ALGER

Inspired by Change, Driven by Growth.

Spring 2019

Capital Markets: Observations and Insights

Birthday Wishes

Birthday Wishes

"You can't help getting older, but you don't have to get old." – George Burns

If the U.S. economic expansion continues past its birthday at the end of this quarter, it will be the longest ever at over 10 years old. This is a tremendous achievement, one that most did not foresee in 2009 coming out of the financial crisis. However, investors are asking more frequently: will there be other birthdays to celebrate in this cycle?

Many seem confident that the end is near—a sentiment that could perhaps be the wall of worry the market can climb to higher levels. While this cycle is clearly old in chronological terms, it appears more youthful by several other measures. For example, cyclical components of GDP, the proportion of the population employed, cumulative growth in GDP, the real Federal Funds rate, and debt service ratios are all at levels that are not indicative of a peak in economic activity.

While we hope that this expansion has more birthday celebrations ahead of it, our focus at Alger has always been to understand the companies we invest in with an eye towards finding innovation and change rather than to try and forecast overall economic activity. In the long run, we believe what matters most is that innovation triumphs over economic volatility and is the primary contributor to long-term wealth creation.

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Key Observations

- While investors are preparing for the end of the economic expansion, **various data points signal continued growth**
- **Sentiment has significantly improved** after reaching levels that we had flagged as overly depressed
- Regardless of economic activity, we believe **innovation will drive equity returns and wealth creation** as it has historically done

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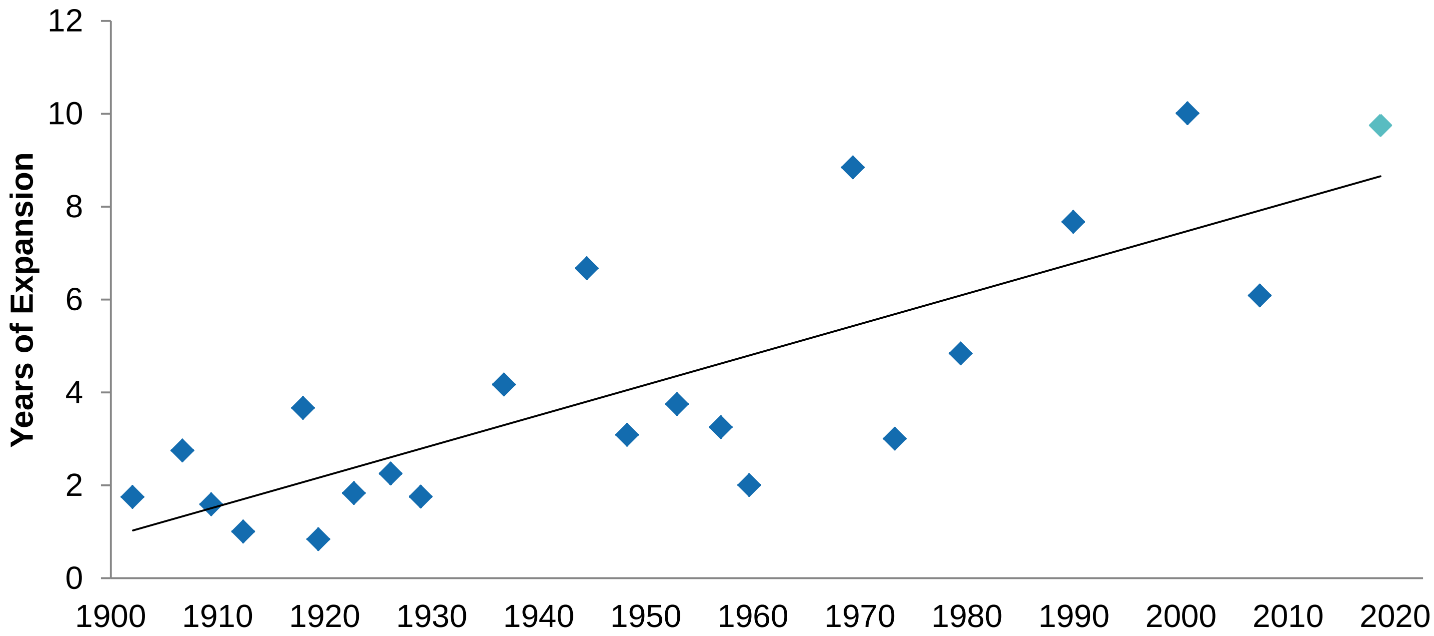
Cycles Have Been Lasting Longer

- U.S. economic expansions have been increasing in duration. Driving factors include:
  - Increased fiscal and monetary intervention (e.g., tax cuts/spending and assertive Fed)
  - Structural changes in the economy (e.g., larger proportion of services)
  - Technological advances (e.g., improved inventory management)

Age of U.S. Economic Expansions

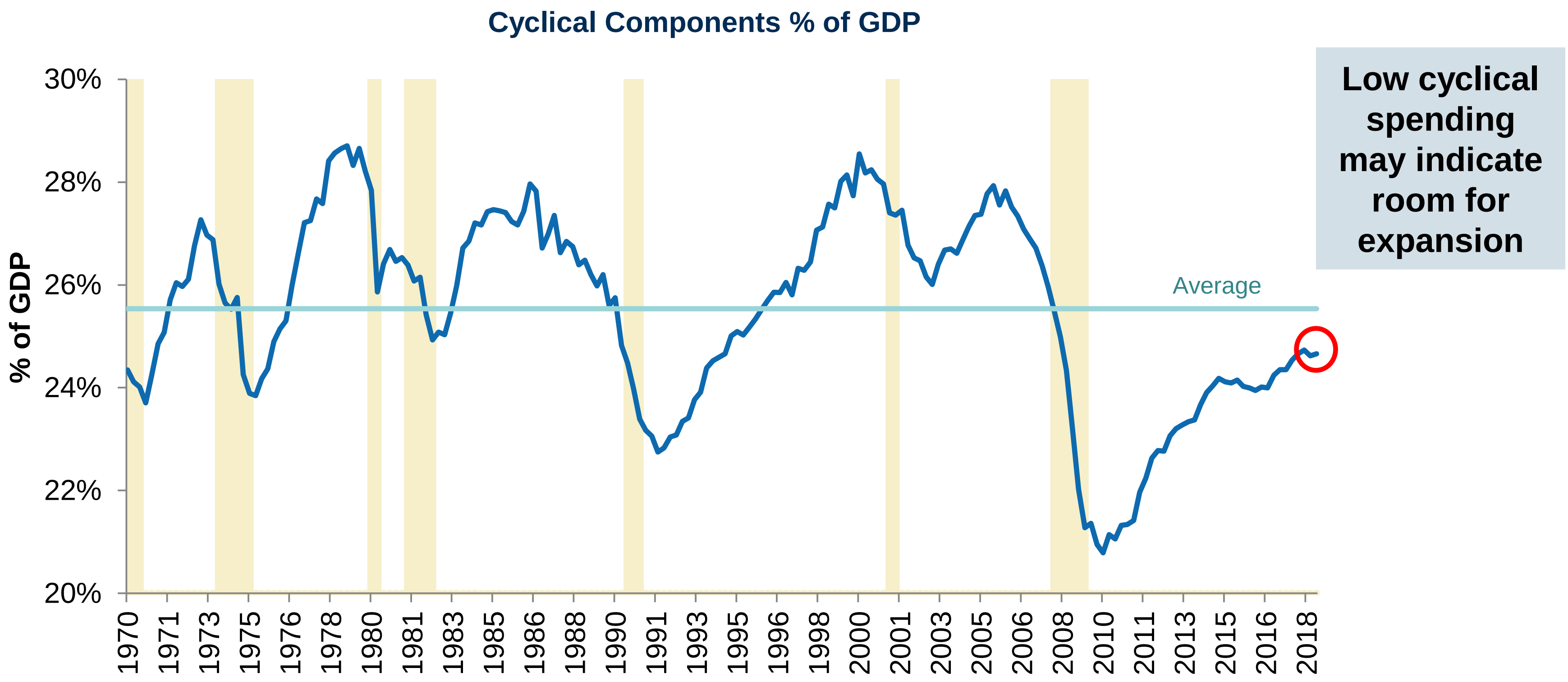


Source: FactSet and Alger. Note: double-dip recession in early 1980s accounted for as one recession.

Birthday Wishes

Cyclical Spending Signals More Expansion

- The cyclical components of GDP – business investment, residential investment, and consumer durables – have historically risen much higher prior to economic peaks
- The implication is that the economic expansion has room to expand

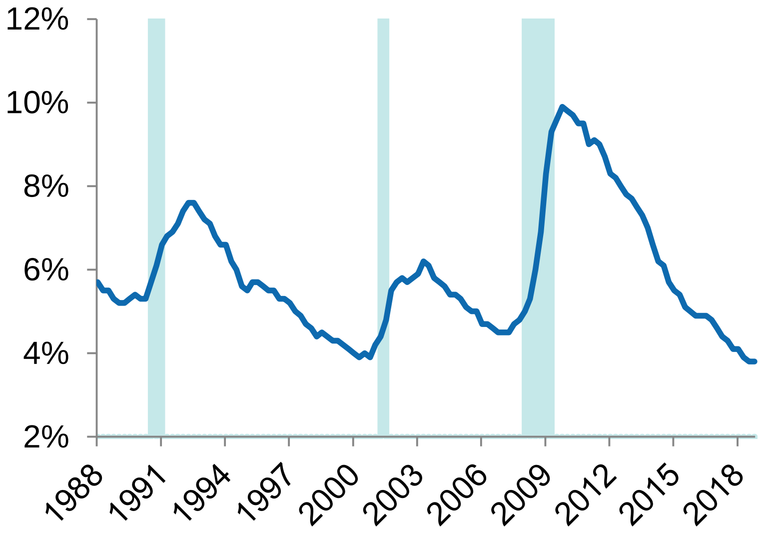


Source: U.S. Bureau of Economic Analysis.

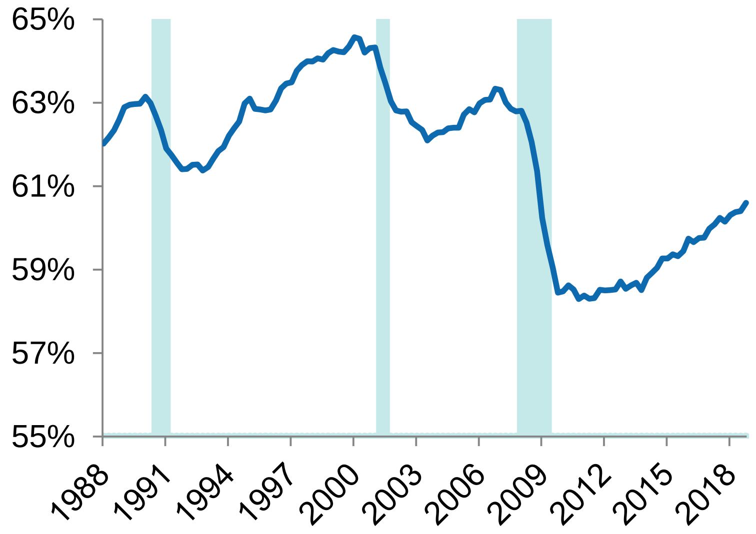
- The traditional unemployment rate indicates an economy operating at full capacity
  - Implies higher inflation and higher interest rates on the way

- However, the ratio of employed to total eligible population is low relative to historical economic peaks
  - Suggests worker availability may dampen inflation and keep the Fed at bay

The Official Unemployment Rate Is Low…



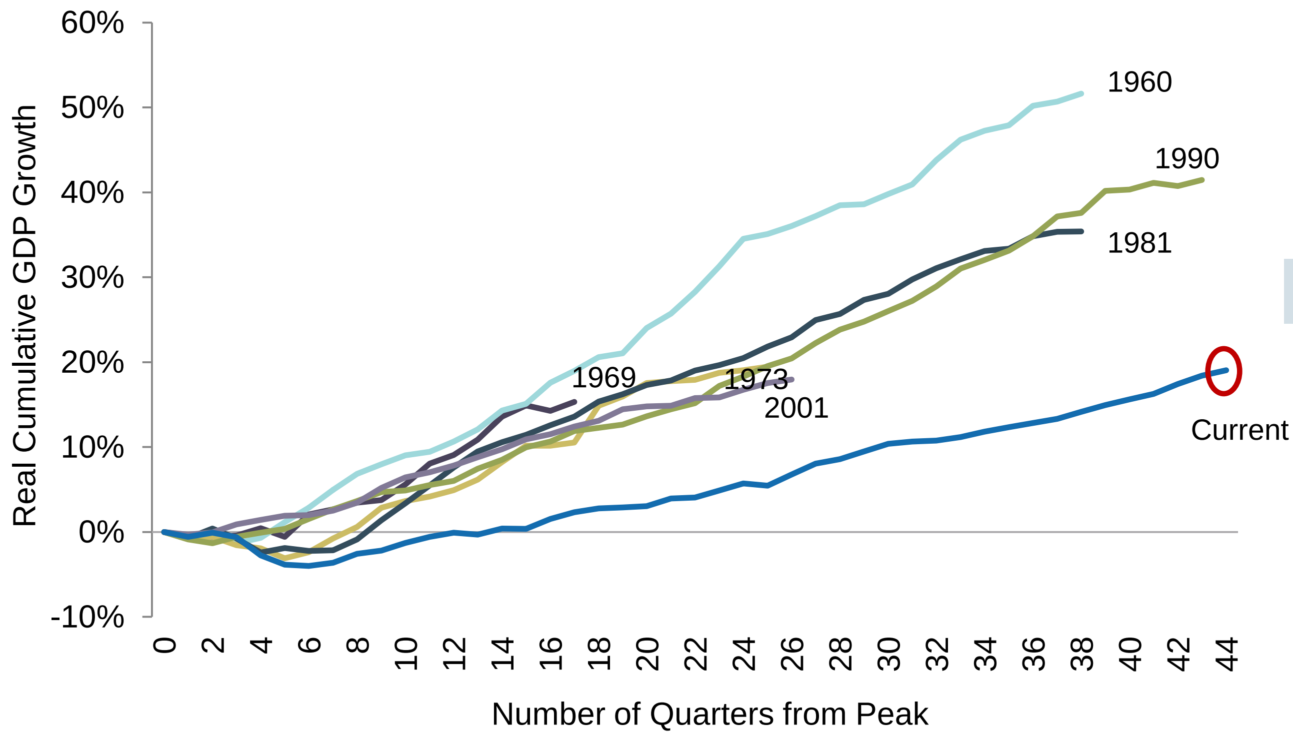
…But Employed / Population Indicates Slack



Source: U.S. Bureau of Labor Statistics. Shaded regions indicate U.S. recessions. Quarterly data through 2018.

The Upside of Being Slow

- While this expansion is chronologically old, it has not grown GDP as much as economic recoveries of comparable length
- This suggests a possibly longer runway of economic expansion now

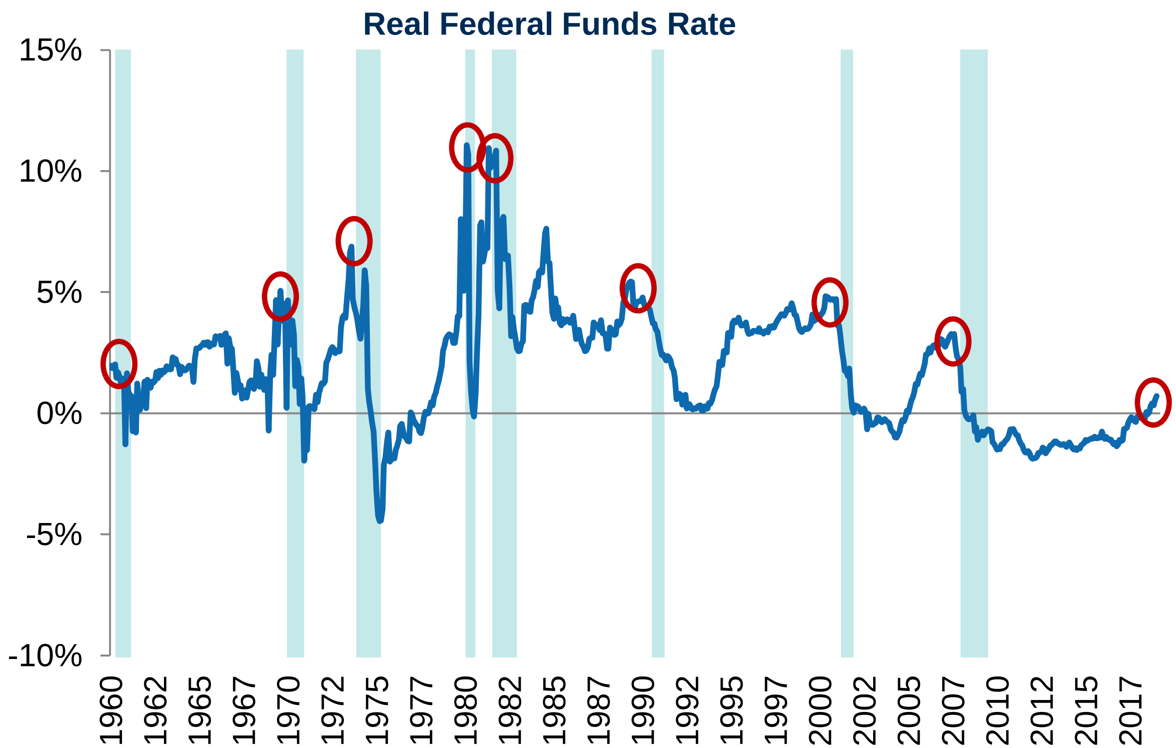


Room to catch up?

Source: U.S. Bureau of Economic Analysis and Alger as of March 2019. Dates indicate beginning of measurement periods.

Monetary Policy Is Not Restrictive

- Over the past half century, every U.S. recession has been preceded by a materially positive real Fed Funds rate — 2% or higher
- In contrast, today we have a relatively low real Fed Funds rate of under 1%



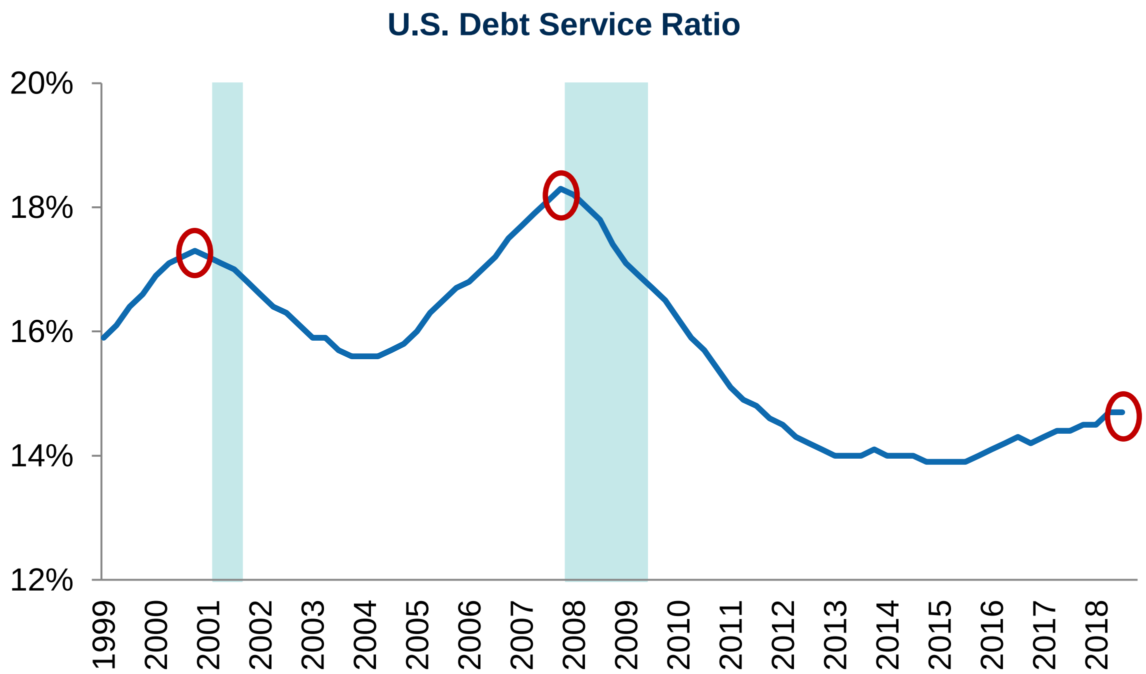
Today real short-term interest rates are far lower than what induced previous recessions

Source: FactSet, as of March 2019. Real Federal Funds rate is equal to the Federal Funds rate less the year-over-year change in the PCE Price Index ex-food and energy. Shaded regions denote U.S. recessions.

Birthday Wishes

Low Debt Burden

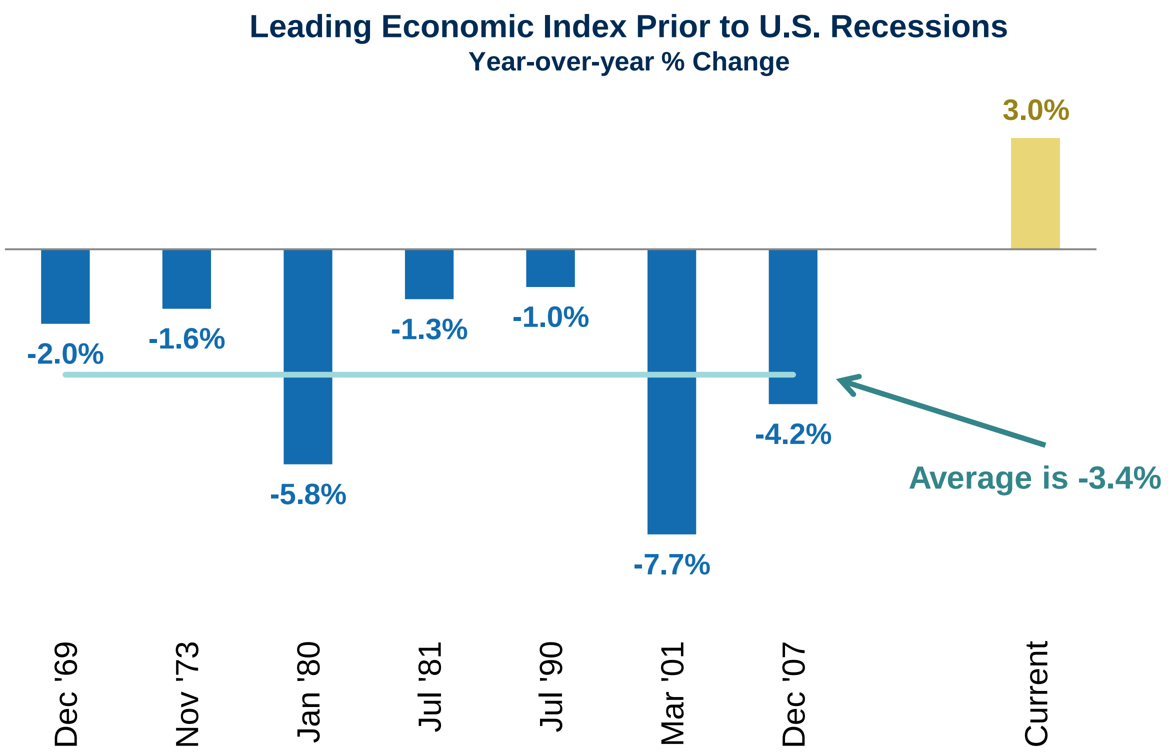
- Despite higher levels of debt as a % of GDP, the U.S. non-financial private sector debt service ratio is much lower than in the past two recessions
  - Because more than 80% of U.S. consumer and business debt is fixed, higher interest rates should not have a dramatic impact on service costs



Debt service ratio indicates households and corporations are not burdened by debt payments

Source: Bank for International Settlements, March 2019. Debt Service Ratio is the share of income used for interest payments and amortizations in the non-financial private sector. Shaded regions indicate recessions.

- The Leading Economic Index is a good indicator of future economic growth or lack thereof
- Historically, it has declined on a year-over-year basis leading up to a recession
- Currently, it is rising, indicating continued economic growth, albeit at a slower pace

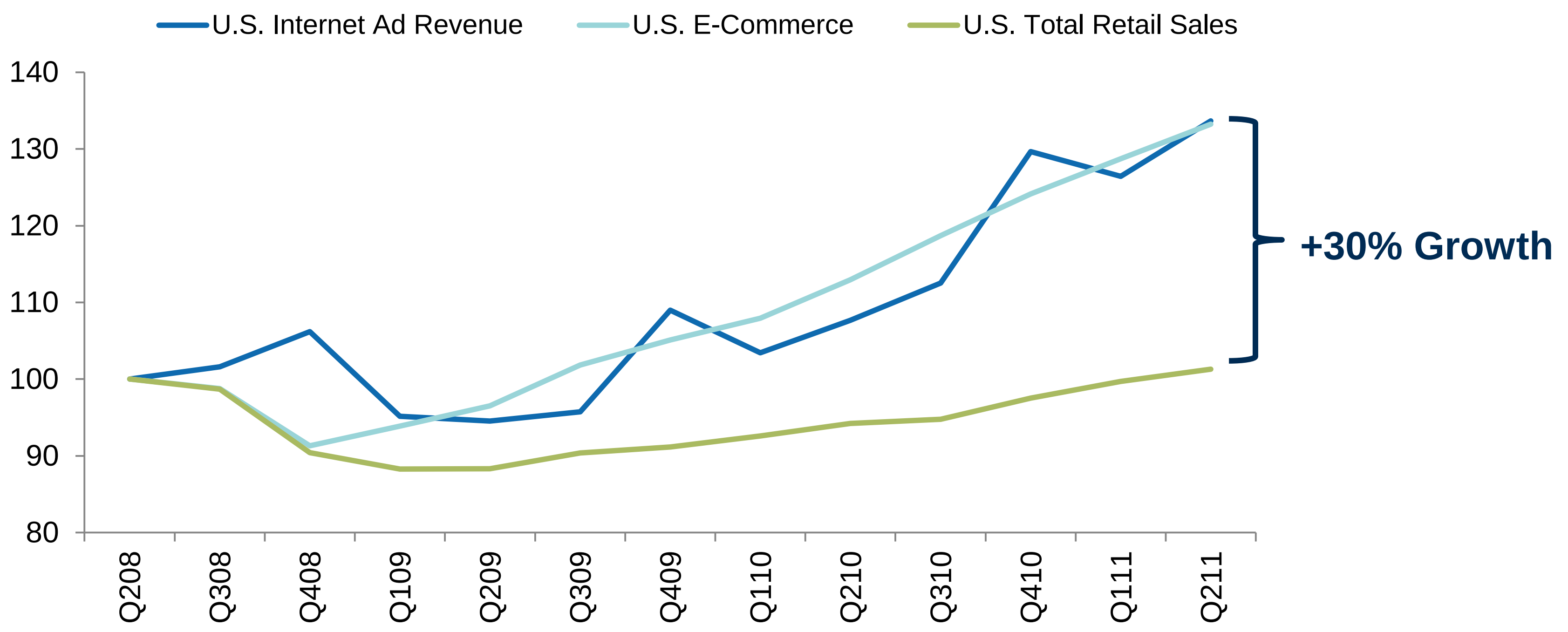


Leading economic index does not indicate recession

Source: The Conference Board and Alger analysis as of March 2019

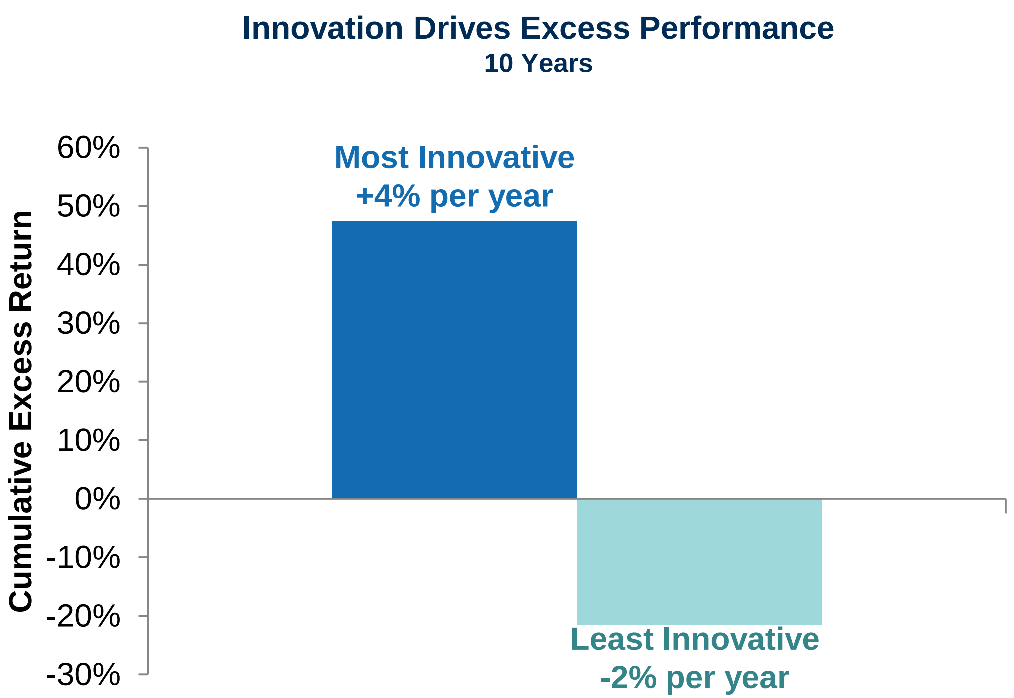
Birthday Wishes
Innovation Through Economic Cycles

- Innovation can flourish even if the economy languishes
  - History shows that there are areas of innovation and growth throughout recessions, depressions and panics over the past 150 years*



Source: Bureau of Economic Analysis, PwC, Census Bureau. *See Alger's white paper "The Enduring Force of Innovation."

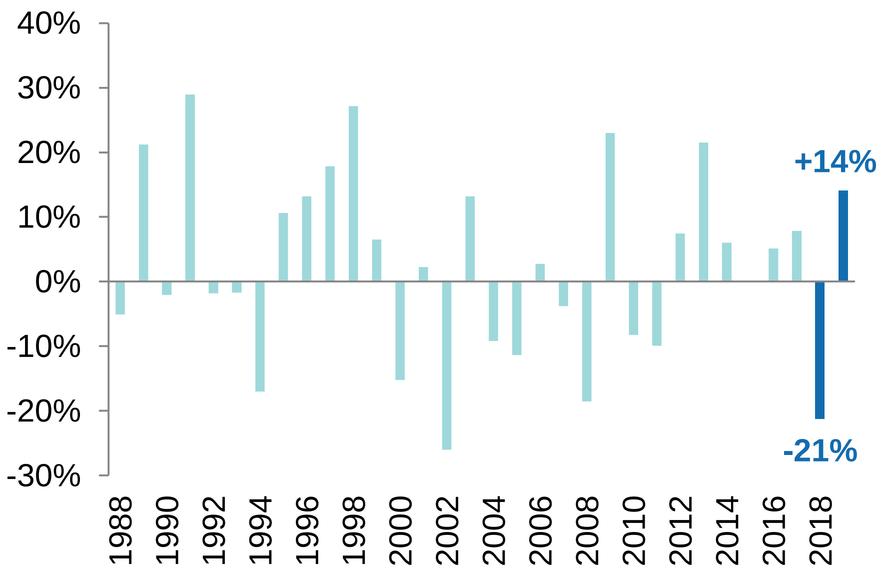
- Studies have shown, and our research demonstrates, that the most innovative companies grow their sales, earnings, and stock prices faster*



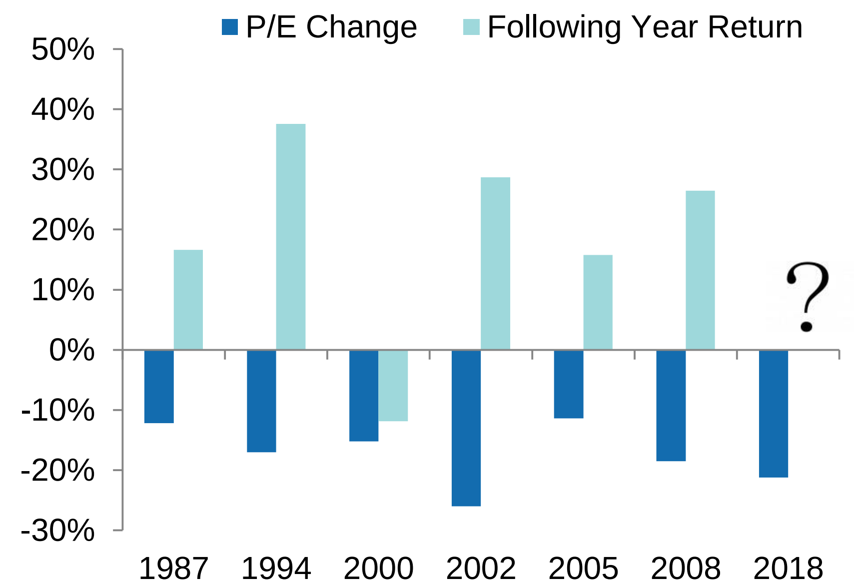
Source: FactSet. Most/least innovative stock excess performance is derived from highest and lowest S&P 1500 quintiles based on R&D as % of sales, normalized for market value, using one month returns for 10 years ending 12/31/18. *Baruch Lev and Suresh Radhakrishnan, "The Stock Market Valuation of R&D Leaders."

- Last year, equity valuations had their second largest decline in three decades (-21%)
- This year sentiment has rebounded (+14%)
- Year-to-date returns have been broadly consistent with historical precedent
- Annual returns averaged 19% after double-digit declines in P/E

Change in S&P 500 P/E



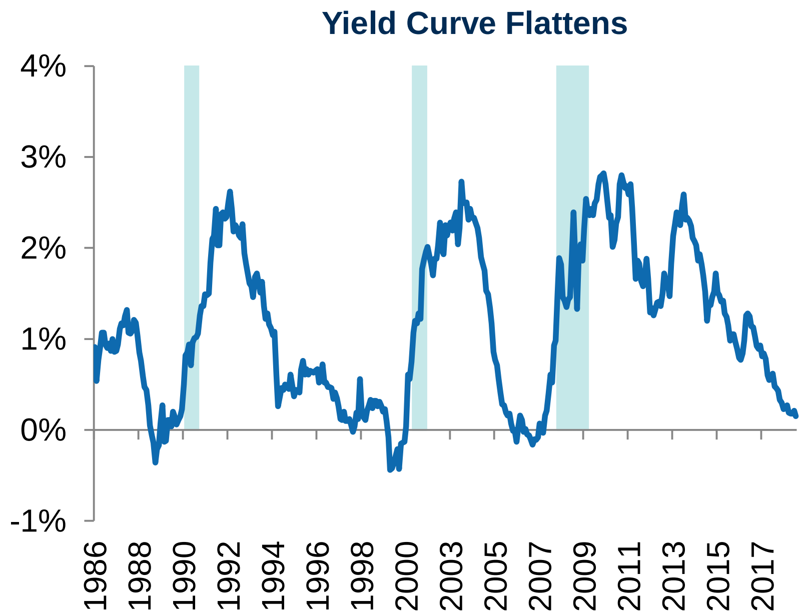
Double-Digit S&P 500 P/E Declines

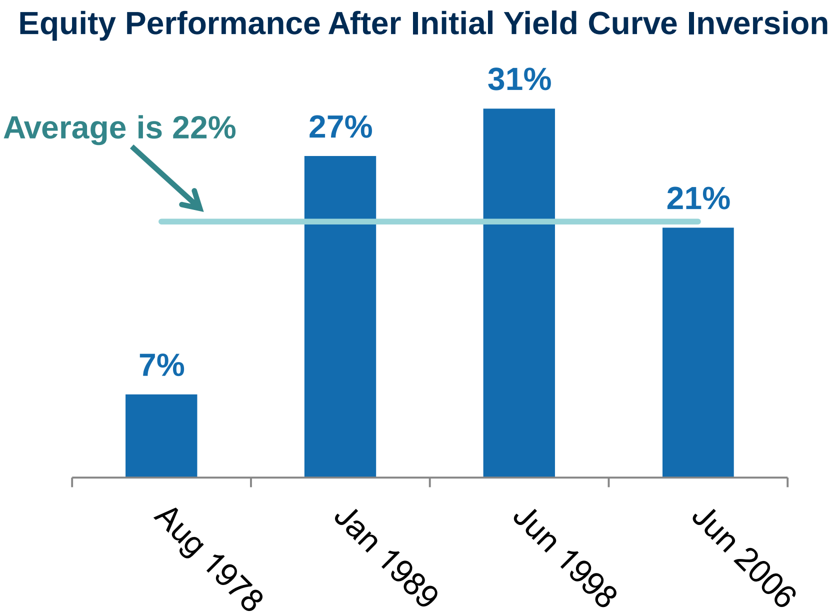


Source: FactSet and Alger. Data is 1987-2019.

Yield Curve Flattens

- During the first quarter, the Treasury yield curve, or spread between the 10-year and 2-year Treasury yields, flattened
- While an inversion in the curve often signals a recession ahead, we believe 1) the very low level of interest rates is distorting its signal and 2) equity returns are often strong after inversion

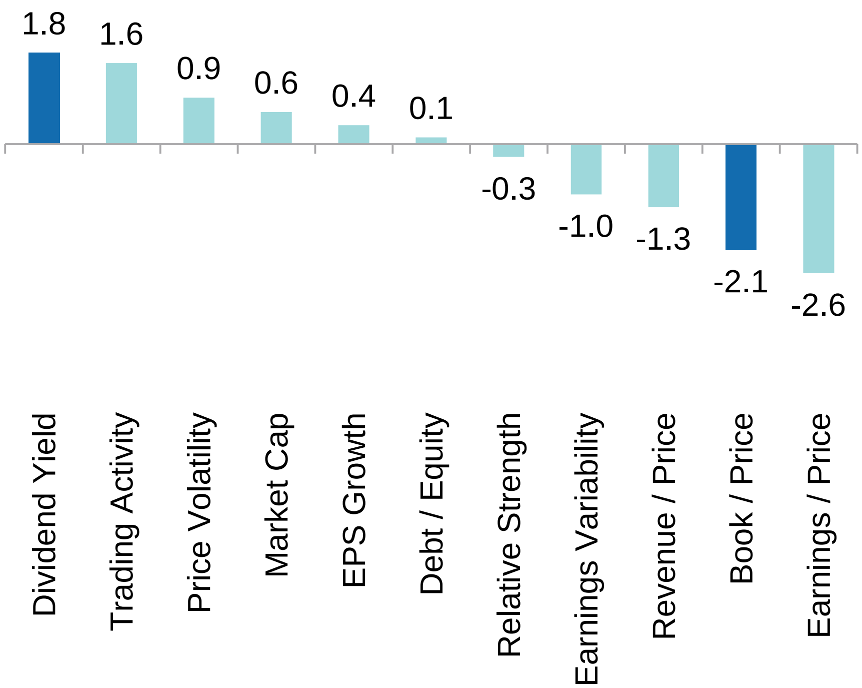




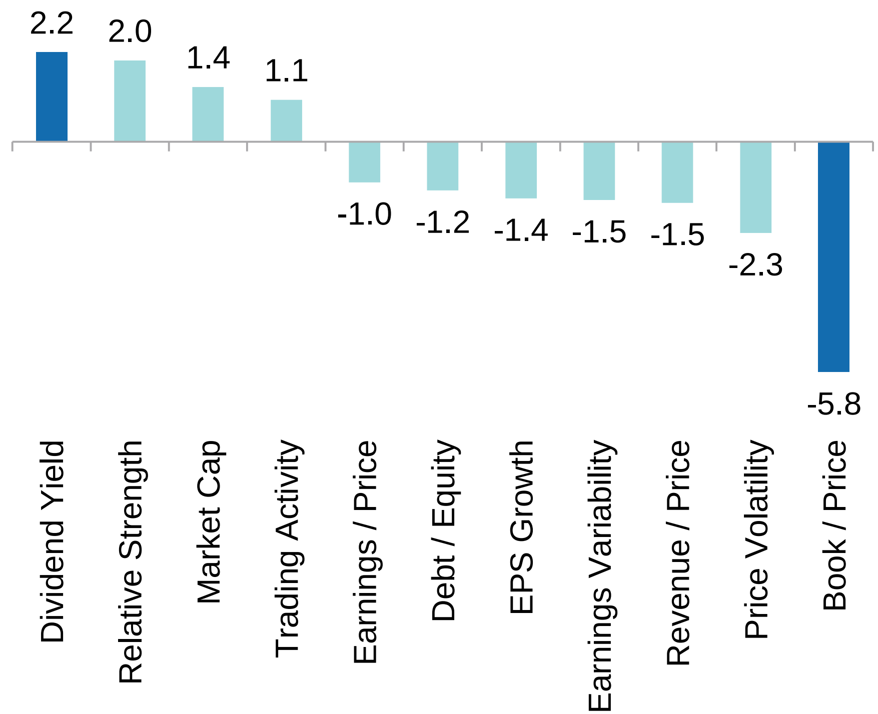
Source: FactSet as of 3/31/19. Yield curve represented by 10-year less 2-year Treasury yield (monthly data).

- In 1Q19, dividend yield outperformed as interest rates declined while the secularly challenged low price-to-book stocks continued to lag

1Q19
Excess Return (%)



2018
Excess Return (%)

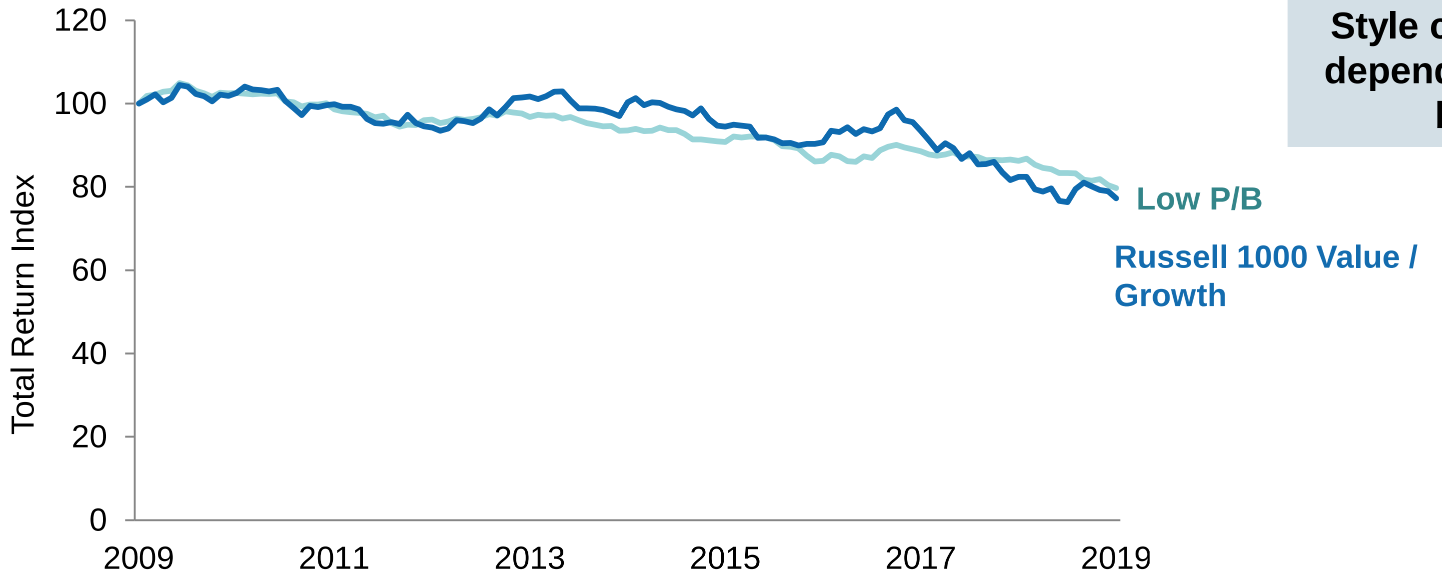


Source: FactSet as of 3/31/19 using Northfield defined quantitative factors for the Northfield broad U.S. market database.

Performance

Structural Issues Driving Growth vs. Value

- Growth stocks have dramatically outperformed (~30%) Value stocks over the past decade
- The driver has been the very weak performance of the valuation metric Price-to-Book, which is used heavily in index classifications of Growth vs. Value stocks
- As accounting fails to keep up with the changing economy, book value may no longer be as relevant (e.g., R&D is not capitalized in book value)

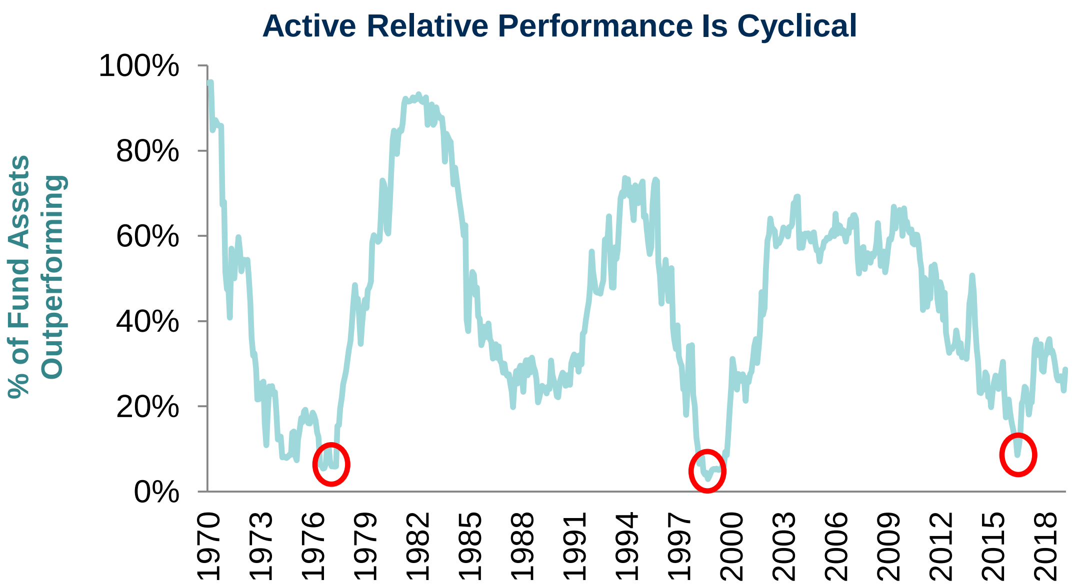


Style classification too dependent upon flawed book value

Source: FactSet as of 3/31/19. Low price-to-book returns are based on the B/P Northfield factor for the Northfield broad U.S. market database.

Has Active Relative Performance Troughed?

- Factors that impact U.S. active relative performance often prove to be cyclical
  - Interest rates/bond-like equities
  - Small cap performance
  - Overall market performance
  - Non-U.S. stock performance

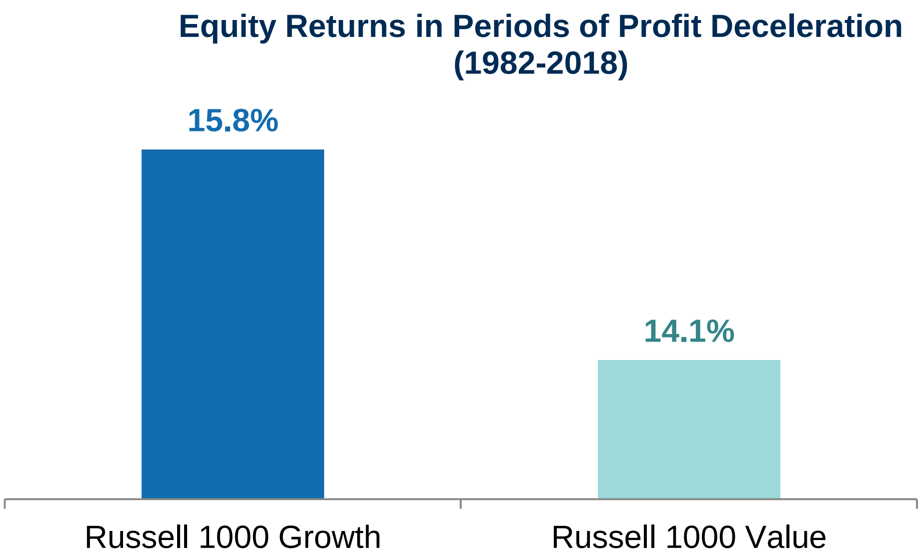


Source: Nomura/Instinet, Joseph Mezrich and FactSet through 3/31/19. Fund performance is trailing five-year data of U.S. active equity mutual funds in existence for five years or more and part of the growth, growth & income, and income categories based on CRSP codes.

Performance

What Outperforms in a Slowdown?

- Growth equities typically outperform when overall EPS growth decelerates, likely because:
  - Growth equities are less cyclical
  - Value stocks have more operational and financial leverage
  - Higher growth is more scarce



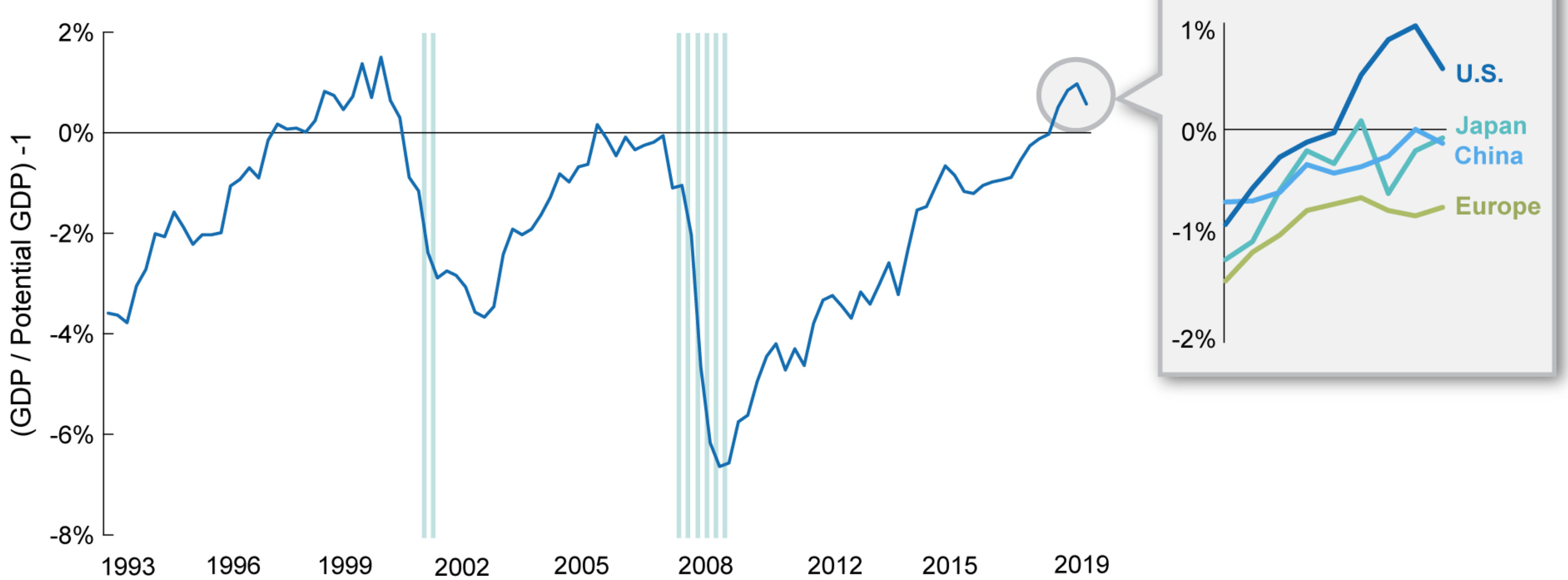
Growth has historically outperformed Value when fundamentals decelerate

Source: Bank of America Merrill Lynch Quantitative Strategy. Median data for periods: Jun 1984-Dec 1985, Jun 1988-Dec 1991, Mar 1995-Sep 1998, Mar 2000-Dec 2001, Dec 2003-Jun 2005, Mar 2006-Mar 2009, Jun 2010-Sep 2012, and Dec 2013-Dec 2015.

Better to Be Behind?

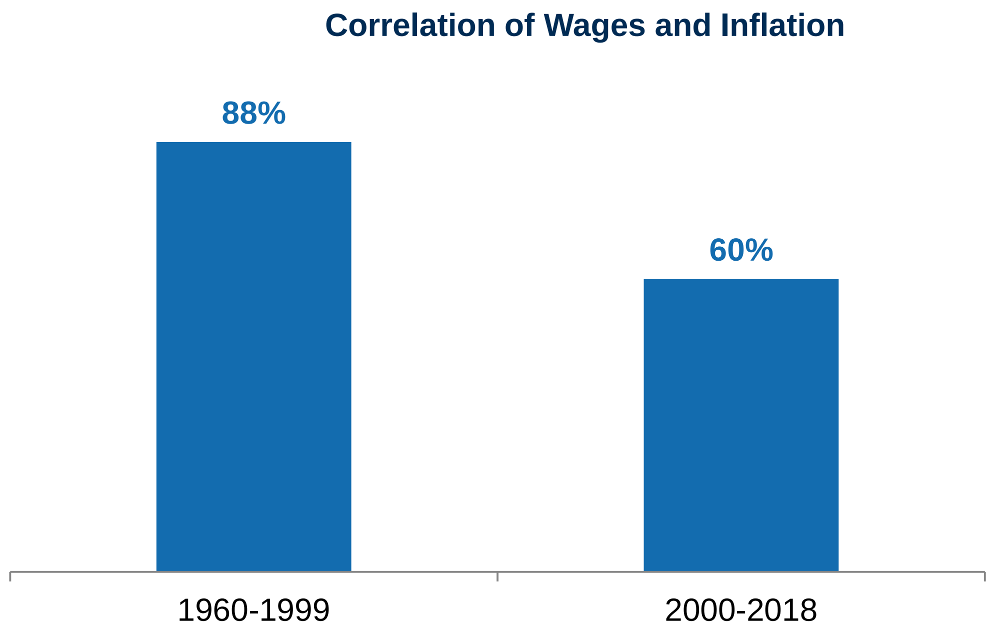
- The output gap measures economic output relative to potential, with a lower output gap indicating more growth left in the cycle
- While most major regions are at or near potential output, some, such as Europe, are further behind the U.S.

U.S. Output Gap



Source: FactSet and Oxford Economics as of 3/31/19. Shaded regions indicate U.S. recessions.

- While the positive output gap in the U.S. indicates inflation pressures, we believe innovation in the form of pricing transparency, new business models, and automation is driving down inflation
  - An indication of this dynamic is the declining correlation of wages and inflation

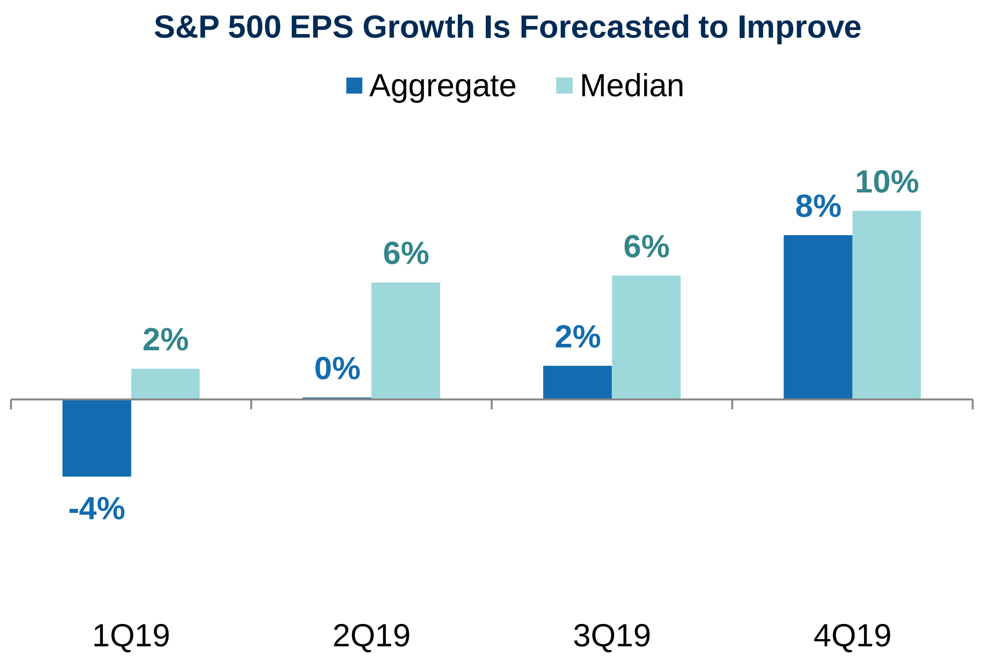


Wages are having less impact on prices likely because of innovation

Source: Alger analysis, U.S. Bureau of Economic Statistics, and U.S. Bureau of Labor Statistics. Wages are year-over-year change in unit labor costs and inflation is year-over-year change in PCE price deflator ex-food & energy.

Fundamentals
Growth Acceleration

- After an impressive 2018, EPS growth has been under pressure in early 2019
- While the economy has slowed, idiosyncratic issues are also at work, as illustrated by the stronger S&P 500 *median* EPS growth rate
- Importantly, the economy and EPS growth are forecasted to accelerate through 2019



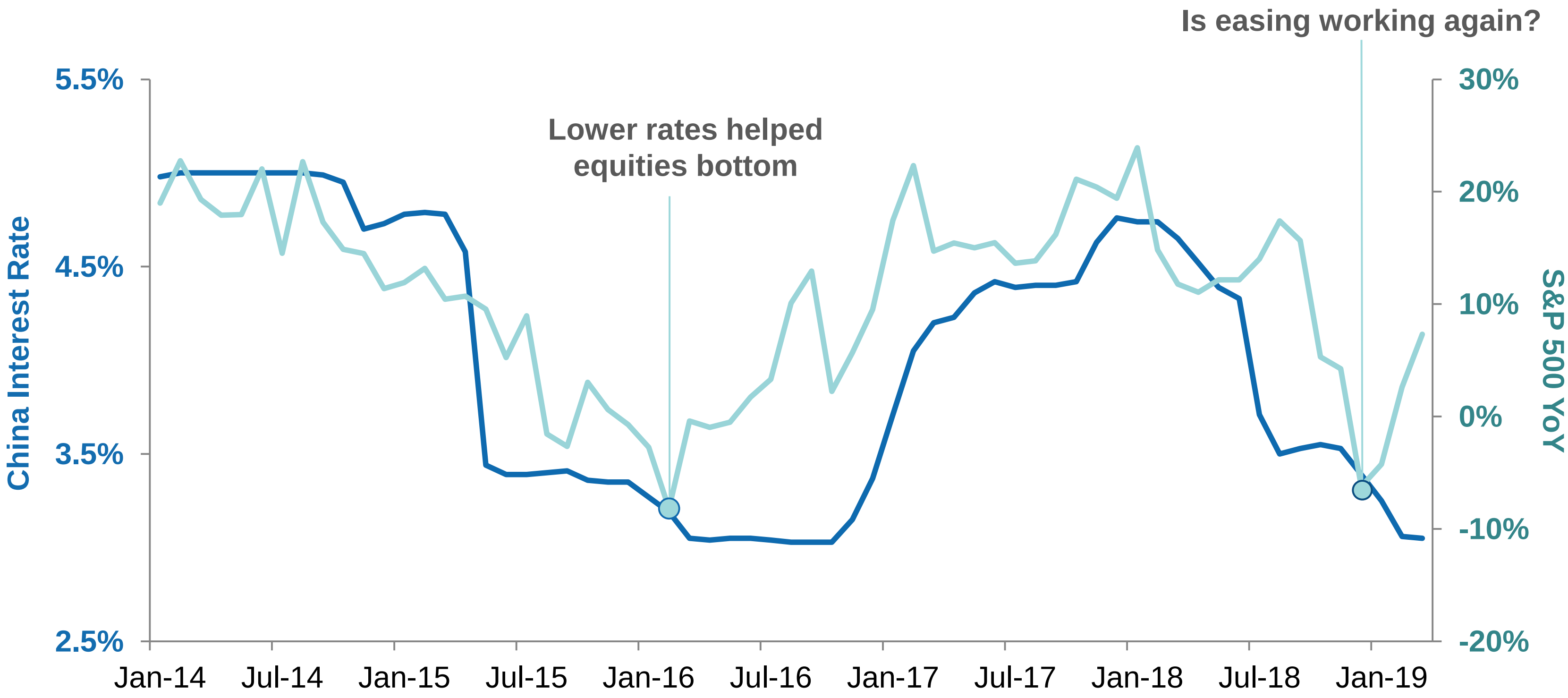
EPS growth forecasted to quickly return to solid levels

Source: FactSet and Alger analysis. EPS for 2019 are consensus estimates and actual earnings per share might be materially different than shown.

Fundamentals

China Is Stimulating

- Chinese growth has been a key driver in the volatility of global equities
- Through various means, China is working to stimulate its economy
- A trade deal would go a long way to help the decelerating Chinese economy but stimulus may pick up some of the burden

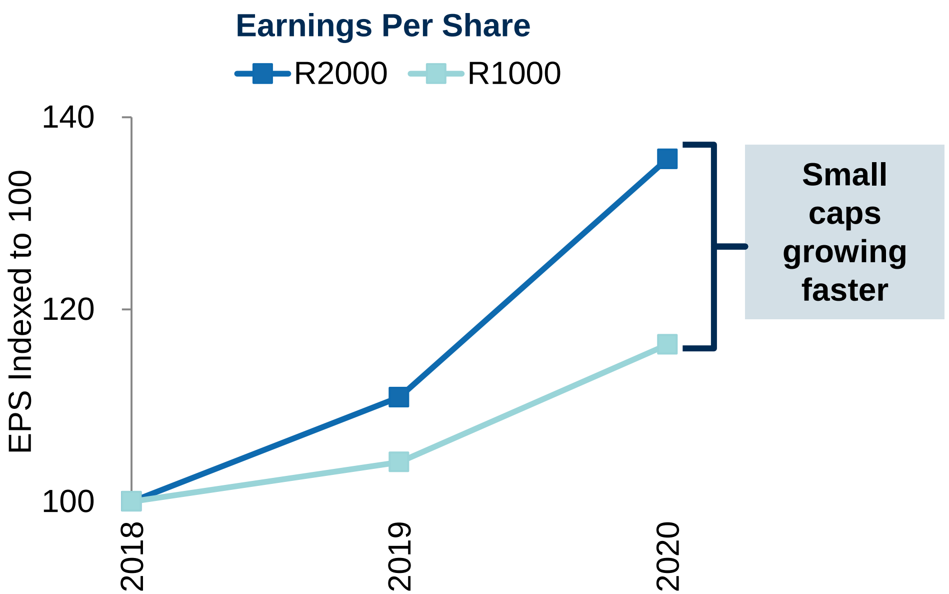


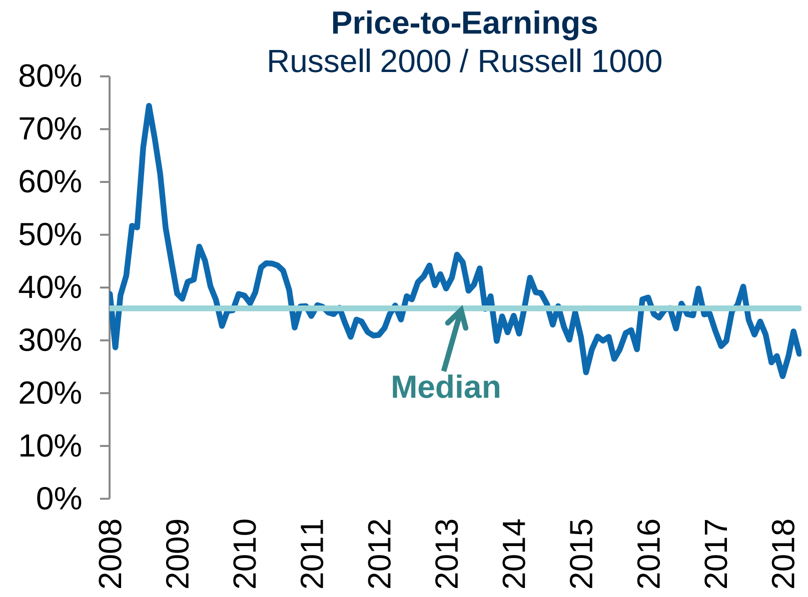
Source: FactSet as of March 2019. China interest rate is SHIBOR one year rate.

Fundamentals

Smaller Capitalization Stocks Poised to Outperform

- **Compelling valuation**: Small cap P/E multiple premium is low relative to history
- **Stronger fundamentals**: Estimated small cap EPS growth for ‘19 & ‘20 is double that of large cap
- **More levered to domestic economy**: U.S. small caps have less exposure to international economies



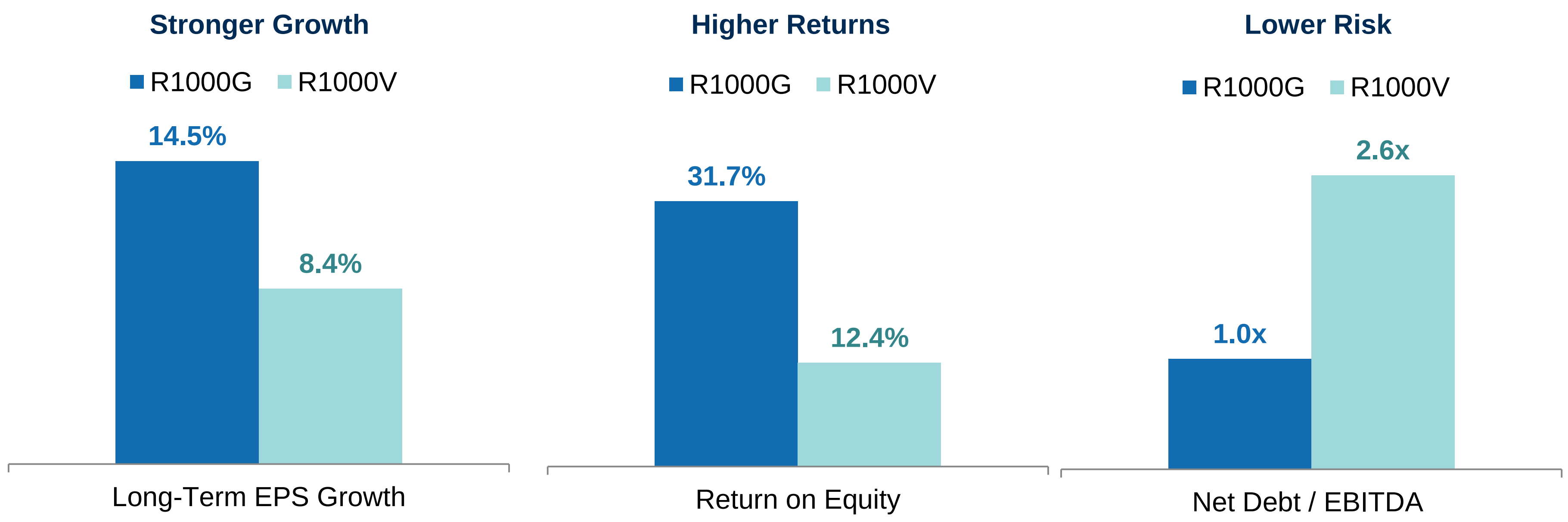


Source: FactSet as of March 2019 . EPS for 2019-2020 are consensus estimates and actual earnings per share might be materially different than shown.

Fundamentals

The Growth Advantage

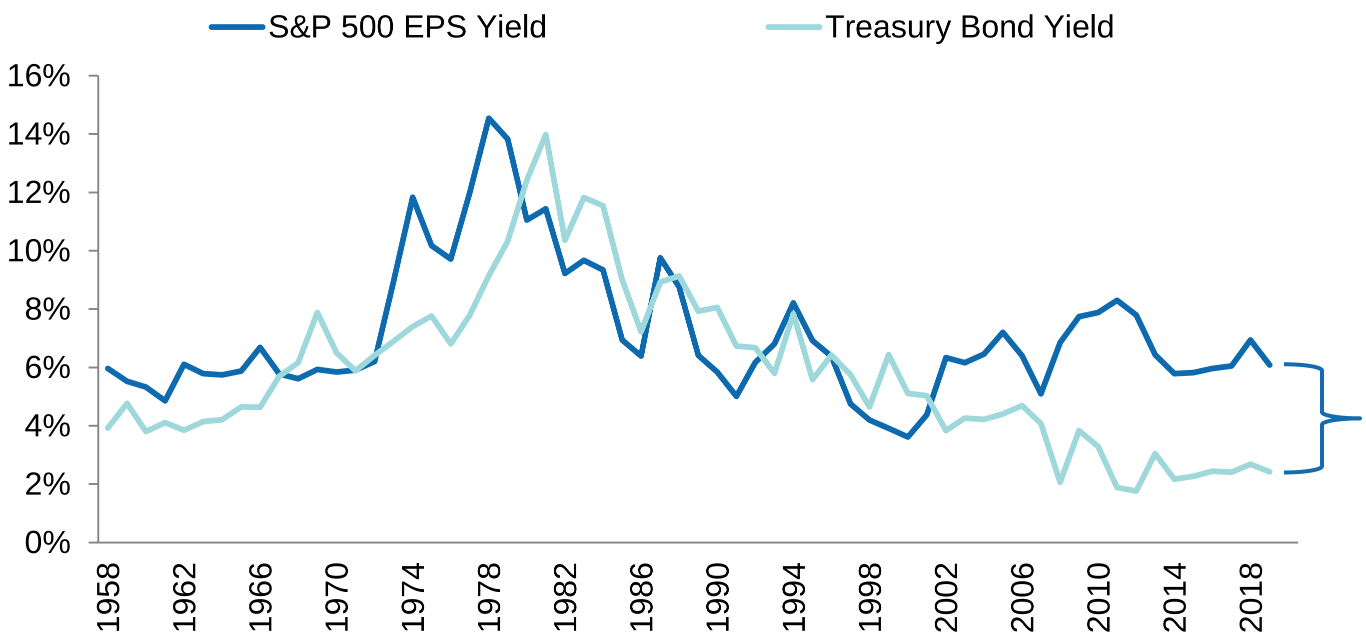
- Three variables drive P/E multiples: growth, return on capital, and risk
- As compared to the Russell 1000 Value Index, the Russell 1000 Growth Index has higher expected EPS growth, higher return on equity, and lower risk in the form of better balance sheets



Source: FactSet as of 3/31/19. Growth represents consensus long-term analyst estimates and actual future EPS growth rates might be materially different than the forecasts shown.

Stocks Are Cheap Relative to Bonds

- Historically, the "earnings yield" of equities (inverse of the P/E) has been just modestly above 10-year Treasury yields
- Since the Global Financial Crisis, however, that spread has widened out and has yet to normalize, making equities attractive relative to bonds

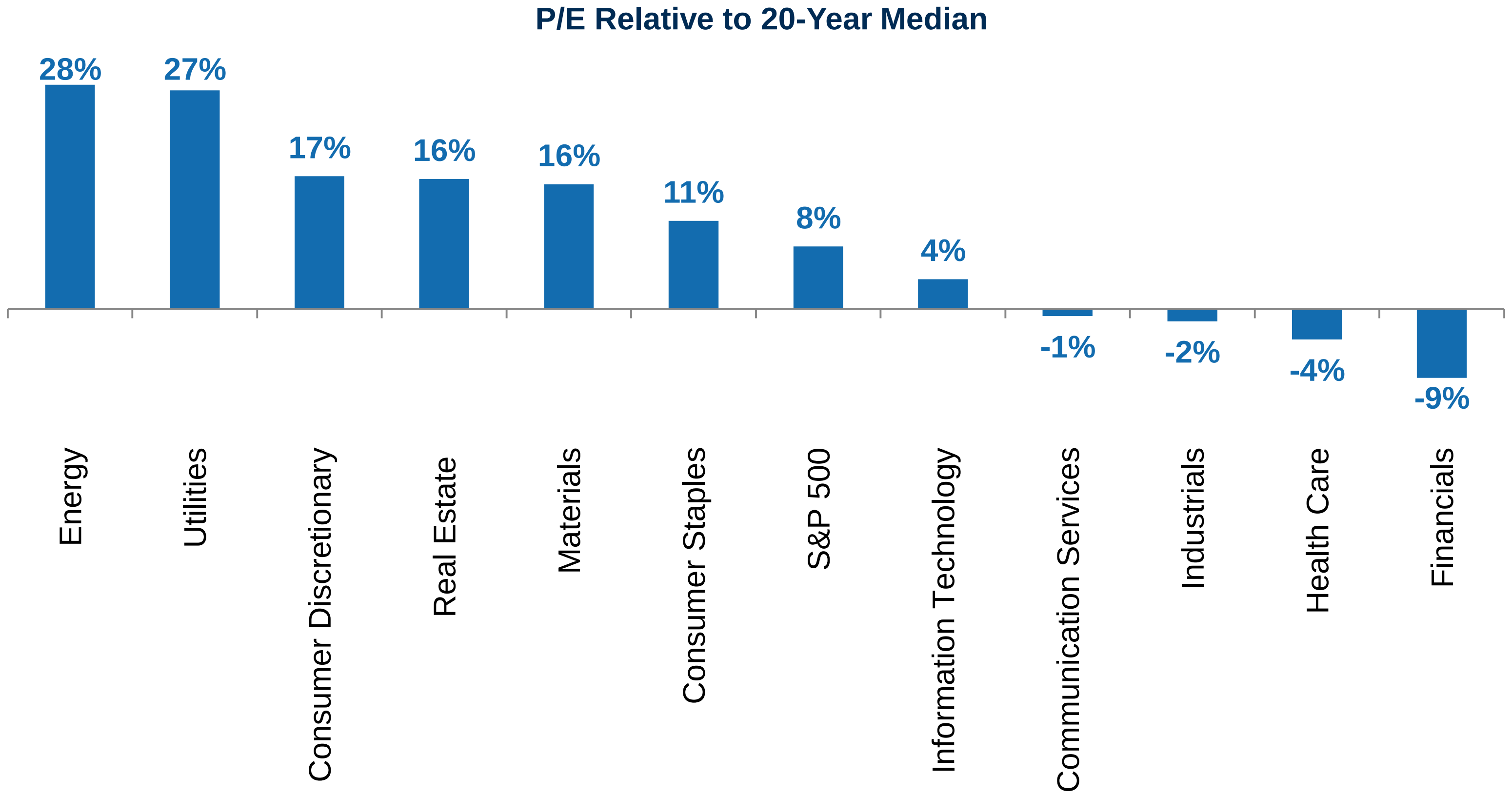


Spread of >350bps indicates stocks are attractive relative to bonds

Source: FactSet, Federal Reserve, and S&P, as of 3/31/19.

What Is In and Out of Favor?

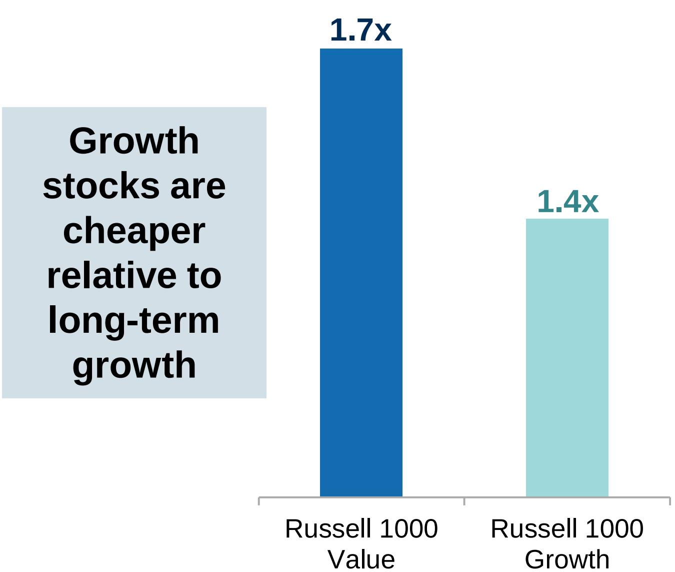
- Sector valuation varies with the more bond-like equity sectors trading at premiums to the market



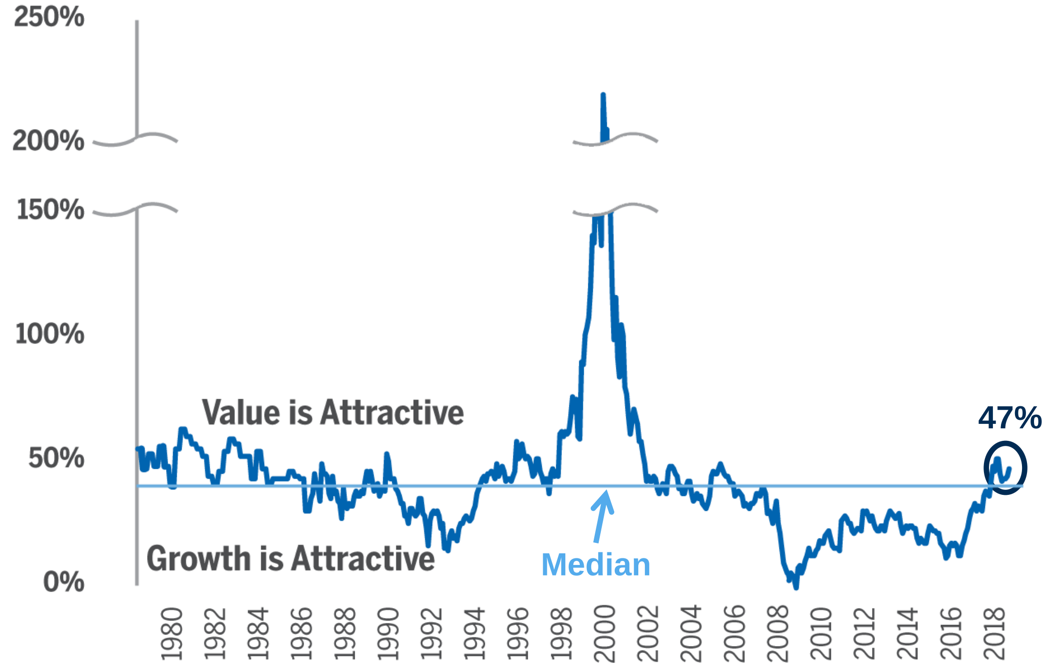
Source: FactSet and UBS, based on S&P 500 Index as of 3/31/19. The Communication Services, Consumer Discretionary, and Technology sectors' historical data have been restated to reflect September 2018 changes to the GICS sector classifications. Note that Consumer Discretionary ex-Internet Retail is a 1% premium to its 20-year median.

- Despite their outperformance over the past several years, Growth stocks are not very expensive compared to their Value equity counterparts relative to expected growth rates or history

Russell 1000 Growth vs. Russell 1000 Value PEG Ratio
(P/E Divided by Long-Term Growth Rate)



Russell 1000 Growth Relative to Russell 1000 Value P/E

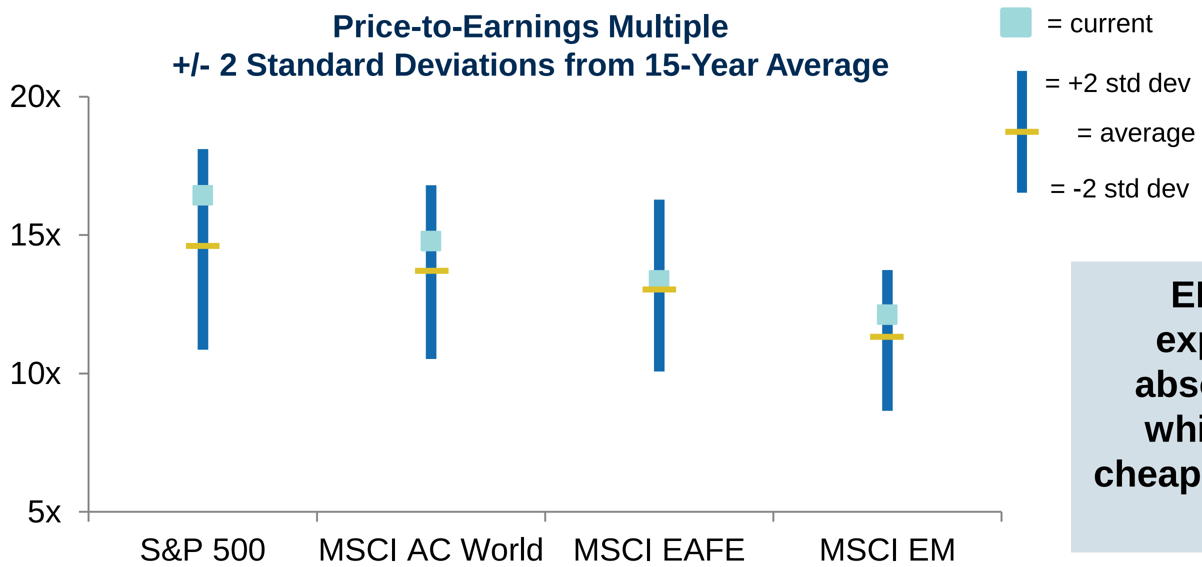


Source: FactSet, Bank of America as of 3/31/19.

Valuation

Global Equity Valuations Are Reasonable

- Price-to-earnings multiples around the world are modestly above their historical average, which is reasonable relative to very low global interest rates



EM is least expensive in absolute terms while EAFE is cheapest relative to history

Z-Score (Standard Deviations Above/Below Mean)			
1.1	0.7	0.1	0.7

Source: FactSet. Monthly estimates over past 15 years ending 3/31/19. MSCI AC World represents developed and emerging markets globally. MSCI EAFE represents developed countries in Europe, Australasia and the Far East. MSCI EM represents emerging markets globally. A Z-Score is the number of standard deviations a data point is from the mean. A z-score equal to zero, it is on the mean. If a z-score is equal to +1, it is 1 standard deviation above the mean. Standard deviation measures how much the data has deviated from its average. If data has a high standard deviation, there is large deviation from its mean, and vice versa. Standard deviation is generally used to compare the relative volatility of data sets.

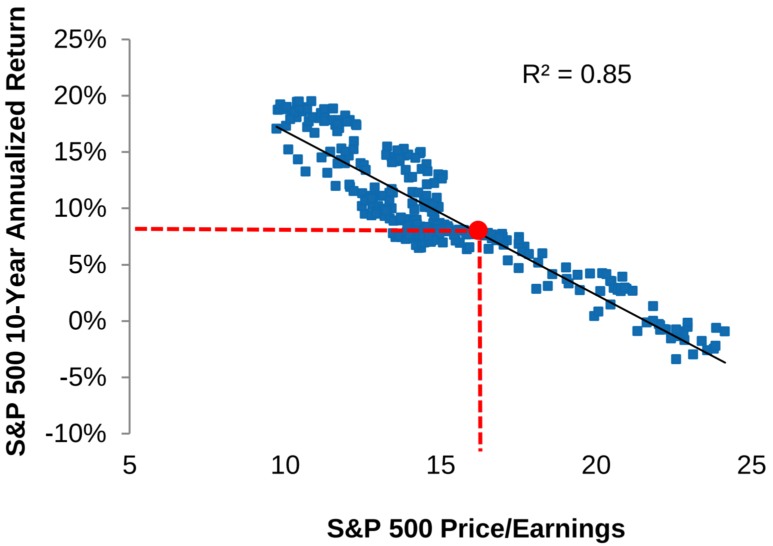
Valuation

Framework for Forecasting Returns

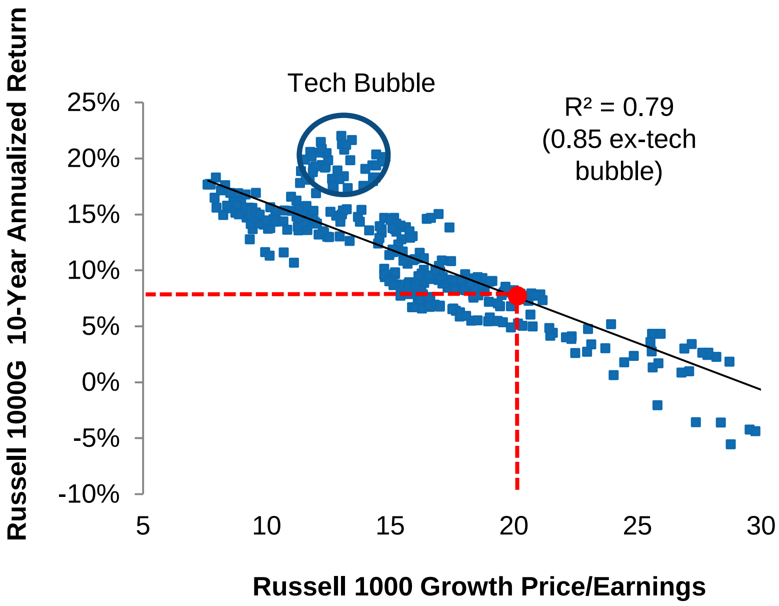
- There is a strong relationship between starting valuations and ensuing 10-year returns
- Current valuations suggest equities should materially outperform bonds over the coming decade

S&P 500 P/E vs.
10-Year Returns

■ = Month
● = Current



Russell 1000 Growth P/E vs.
10-Year Returns



Source: FactSet. Each dot represents the P/E during that month and the returns generated over the subsequent 10 years. The starting P/E ratio is the price divided by the next 12-month earnings per share estimate at the start of each 10-year period measured. Monthly data through March 2019 and beginning in January 1986 (S&P 500) and December 1978 (Russell 1000 Growth). The tech bubble, represented by the 10-year returns beginning in April 1987-March 1990 and ending in April 1997-March 2000, skewed the regression by resulting in higher returns for given valuations than the historical relationship would imply.

Disclosure

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The S&P 500 Index is an unmanaged index generally representative of the U.S. stock market without regard to company size. The S&P Composite 1500 is an unmanaged index that covers approximately 90% of the U.S. market capitalization. The Russell 1000® Growth Index is an unmanaged index designed to measure the performance of the largest 1000 companies in the Russell 3000 Index with higher price-to-book ratios and higher forecasted growth values. The Russell 1000 Value Index measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2000 Growth Index is an unmanaged index generally representative of common stocks designed to track performance of small-capitalization companies with greater than average growth orientation. The Russell 2000 Value Index is an unmanaged index generally representative of the small-cap value segment of the U.S. equity universe and measures the performance of Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values. The Russell 3000® Growth Index is an unmanaged index designed to measure the performance of those Russell 3000® Index companies with higher price-to-book ratios and higher forecasted growth values. The Russell 3000 Value Index is an unmanaged index generally representative of stocks from the Russell 3000 Index with lower price-to-book ratios and lower expected growth rates. The MSCI ACWI Index (gross) is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The MSCI ACWI consists of 45 country indices comprising 24 developed and 21 emerging market country indices. The MSCI ACWI ex USA Index (gross) captures large and mid cap representation across 23 of 24 Developed Markets (DM) countries excluding the US) and 23 Emerging Markets (EM) countries. The index covers approximately 85% of the global equity opportunity set outside the US. The indices presented are provided for illustrative purposes, reflect the reinvestment of dividends and do not assess fees and expenses that would have the effect of reducing returns. Investors cannot invest directly in any index. The index performance does not represent the returns of any portfolio advised by Fred Alger Management, Inc. and actual client results might differ materially than the indices shown. Note that past performance is no guarantee of future results. Comparison to a different index might have materially different results than those shown.

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