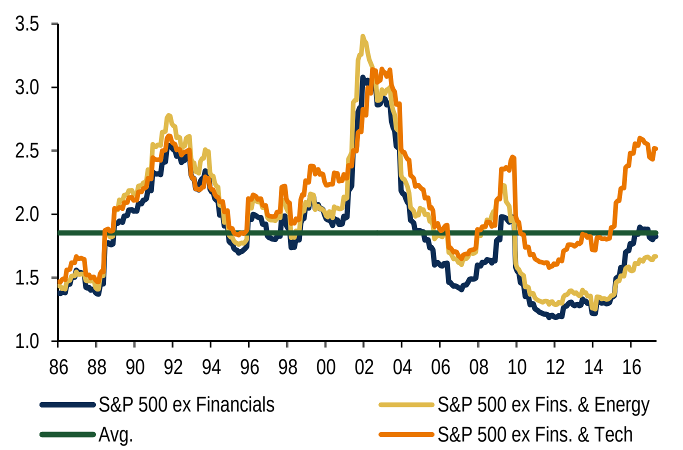
Leverage has started to matter today

Leverage has been increasing and sits at record levels for small caps

Leverage for non-Financial corporates has been steadily increasing over the last few years, such that Net Debt to EBITDA for the S&P 500 ex. Financials now sits in line with its long-term average, though below 2007 levels (Chart 60). Some of the increase has been due to Energy, where excluding this sector leverage is below average and well below the prior cycle. But when removing Tech—the one sector with net cash—leverage is well above average and the prior cycle peak. Leverage is at particularly worrisome levels for smaller, more credit-sensitive companies—Net Debt/EBITDA for the Russell 2000 ex. Financials and Tech is at an all-time high (Chart 61).

Chart 60: S&P 500 non-Financial leverage is higher than at the peak of the last cycle when excluding Tech…

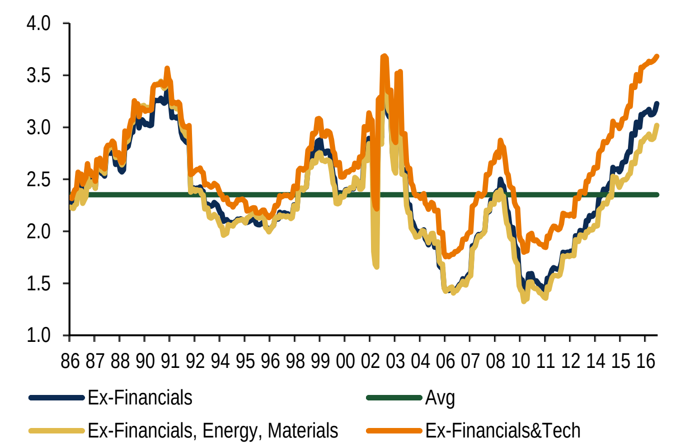
S&P 500 ex-Financials Net Debt/EBITDA, 1986-4/2017



Source: FactSet, BofAML US Equity & US Quant Strategy

Chart 61: …and Russell 2000 non-Financial leverage ex-Tech is at all-time highs

Russell 2000 ex-Financials Net Debt/EBITDA, 1986-4/2017

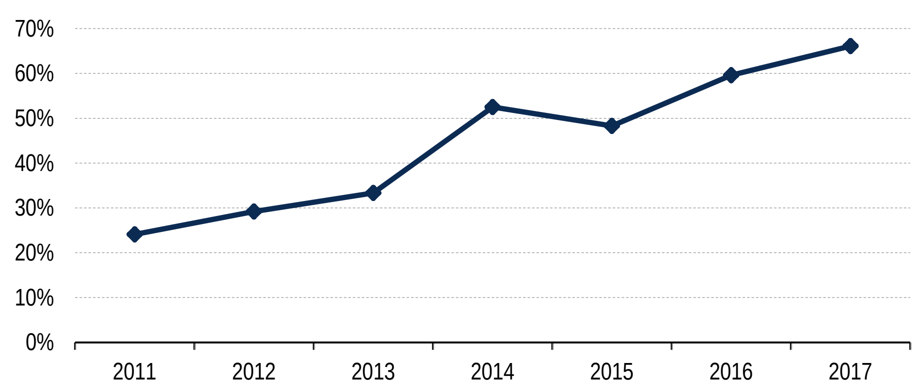


Source: FactSet Research Systems; BofA Merrill Lynch US Equity and US Quant Strategy

Investors have honed in on balance sheet strength

Each year, we survey our institutional clients to assess which factors and attributes are most important to them in selecting securities. Our 2017 survey revealed that investors are increasingly focused on leverage: Net Debt/EBITDA saw among the highest tick-ups in usage of any factor last year, and has seen the single largest two-year increase in popularity of any factor on our survey (ranging from valuation to quality to technical to growth factors and more). 66% of respondents cited using this factor—an all-time high vs. 24% in 2011 when we started including it in our survey (Chart 62).

Chart 62: Percentage of BofAML Institutional Factor Survey respondents using Net Debt/EBITDA is at all-times since we began including this factor in 2011

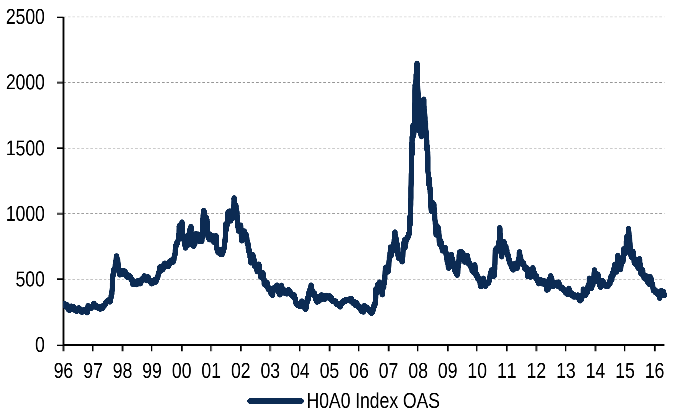


Source: BofA Merrill Lynch US Equity & US Quant Strategy

But credit pressures may be delayed as conditions have improved

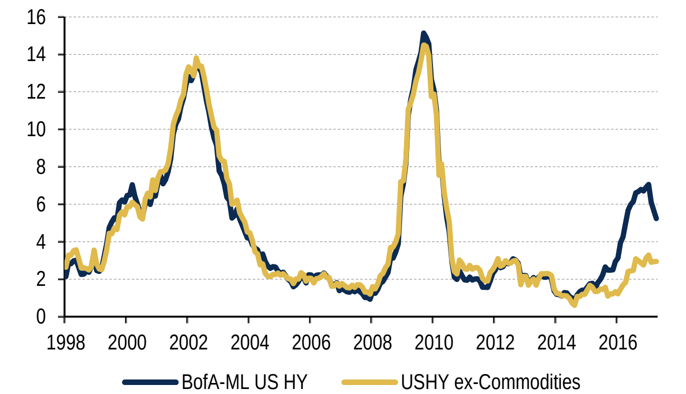
After deteriorating for much of 2014 and 2015, credit conditions have improved over the last year or so as overall growth has improved and we have moved further from the commodity crisis. High yield spreads have come down from elevated levels, and default rates have also come down (despite remaining elevated). Additionally, the Fed's latest Senior Loan Officer Survey suggests that lending standards are no longer tightening. We expect the pace of Fed rate hikes to be gradual, and S&P 500 interest coverage remains at healthy levels. We continue to monitor credit conditions, but any credit pressures may be delayed with continued improving growth and confidence.

Chart 63: High Yield credit spreads, 1996-present



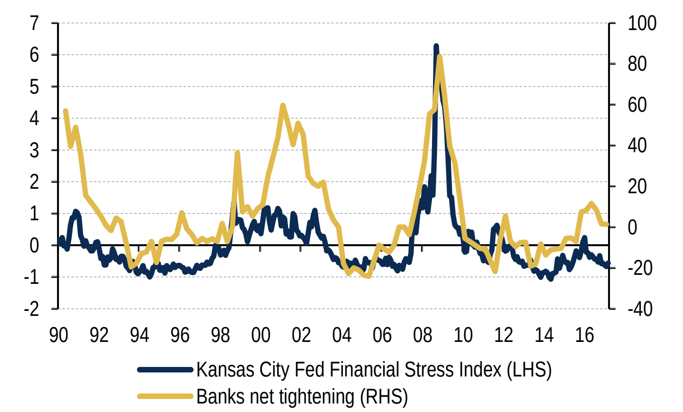
Source: Bloomberg, BofA Merrill Lynch Global Research

Chart 64: High yield default rate, 1998-present



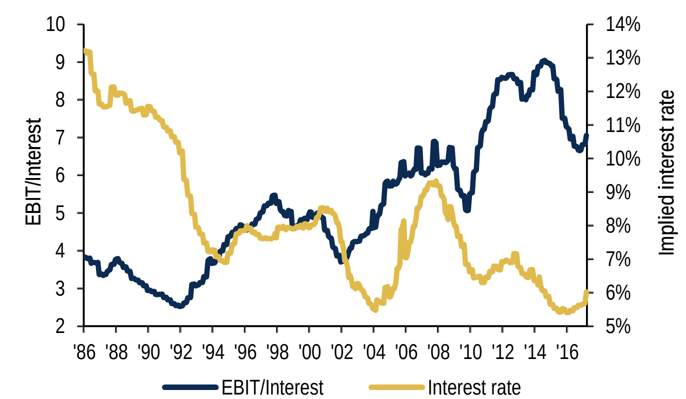
Source: Bloomberg, BofA Merrill Lynch Global Research

Chart 65: Kansas City Fed Financial Stress index & Fed loan officer survey of bank lending standard, 1990-present



Source: BofA Merrill Lynch US Equity & Quant Strategy, Federal Reserve Board

Chart 66: S&P 500 interest coverage vs. implied interest rate on debt, 1986-present



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

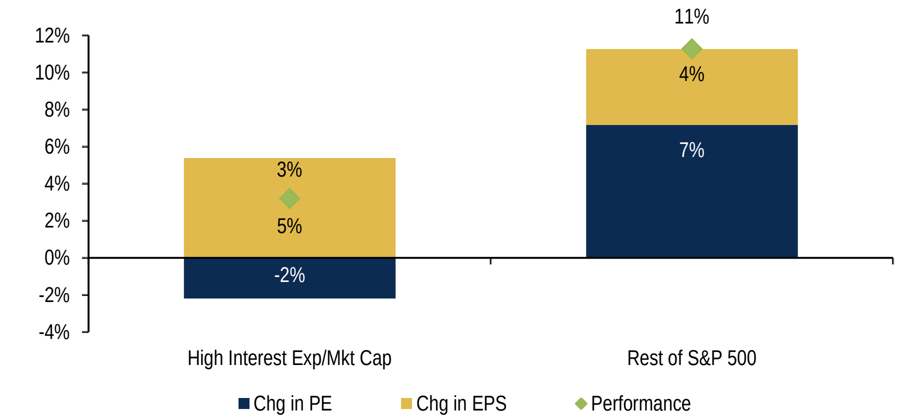
Policy risks: tax reform could end interest deductibility

One element of the House Blueprint (Paul Ryan) plan for tax reform that would help fund the corporate tax cut is the loss of the ability of corporates to deduct interest expense from their pre-tax income. Trump has also proposed this, with his plan giving companies the choice between deducting interest expense and fully expensing capex while both would be mandatory under the House plan. This could hurt levered companies with high interest expense, particularly if this occurs in tandem with rising interest rates and a greater focus by the market on credit sensitivity, as discussed above. For a screen of companies which could be most hurt, see: Equity and Quant Strategy: Equity Strategy Theme Screens 30 March 2017.

What's priced in? Companies with high interest expense have de-rated

Since the election, companies with high interest expense as a proportion of their market cap have underperformed the S&P and have actually seen their multiples compress. This could suggest that this component of tax reform is discounted by the market, but also may be due to more credit-sensitive stocks underperforming.

Chart 67: Performance post-election of stocks which could be hurt by ending interest deductibility* vs. rest of the S&P 500, decomposed into fwd. P/E change vs. fwd. EPS change (11/8/17-5/12/17)



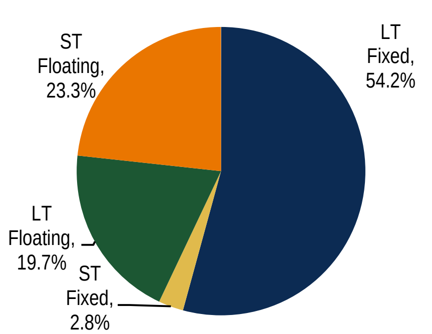
*Note: Based on top decile of S&P 500 ex. Financials, REITs and Utilities by high interest expense as a percent of market cap, as published in Equity and Quant Strategy: Equity Strategy Theme Screens 30 March 2017.

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

Drag may be gradual if policy applies just to new debt (or is phased in)

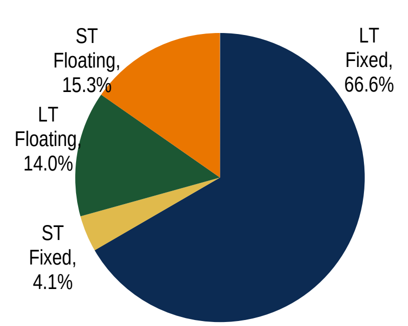
If an ending of interest deductibility applies only to new debt, the drag would be gradual for the overall S&P 500 as debt matures and is refinanced. Companies have shifted the composition of their debt toward longer maturities and fixed rates. We estimate an average S&P 500 debt maturity of over eight years, with just one-third maturing within the next three years. The grandfathering of existing debt is a reasonable assumption, but not a sure thing, in our view. There is a possibility that legislators apply it to all debt on the grounds that most companies are expected to be net beneficiaries of comprehensive tax reform. There is also a possibility that this policy is phased in over a number of years, with certain portions of the existing debt losing their interest deductibility over time.

Chart 68: Russell 1000 debt by type and maturity - 2007



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

Chart 69: Russell 1000 debt by type and maturity – today (as of Oct. 2016)



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

Table 15: Russell 1000 estimated weighted average debt maturity (ex-Financials & REITs)

Sector	Estimated Wtd Avg Maturity (years)
Cons. Disc.	7.0
Cons. Staples	8.1
Energy	8.4
Health Care	8.0
Industrials	8.0
Materials	7.4
Technology	7.4
Telecom	10.8
Utilities	12.0
Total	8.3

Note: Analysis as of Oct. 2016

Source: FactSet, BofAML US Equity & US Quant Strategy

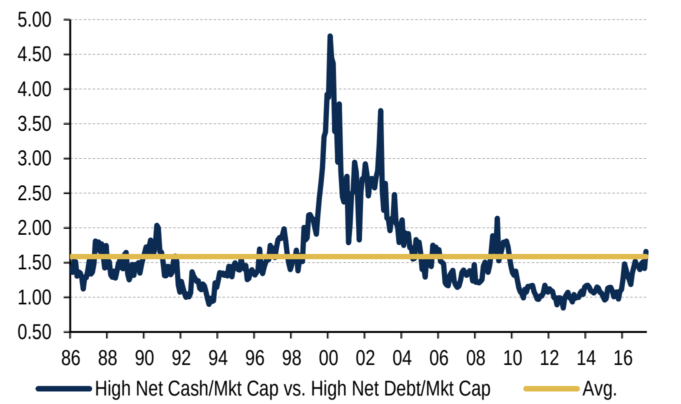
Debt paydown may be likely (and also a potential use of repatriated cash)

If the interest tax shield is removed, companies will likely grow comfortable with a smaller amount of debt, retain more earnings, use less cash for dividends and share buybacks, and potentially draw down cash if they have it. Additionally, in the event of a mandatory tax on overseas profits and a deemed repatriation of much of the $1.2tn of estimated overseas cash, we suspect companies may also chose to use some of their excess cash to pay down debt. We do not see a surge in equity issuance as likely, unless the change applies to all existing debt (which we view as unlikely).

Take advantage of the re-pricing of credit risk

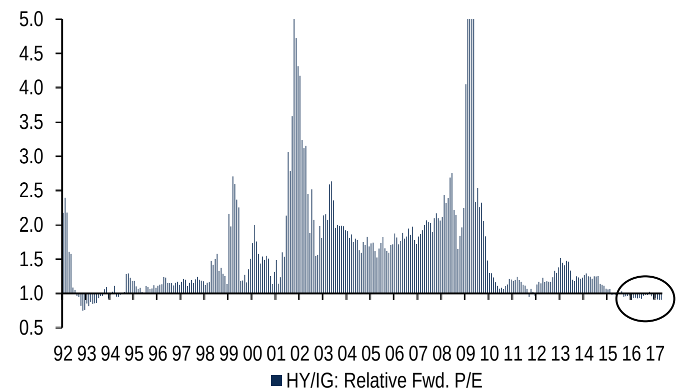
Cash-rich liquid companies were trading at a significant discount to history vs. their levered counterparts, but over the past year-and-a-half have re-rated such that the two now trade in line with history (Chart 70). We expect this to continue—and that cash-rich stocks can trade at a premium to history vs. levered stocks—as cash now begins to generate yield and levered companies see multiples compress as interest rates rise and credit sensitivity is penalized. In a similar vein, S&P 500 companies with investment grade debt have traded at a discount to those with high yield debt since 1994, but have begun to trade at a premium (Chart 71).

Chart 70: Median relative forward P/E of High Net Cash to Mkt Cap vs. High Net Debt to Mkt Cap S&P 500 stocks (1986-4/2017)



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

Chart 71: Relative forward P/E of High Yield vs. Investment Grade S&P 500 stocks (1992-4/2017)



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

Appendix

Performance of quantitative strategies

Table 16: Quantitative strategy performance – as of 4/30/17

04/28/2017							2 Yr Perf.		3 Yr Perf.		5 Yr Perf.		
Strategies (Universe based on the S&P 500)		1 M	3 M	6 M	12 M	YTD	Gross	Anlzd	Gross	Anlzd	Gross	Anlzd	Inception Date
High Foreign Exposure	Miscellaneous	0.6	6.1	16.8	29.7	10.1	22.1	10.5	26.6	8.2	66.1	10.7	12/31/1988
High Duration	Growth	1.9	6.5	11.0	14.1	10.0	10.4	5.1	26.1	8.0	68.5	11.0	12/31/1988
High Variability of EPS	Risk	1.3	4.8	15.9	24.4	8.8	15.8	7.6	25.5	7.9	78.4	12.3	12/31/1988
EPS Momentum	Growth	1.3	4.6	14.7	15.7	8.5	7.9	3.9	22.4	7.0	75.7	11.9	12/31/1988
ROE (5-Yr Average)	Quality	1.1	5.5	11.9	13.9	8.4	12.2	5.9	26.5	8.1	72.0	11.5	4/30/1997
High Free Cash Flow to EV	Value	1.0	4.3	12.8	19.7	7.7	5.4	2.6	23.9	7.4	100.5	14.9	7/31/2010
ROA	Quality	0.2	5.3	11.4	12.5	7.7	7.0	3.4	27.1	8.3	64.2	10.4	4/30/1997
High Projected 5-Yr Growth	Growth	-0.2	2.9	12.0	17.2	7.5	14.0	6.8	30.2	9.2	104.7	15.4	12/31/1988
Forecast Negative Earnings Surprise	Growth (Negative)	1.2	3.8	11.0	10.3	7.4	6.9	3.4	19.9	6.2	67.6	10.9	12/31/1988
ROE (1-Yr Avg. Adj. by Debt)	Quality	1.3	6.0	13.2	16.0	7.2	13.0	6.3	31.7	9.6	77.1	12.1	4/30/1997
Analyst Coverage Neglect	Miscellaneous	1.2	5.1	12.8	14.4	6.9	16.1	7.7	28.8	8.8	92.6	14.0	6/30/1989
S&P 500 Index (Price Return)	Benchmark	0.9	4.6	12.1	15.4	6.5	14.3	6.9	26.6	8.2	70.6	11.3	
ROC	Quality	0.5	4.4	10.0	12.9	6.4	9.5	4.7	30.5	9.3	70.2	11.2	4/30/1997
Low Price to Free Cash Flow	Value	0.7	3.5	10.8	14.7	6.4	-2.8	-1.4	13.8	4.4	80.4	12.5	7/30/2003
Low PE to GROWTH	GARP	-0.5	1.3	17.5	23.7	6.3	12.4	6.0	19.5	6.1	70.4	11.3	12/30/1988
Relative Strength (30wk/75wk)	Technical	-0.5	1.5	7.6	9.4	6.2	9.2	4.5	16.5	5.2	71.0	11.3	8/31/1995
Short Interest	Miscellaneous	-0.3	2.5	13.5	15.3	6.1	14.1	6.8	20.0	6.3			10/31/2013
S&P 500 Equal Weighted (Total Return)	Benchmark	0.6	3.7	12.6	16.6	5.9	16.8	8.1	32.2	9.7	96.3	14.4	
ROE (5-Yr Avg. Adj. by Debt)	Quality	1.0	4.3	10.3	13.3	5.7	14.4	7.0	32.4	9.8	79.3	12.4	4/30/1997
High Dividend Growth (Total Return)	Corp Cash Deployment	0.7	2.5	11.5	16.3	5.4	7.8	3.8	15.0	4.8	71.9	11.4	12/31/2004
ROE (1-Yr Average)	Quality	1.2	3.4	9.4	9.9	5.4	6.4	3.2	23.3	7.2	68.5	11.0	4/30/1997
S&P 500 Equal Weighted (Price Return)	Benchmark	0.6	3.2	11.6	14.3	5.3	11.7	5.7	24.0	7.4	76.6	12.1	
Price Returns (3-Month)	Technical	1.9	4.1	19.7	13.8	5.2	9.5	4.6	25.2	7.8	84.8	13.1	1/31/2010
High Dividend Growth (Price Return)	Corp Cash Deployment	0.5	1.9	10.3	13.8	4.8	3.1	1.5	7.5	2.5	53.3	8.9	12/31/2004
DDM Valuation	Value	1.1	4.1	7.7	11.4	4.5	14.5	7.0	25.4	7.9	94.5	14.2	12/31/1988
Alpha Surprise Model	GARP	0.4	3.3	12.5	14.1	4.5	13.7	6.6	30.0	9.1	92.5	14.0	12/31/1988
High Beta	Risk	-0.6	2.0	17.9	24.5	4.4	0.9	0.5	4.2	1.4	57.4	9.5	12/31/1988
Relative Strength (Price/200-Day Moving Avg)	Technical	1.1	2.6	16.8	11.5	4.2	13.1	6.3	25.9	8.0	87.7	13.4	1/31/2010
Forward Earnings Yield	Value	-1.3	0.6	15.4	21.8	4.1	6.1	3.0	10.1	3.3	79.7	12.4	12/31/1988
Price Returns (9-Month)	Technical	-0.2	2.4	14.0	10.6	3.6	13.9	6.7	27.5	8.4	99.2	14.8	1/31/2010
Earnings Yield	Value	-0.8	1.1	16.3	23.7	3.4	15.7	7.6	24.0	7.4	90.7	13.8	12/31/1988
Most Active	Technical	-1.1	0.5	12.9	21.5	3.3	13.9	6.7	22.7	7.1	84.4	13.0	8/31/2003
Price Returns (12-Month plus 1-Month Reversal)	Technical	-1.2	1.4	7.1	11.3	3.2	11.0	5.3	27.0	8.3	89.9	13.7	1/31/2010
Price Returns (12-Month plus 1-Month)	Technical	1.6	2.6	8.8	7.5	2.9	10.7	5.2	19.8	6.2	71.8	11.4	1/31/2010
Price Returns (11-Month since 1 year ago)	Technical	-0.5	0.9	3.7	5.4	2.8	4.8	2.4	16.7	5.3	72.7	11.6	1/31/2010
Price Returns (12-Month)	Technical	0.1	0.4	3.8	5.4	2.7	9.7	4.7	24.0	7.4	87.4	13.4	1/31/2010
Low Price to Cash Flow	Value	-0.1	0.5	11.3	13.2	2.5	-4.4	-2.2	-0.3	-0.1	54.4	9.1	12/31/1988
Forecast Positive Earnings Surprise	Growth	0.5	1.8	9.7	12.1	2.3	7.3	3.6	19.5	6.1	80.7	12.6	12/31/1988
Low Price to Sales	Value	0.6	0.8	10.4	12.4	2.1	3.1	1.5	18.2	5.7	110.9	16.1	12/31/1988
Share Repurchase	Corp Cash Deployment	-0.6	0.7	10.5	15.4	2.1	2.2	1.1	13.3	4.3	85.4	13.1	12/31/2004
Relative Strength (10wk/40wk)	Technical	-0.3	-0.4	13.5	13.0	2.1	15.9	7.7	30.6	9.3	93.4	14.1	1/31/2010
Relative Strength (5wk/30wk)	Technical	0.0	0.3	15.3	12.4	2.0	15.7	7.6	30.2	9.2	95.4	14.3	1/31/2010
Low Price	Risk	-1.3	-1.4	12.5	20.8	1.8	13.1	6.3	18.6	5.8	101.9	15.1	12/31/1988
Upward Estimate Revisions	Growth	-1.8	-1.5	13.7	15.8	1.4	6.8	3.4	19.1	6.0	83.0	12.9	12/31/1988
Low EV/EBITDA	Value	1.2	0.0	6.7	10.2	0.9	-7.4	-3.8	-7.1	-2.4	47.2	8.0	9/30/2001
Dividend Yield (Total Return)	Corp Cash Deployment	-0.9	-0.3	9.3	19.4	0.5	29.1	13.6	44.4	13.0	113.3	16.4	12/31/1988
Low EPS Torpedo	Growth (Negative)	0.6	-1.1	9.7	14.0	0.5	-15.3	-8.0	-13.8	-4.8	23.5	4.3	12/31/1988
Institutional Neglect	Miscellaneous	-0.7	-0.2	6.3	8.3	0.4	13.5	6.6	19.5	6.1	61.8	10.1	12/31/1988
Low Price to Book Value	Value	-1.3	-2.3	15.0	22.5	-0.5	6.7	3.3	10.5	3.4	83.0	12.9	12/31/1988
Dividend Yield (Price Return)	Corp Cash Deployment	-1.2	-1.5	6.8	14.1	-0.9	17.3	8.3	25.5	7.9	67.9	10.9	12/31/1988
Small Size	Miscellaneous	-1.4	-2.8	6.3	6.0	-1.9	3.2	1.6	11.3	3.6	80.3	12.5	12/31/1988
High EPS Estimate Dispersion	Risk	-3.8	-7.3	4.2	4.6	-6.0	-17.0	-8.9	-19.8	-7.1	30.2	5.4	12/31/1988

Source: BofA Merrill Lynch US Equity & US Quant 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 60 for a full explanation.

†For screens that have less than 5 years history, the 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.

Table 17: Advances and Declines as of 4/30/2017

	1M		3M		6M		12M		YTD		2Yr		3Yr		5Yr	
Quantitative Strategies	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.	Adv.	Dec.
High Foreign Exposure	30	20	99	51	196	103	373	226	135	64	641	557	958	837	1679	1313
High Duration	34	16	102	47	185	114	338	259	138	61	624	571	968	827	1684	1309
High Variability of EPS	34	25	111	69	240	140	451	309	156	90	830	687	1264	1009	2222	1572
EPS Momentum	31	19	95	55	198	102	348	252	132	68	644	555	990	807	1714	1281
ROE (5-Yr Average)	31	19	102	48	195	105	336	264	136	64	633	567	966	832	1690	1305
High Free Cash Flow to EV	24	18	71	49	149	93	285	205	99	63	496	487	798	686	1431	1034
ROA	25	25	94	56	182	118	330	270	126	74	612	587	964	835	1661	1338
High Projected 5-Yr Growth	28	26	96	60	193	114	355	254	134	72	647	564	1003	813	1743	1288
Forecast Negative Earnings Surprise	48	29	131	88	267	161	471	382	181	104	860	831	1295	1160	2287	1780
ROE (1-Yr Avg. Adj. by Debt)	28	22	97	53	191	109	343	257	129	71	628	572	977	823	1712	1288
Analyst Coverage Neglect	23	16	67	49	135	97	268	216	88	63	559	498	893	751	1567	1137
ROC	26	24	94	56	182	118	338	262	125	75	623	576	986	813	1698	1299
Low Price to Free Cash Flow	25	25	85	65	186	114	338	260	120	80	595	603	942	853	1715	1277
Low PE to GROWTH	24	26	80	70	196	104	368	232	123	77	642	558	980	818	1711	1284
Relative Strength (30wk/75wk)	24	26	82	68	170	131	320	278	121	79	617	580	952	841	1667	1326
Short Interest	27	23	91	59	200	99	360	237	131	68	657	537	972	819	1643	1283
ROE (5-Yr Avg. Adj. by Debt)	27	23	94	56	179	121	334	266	124	76	627	573	979	820	1704	1295
High Dividend Growth (Total Return)	29	21	85	64	184	115	351	247	120	79	636	562	975	822	1746	1248
ROE (1-Yr Average)	34	16	96	54	191	109	329	271	129	71	617	582	971	826	1700	1295
Price Returns (3-Month)	31	19	90	59	195	103	334	262	117	81	629	564	964	829	1671	1314
High Dividend Growth (Price Return)	28	22	84	65	181	118	341	257	118	81	618	579	948	848	1711	1284
DDM Valuation	31	25	105	65	188	122	368	284	132	84	681	601	1070	876	1954	1418
Alpha Surprise Model	26	24	88	62	173	100	286	198	114	78	569	466	963	726	1682	1175
High Beta	24	27	85	71	190	119	360	256	116	89	620	618	947	909	1702	1365
Relative Strength (Price/200-Day Moving Avg)	32	18	90	60	195	104	326	271	116	83	632	563	970	823	1699	1286
Forward Earnings Yield	19	31	79	71	184	116	354	246	115	85	640	560	972	826	1748	1246
Price Returns (9-Month)	23	27	83	67	178	122	320	277	110	90	635	559	977	815	1713	1271
Earnings Yield	22	28	81	69	190	110	365	235	113	87	646	554	994	804	1775	1219
Most Active	19	31	76	74	178	122	350	248	111	89	629	567	968	826	1709	1279
Price Returns (12-Month plus 1-Month Reversal)	22	28	82	68	175	124	324	271	112	87	621	571	983	807	1711	1277
Price Returns (12-Month plus 1-Month)	34	16	93	57	182	118	328	272	120	80	650	548	973	824	1694	1297
Price Returns (11-Month since 1 year ago)	23	27	75	75	154	146	303	294	103	97	601	594	947	844	1671	1318
Price Returns (12-Month)	27	23	80	70	165	135	321	277	111	89	637	559	979	814	1701	1288
Low Price to Cash Flow	24	26	74	76	177	123	323	275	106	94	577	621	898	898	1626	1361
Forecast Positive Earnings Surprise	41	34	125	99	264	177	476	372	167	133	897	797	1443	1178	2541	1833
Low Price to Sales	25	25	77	73	170	130	318	279	103	97	593	604	943	853	1698	1293
Share Repurchase	23	27	78	72	183	117	335	264	110	90	584	614	940	858	1712	1286
Relative Strength (10wk/40wk)	24	26	75	75	176	123	325	271	105	94	639	554	979	811	1696	1289
Relative Strength (5wk/30wk)	24	26	76	74	179	120	316	281	103	96	633	560	969	821	1695	1287
Low Price	18	32	69	81	165	135	327	272	101	99	589	608	903	887	1634	1349
Upward Estimate Revisions	20	30	72	77	171	128	327	272	102	97	625	572	962	835	1722	1271
Low EV/EBITDA	28	22	73	77	162	138	306	292	101	99	558	640	874	921	1615	1377
Dividend Yield (Total Return)	20	30	71	79	168	132	329	270	99	101	635	563	977	819	1760	1234
Low EPS Torpedo	24	26	69	81	168	132	321	278	99	101	555	644	872	925	1581	1411
Institutional Neglect	23	27	78	72	176	124	322	276	107	93	621	575	935	859	1690	1299
Low Price to Book Value	19	31	69	83	178	124	362	241	101	101	645	560	991	815	1785	1230
Dividend Yield (Price Return)	20	30	67	83	161	139	311	288	94	106	604	593	929	866	1669	1323
Small Size	19	31	70	80	157	143	301	298	97	103	576	621	898	895	1621	1367
High EPS Estimate Dispersion	9	33	44	85	125	141	257	278	63	111	462	587	704	820	1336	1241

Source: BofA Merrill Lynch US Quantitative Strategy

Performance calculation methodology

For each of the cash deployment strategies represented in this report noted in the tables above, 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 index 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.

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.

Advances and declines

Advances and declines are based on the price returns of each stock for each relevant period. The portfolio rebalancing done each month constitutes the start of a new period for each stock in the portfolio. The performance period for the stock being removed will end when the stock is removed from the portfolio. For the stock being added, the performance period will begin when it is added to the portfolio.

Definitions

Dividend Yield: Indicated dividend divided by month-end price.

Dividend Growth: The growth between trailing four-quarter total common dividends and year-ago trailing four-quarter total common dividends.

Share Repurchase: The year-to-year change in shares outstanding.

Disclosures

Important Disclosures

BofA Merrill Lynch Research Personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for the purpose of any recommendation in relation to: (i) an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report; or (ii) a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including Bank of America Merrill Lynch trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities that may not be offered or sold in one or more states or jurisdictions. Readers of this report are advised that any discussion, recommendation or other mention of such securities is not a solicitation or offer to transact in such securities. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Financial Global Wealth Management financial advisor for information relating to fixed income securities

Officers of MLPF&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://go.bofa.com/coi.

"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report. "BofA Merrill Lynch" and "Merrill Lynch" are each global brands for BofA Merrill Lynch Global Research.

Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:

MLPF&S distributes, or may in the future distribute, research reports of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch) regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; DSP Merrill Lynch (India): DSP Merrill Lynch Limited, regulated by the Securities and Exchange Board of India; Merrill Lynch (Indonesia): PT Merrill Lynch Sekuritas Indonesia, regulated by Otoritas Jasa Keuangan (OJK); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow, regulated by the Central Bank of the Russian Federation; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V., regulated by Comisión Nacional del Mercado De Valores; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A., regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company, Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This research report: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK) and Bank of America Merrill Lynch International Limited, which are authorized by the PRA and regulated by the FCA and the PRA, and is distributed in the UK to retail clients (as defined in the rules of the FCA and the PRA) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and subject to limited regulation by the FCA and PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been considered and distributed in Japan by Merrill Lynch (Japan), a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by DSP Merrill Lynch (India); and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch International Bank Limited (Merchant Bank) (MLIBLMB) and Merrill Lynch (Singapore) (Company Registration Nos F 06872E and 198602883D respectively). MLIBLMB and Merrill Lynch (Singapore) are regulated by MAS. Bank of America N.A., Australian Branch (ARBN 064 874 531), AFS License 412901 (BANA Australia) and Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distribute this report in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of BANA Australia, neither MLEA nor any of its affiliates involved in preparing this research report is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this report in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Research reports prepared and issued by Merrill Lynch (DIFC) are done so in accordance with the requirements of the DFSA conduct of business rules. Bank of America Merrill Lynch International Limited, Frankfurt Branch (BAMLI Frankfurt) distributes this report in Germany and is regulated by BaFin.

This research report has been prepared and issued by MLPF&S and/or one or more of its non-US affiliates. MLPF&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF&S and not such foreign affiliates. Hong Kong recipients of this research report should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this report. Singapore recipients of this research report should contact Merrill Lynch International Bank Limited (Merchant Bank) and/or Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this research report.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Merrill Lynch.

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This report is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may

lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.
This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.
BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.
Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments, including ADRs, effectively assume currency risk.
UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at http://go.bofa.com/coi.
MLPF&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF&S or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.
BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.
In the event that the recipient received this report pursuant to a contract between the recipient and MLPF&S for the provision of research services for a separate fee, and in connection therewith MLPF&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF&S). MLPF&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

Copyright and General Information regarding Research Reports:

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such issuers in research reports. To the extent this report discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this report is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.
This report has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of MLPF&S, any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.
Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.
The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.
Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.
In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with MLPF&S or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.
Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.