

# Outlook

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Investment Management Division

## (Un)Steady as She Goes

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“We cannot direct the wind, but we can adjust the sails.”

Common Adage



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Dear Clients,

2017 was a remarkable year. The US economy posted another year of growth, making this recovery the third-longest in the post-WWII era, at nearly nine years. Given the low probability of a recession in the next two quarters, the recovery is expected to move up a notch to rank as the second-longest, and has a very high likelihood of becoming the longest since 1945, if economic growth persists through mid-2019.

On a global basis, 179 of 192 economies in the International Monetary Fund's (IMF's) World Economic Outlook (WEO) forecast posted economic growth last year, and the IMF forecasts 2018 will have the fewest countries in recession ever.<sup>1</sup>

Unemployment rates have declined around the world, with 2.1 million jobs created in the US and a total of about 8.2 million newly employed people in the member countries of the Organisation for Economic Co-operation and Development (OECD).

Strong synchronized global growth, low and stable inflation, and easy monetary policy provided a favorable environment for robust and broad-based earnings growth and equity market appreciation in 2017, continuing a steady path maintained since the trough of the global financial crisis (GFC) in March 2009.

US equities returned 21.8% last year, developed markets 15.2%, and emerging markets had the strongest returns, at 31.0%, all measured in local-currency terms.

And yet, 2017 was a very unsteady year in other respects.

In last year's *Outlook*, we suggested that the Donald Trump presidency would be "unconventional," and the tweeting and teetering have certainly borne that out.

Tensions between the US and North Korea escalated to such an extent that some military experts have assigned a 50% probability to war between the two countries.<sup>2</sup> US-China relations also came under strain. President Trump's 2017 US National Security Strategy labeled China a strategic "competitor" that, together with Russia, challenges "American power, influence, and interests, attempting to erode American security and prosperity."<sup>3</sup>

Terrorist attacks increased in Western countries, and cyberattacks from all manner of perpetrators, including nation-states and criminals, reached record levels in scale and impact.<sup>4</sup>

In making investment decisions, how should our clients weigh the benefits of economic growth against the risks from such challenges to the global order? On the "Steady as She Goes" front, we will provide data and analysis on the

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underlying strength of the US economy and US earnings as well as the strength of household and private sector balance sheets. We will also show you why we do not think US equities are in a bubble. We provide similar data and analysis on developed and emerging markets. We will share analysis from our colleagues in Goldman Sachs Global Investment Research that shows how economic recoveries in developed countries are becoming longer.

On the “Unsteady as She Goes” front, we provide data and analysis on the long list of concerns that could derail our base case, including war with North Korea, major disruptions in the Middle East, and a cyberattack on US infrastructure. We touch on the manic prices in cryptocurrencies and crypto-affiliated stocks. But we also warn our clients that some of the most significant risks, such as war with North Korea or a major cyberattack, are not predictable.

As is our practice, we have provided excerpts from the experts. Some of them have an admirable track record of offering helpful insights, while others have proven to be consistently wrong. We provide such examples so that you can be alerted to how a cascade of incorrect information can negatively affect your decision making. As highlighted in our 2010 *Outlook* report, *Taking Stock of America*, Nobel Laureate in Economics Daniel Kahneman and the late Amos Tversky coined the term “availability cascade” for the way “a proposition can become irresistible simply by the media repeating it.”<sup>5</sup> We, like our clients, have to be cognizant of behavioral biases that could negatively impact our analysis and our views.

We recommend that clients stay invested in equities notwithstanding currently high valuations and the constant cascade of warnings that we are in an equity bubble. We also recommend clients maintain a strategic overweight to US assets for the long run, and enhance the returns of their portfolio by taking advantage of tactical opportunities in stocks, bonds and currencies. This recommendation comes with a note of caution. We have to remain vigilant, brace ourselves for continued cyberattacks and terrorism, and acknowledge that growing geopolitical tensions could result in an ugly and costly war.

As our longtime clients know, we have been mindfully optimistic with respect to the length and strength of this bull market, particularly with respect to the US. As early as January 2014—when we published our annual economic and investment *Outlook* for the year, *Within Sight of the Summit*—we stated that while we were within sight of the summit, we were not yet ready to call for a peak in equity prices. In our *Outlook* for 2015, *US Preeminence*, we recommended clients maintain their strategic overweight to US equities because the gap between the US and other major developed and emerging

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economies was continuing to widen. In our 2016 *Outlook* report, *The Last Innings*, we stated that this economic recovery and equity bull market had further innings to go. And most recently, in our *Outlook* for 2017, *Half Full*, we were still looking at the glass optimistically as half full. In this year’s economic and financial market *Outlook* report, *(Un)Steady as She Goes*, we recommend clients invest on the basis of the “Steady as She Goes” outlook but recognize the risks associated with the “Unsteady as She Goes” undertow.

We hope our 2018 *Outlook* arms you, our clients, with sound data and thoughtful analysis so you can prudently evaluate—and put into place—your strategic and tactical asset allocation, given expectations of steady economic growth and steadily appreciating financial markets, but within an unusually uncertain and unsteady political and geopolitical setting.

We also take this opportunity to wish you a very healthy, happy and, of course, prosperous New Year.

The Investment Strategy Group



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## (Un)Steady as She Goes

Since the trough of the global financial crisis (GFC), the US and global economies and financial markets have performed exceptionally well.

The US is on a steady course to register the longest period of growth in its post-WWII history and is well above its pre-GFC peak. US equity markets have risen nearly fivefold since their March 2009 trough, and residential and commercial real estate values have appreciated 41% and 87%, respectively. Such growth has led to a drop in unemployment and a commensurate increase in median household income and total household wealth.

On a global basis, the economy has grown by nearly one-third, buoyed by growth in emerging market countries, and global GDP is also well above its pre-crisis peak. Global equities as measured by the MSCI All Country World Index have risen nearly fourfold from trough levels, and residential and commercial real estate values have appreciated by over 20%. As is the case with the US, OECD aggregate data shows a drop in unemployment and a commensurate increase in household disposable income.

Notably, the pace of both economic growth and asset appreciation has been not only robust but remarkably steady.

Over the last 8.5 years, the US—the largest economy in the world—experienced growth in all but two of 35 quarters (the first quarter of 2011 and first quarter of 2014), both of which were partly attributed to problematic seasonal adjustments. Similarly, US equities did not experience a bear market, defined as a drop greater than 20%, during that time. Most recently, in 2017, the S&P 500 Index's largest peak-to-trough decline based on closing prices was 2.8%. Such steady appreciation from such high valuation levels has not occurred since 1945.

Global growth has been similarly steady and relatively synchronized, without a negative quarter

since the GFC, and most synchronized in 2017, when 179 of the 192 countries in the IMF WEO forecast experienced economic growth. Post-GFC, some smaller countries in Europe experienced a drop in GDP as a result of the Eurozone sovereign debt crisis and some emerging market countries experienced a drop in GDP as a result of the decline in commodity prices.

Global equities were remarkably steady as well, except for the bear market triggered by the Eurozone sovereign debt crisis in the second half of 2011. Since then, the drops in the MSCI All World Equity Index have been much more muted. Most recently, in 2017, the index did not experience a cumulative downdraft greater than 2.0%.

In contrast to such steady growth in the world economy and steady appreciation in asset prices since the GFC, the public narrative has been surprisingly negative and the level of unease high in both the US and elsewhere. Measures such as the Economic Policy Uncertainty Index<sup>6</sup> and Ambiguity Index<sup>7</sup> reflect concerns about an unsteady undertow. Well-respected pundits and investors have been warning of “bubble” valuations, recommending an exit from the US equity market. General levels of dissatisfaction “with the way things are going in the United States” has persistently hovered at about 70% since the GFC, compared with levels in the 30–40% range in the late 1990s, based on the most recent Gallup polls.<sup>8</sup> Similarly, confidence in US institutions such as the presidency, Congress, organized religion and banks has stayed at levels well below those of the late 1990s, and in some cases has actually declined further since 2009.

Both criminally motivated and geopolitically motivated cyberattacks have increased, as have incidents of terrorism, both homegrown and refugee-driven. We have also seen a rise in populism—at both ends of the political spectrum—in the US, across Europe, and in several key emerging market countries. Income inequality as measured by the OECD Gini coefficient has increased despite steady economic growth. Finally, geopolitical tensions between the two largest economies in the world—the US and China—have increased, as have concerns about North Korea's nuclear arms and ballistic-missile capabilities that could, if unchecked, imminently threaten US allies, if not the US mainland.

This extensive list of concerns has kept capital flows into riskier assets at bay. US equity funds have seen outflows

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**The pace of both economic growth and asset appreciation has been not only robust but remarkably steady.**

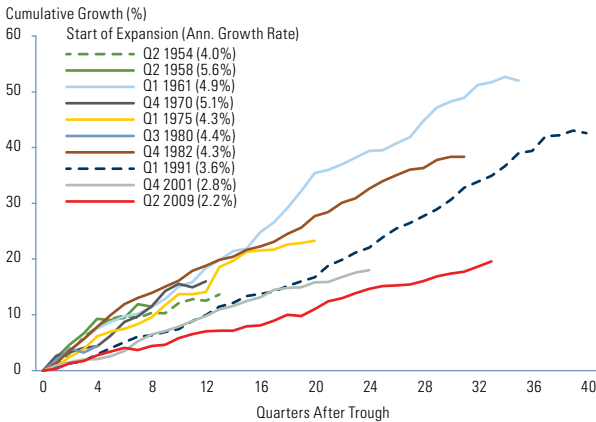
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## Exhibit 1: GDP Growth of Post-WWII US

### Expansions

The pace of this recovery has been slow but steady.



Data through Q3 2017.

Note: Excludes Q4 1945–Q4 1948 expansion. The NBER records an expansion, despite annual real GDP contracting slightly between 1946 and 1947.

Source: Investment Strategy Group, Datastream, NBER.

of approximately \$185 billion, compared with inflows of roughly \$1.8 trillion into bond funds since the trough of the equity market in 2009.

While the facts about the global economy and financial markets point to a “Steady as She Goes” outlook, sentiment indicators, the rise of populism and asset flows reflect an “Unsteady as She Goes” undertow. The key question for our clients is whether in 2018 the major economies and financial markets will stay on their current upward course or whether key economies will get derailed by deteriorating geopolitics, a major cyberattack or terrorist attack, poor monetary and fiscal policies, the rise of extremist populist parties to positions of influence in government institutions in key countries, or some other shock to the global order.

We begin our *Outlook* with a review of the economic and financial market data underlying this steady and broad-based recovery from the GFC. As is typical of our past *Outlook* reports, we will focus on key developed and emerging markets, but with greater emphasis on the US because it has the largest share of global GDP, at about 25%, and largest share of global equities, at about 53%.

We will then turn to those factors such as deteriorating political and geopolitical conditions that have contributed to the pervasive sense of an unsteady global environment and led to unease among pundits and investors.

In weighing the two sets of forces that bear upon our clients’ portfolios, we draw the same conclusion

now that we have since November 2013 when US equities entered the ninth decile of valuations: that clients should remain fully invested in equities and beta-driven assets despite high valuations. We show why we believe US equities are not yet in bubble territory, and are driven instead by underlying earnings and continued economic growth. We also analyze the current low level of inflation volatility and its impact on equity valuation metrics.

Finally, we provide our expected returns for 2018 and the next five years, including our tactical asset allocation recommendations, and dispel the persistent myth of mean reversion in equities and fixed income yield levels. We conclude with our key takeaways.

### Steady as She Goes

We begin by examining economic growth data and the impact of steady growth on improving employment, income and household wealth. We then turn to the impact of steady growth on earnings that, in turn, have sustained the steady appreciation of most equity markets.

#### Economic Growth

After another year of steady growth, the US economic recovery—at 8.5 years—has become the third-longest in the post-WWII period. Given the relatively low probability of recession through mid-2019 (discussed below), this recovery is on course to exceed the 8.75-year recovery of 1961 and the 10-year recovery of 1991. As shown in Exhibit 1, growth has averaged 2.2% per year since the trough of the GFC.

The slow but steady pace of this recovery has led to a constant barrage of negative commentary even well after the trough of the GFC. About a year after the trough, Nobel Laureate Paul Krugman of the City University of New York warned of the “Third Depression.”<sup>9</sup> Nearly two years later, Professor Barry Eichengreen of the University of California at Berkeley warned of the demise of the dollar in “Why the Dollar’s Reign Is Near an End.”<sup>10</sup>

Even after seven years of steady growth, many economists and market observers were not convinced of the steadiness of this recovery. Professor Larry Summers of Harvard University stated, “I’m more convinced of secular stagnation than ever before” in early 2016.<sup>11</sup> As recently

as November 2017, a highly regarded financial columnist wrote that the “challenges of a disembodied economy” demand a “rethink of public policy.”<sup>12</sup> This commentary and others like it have come despite the acceleration of growth in most economies in 2017. In the US, economic growth accelerated from 2.2% in the first half of 2017 to an estimated 2.8% in the second half of the year. Global growth accelerated from 3.0% to an estimated 3.4% over the same period.

Such negative punditry notwithstanding, this long and steady recovery has resulted in the following:

- A \$2.8 trillion increase in the size of the US economy in 2009 dollars (larger than the entire GDP of the UK), or \$3.2 trillion in 2017 dollars (just 13% smaller than the entire GDP of Germany)—which certainly does not point to a “stagnating” or “disembodied” economy
- An increase in the US share of global nominal GDP, further affirming the United States’ stature as the largest economy in the world
- A 5.9 percentage point drop in the unemployment rate to the lowest level seen since the lows of early 2000 and the largest drop in the unemployment rate since WWII, resulting in an increase in the number of jobs of 17.6 million (of which 2.1 million jobs were added in 2017)
- A 168 percentage point increase in household net worth as a share of disposable income (from 505% to a high of 673%) at a time when real median income itself had risen by 11% from its trough levels. The current ratio is now above the pre-GFC level. With such improvement in net worth, households have started to reduce savings (see Exhibit 2) and boost consumption
- An increase in US GDP per capita that has further widened the gap between US GDP per capita and that of other major countries

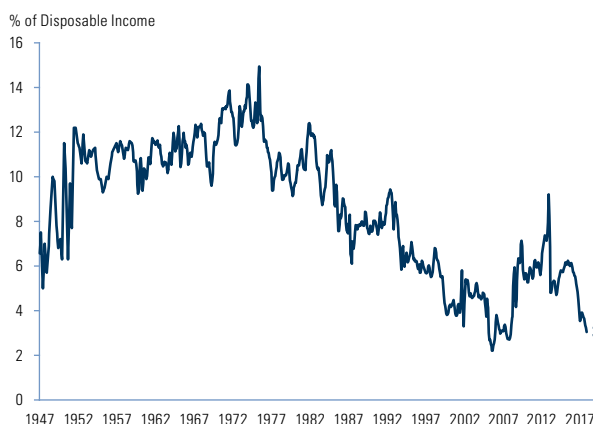
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**It may not be “full speed ahead” for the US economy, but it is hard to deny the many positive contributions of this long and steady expansion.**

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## Exhibit 2: US Personal Savings Rate

Rising net worth has allowed households to reduce savings.



Data through November 2017.  
 Note: Showing the 3-month moving average.  
 Source: Investment Strategy Group, Datastream.

Admiral David Farragut said at the Battle of Mobile Bay in 1864, “Damn the torpedoes, full speed ahead.”<sup>13</sup> It may not be “full speed ahead” for the US economy, but it is hard to deny the many positive contributions of this long and steady expansion.

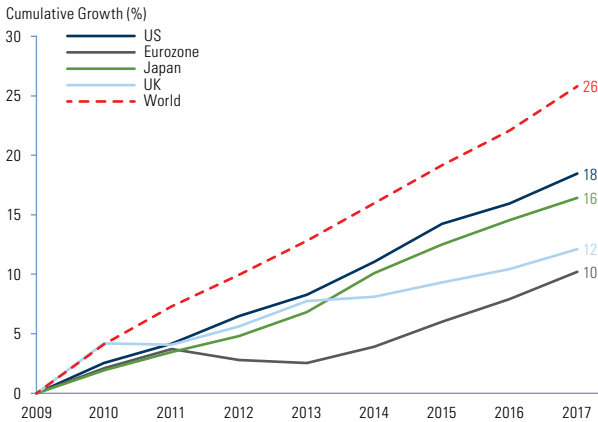
On a global basis, growth has been steady across all key countries and regions, as shown in Exhibits 3 and 4. By the end of 2017, the GDP of key countries exceeded their respective pre-GFC levels (see Exhibit 5), with the GDP of China and India nearly doubling over the period. We should note that US growth rates have exceeded those of other developed economies and two key emerging market economies. With the exception of the hit to growth from the Eurozone sovereign debt crisis, this growth has been remarkably steady.

As is the case in the US, for key OECD countries (ex-US) this growth has led to a drop in the unemployment rate of 1.9 percentage points and an increase in household net worth as a share of disposable income of 79 percentage points.

On a GDP per capita basis, the US experienced the fourth-largest increase in its GDP per capita relative to other post-WWII recoveries, and the highest growth rate of any key developed and emerging market economy except China and India (see Exhibit 6). Even then, the gap between the US and all the other countries widened given the very high starting GDP per capita of the US—even a smaller percentage increase can result

### Exhibit 3: Post-Crisis Developed Market Real GDP Growth

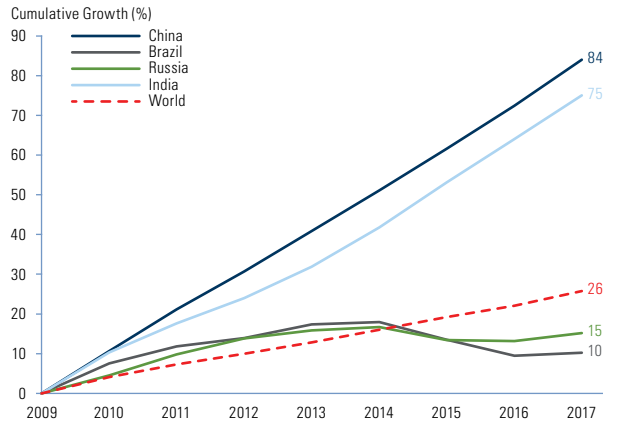
Growth has been steady across advanced economies ...



Data through 2017.  
Source: Investment Strategy Group, IMF.

### Exhibit 4: Post-Crisis Emerging Market Real GDP Growth

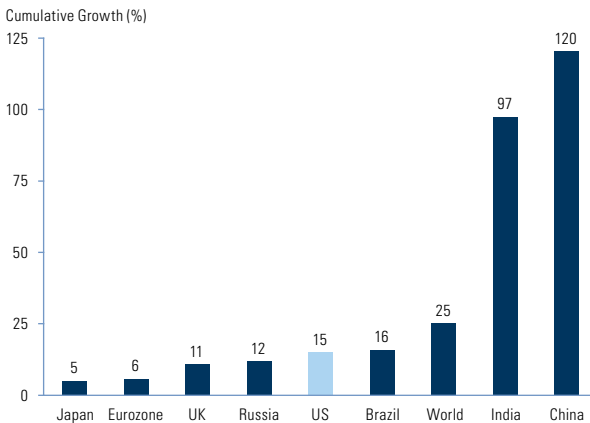
... as well as among emerging market countries.



Data through 2017.  
Source: Investment Strategy Group, IMF.

### Exhibit 5: Real GDP Growth Since 2007

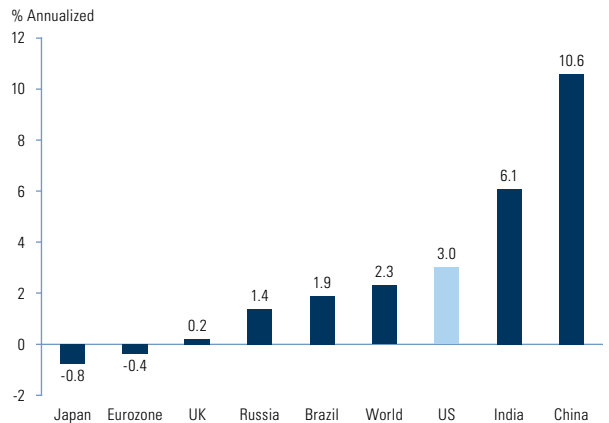
All major countries and regions have seen their economies grow to above pre-crisis levels.



Data through 2017.  
Source: Investment Strategy Group, IMF.

### Exhibit 6: GDP per Capita Growth Since 2009

The US has seen faster GDP per capita growth than any other major economy, except China and India.



Data through 2017.  
Note: Nominal GDP per capita measured in US dollars.  
Source: Investment Strategy Group, IMF.

in a significant change in dollars per capita.

We should note that despite such high growth rates, China's GDP per capita is still below the poverty level of the US on a nominal basis and only 38% above on a purchasing-power-parity basis.

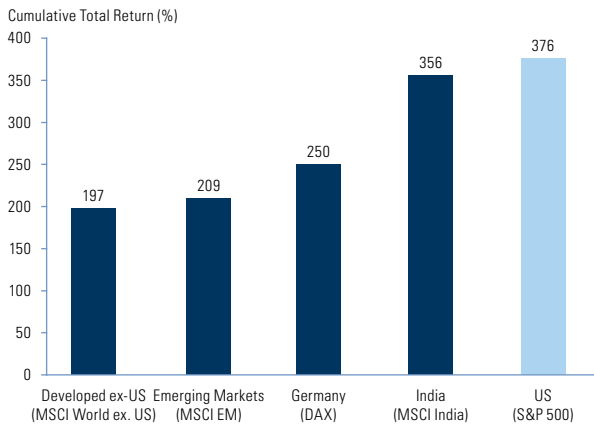
As discussed in Section II of this report, we expect economic growth to continue at this steady pace in 2018, with a slight increase from an estimated 2.3% in 2017 to 2.6% in the US, and an estimated 3.2% in 2017 to 3.4% globally.

### Equity Markets

Equity markets have had a similarly steady pace of appreciation, especially in the US, as shown in Exhibit 7. Since the trough of the crisis, US equities have provided a total return of 376%, or 19.4% annualized—far in excess of the 197% (13.2% annualized) in other developed markets in local-currency terms and of the 199% (13.2% annualized) from a US dollar perspective. Within developed markets outside the US, German equities

### Exhibit 7: Total Returns Since Crisis Trough

US equities have outperformed developed and emerging market stocks.



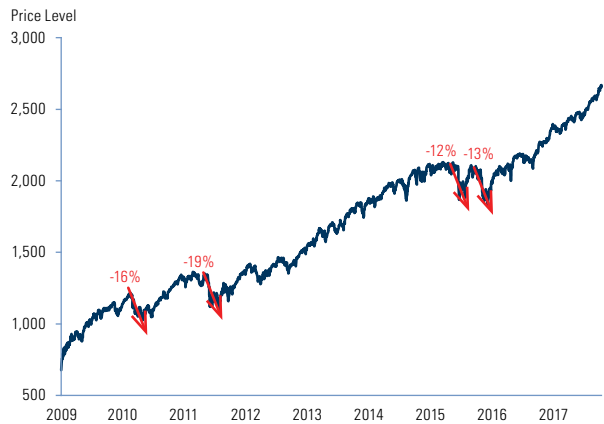
Data through December 31, 2017.

Note: Showing local-currency total returns since March 9, 2009, the daily closing low of the S&P 500.

Source: Investment Strategy Group, Datastream.

### Exhibit 8: S&P 500 Post-Crisis Drawdowns

There have been only four corrections greater than 10% in the S&P 500 since the crisis trough.



Data through December 31, 2017.

Source: Investment Strategy Group, Bloomberg.

provided the strongest total return at 250% (15.3% annualized) in local currency and 233% (14.6% annualized) in dollar terms.

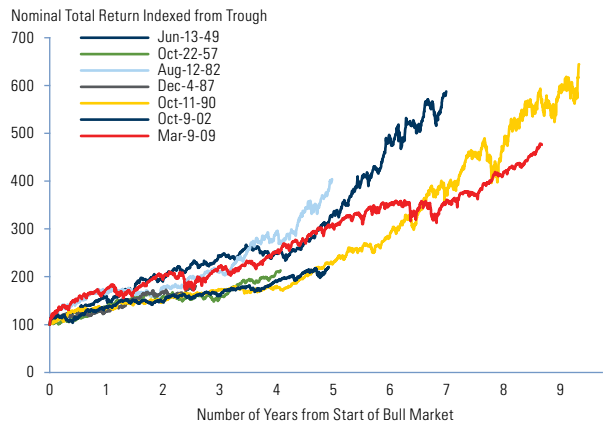
US equities far outpaced emerging market equities as well. Emerging markets returned 209% (13.7% annualized) in local-currency terms and 204% (13.4% annualized) in dollar terms. Within emerging markets, India had the strongest performance with a total return of 356% (18.8% annualized) in local-currency terms and 270% (16.0% annualized) in dollar terms.

US equities have not only outpaced other equity markets, they have also been among the steadiest in their upward trajectory. As shown in Exhibit 8, the S&P 500 has experienced only four corrections with a drop greater than 10% since the trough of equities in March 2009, and only one of the corrections approached—yet did not reach—bear-market levels. The bull market is now the second-longest in the post-WWII period, and is less than a year away from becoming the longest (see Exhibit 9). However, it is still 35% away from becoming the strongest in the post-WWII period, and it is not our base case that it will.

Many market participants have stated that this bull market is in bubble territory, created by some combination of easy monetary policy, President Trump-induced euphoria, irrational exuberance and the FAANGs (the acronym given to Facebook, Amazon, Apple, Netflix and Google, or FAAMGs

### Exhibit 9: Post-WWII US Equity Bull Markets

The current bull market is less than a year away from becoming the longest since 1945.



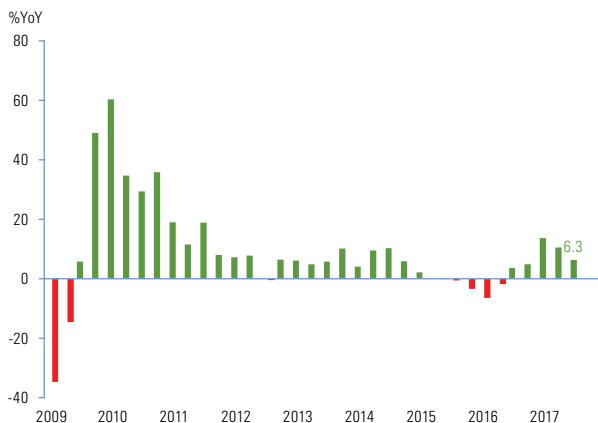
Data through December 31, 2017.

Source: Investment Strategy Group, Bloomberg.

for those who prefer to substitute Microsoft for Netflix), particularly after the 21.8% total return of the S&P 500 in 2017. Warnings of a bubble about to burst have been sounded over the last few years by such notables as Nobel Laureate Robert Shiller of Yale University, who designed, along with Professor John Campbell of Harvard University, the Shiller cyclically adjusted price-to-earnings (CAPE) ratio; Shiller cautioned investors

### Exhibit 10: S&P 500 Quarterly Earnings Growth

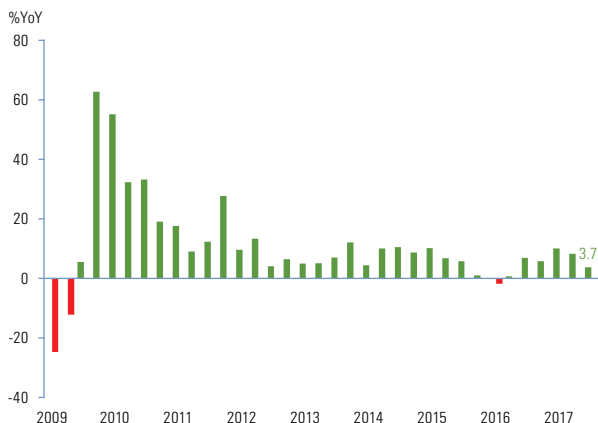
US corporate earnings have grown steadily after their rebound from the crisis.



Data through Q3 2017.  
Source: Investment Strategy Group, Factset.

### Exhibit 11: S&P 500 ex-Energy Quarterly Earnings Growth

Excluding the energy sector, S&P 500 earnings have declined in only one quarter since 2010.



Data through Q3 2017.  
Source: Investment Strategy Group, Factset.

about the “Trump Bull Market” in March 2017.<sup>14</sup> Others have warned that this rally is driven by “the continuous injection of funds into the marketplace by central banks.”<sup>15</sup> A large and well-respected investment consulting firm suggested investors underweight US equities as early as November 2013.<sup>16</sup> Stanley Druckenmiller, “legendary billionaire investor” and chairman and CEO of the Duquesne Family Office, told the audience at an investor conference in May 2016 to “get out of the stock market,” partly due to the Federal Reserve’s easy monetary policy.<sup>17</sup>

While we acknowledge that US equity valuations, which are now in the 10th decile, are high, we do not believe that equities are in a bubble. We believe that this equity rally has been driven by four factors that will persist into next year, barring a major external shock:

- Strong, relatively steady and broad-based earnings growth
- A regime shift that began nearly 22 years ago to a sustained period of low and stable inflation
- Low probability of recession
- A disdain for this rally for most of the last eight years; this has been markedly different from the euphoria that has preceded past market peaks

### Strong, Relatively Steady and Broad-Based Earnings Growth

We believe that the foremost driver of this rally has been strong growth in earnings rather than multiple expansion driven by monetary policy (“easy money”), President Trump-induced euphoria or irrational exuberance. As highlighted above, US equities have generated the strongest returns, relative to developed and emerging market equities, since the trough of the S&P 500. In the US, Japan and emerging markets, and unlike in the Eurozone and in the UK, most of these returns can be attributed to the steady growth in earnings.

As shown in Exhibit 10, earnings growth of the S&P 500 companies has been steady, after the initial rebound following the depths of the GFC. If we exclude the impact of declining oil prices in the second half of 2014 through early 2016 from \$116 per barrel to a low of \$27 per barrel of Brent crude, S&P 500 companies experienced only one quarter of negative year-over-year EPS growth (see Exhibit 11).

Since the trough of the cycle, earnings growth has accounted for over 46% of S&P 500 returns, dividends have accounted for over 21% and multiple expansion has accounted for the rest at 32% (numbers do not add up to 100% due to rounding). Alternatively put, 67% of the returns of this bull market were not driven by multiple expansion: a bull market where the preponderance of returns are from underlying

earnings and dividends is unlikely to be in bubble territory.

In order to attribute the 376% total return of the S&P 500 to earnings growth, dividends and multiple expansion, we used forward-looking metrics to avoid the distortion from base effects of negative earnings and the mismatch between the price of the S&P 500 at any point in time and the earnings known at that time. In other words, investors do not price the S&P 500 on, say, January 8, based on earnings on that date—those earnings will not be known until May. We, therefore, use forward earnings estimates for the next 12 months and a market multiple based on those forward-looking earnings. For those who may be skeptical about using forward earnings, we should note that we also used trailing 12-month earnings growth rates and the results were nearly identical.

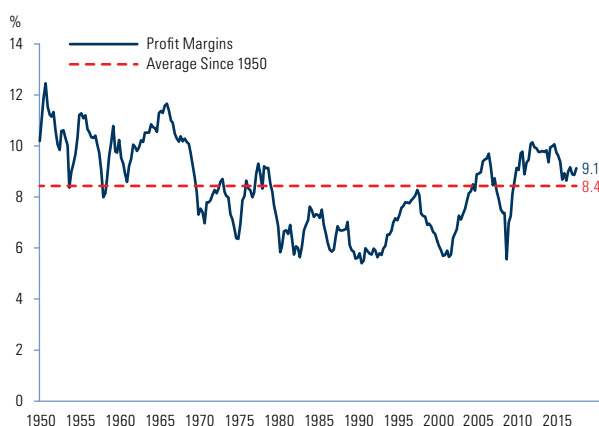
Another metric used to gauge the steady growth in profitability is the levels of profits from the national income and product accounts (NIPA). NIPA profits increased from a trough level of \$1.0 trillion to \$2.2 trillion by the third quarter of 2017, a colossal increase of \$1.2 trillion. To put this number in context, this increase is equivalent to the entire GDP of Mexico. As a share of GDP, profits troughed at 7.0% and stood at 11.4% in the third quarter of 2017. As shown in Exhibit 12, profit margins have also remained at high levels after their surge following the GFC.

According to Empirical Research Partners, the increase in margins in manufacturing companies since 2000 can be attributed to wage savings from offshoring and from more efficient domestic plants (39%), the decline in the effective tax rates (36%) and the decline in interest rates (25%).<sup>18</sup> On a forward-looking basis, we do not expect the same kind of improvement in margins as we have seen in the past, but we also do not anticipate a notable decrement because:

- Effective tax rates will be lower, which would improve margins
- A modest and slow rise in interest rates would have a limited impact on margins given the long duration and fixed rates of most corporate debt (see Section III for further details)
- A modest and slow increase in wages as a result of lower unemployment rates will be partially offset by greater automation, having a limited net effect on margins

## Exhibit 12: NIPA Profit Margins

Profit margins have risen and remain above their historical average.



Data through Q3 2017.

Note: Profit margins adjusted for inventory and capital consumption.

Source: Investment Strategy Group, US Department of Commerce, Bureau of Economic Analysis.

The growth in earnings in the US was relatively broad-based as well. All sectors grew earnings, with the smallest contribution from utilities and energy and the greatest contribution from the information technology, financials and consumer discretionary sectors. Within the information technology and consumer discretionary sectors, the FAANGs were a dominant driver of earnings.

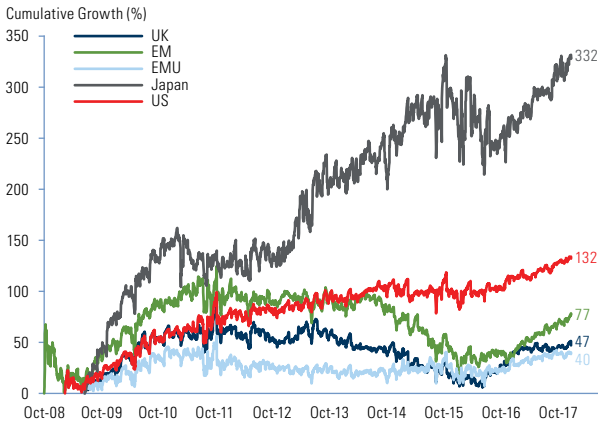
In addition to the misconception that this rally has been driven by easy money, irrational exuberance or the impact of Trump administration policies, we believe that there is a significant misconception about the role of the FAANGs in boosting returns. A common refrain has been that the FAANGs account for a disproportionate share of US equity returns. Even on the last business day of 2017, the *Wall Street Journal* featured an article stating “the US stock market’s rally this year was driven to an unprecedented degree by the tech industry.”<sup>19</sup>

The facts suggest otherwise. In July 2017, when the S&P 500 had returned 9.5% year-to-date, we wrote a *Sunday Night Insight* titled *This Rally Does NOT Hang on the FAANGs*, to show that, contrary to the prevailing lore, the S&P 500-ex the FAANGs was not languishing with low- to mid-single-digit returns.

In an effort to dispel this misconception and reaffirm the strong underpinnings of this rally, we, once again, analyze the impact of the FAANGs. In 2017, the S&P 500 returned 21.8%, the FAANGs,

### Exhibit 13: Earnings Growth Since Crisis Trough

US earnings have grown faster than those of other key markets, except for Japan.



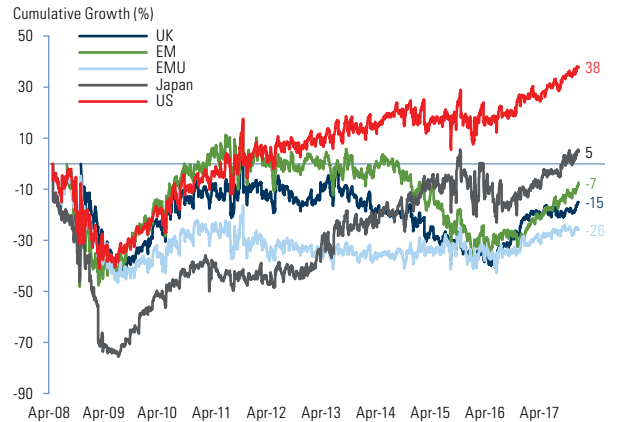
Data through December 31, 2017.

Note: Based on 12-month forward earnings of MSCI indices and using the crisis troughs for the UK (Jul-10-09), EM (Oct-27-08), EMU (Jul-10-09), Japan (Jul-13-09) and US (Mar-9-09).

Source: Investment Strategy Group, Datastream.

### Exhibit 14: Earnings Growth Since Pre-Crisis Peak

In contrast with other major markets, US earnings are well above pre-crisis highs.



Data through December 31, 2017.

Note: Based on 12-month forward earnings of MSCI indices and using the pre-crisis peaks for the UK (Nov-4-08), EM (Jul-31-08), EMU (Apr-28-08), Japan (Apr-28-08) and US (Apr-25-08).

Source: Investment Strategy Group, Datastream.

46.5%, the FAAMGs, 45.0%, and the entire information technology sector, 38.8%. If we take out each of these groups with their respective market shares of 10.8%, 13.4% and 23.8%, and reassign those weights back into the rest of the S&P 500, the returns for the S&P 500 decline to 19.4% without the FAANGs, 18.9% without the FAAMGs, and 17.4% without the entire information technology sector. By any measure, such returns are extremely strong. To put these numbers in context, the bull market between 2002 and 2007 provided an annualized return of 17.1%.

Similarly, the 40.1% spread between the returns of the best-performing sector (information technology at 38.8%) and the worst-performing sector (telecom at -1.3%) in 2017 has been highlighted as an “unprecedented” outlier. Since 1990, the widest spreads occurred in the dot-com boom-and-bust era—more specifically, 94% in 1999 and 98% in 2000. Over one-third of the time, spreads have ranged between 37% and 43%, putting the 2017 spread between sectors in line with these numbers.

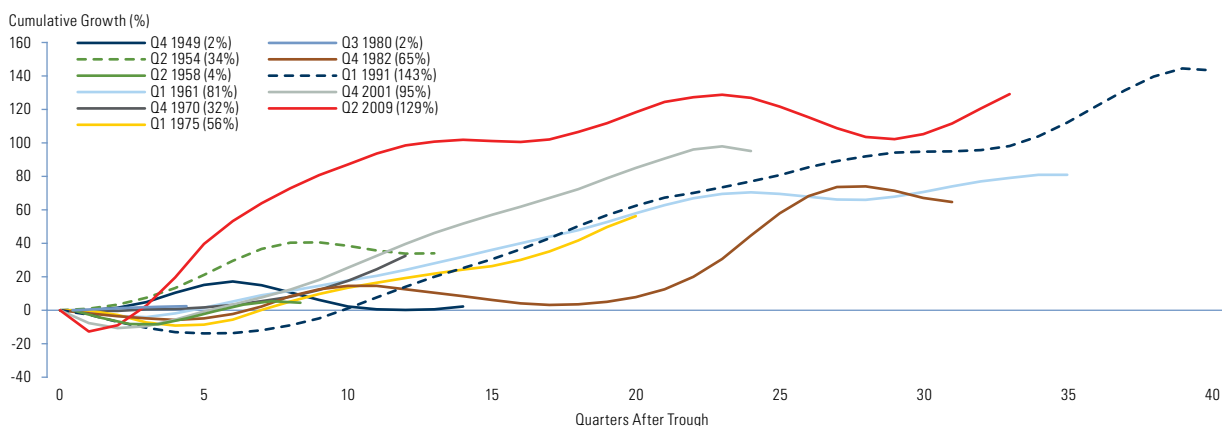
The role of the FAANGs, the FAAMGs and the information technology sector is much more muted since the inception of the FAANGs in the second quarter of 2012, when the Facebook initial public offering was made. Over this period, the S&P 500 returned 15.5% annualized, compared to 14.7% without the FAANGs, 14.5% without the FAAMGs and 14.5% without the technology sector.

While other countries and regions have also experienced steady growth in earnings, the pace of earnings growth has been strongest in Japan and the US. As shown in Exhibit 13, US earnings outpaced those of the Eurozone, the UK and even emerging markets. The US earnings growth rate significantly lagged the earnings growth rate in Japan, but Japan achieved its earnings with the tailwind of a near-20% depreciation in the trade-weighted yen from the GFC to its lowest levels, whereas the US trade-weighted dollar appreciated about 14% before its recent depreciation in 2017. Furthermore, as shown in Exhibit 14, US earnings have now exceeded their prior peak by a total of 38%, while Japan’s earnings are barely higher than their 2008 peak. Earnings in the Eurozone, UK and emerging markets remain below peak levels. We should note that to avoid the mathematical problem of computing growth rates with negative earnings in the denominator, we have used forward earnings as a measure of earnings growth over this period.

As many of our clients know, US preeminence has been our investment theme for the past nine years, since the depths of the GFC. We believe that this investment theme is intact as it enters its 10th year. Much of our conviction has come from strengths we have discussed at length in prior *Outlook* reports: technological innovation, increasing export competitiveness, higher productivity levels, a more flexible labor

## Exhibit 15: Cumulative S&P 500 Earnings Growth During Economic Expansions

Despite slow GDP growth, US earnings have grown at the fastest pace of any post-WWII expansion.



Data through Q3 2017.

Note: Showing the 12-month moving average operating earnings growth for each expansion.

Source: Investment Strategy Group, Robert Shiller, Datastream.

and regulatory environment (especially relative to Europe), more favorable demographics relative to most developed and emerging market countries, abundant natural resources and, as we pointed out in our 2011 *Outlook* report, *Stay the Course*, structural resilience. This steady and broad-

based earnings growth since the trough of the crisis further confirms our view, and our strategic overweight to US assets remains.

As shown in Exhibit 15, this earnings recovery has been the strongest of any in the post-WWII period, which is remarkable given that the economic recovery has been the slowest over the same period (see Exhibit 1).

We expect US earnings to increase by about 15–18% in 2018, of which 7–11% would be organic growth and in line with 2017 growth rates. The remaining 8% would result from lower corporate tax rates.

### Regime Shift in Inflation Volatility

A second factor that has contributed to this strong rally has been the relatively low and stable inflation. About 11 years ago, in July 2006, we suggested that average market valuations have been higher in periods of low and stable inflation. We had shown that across some key valuation metrics that we use in the Investment Strategy Group, average valuations were about 46% higher than their long-term average since 1900 and 36% higher if we looked at the post-WWII period.

Since then, we have expanded our analysis. We use a series of tools (Hidden Markov Model and Generalized AutoRegressive Conditional Heteroskedasticity—or GARCH Model) to analyze shifts in inflation regimes.


We have concluded, with a 99% confidence level (statistically speaking), that we have been in a

Outlook

Investment  
Strategy Group  
January 2011


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Stay the Course



*The American Evolution:* Much like George Washington crossing the Delaware River in the winter of 1776-77, America's structural resilience, fortitude and ingenuity will carry the economy and financial markets in 2011 – and beyond.

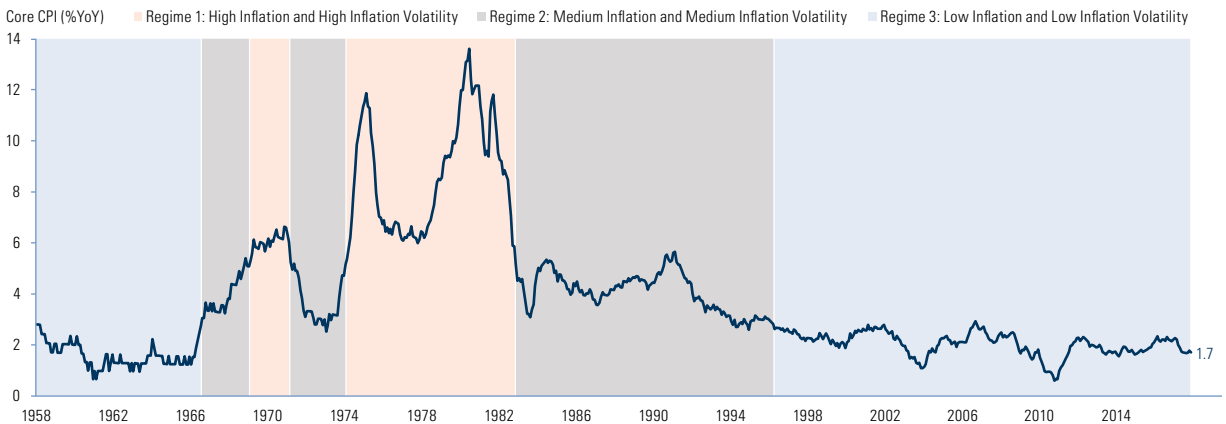
For Private Wealth  
Management Clients





## Exhibit 16: US Inflation Regimes

We have been in a regime of low inflation and low inflation volatility since April 1996.



Data through November 2017.  
Source: Investment Strategy Group, Datastream.

different inflation regime since April 1996—nearly 22 years. As shown in Exhibit 16, the post-WWII period can be bucketed into three different regimes:

- High inflation and high inflation volatility
- Medium inflation and medium inflation volatility
- Low inflation and low inflation volatility

While the long-term average inflation as measured by core consumer price index (CPI) inflation is 3.7% with a standard deviation of 2.6%, the current low inflation and low inflation regime average is 1.9% with a standard deviation of 0.5%. While regimes shift over time and we may well shift to a higher level of inflation and inflation volatility at some distant point, we believe that we will be in the current regime for the foreseeable future. This being the case, the valuation characteristics of the current regime are very relevant to the present and future path of this equity market rally and critical to our longer-term return expectations.

As shown in Exhibit 17, median valuations across six valuation metrics, including the widely quoted Shiller CAPE, are about 35% higher in this lower inflation regime (the blue bars) than the median levels in the post-WWII period (the red bars). For example, the median multiple for the Shiller CAPE is 26 in the current regime while the long-term median since WWII is 18. If we were to use the low inflation regime metric of 26, we would conclude that US equities are not anywhere near

as overvalued as they appear. At the current CAPE level of 32, US equities appear extended by only 24%, but compared with the long-term median, US equities appear extended by a whopping 78%. If, indeed, we are in a low inflation and low volatility of inflation regime, multiples have not expanded beyond reason to generate the 376% return since the trough of the S&P 500 Index.

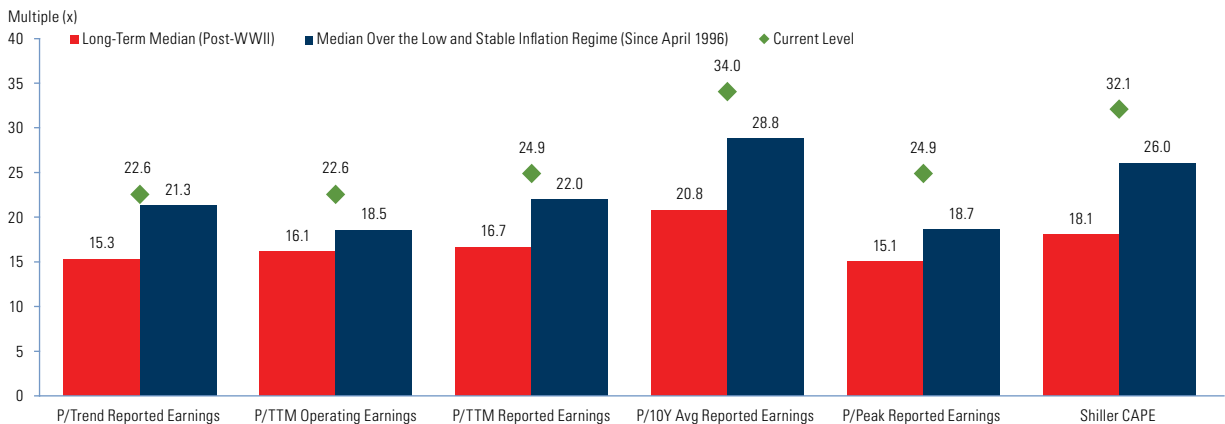
We conclude, again, that this rally is not driven, at least to any meaningful extent, by the Federal Reserve's quantitative easing or zero interest rate policy since the GFC. It has been sustained by a 22-year period of low inflation and low volatility of inflation that is likely to persist even as the Federal Reserve continues on its steady path of interest rate hikes.

### Low Probability of Recession

A third factor that has sustained this rally has been the low probability of recession over the last 8.5 years. As highlighted earlier, the slow but steady recovery is close to being the second-longest recovery in the post-WWII history. Importantly, for most of this recovery, the probability of a recession has been extremely low. As shown in Exhibit 18, the Investment Strategy Group's proprietary recession model, which is an average of several models that incorporate economic data, survey data such as purchasing managers indices, and indicators such as the Conference Board Leading Economic Indicator, has measured low probabilities of a recession for most of this period. Our measure had been below 10% through the

## Exhibit 17: S&P 500 Valuation Multiples in Low-Inflation Regimes

Multiples in this lower-inflation regime are about 35% higher than the post-WWII median.

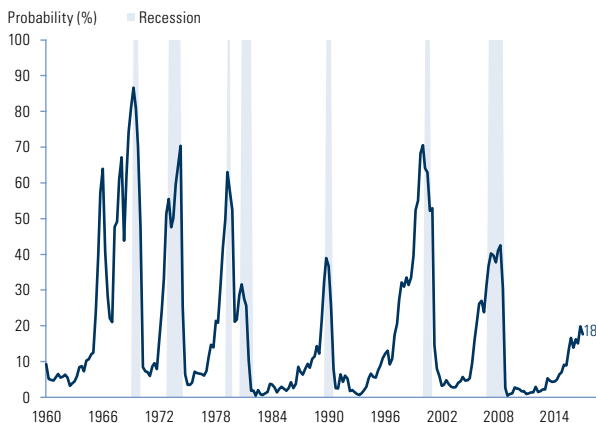


Data through December 31, 2017.

Source: Investment Strategy Group, Robert Shiller, Datastream, Standard and Poor's.

## Exhibit 18: Probability of a US Recession

For most of this recovery, the probability of a recession has been low.



Data through December 31, 2017.

Source: Investment Strategy Group.

## Exhibit 19: Odds of Various S&P 500 One-Year Total Returns During US Economic Expansions

When the probability of recession is low, the likelihood of positive returns is very high.



Data as of December 31, 2017.

Note: Based on data since 1945.

Source: Investment Strategy Group, Bloomberg.

first quarter of 2016 and currently stands at 17.6% probability of a recession. This model is one of many inputs into our assessment of US recession risk. The Bloomberg survey of economists, which provides insight into the consensus thinking at the time, has been similarly subdued and currently stands at 15%.

When the probability of recession is low, the likelihood of positive returns is very high. As shown in Exhibit 19—an exhibit that may be

familiar to many of our clients from our 2017 *Outlook* client calls—the probability of positive returns during expansions is 87%. Furthermore, the probability of a higher positive return is substantially greater than the probability of a higher negative return. In fact, the probability of 20% returns like those experienced in 2017 is 31%. A bull market, therefore, is more likely to be sustained when investors expect a low probability of recession.

---

We believe the probability of a US recession will continue to be low for the next two years owing to:

- Continuing favorable monetary policy
- Favorable fiscal policy as a result of the Tax Cuts and Jobs Act of 2017
- An absence of the imbalances that have led to some past recessions
- Structural factors that support longer recoveries and shallower boom-and-bust cycles

In the post-WWII period, recessions in the US have been triggered by Federal Reserve tightening of monetary policy, by economic imbalances such as the dot-com bubble of 2000 and the housing bubble of 2008, or by external shocks such as the Arab oil embargo of 1973. Because we believe that the first two triggers of past recessions are absent, as discussed below, we assign a probability of only 10% to a recession in 2018. However, we acknowledge that the risk of external shocks has increased significantly. We discuss those risks later as we evaluate the factors that have contributed to an “Unsteady as She Goes” undertow.

#### Favorable Monetary Policy

Since the first interest rate hike in December of 2015, the Federal Reserve has hiked rates four more times and started to reduce the reinvestment of principal payments from securities held on its balance sheet in October 2017. At the time of the first hike, a large number of naysayers—albeit notable ones—warned of the dire consequences of the Federal Reserve’s policy. Some headlines were alarming (see next page).

There were a few notable exceptions: among them was our colleague Jan Hatzius, Goldman Sachs’ chief economist, who has consistently emphasized that the slower pace of this recovery is primarily a cyclical issue due to the depths of the GFC rather than a major structural problem with the US economy. In December 2015, he stated that

“given how far the funds rate is below normal, how close the economy is to full employment, and my expectation for gradual increases in wage and price inflation, now seems like an appropriate time to move.”<sup>20</sup>

As Federal Reserve Chair Janet Yellen pointed out at the time,<sup>21</sup> tightening cycles that have been characterized by the following factors have not led to a recession: (1) an early start to the tightening cycle; (2) a slow pace relative to historical averages (220 basis points per year for non-recessionary tightening and 330 basis points for a recessionary tightening cycle); (3) low core inflation; and (4) slack in the labor market.

So far, this tightening cycle has been characterized by a slow pace and low inflation. The pace, starting with the first hike, has been about 60 basis points per year, and the core personal consumption expenditures (PCE) index was at 1.5% in November 2017. While labor slack was significant at the time of the first hike, our colleagues in Goldman Sachs Global Investment Research believe that the US economy is already beyond full employment, and that the “labor market is on track to become one of the tightest in post-war US history.”<sup>22</sup> While it is quite possible that all the labor slack has been exhausted, we believe there is considerable uncertainty regarding the exact level of full employment that will lead to inflationary pressures. We cannot be certain of the continued impact of globalization, the changes in labor force participation and the steady march of automation.

Given our base case of three hikes for 2018, we believe that the slow and steady pace of Federal Reserve hikes will not cause a recession. Obviously, we realize that there will be a significant change to the roster of Federal Open Market Committee voting members, but we do not think that they will change the path of steady hikes unless the economy grows more rapidly and inflation accelerates or there is an external geopolitical shock emanating from Asia, the Middle East or Russia.

#### Favorable Fiscal Policy

Another contributor to a low probability of a recession is the Tax Cuts and Jobs Act (TCJA) of December 2017. Based on conventional (or static) scoring of the tax bill’s impact on growth, the bill is estimated to cost \$1.46 trillion; based on dynamic scoring, the bill is estimated to cost over \$1 trillion. Dynamic scoring

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**Given our base case of three hikes for 2018, we believe that the slow and steady pace of Federal Reserve hikes will not cause a recession.**

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“Fed Fumble...There’s growing talk that the Fed made an error in hiking rates.”<sup>23</sup>

– Paul Krugman, Nobel laureate in economics and professor at City University of New York, January 26, 2016

“I think on balance it was a mistake to lock in a December rate increase.”<sup>24</sup>

– Lawrence Summers, professor at Harvard and former Secretary of the Treasury, December 15, 2015

“I think there’s a 50% chance that the Federal Reserve will be really sorry that it raised rates when it did. And there is no upside for proceeding with rate hikes now.”<sup>25</sup>

– Brad DeLong, professor of economics at UC Berkeley and former Deputy Assistant Secretary of the Treasury for Economic Policy, December 10, 2015

“Another question is whether the Fed should raise rates this month. My answer to that is also no.”<sup>26</sup>

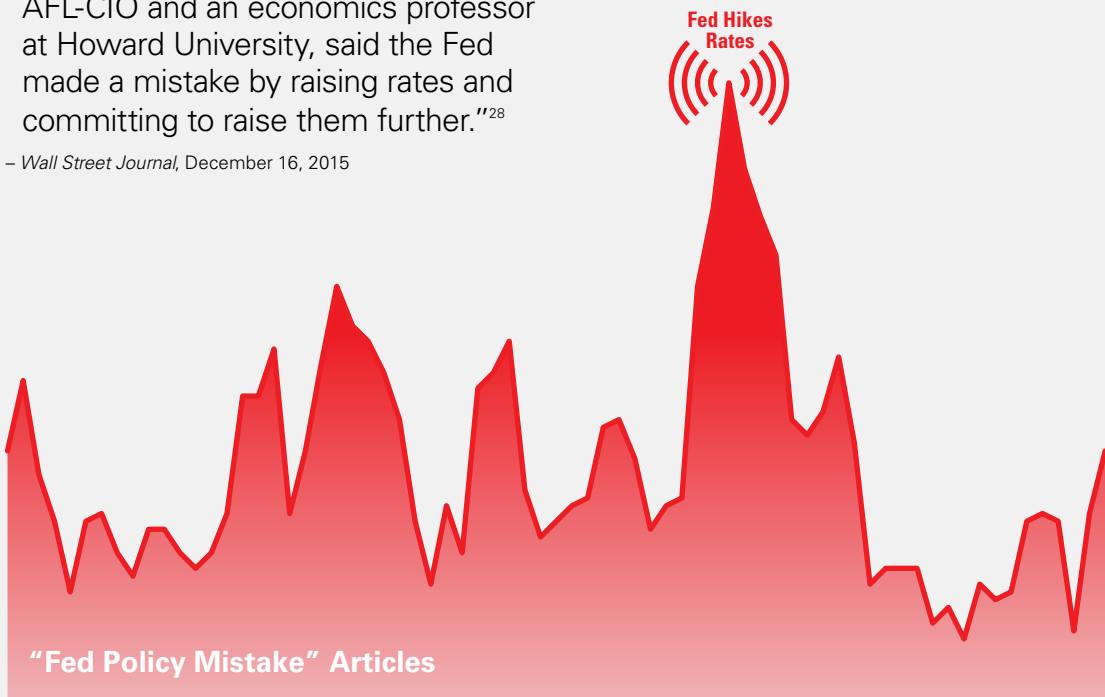
– Martin Wolf, chief economics commentator at the *Financial Times*, September 8, 2015

“Was December too early to start raising rates? By the action in the markets lately, the answer is yes.”<sup>27</sup>

– Paul Vigna, reporter for the *Wall Street Journal*, January 26, 2016

“William Spriggs, chief economist at the AFL-CIO and an economics professor at Howard University, said the Fed made a mistake by raising rates and committing to raise them further.”<sup>28</sup>

– *Wall Street Journal*, December 16, 2015



2012

2013

2014

2015

2016

2017

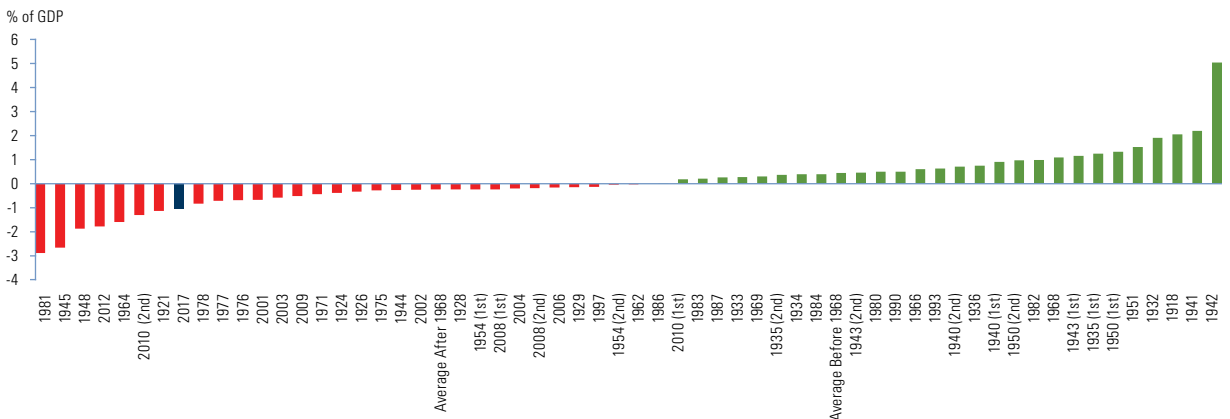
Data through December 2017.

Source: Investment Strategy Group, Bloomberg.

Note: Showing the 3-month rolling sum of Bloomberg stories containing the terms “Fed policy mistake.” The chart peaked at 79 in November 2015.

## Exhibit 20: Revenue Effects of Major US Tax Bills

This is the eighth-largest tax cut in the last century.



Data as of December 2017.

Note: Measured against the one-year impact of tax bills through 1941, two-year average impact through 1977, and four-year average impact through 2012. GDP projections from the Congressional Budget Office. Years with two tax bills are specified.

Source: Investment Strategy Group; Congressional Budget Office; Christina Romer and David Romer, "A Narrative Analysis of Interwar Tax Changes," University of California, Berkeley, February 2012; Jerry Tempalski, "Revenue Effects of Major Tax Bills," Office of Tax Analysis of the Department of the Treasury, September 2006.

uses macroeconomic models to measure the cost of a tax policy change by incorporating feedback on changes in jobs, wages and investment and therefore indirectly on growth.

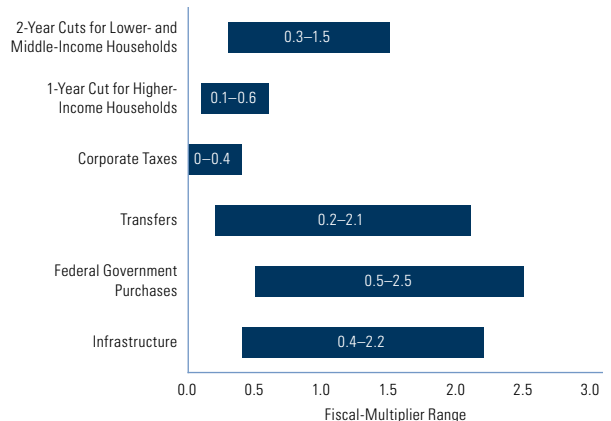
Based on the Joint Committee on Taxation's estimation of the size of the tax bill, it would be the eighth-largest since 1918,<sup>29</sup> as shown in Exhibit 20. The tax policy changes are estimated to raise debt-to-GDP from the current level of 91% forecast for 2027 to 95% or 98%, depending on which of the two different scoring methodologies is used. Debt-to-GDP is forecast to rise to 98–100% if a number of expiring tax cuts are renewed.<sup>30</sup> However, in the short term, the bill is expected to boost real GDP growth by 0.3 percentage points in both 2018 and 2019.<sup>31</sup>

While this additional boost further reduces the likelihood of a recession, there has always been considerable uncertainty about the impact of tax policy on the US economy (see Exhibit 21). Charles Whalen and Felix Reichling of the Congressional Budget Office have reviewed the literature on the effect of a change in fiscal policy on the economy.<sup>32</sup> The range of estimates for this effect is significant depending on the following:

- The specific policy, such as the type of government expenditure or the type of tax cut
- The type of model, such as a macroeconomic forecasting model, a time series model or a dynamic stochastic general equilibrium model

## Exhibit 21: Estimates of US Fiscal Multipliers by Budget Category

There is considerable uncertainty about the impact of tax policy on the US economy.



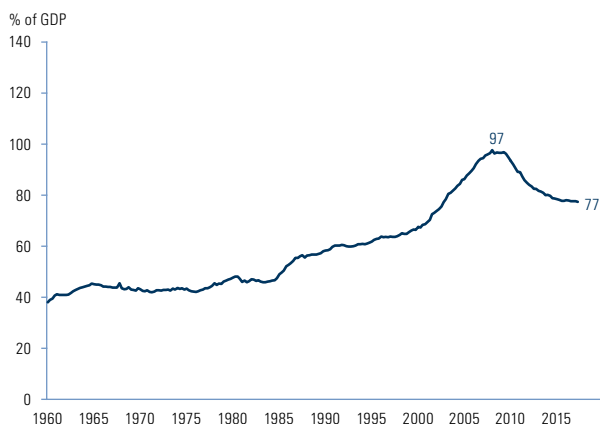
Source: Investment Strategy Group; Charles J. Whalen and Felix Reichling, "The Fiscal Multiplier and Economic Policy Analysis in the United States," Congressional Budget Office, February 2015.

- The prevailing economic environment at the time, such as an economy that is growing below its potential or one that is growing above potential
- The prevailing monetary policy of the time

As can be seen from Exhibit 21, the effect, called the multiplier effect, ranges from a low of zero to a high of 2.5. For example, every dollar of corporate

## Exhibit 22: US Household Debt

Consumers have delevered meaningfully since the crisis.



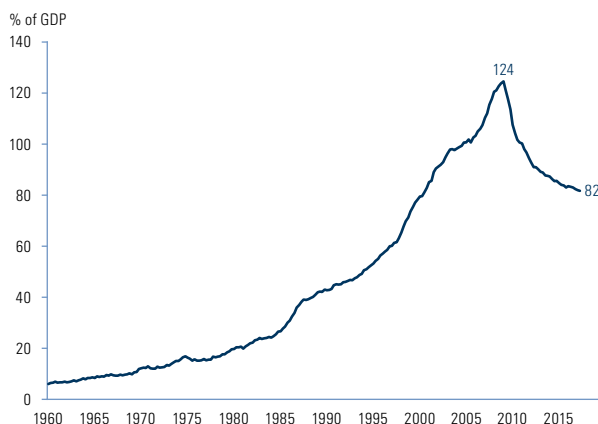
Data through Q2 2017.

Note: Showing liabilities of households and nonprofit organizations.

Source: Investment Strategy Group, Haver.

## Exhibit 23: US Financial Sector Debt

Financial corporations have steadily reduced their borrowing over the last decade.

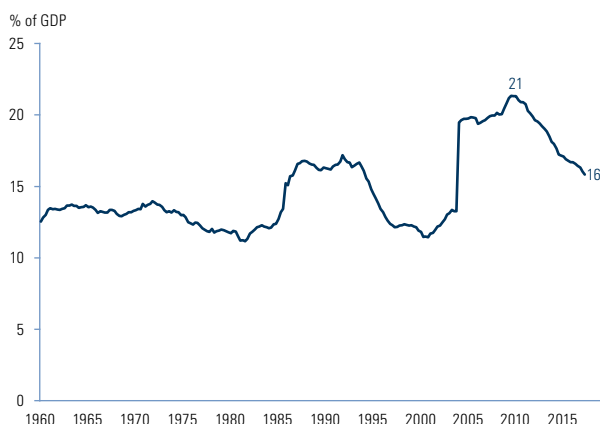


Data through Q2 2017.

Source: Investment Strategy Group, Haver.

## Exhibit 24: US State and Local Government Debt

While federal borrowing has risen, state and local governments have become less indebted.



Data through Q2 2017.

Source: Investment Strategy Group, Haver.

tax cuts that primarily affects cash flows can boost GDP growth anywhere from zero to 40 cents. Similarly, tax cuts for higher-income households have a fiscal multiplier that ranges from 0.1 to 0.6, while a tax cut for lower- and middle-income households has a fiscal multiplier of 0.3 to 1.5. While the range of possible outcomes is wide, and while best-in-class economists will continue to debate the impact of the TCJA, it is clear that the tax cuts will boost GDP at the margin and lower

the probability of a recession in 2018 and, in all likelihood, in 2019 as well.

On a global basis, the fiscal policy backdrop is somewhat supportive. In the developed economies, Eurozone fiscal policy is broadly neutral. Germany's budget surplus of 0.9% of GDP—its fourth surplus in as many years—is expected to be spent to support the growth momentum in Germany. In Japan, the government of Prime Minister Shinzo Abe is focused on boosting the recovery through a series of spending measures and tax incentives—which have been called a “human capital revolution” and a “productivity revolution”<sup>33</sup>—as a continuation of Abenomics policies.

As usual, Chinese policymakers stand ready to adjust fiscal policy should growth slow down to levels that the central government deems unacceptable.

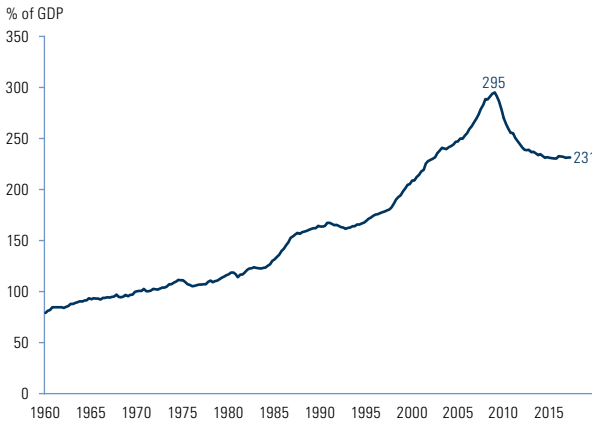
### Absence of Imbalances

Another major factor that lowers the probability of a recession is the absence of significant imbalances in key developed and emerging market economies.

We examine the level of imbalances across a broad range of macroeconomic variables such as current account balances, residential investment, property prices, debt levels in the private and public sectors, the output gap, market sector valuation dislocations and other private sector vulnerabilities.

## Exhibit 25: US Private Sector Debt

Household and corporate balance sheets look healthier.

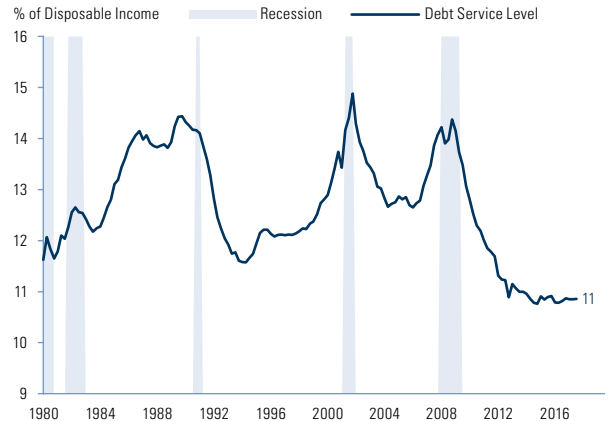


Data through Q2 2017.

Source: Investment Strategy Group, Haver.

## Exhibit 26: Household and Nonfinancial Corporate Debt Service

Low interest rates have helped bring debt service levels down.



Data through Q3 2017.

Source: Investment Strategy Group, Haver.

As was the case last year, the US economy does not have any major imbalances that are precursors to a recession or market dislocation, for the following reasons:

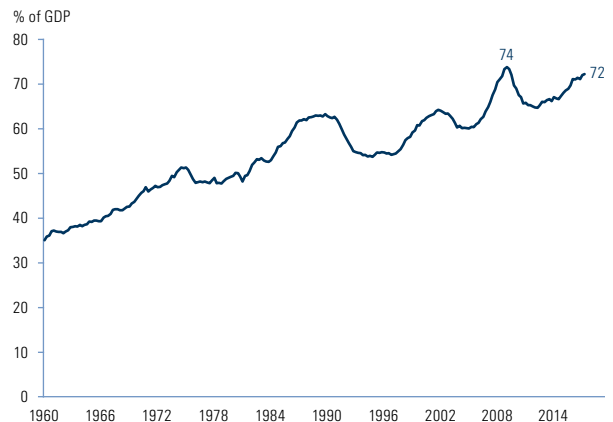
- Wage and compensation growth rates are in line with long-term averages.
- Consumer durables and structures spending as a share of GDP is below long-term averages.
- Debt as a share of GDP has declined for households (see Exhibit 22), financial institutions (see Exhibit 23), state and local governments (see Exhibit 24), and the aggregate private sector (see Exhibit 25).
- Debt service levels have decreased given the low interest rate environment and are close to 37-year lows (see Exhibit 26).
- Gross national savings as a share of GDP are in line with the average levels since 1990.
- Banks have lowered their debt levels as a share of assets to 14%, relative to a long-term average of 44%. They have also built significant Tier 1 capital ratios.

However, federal government and nonfinancial corporate sector debt levels have increased. As mentioned earlier, federal debt levels are expected to increase as a result of the TCJA, but not yet to alarming levels.

Nonfinancial corporate debt has increased steadily from the second quarter of 2012 and is

## Exhibit 27: US Nonfinancial Corporate Debt

Companies have increased borrowing to levels near crisis highs.



Data through Q2 2017.

Source: Investment Strategy Group, Haver.

approaching levels last seen in the first quarter of 2009 (see Exhibit 27). Such an increase has led to a growing concern that leverage has raised the vulnerability of corporate America and another debt crisis may well be looming. We are not concerned, for three main reasons:

1. The two sectors with the biggest increase in debt relative to their long-term averages since 1993 are information technology and health

care. These two sectors have among the highest interest coverage ratios of S&P 500 sectors. The earnings of information technology companies, as measured by EBITDA (earnings before interest, taxes, depreciation and amortization), cover their interest expense by a ratio of 20-to-1, and those of the health care sector by a ratio of 12-to-1.

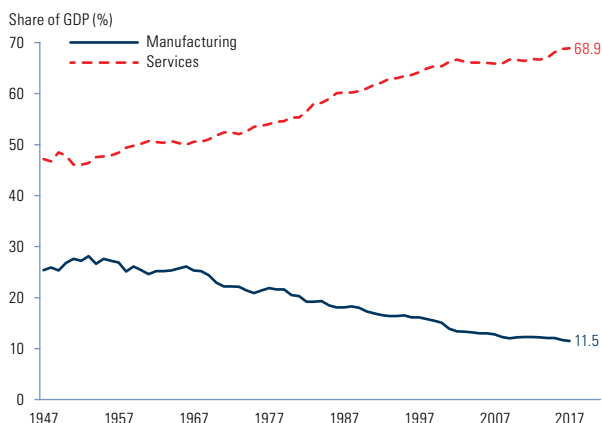
2. S&P 500 companies, in aggregate, have interest coverage ratios that are well above their long-term average.
3. Companies have capitalized on the low interest rate and tight corporate spread environment to lock in a cheap source of funding for the long run. In 2017, the average cost for high-quality corporate debt was 3.1% and the average maturity of corporate debt issues was about 16 years. High yield debt traded at yields as low as 5%. While 30-year fixed-rate debt has been the more typical maturity of long-term debt for high-quality companies, some companies (such as Amazon<sup>34</sup> and Microsoft<sup>35</sup>) locked in low rates for 40 years when they issued 40-year bonds in 2017.

On a global basis, imbalances have continued to diminish in 2017 relative to 2016, when they were already substantially lower than the pre-crisis levels. For example, current account surpluses declined in both Germany and China. While residential property prices continued to increase, they are still below 2007 peak levels on a real basis in countries like the US and the UK, which have had strong residential real estate markets. Commercial real estate prices in the US are 24% above their pre-crisis peak, and if prices and supply continue at this pace, commercial real estate could become an imbalance in the future.

The one worrisome imbalance that was also highlighted last year is the rising debt levels in China. Since the end of 2016, debt has continued to increase, from 277% of GDP to 284%, albeit at a slower pace than in prior years. In our 2016 *Outlook*, we stated that China was unlikely to have a hard landing over the next two years (i.e., 2016 and 2017). In our 2017 *Outlook*, we reiterated the view that we did not expect a hard landing in 2017 but indicated the risks would grow in 2018 and 2019. While the risks have increased, they have been offset by a combination of several factors:

## Exhibit 28: GDP Contribution from Services and Manufacturing

Private services account for an increasing share of GDP as manufacturing loses ground.



Data through Q2 2017.  
Source: Investment Strategy Group, Haver.

- Significant capital controls and the depreciation of the US dollar that have stemmed capital outflows
- The heavy hand of the central government in directing the economy
- A favorable global economic growth environment

These three factors will keep any meaningful risk emanating from China at bay for the next few years.

### Structural Forces

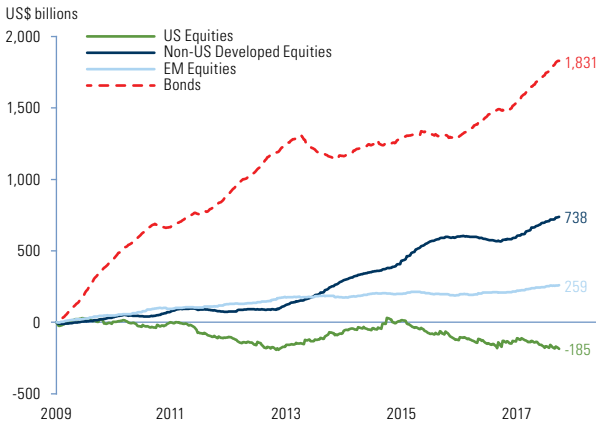
The probability of a recession is also lower due to structural forces that have changed the US economy. They include:

- Continued decline in the GDP share of manufacturing, from a high of 28% in 1953 to 11.5% as of the second quarter of 2017, and the increase in private services from a low of 46% in 1952 to 69% as of the second quarter of 2017 (see Exhibit 28). Services are less volatile than manufacturing and do not have the same inventory buildups and reductions.
- Better just-in-time inventory management systems that have allowed companies to manage their inventory levels more effectively and reduce the volatility of the inventory cycle (which is not unique to the United States).



### Exhibit 29: Cumulative Mutual Fund and ETF Flows

Investors have favored bonds and non-US equities throughout this bull market.

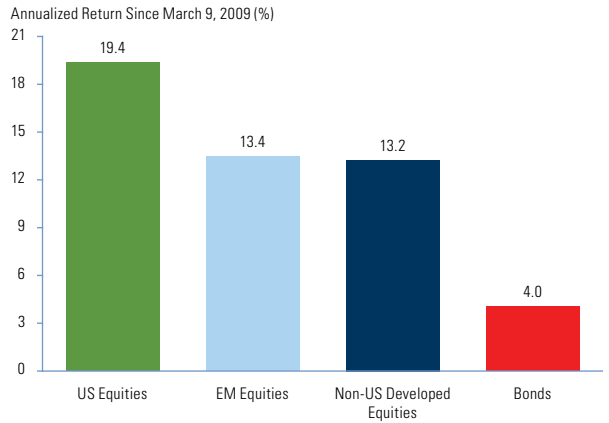


Data through November 27, 2017.

Note: Based on ICI weekly estimates. Flows exclude reinvested dividends.  
Source: Investment Strategy Group, Investment Company Institute (ICI).

### Exhibit 30: Asset Class Returns Since March 9, 2009

US equities have outperformed their peers and bonds by a significant margin.



Data through November 27, 2017, to be consistent with cumulative flows data in Exhibit 29.

Note: Based on the following indices: US Equities: MSCI USA, Non-US Developed Equities: MSCI World ex. US, EM Equities: MSCI EM(\$), Bonds: Bloomberg Barclays Multiverse Total Return Index Value Unhedged USD.

Source: Investment Strategy Group, Datastream, Bloomberg.

Past performance is not a guarantee of future results.

- More effective monetary and fiscal policies across developed and emerging market countries.
- Automatic stabilizers that reduce the impact of economic declines.

Our colleagues in Goldman Sachs Global Investment Research have shown that in developed economies the duration of expansions has increased.<sup>36</sup> Prior to 1950, the average expansion lasted 3.2 years, while after 1950 the average expansion has lasted 8.3 years. The length of this US recovery is barely above the post-1950 average. Longer expansions imply lower probability of a recession.

#### Disdain for This Rally

In a recent Goldman Sachs *Top of Mind* interview, Steve Einhorn, former partner-in-charge of

The one worrisome imbalance that was also highlighted last year is the rising debt levels in China. Since the end of 2016, debt has continued to increase.

Goldman Sachs Global Investment Research and current vice chairman of Omega Advisors, stated that “this has been one of the most hated bull market advances.”<sup>37</sup> He also stated that investor exuberance was one of the five conditions on his bear market checklist. As an aside, the other items on his checklist are wage and consumer price inflation, a “hostile Fed” that tightens aggressively, a recession and extended valuation. He believes that none of the five conditions have been met.

The disdain for this market has been not only intense but also long-lived. In our 2014 *Outlook* report, *Within Sight of the Summit*, written after US equities had entered the ninth decile of valuations, we argued that there was “No Bubble Trouble Yet” in order to counter the market commentators warning investors of a “massive bubble.” An exhibit, reproduced on page 24, showed the extent of such commentary. The same disdain continues, as shown on page 25.

One piece of evidence for this bull market being among the “most hated bull market advances” is the absence of investor funds flowing into US equities. As shown in Exhibit 29, investors have shied away from US equities, preferring bonds and non-US equities since the

“ ... it is only rational to recognize that low interest rates raise asset values and drive investors to take greater risks, making bubbles more likely.”<sup>38</sup>

– Larry Summers, Harvard Professor and Former US Secretary of the Treasury  
December 13, 2013

“What am I missing here? I see asset bubbles.”<sup>39</sup>

– Sen. Mike Johanns, R-NE  
November 14, 2013

“Bubbles look like this. And the world is still very vulnerable to a bubble.”<sup>40</sup>

“Stocks won’t be in bubble territory until the [CAPE] metric climbs to 28.8.”<sup>41</sup>

– Robert Shiller, Nobel Laureate in Economics  
November 21, 2013

“We have to watch this very carefully, but I don’t see this as an asset bubble.”<sup>42</sup>

– Janet Yellen, Federal Reserve Chair Nominee  
November 14, 2013

“This is another huge bubble driven by the Fed.”<sup>44</sup>

– David Stockman, Former Director of the Office of Management and Budget  
November 26, 2013

“We are again in a massive financial bubble in bonds, in equities, a bubble in asset prices.”<sup>43</sup>

– Marc Faber, Publisher, The Gloom Boom & Doom Report  
November 29, 2013



“Stocks rest on faulty foundation.”<sup>45</sup>

– Bill Gross, Co-Founder of PIMCO and Portfolio Manager at Janus Capital  
April 13, 2017

“The stock market is overvalued...The only other time in the past half century that stock prices have been so highly priced was during the tech bubble.”<sup>47</sup>

– Mark Zandi, Chief Economist at Moody's Analytics  
August 10, 2017

“This crazy, expensive stock market is for speculators, not investors.”<sup>46</sup>

– *Wall Street Journal*  
March 9, 2017

“It looks to me a bit like a bubble again.”<sup>48</sup>

– Robert Shiller, Nobel Laureate and Professor of Economics at Yale University  
September 13, 2015

“Peter Boockvar, chief market analyst at The Lindsey Group, predicts the ‘overvalued’ stock market will run into serious trouble.”<sup>49</sup>

– CNN  
October 19, 2017

inception of this bull market. Cumulative flows into US equity mutual funds and exchange-traded funds (ETFs) since the trough of US equities in March 2009 have been negative, measuring a total of \$185 billion of outflows. In contrast, flows into non-US developed market equities have been \$738 billion, into emerging market equities \$259 billion and into bond funds \$1.8 trillion. As highlighted earlier and shown in Exhibit 30, US equities have outperformed the other three asset classes by a significant margin.

As our colleague David Kostin, US equity strategist, notes, buybacks have more than offset the outflows from investors and pension plans.<sup>50</sup> Since March 2009, buybacks have totaled \$4.5 trillion.

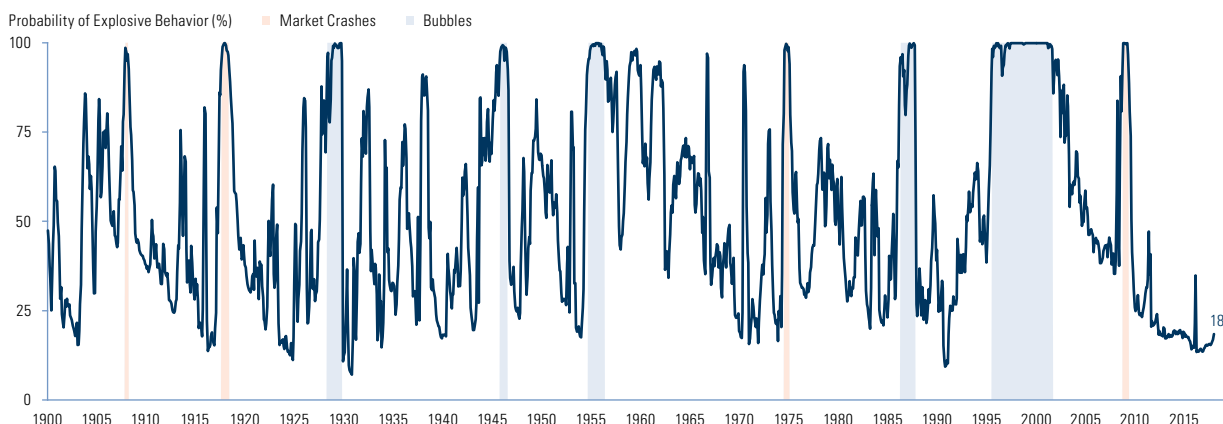
Over the last few months, market sentiment has begun to shift and investor enthusiasm toward US equities has increased as measured across a series of indicators such as non-dealer S&P 500 futures exposure. Such a shift in sentiment, in conjunction

with the fact that the S&P 500 did not experience even a 5% downdraft in 2017, suggests that a market correction is likely in the next several months. Over a 12-month period the probability of a 5% correction from current valuation levels is 96%, and the probability of a 10% correction is 64%. However, this is not a steep-enough correction for investors to try to get ahead of, especially not for taxpayers. Clients should remain invested and look beyond these types of corrections.

As mentioned earlier, we do not believe that the equity market is in bubble territory. This bull market has been underpinned by strong earnings growth, low inflation and low volatility of inflation, and low probability of a recession. Two additional indicators confirm our view. First, a “bubble indicator” that we have referenced in the past suggests that the probability of being in a bubble is 18%, as shown in Exhibit 31. This indicator, which looks at explosive price

### Exhibit 31: S&P 500 Bubble Indicator

A bubble-detection test that has been reliable historically does not set off alarm bells.



Data through December 31, 2017.

Source: Investment Strategy Group; Bloomberg; Robert Shiller; Peter C.B. Phillips, Shu-Ping Shi and Jun Yu, "Testing for Multiple Bubbles 1: Historical Episodes of Exuberance and Collapse in the S&P 500," Singapore Management University, August 2013.

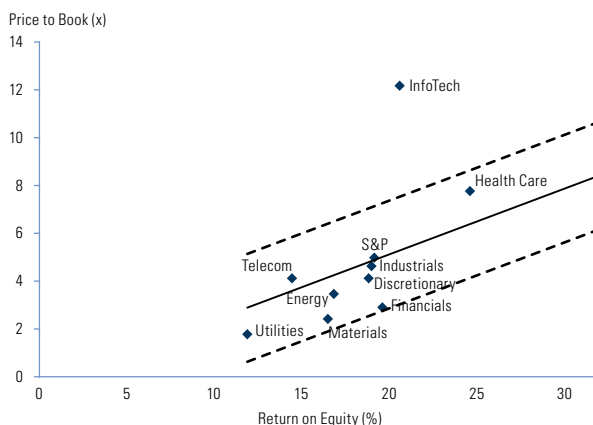
behavior—both up and down—is based on a price-dividend ratio and was developed by Peter C. Phillips of Yale University, Shu-Ping Shi of The Australian National University and Jun Yu of Singapore Management University.<sup>51</sup>

Second, we examine the dispersion of valuation among equity sectors to see if any one sector is in bubble territory, since a large imbalance in any one sector increases the risks of a downdraft in the entire equity market. As shown in the three equity sector charts from March 2000 (see Exhibit 32), October 2007 (see Exhibit 33) and December 2017 (see Exhibit 34), there is currently less dispersion among equity sector valuations based on return on equity and price-to-book value compared to the two prior periods. Furthermore, unlike the period before the dot-com bubble burst, no sector, including the information technology sector, is three standard errors outside the fitted line that captures the relationship between price-to-book and return on equity.

While we do not believe that any one indicator will provide the key to underweighting equities at just the right time—i.e., as close as possible to the peak in equities—we believe that leveraging a mix of tools that provide fundamental, quantitative and technical analysis is more likely to guide us in the right direction. Analytical rigor born of intellectual curiosity is the foundation of our investment philosophy.

### Exhibit 32: S&P 500 Sector Dispersion in March 2000

Information technology stood out as a bubble in 2000.



Data as of March 31, 2000.

Note: Dashed lines indicate 3 standard error bands.

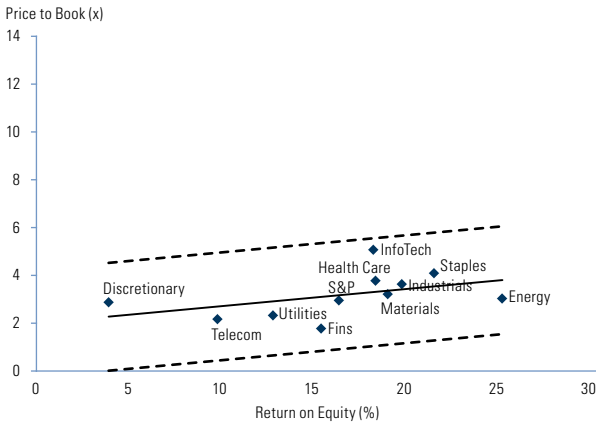
Source: Investment Strategy Group, Bloomberg.

### Unsteady as She Goes

One of the unusual features of 2017 has been the extremely low level of equity market volatility. Whether one looks at realized volatility or implied volatility as measured by the VIX, or at one-month volatility versus three-month volatility, market volatility has been very low. In 2017, not only has average volatility been about 45% (or nine percentage points) below its historical average, as

### Exhibit 33: S&P 500 Sector Dispersion in October 2007

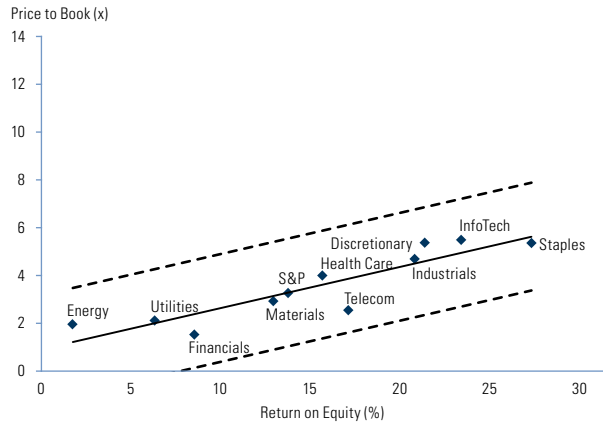
Economic imbalances, rather than an equity bubble, drove the downturn.



Data as of October 31, 2007.  
Note: Dashed lines indicate 3 standard error bands.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 34: S&P 500 Sector Dispersion in December 2017

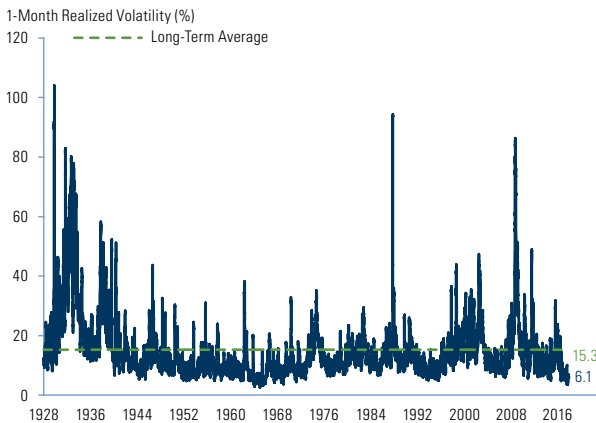
There is currently little dispersion among equity sector valuations.



Data as of December 31, 2017.  
Note: Dashed lines indicate 3 standard error bands.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 35: S&P 500 Historical Volatility

Realized volatility has been higher 95% of the time since 1928.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

shown in Exhibit 35, but one-month volatility closed the year at the fifth percentile, i.e., realized volatility has been higher 95% of the time since 1928.

Some of this low volatility reflects a “Steady as She Goes” backdrop driven by steady economic and earnings growth. Typically, volatility declines in periods of economic expansion, declining unemployment, stable inflation, easy monetary policy and easing financial conditions.

However, such low volatility belies the levels of concern below the surface; we have to examine other indicators to see that investors are not as sanguine as they appear.

We focus on three such indicators, all of which point in the direction of greater fear and uncertainty than is reflected in volatility or equity market returns:

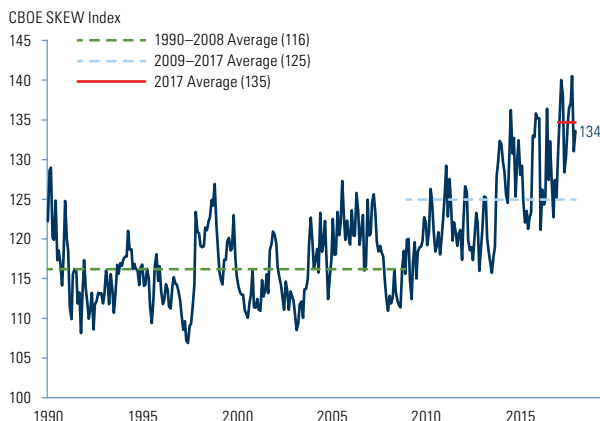
- The skew in S&P 500 implied volatility
- The Economic Policy Uncertainty (EPU) Index, which is composed of a series of measures designed by Professor Scott Baker of Northwestern University, Professor Nick Bloom of Stanford University and Professor Steven Davis of University of Chicago<sup>52</sup>
- The Ambiguity Index, designed by Professor Menachem Brenner of New York University (who was also co-inventor of the first volatility index based on the prices of traded index options and the precursor to the VIX) and Professor Yehuda Izhakian of Baruch College<sup>53</sup>

#### S&P 500 Implied Volatility Skew

Volatility skew is a measure that allows us to examine the fear premium priced in the markets. When investors are more concerned about risk and want to insure against a market downdraft, skew increases. CBOE has one such benchmark called the Cboe SKEW Index, which is derived

### Exhibit 36: Volatility Skew

Skew has been trending upward since the crisis.

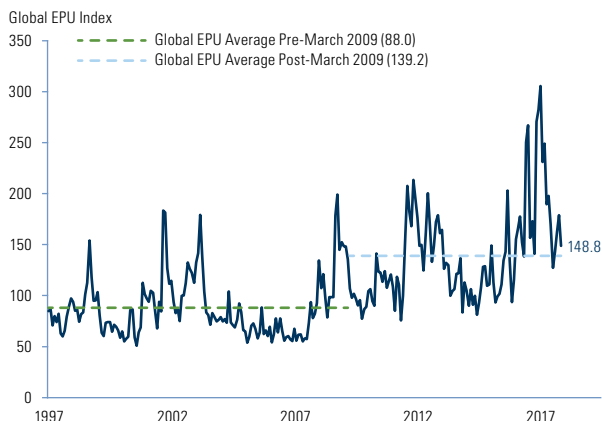


Data through December 31, 2017.

Source: Investment Strategy Group, CBOE, Datastream.

### Exhibit 37: Global Economic Policy Uncertainty (EPU) Index

Economic Policy Uncertainty stands almost 70% above its pre-crisis average.



Data through November 2017.

Note: Global EPU Index uses PPP-adjusted GDP Weights.

Source: Investment Strategy Group, Economic Policy Uncertainty Index ([www.policyuncertainty.com](http://www.policyuncertainty.com))

from the price of S&P 500 tail risk. As is the case for the VIX, the price of S&P 500 tail risk is calculated from the prices of S&P 500 out-of-the-money options. SKEW typically ranges from 100 to 150. A value of 100 means that the perceived distribution of S&P 500 returns is normal, and the probability of outlier returns is therefore negligible. As SKEW rises above 100, the left tail of the S&P 500 distribution acquires more weight, and the probabilities of outlier returns become more significant, i.e., market participants are pricing in a higher probability of an adverse event than one suggested by a normal distribution.

As shown in Exhibit 36, SKEW has been trending upward since the GFC and ended the year near record levels, at the 96th percentile. The average for 2017 has been the highest of any year since the inception of the index in 1990. SKEW is clearly conveying a very different level of fear and unease in the markets than realized volatility or the VIX.

#### Economic Policy Uncertainty Index

The EPU Index also conveys a heightened level of concern. This global economic policy uncertainty index is based on data from 18 developed and emerging market countries that account for two-thirds of world GDP. The index uses three types of data: newspaper coverage of policy-related economic uncertainty; number of federal

tax code provisions set to expire in future years; and dispersion of economists' forecasts of key economic indicators as a proxy for uncertainty.

As shown in Exhibit 37, the average level of economic policy uncertainty has been 60% higher after the GFC than the average level before the crisis. It reached record highs in 2016 and decreased in 2017, but remains above the post-GFC average and currently stands almost 70% above the pre-GFC average. This index is available for individual countries and regions such as the US, Europe and China. Among these countries, the US has had the lowest increase in uncertainty and China has had the highest.

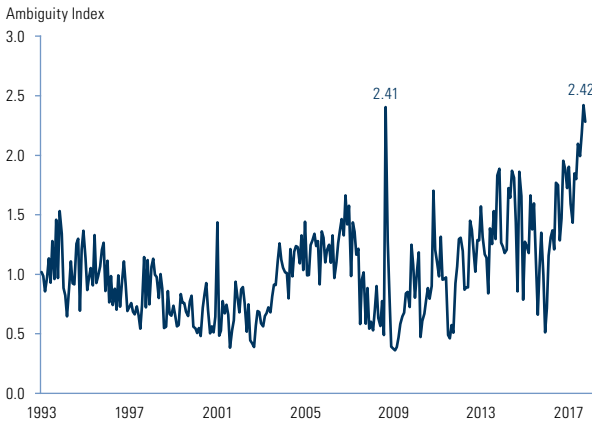
#### Ambiguity Index

The Ambiguity Index is a new index designed to capture a dimension of uncertainty not accounted for by risk. It uses daily S&P 500 price moves to measure the probability distribution of returns every day, and then measures the change in these probability distributions over time. If investors have low confidence in the probability distributions, uncertainty is greater and, as a result, the Ambiguity Index is higher.

As shown in Exhibit 38, the Ambiguity Index has been trending upward since the trough of the GFC, and reached a peak of 2.42 in October 2017, even higher than the levels seen in October 2008. In their forthcoming paper in the *Journal*

### Exhibit 38: Ambiguity Index

The Ambiguity Index has been trending upward since the trough of the crisis.



Data through November 2017.

Source: Investment Strategy Group, Yud Izhakian and Menachem Brenner, "Asset Pricing and Ambiguity: Empirical Evidence," *Journal of Financial Economics*, forthcoming.

of *Financial Economics*, "Asset Pricing and Ambiguity: Empirical Evidence," the creators of this index explain that high ambiguity can coincide with high equity returns or low equity returns, as evidenced by the high levels in 2008 and in 2017. The level of the index exclusively measures the level of investor ambiguity toward the US equity market as measured by the S&P 500.

These three indicators reflect higher levels of investor unease and concern than are reflected in realized and implied volatility. These higher levels may partially explain the surprisingly limited flows into US equities and the surprisingly large flows into bonds.

What could account for such high levels of investor unease and concern? The possible list of culprits is long:

- Perceived or actual deteriorating domestic politics in Washington, D.C.

**"2018 doesn't feel good. Yes, markets are soaring and the economy isn't bad, but citizens are divided."**

—Eurasia Group

- Fear of globalization and the steady march of China's increasing share of global trade
- Fears of immigration
- Rising incidents of terrorism in OECD countries
- The rise of populism
- The increasing threat of cyberattacks, especially on infrastructure and world telecommunication systems
- Rising geopolitical tensions with North Korea, across the Middle East, and between the US and China
- The bitcoin and cryptocurrency mania

Eurasia Group's report on the top risks of 2018 summarized these concerns: "2018 doesn't feel good. Yes, markets are soaring and the economy isn't bad, but citizens are divided. Governments aren't doing much governing. And the global order is unraveling. The scale of the world's political challenges is daunting. Liberal democracies have less legitimacy than at any time since World War II, and most of their structural problems don't appear fixable. Today's strongest leaders show little interest in civil society or common values."<sup>54</sup>

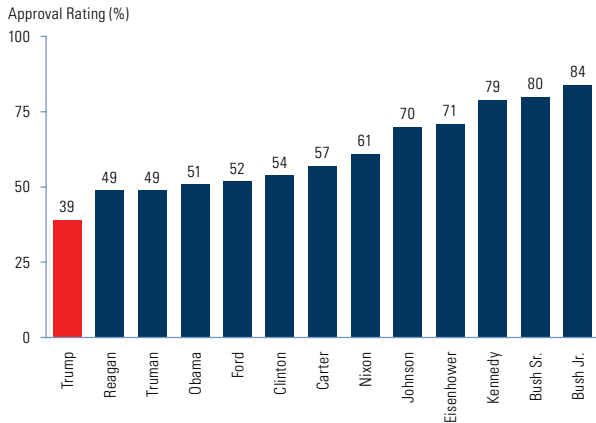
We highlighted some of the concerns listed above in last year's *Outlook: Half Full* as risks for 2017. We characterized some of these areas of concern as high-probability but uncertain-impact risks. For example, we suggested that there was a high-probability but uncertain-impact risk of geopolitical tensions with North Korea spilling into outright conflict. In 2018 and for the foreseeable future, we believe that the probabilities have clearly increased. We also believe that while geopolitical experts in the field have provided us with a range of probabilities for various scenarios, these risks may not be truly measurable. Most experts underestimated the progress made by North Korea with its ballistic missiles program. We therefore should be realistic about the limited degree of confidence we can have in any insights into such geopolitical affairs.

#### Domestic Politics

One does not have to look far to know that US politics has become polarized. One hour of news on CNN and Fox and a brief glance at books such as *One Nation After Trump: A Guide for the Perplexed, the Disillusioned, the Desperate, and the Not-Yet Deported*<sup>55</sup>

### Exhibit 39: Presidential Approval Rating

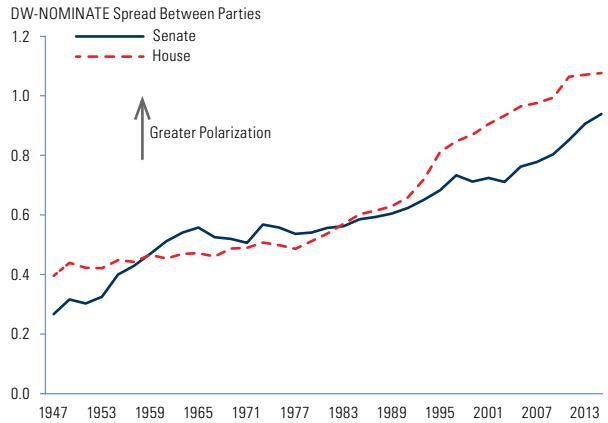
Trump's approval rating at the end of his first 11 months in office was the lowest of any president in the post-WWII period.



Data as of December 31, 2017.  
 Note: All approval ratings are measured approximately 11 months into a presidency.  
 Source: Investment Strategy Group, Gallup.

### Exhibit 40: Ideological Gap Between Congressional Republicans and Democrats

Polarization in Congress has risen.



Data through the 114th Congress (2015).  
 Source: Investment Strategy Group, Brookings, Keith T. Poole and Howard Rosenthal, <https://voteview.com/>.

or *Fire and Fury: Inside the Trump White House*<sup>56</sup> will suffice.

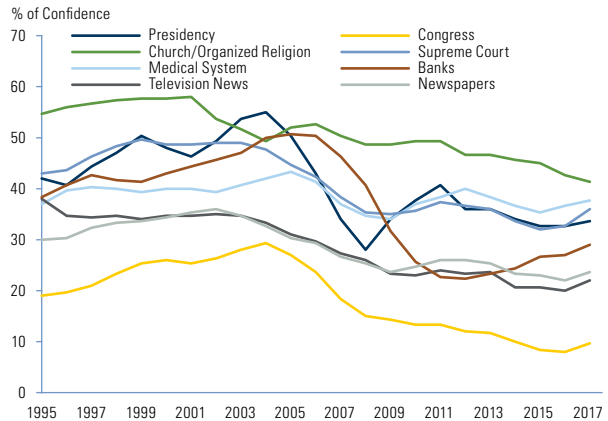
We can carefully analyze the data and confirm the extent of polarization. However, it is important to note that this is not merely a 2017 issue. While it may be easy to point to President Trump's approval rating at the end of his first 11 months in office—the lowest of any president in the post-WWII period (see Exhibit 39)—as a factor contributing to the current level of polarization, this polarization has existed for a long time. As shown in Exhibit 40, polarization has been on the rise since the end of WWII, and the pace has accelerated in the last 30 years, especially in the House of Representatives.

Gallup polls show that the overall level of dissatisfaction with the “way things are going in the United States at this time” is high,<sup>57</sup> but it has been high since the war in Afghanistan that followed the September 11 terror attacks and the invasion of Iraq. However, the October 2017 readings showed a lower level of dissatisfaction than the recent high reached in July 2016.

Public confidence in certain US institutions has also declined. But again, as shown in Exhibit 41, this trend has been in place for many years. Confidence in Congress peaked over a decade ago, in 2004; confidence in the presidency peaked at about the same time. Interestingly, after a steady period of decline, confidence in both television

### Exhibit 41: US Confidence in Institutions

US confidence in various institutions has been in decline over the past several years.



Data through 2017.  
 Note: Percentage of respondents with “a great deal” or “quite a lot” of confidence in each institution. Showing the 3-year moving average.  
 Source: Investment Strategy Group, Gallup.

news and newspapers ticked up between 2016 and 2017. Tweets about “fake news” seem to have had the paradoxical effect of increasing confidence in the news.

For those who wonder whether US institutions are strong enough to withstand the current discourse, we remind you of the caning of Senator





Illustration of Representative Preston Brooks caning Senator Charles Sumner on the Senate floor in 1856. Schomburg Center for Research in Black Culture, Manuscripts, Archives and Rare Books Division, The New York Public Library. "The stricken Senator." The New York Public Library Digital Collections. 1856. <http://digitalcollections.nypl.org/items/510d47da-75e1-a3d9-e040-e00a18064a99>.

Charles Sumner on May 22, 1856, two days after his famous anti-slavery speech "The Crimes Against Kansas." In his speech, Senator Sumner had disparaged Senator Andrew Butler, a Democrat representing South Carolina. In response, Senator Butler's relative, Representative Preston Brooks, struck Sumner repeatedly with a cane on the Senate floor. According to the US Senate website, this event symbolized the "breakdown of reasoned discourse."<sup>58</sup> The current level of discourse in Washington, D.C., compares favorably to that episode, but certainly does not appear reasoned, either.

While such polarization and much of the current discourse we are witnessing in the US may be unpleasant, these factors alone should not impact portfolio allocations. Fiscal policy through the TCJA will at a minimum have a modestly positive impact on growth and could conceivably have a greater multiplier effect than expected. The TCJA will also increase corporate profitability. Monetary policy under a new Federal Reserve chair and vice chair is likely to be conventional, and the regulatory environment will be somewhat more favorable.

### Rise of Populism

One risk we pointed out as a low-probability but high-impact risk for 2017 was the rise of populism in Europe that could result in the election of extreme-right or extreme-left parties. While none of the extreme candidates—such as Geert Wilders of the Netherlands or Marine Le Pen of France—succeeded in 2017, we believe it is premature to ring the death knell of populism.

As discussed in two recent books, Ian Bremmer's *Us Vs. Them: The Failure of Globalism*<sup>59</sup> and John Judis' *The Populist Explosion: How the Great Recession Transformed American and European Politics*,<sup>60</sup> the factors that led to the emergence of populism have not only persisted, but some have grown in importance: globalization, increased income inequality, fear of immigrants and job insecurity as a result of technological progress and automation.

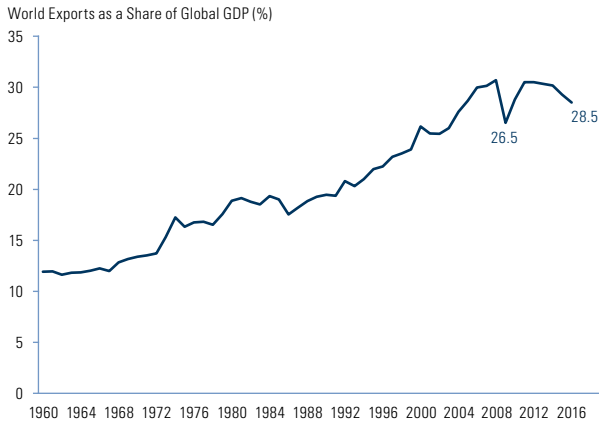
Let us examine these four factors. Global trade as a share of GDP has recovered from its post-crisis lows (see Exhibit 42), but it is unlikely to exceed the pre-GFC level of 30.7% in the near future for several reasons. First is China. As shown in Exhibit 43, China's share of global exports peaked in 2016 at 14% and has declined since. If one adjusts for the impact of commodity prices, China's share has held pretty steady since 2013. China's efforts to reduce reliance on exports and investments, as well as US resistance to the growing trade deficit with China, will limit the growth in China's share. In addition, the disruptions in supply chains following the Fukushima nuclear meltdown prompted the re-shoring of some manufacturing processes. (See the 2013 *Outlook: Over the Horizon* for a more detailed discussion of re-shoring in the US.) While global trade as a share of GDP may not increase,



Ian Bremmer's forthcoming book discusses the factors behind the rise in global populism.

### Exhibit 42: World Exports as a Share of Global GDP

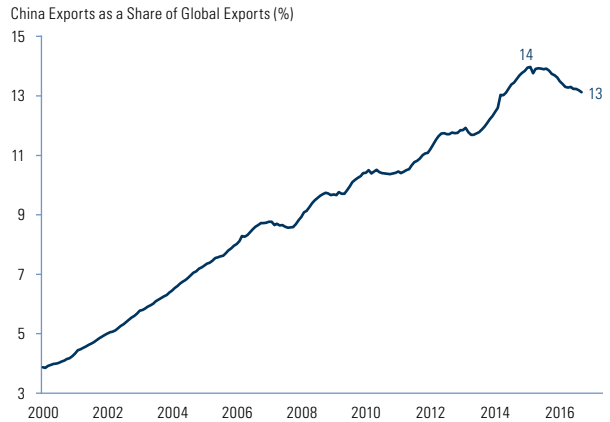
Global trade as a share of GDP has recovered from its post-crisis lows.



Data through 2016.  
Source: Investment Strategy Group, World Bank.

### Exhibit 43: China's Share of Global Exports

China's share of global exports peaked in 2016.



Data through August 2017.  
Note: Measured in nominal terms.  
Source: Investment Strategy Group, Haver.

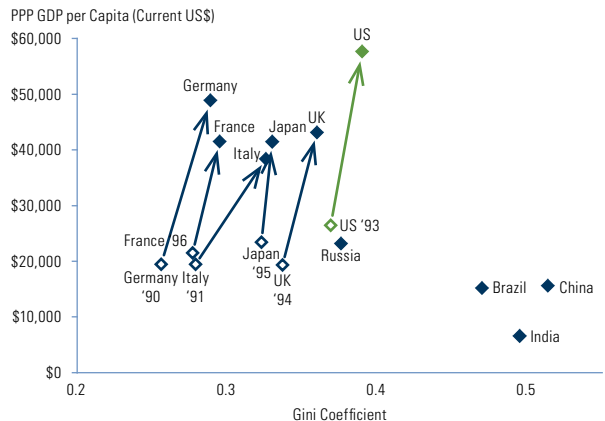
we do not expect it to decrease significantly either, but rather to hold steady near current levels.

Gini coefficients, as one measure of income inequality, have deteriorated across key developed economies, and the US ranks as having the highest Gini coefficient among OECD countries based on disposable income (see Exhibit 44). Even though income inequality has become one of the most widely discussed topics among policymakers, economists and political scientists, no easy solutions to lessen it are in sight.

With respect to immigration, the United Nations High Commissioner for Refugees estimates that over 22 million people are seeking safety internationally as refugees, of whom 5.5 million are from Syria and 2.5 million from Afghanistan.<sup>61</sup> The fear of immigrants as a threat to public safety and a threat to job security has increased in the last few years. The EPU Index team has also created Migration Policy Uncertainty and Fear indices: in the US, UK, Germany and France, both the policy and fear indices show a rise since 2014, with spikes at the time of elections or terrorist attacks.<sup>62</sup> In Europe, immigration was the second-most important issue facing the Eurozone after unemployment, based on the latest polls by Eurobarometer.<sup>63</sup> With the growing number of refugees, this fear factor will contribute to a greater sense of nationalism and greater support for populist anti-establishment candidates.

### Exhibit 44: Trajectory of Income Inequality

Gini coefficients have deteriorated across OECD economies.



Note: Gini coefficients measure disposable income, which adjusts for the redistributive effects of taxes and transfers. Endpoints are the latest available for each economy. 2015: US, UK, France. 2014: Germany, Italy. 2013: Brazil. 2012: Japan. 2011: China, Russia, India. For Brazil, China, India and Russia there is not sufficient historical data to show a trajectory.  
Source: Investment Strategy Group, OECD, World Bank.

Finally, with respect to job insecurity as a result of greater automation, the latest McKinsey Global Institute report, "Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation," estimates that as many as 800 million jobs could be displaced by automation by 2030, with a midpoint of 400 million displaced.<sup>64</sup> Of those displaced, a large portion will have to find completely new occupations. Workers are right to

fear the transition as a result of greater automation.

Based on the available data and forward-looking trends, it is unlikely that populism will dissipate any time in the near future.

### Terrorism

While terrorism in OECD countries increased and spread to more countries in 2016 through mid-2017, terrorism defined as the number of deaths from terrorist activities has declined by 22% from its peak in 2014, according to the Global Terrorism Index (GTI).<sup>65</sup> This is due to declines in Afghanistan, Syria, Pakistan and Nigeria.

With the near-elimination of Islamic State of Iraq and the Levant (ISIL) from Syria and Iraq, and the weakening of al Qaeda and Boko Haram, the GTI may well continue to fall on a global basis, but it is unlikely that the type of terrorist attacks we have seen in the West—such as those perpetrated by the suicide bomber in Manchester or by those ramming vehicles into pedestrians in New York, London, Manhattan, Barcelona, Nice and Berlin—can be fully thwarted.

Nevertheless, as horrific as the human toll of such attacks has been, they have not severely impacted economic growth or market sentiment, likely in part because of the small death toll, relatively speaking, and in part because they are dispersed throughout a number of Western cities.

### Increasing Threat of Cyberattacks

Cyberattacks are on the rise from three types of perpetrators: nation-states such as Russia, China, North Korea and Iran; cybercriminals from these countries and elsewhere; and internal “turncoats” who have betrayed the organizations for or with which they work.<sup>66</sup> According to testimony to the Senate Armed Services Committee, more than 30 nations are developing offensive cyberattack capabilities.<sup>67</sup> Some of the cyber professionals who work for nation-states during the day moonlight as cybercriminals for personal gain at night.<sup>68</sup>

Objectives include state and industrial espionage, political interference, and theft and extortion. The perpetrators threaten critical infrastructure, telecommunications, and transportation and energy systems, as well as the financial service industry, government and



Floral tribute for victims of the Manchester Arena bombing in May 2017.

private sector data, intellectual property, and personal wealth.

The following are some of the most significant cyberattacks of 2017:

- Personal data, including Social Security data of 145 million people, was stolen from **Equifax**. This cyberattack was considered the worst breach of all time in the private sector.<sup>69</sup>
- Verizon announced that the scale of **Yahoo’s** hack was much larger than initially disclosed and that every one of Yahoo’s 3 billion accounts was hacked in 2013.<sup>70</sup>
- **WikiLeaks** released documents that claimed to describe hacking tools created by the CIA, and an unidentified group called **Shadow Brokers** leaked a suite of hacking tools that are widely believed to belong to the National Security Agency.<sup>71</sup>
- **WannaCry** attacked more than 300,000 computers across 150 countries and different industries, including health care, and asked for ransom payable in bitcoin. The US has officially blamed North Korea for the WannaCry attack.<sup>72</sup>
- A computer virus called **NotPetya** targeted Ukrainian businesses using compromised software that spread to FedEx, WPP, Rosneft and Maersk.<sup>73</sup>
- In November, the new **Uber** CEO revealed that data from 67 million Uber users had been stolen in 2016.<sup>74</sup>
- According to national intelligence services, cybersecurity firms and recent revelations by Facebook, Russians continued the practice of interfering in domestic elections that they

had honed in the US and the UK ahead of the Brexit referendum, spreading misinformation during the Catalan independence referendum and attacking emails of the Macron campaign in France.<sup>75</sup>

- It was revealed that the Russian government used software made by the Russian antivirus software company, **Kaspersky Lab**, to obtain classified US documents. According to the *New York Times*, “nearly two dozen American government agencies—including the State Department, the Department of Defense, Department of Energy, Justice Department, Treasury Department and the Army, Navy and Air Force” used the software. Israeli intelligence alerted the US to this Russian intrusion.<sup>76</sup>
- North Korea is reported to have recently targeted US electric power companies, according to the cybersecurity firm FireEye.<sup>78</sup>
- Three Chinese employees of **Boyusec** (a Chinese internet security firm), including one alleged to be affiliated with China’s People’s Liberation Army Unit 61398, were charged by US prosecutors for hacking into Siemens, Trimble Inc. (a GPS developer) and Moody’s Analytics to steal business secrets.<sup>79</sup>
- UK Air Chief Marshall Sir Stuart Peach warned of the increasing threat of Russian submarine activity near cables on the ocean floor that are used for an estimated 97% of global communications and \$10 trillion in daily financial transactions.<sup>80</sup>

Such cyberattacks have compromised national security across many countries, endangered patients’ lives in hospitals, cost an estimated



The number and type of cyberattacks and their associated risks will increase globally.



According to the US Department of Defense, North Korea has a growing potential “to conduct catastrophic attacks on U.S. critical infrastructure.”<sup>77</sup>

\$2 billion in ransomware in 2017 and required several hundred billion dollars in government and corporate expenditures to recover from cyberattacks and develop cybersecurity capabilities.<sup>81</sup> Cybersecurity Ventures estimates that damages from cybercrime cost about \$3 trillion in 2015.<sup>82</sup>

While the costs of cyberattacks will only increase over time, these attacks have thus far had a limited impact on economic growth, financial markets and human welfare. That likely will not be the case in the future.

The number and type of cyberattacks and their associated risks will increase globally. A more digitized world increases what experts refer to as the “attack surface.” Greater use of robotics and artificial intelligence will provide nation-states and criminals with more tools. And rising geopolitical tensions between the US and North Korea, rising tensions in the Middle East and deteriorating US-China relations will increase the incentives for more cyberattacks.

### Rising Geopolitical Tensions

In our 2017 *Outlook, Half Full*, we identified three high-probability geopolitical risks with uncertain impact: North Korean belligerence continues, Middle East conflicts and tensions persist, and Russian adventurism intensifies. US-China relations deteriorating under the Trump administration was mentioned as a high-probability, high-impact risk. All four risks have spilled over into 2018: the probabilities of occurrence have increased, as have their likely impacts.

## North Korea

In 2017, North Korea tested 23 missiles, including a Hwasong-15 intercontinental ballistic missile purportedly capable of reaching anywhere in the mainland US.<sup>83</sup> The US has responded by tightening sanctions and leading the United Nations to impose a series of additional sanctions, including reducing exports of refined petroleum products to North Korea by 90% and banning all major exports from North Korea.<sup>84</sup>

Without significant pressure from China, which heretofore has been absent, it is unlikely that existing sanctions will deter leader Kim Jong Un from his nuclear ambitions. The US does not have any good remaining options at this time. A nuclear North Korea may or may not be deterred from the use of its weapons against the US and its allies, but the country could still sell its nuclear arms and ballistic missile know-how to other rogue states or terrorist groups. The risk posed by the proliferation of weapons of mass destruction is an immense challenge to global security that, if unchecked, could result in substantial death, devastation and environmental degradation. On the other hand, preemptive and preventive war with North Korea with all the “fire and fury”<sup>85</sup> of the US military likely would cost several hundred thousand lives, including US, South Korean and possibly Japanese lives, and destruction on a massive scale.

Geopolitical experts with extensive military and foreign-policy backgrounds have assigned probabilities as low as 10% and as high as 50% to a military conflict with North Korea.<sup>86</sup>

## Middle East

While ISIL has been largely defeated in Iraq and Syria, regional tensions, rivalries and historic fault lines remain. In Iraq, long-term, peaceful coexistence of Kurds, Shiites and Sunnis may prove elusive, and both Iran and Russia are carving out roles as power brokers. In Syria, the US, Russia, Turkey, Iran and anti-Assad rebel groups maintain varying degrees of presence, a situation that could risk an inadvertent military incident between these parties. For now, the Assad government’s survival is no longer in question.

In Yemen, the war rages on and civilian death, disease and misery spread. In an unusual



North Korea's Hwasong-15 intercontinental ballistic missile is purportedly capable of reaching anywhere in the mainland US.

*James Martin Center for Nonproliferation Studies; Nuclear Threat Initiative.*

statement from the leaders of the UN World Food Programme, UNICEF and the World Health Organization, the country was described as being “on the brink of famine with 60% of the population not knowing where their next meal will come from.”<sup>87</sup> The United Nations has called it the “world’s largest humanitarian crisis.”<sup>88</sup> While the humanitarian toll is horrific, the impact on the rest of the world is minimal, with most of the damage contained within the region.

Moving on to Iran, the country is faced with four issues:

- Domestic political instability driven by the rivalry between the moderates supported by the middle class and, importantly, Iran’s majority youth population, and the extremist, aging religious leaders; the revolutionary guards are aligned with the latter
- Domestic economic discontent as the benefits of the Iran nuclear deal (Joint Comprehensive Plan of Action [JCPOA]) have not been as big as expected, notwithstanding a drop in inflation from nearly 40% to about 10% and in unemployment from nearly 15% to about 12%<sup>89</sup>
- Rivalry with Saudi Arabia for greater influence in the region; Iran has the advantage of proxy



US-backed forces in Iraq in October 2016.  
*NBC News 20161018 - Fall of Mosul would mean end of ISIS Caliphate in Iraq.*

forces in places such as Lebanon, Iraq and Syria, while Saudi Arabia has the advantage of better relations with both the US and Israel and substantially greater financial resources

- Deteriorating US relations and the risk to the survival of the JCPOA

Again here, we face a range of possible outcomes in which the US could get drawn into a fight with Iran in response to the unraveling of the JCPOA or in support of a regional US ally. A conflict with Iran would have much greater impact on regional stability, oil supplies and prices, and global risk premiums than what we have seen in the Middle East in recent years.

In Saudi Arabia, Crown Prince Mohammad bin Salman (MbS, as he is referred to by the Western press) has consolidated power by “controlling all three Saudi security services—the military, internal security services and national guard.”<sup>90</sup> He has also



Deteriorating relations between the US and Iran pose a risk to the nuclear deal.

embarked upon a reform and modernizing agenda that is resisted by powerful religious, political and economic groups domestically. Professor Bernard Haykel of Princeton University believes that this consolidation will now allow MbS to “streamline decision making and mitigate the political risks that are inherent in any system of multiple, competing power centers.”<sup>91</sup> On the other hand, Bruce Riedel, senior fellow at Brookings Institution and former CIA officer and adviser to four US presidents, believes that “a perfect storm is gathering around the kingdom of Saudi Arabia” that could destabilize the country and the entire region.<sup>92</sup> If such a storm broke out, it would reverberate through oil markets and send shock waves through the global economy.

### Russia

While Russia’s cross-border cyber activities and political and security engagement in the Middle East continued unabated, its territorial adventurism in the Ukraine and the Baltics was relatively restrained in 2017. Perhaps President Vladimir Putin was finding his footing with the new administration in Washington, D.C. or stepping back as the spotlight was thrown on Russia by US Special Counsel Robert Mueller’s investigation of “any links and/or coordination between the Russian government and the individuals associated with the campaign of President Donald Trump.”<sup>93</sup>

Russia will nonetheless continue to challenge the US and the global order whenever and wherever it can, but for now cyberattacks and stealth operations seem to be the preferred modus operandi.

### China

The 2017 US National Security Strategy took aim at China (and also Russia) as a challenge to the US on both geopolitical and economic grounds.<sup>94</sup> President Trump is not alone in making such a call.

As early as April 2015, Council on Foreign Relations Senior Fellow Robert D. Blackwill and Carnegie Endowment for International Peace Senior Associate Ashley J. Tellis published a report titled “Revising U.S. Grand Strategy Toward China.”<sup>95</sup> The report suggested that “China represents and will remain the most significant competitor to the United States for decades to come.

As such, the need for a more coherent U.S. response to increasing Chinese power is long overdue,” further suggesting that “because the American effort to ‘integrate’ China into the liberal international order has now generated new threats to U.S. primacy in Asia—and could result in a consequential challenge to American power globally—Washington needs a new grand strategy toward China that centers on balancing the rise of Chinese power rather than continuing to assist its ascendancy.”

An even higher level of concern was offered by Graham Allison, former head of Harvard Kennedy School’s Belfer Center for Science and International Affairs. Allison has served as assistant secretary of defense and has advised the secretaries of defense under every president from Ronald Reagan to Barack Obama. In his recently published book *Destined for War: Can America and China Escape Thucydides’s Trap?* Allison suggests that a rapidly rising China is challenging the US and the world order established by the US in the post-WWII period, and the two countries need to recognize and deal with the “tectonic structural stress” that China’s rise has created if peace is to be maintained.<sup>96</sup>

US policy is certainly undergoing a seismic shift. The 2017 US National Security Strategy described China as a strategic competitor that maintains a repressive vision and pursues policies of economic aggression aimed at weakening the US.

On the regional geopolitical front, China seems committed to the status quo and is not engaging in any activities that destabilize North Korea, including any serious support for UN Security Council sanctions. In the first half of 2017, China-North Korea trade was up 10% from the same period in 2016! The Chinese also continue to build infrastructure on seven newly created islands in the South China Sea.<sup>97</sup>

On the trade front, China’s trade surplus with the US has continued to expand and now accounts for 61% of the US trade deficit. After repeated attempts at economic dialogue, the Trump administration may have finally thrown in the towel, believing that China will not alter its mercantilist policies. President Trump issued several executive orders to investigate steel and aluminum imports,<sup>98</sup> and ordered a probe into China’s intellectual property practices under Section 301.<sup>99</sup> In late November, the US initiated the anti-dumping investigation into Chinese



China has continued construction in disputed areas of the South China Sea.

Map Data: Google Maps.

aluminum sheeting imports.<sup>100</sup> The US will likely take a much harder stance against Chinese foreign direct investment in the US, limiting investment in or purchases of US companies, citing national security threats and intellectual property theft.<sup>101</sup>

We believe tension in US-China relations—both geopolitical and economic—will rise significantly in 2018. If China believes these actions have no teeth and this administration, like past administrations, will not act, tensions will escalate further. Evan Medeiros, head of Eurasia Group’s Asia research and former White House special assistant to President Obama, predicts that “the Chinese may be surprised by how quickly the administration will move to coercive measures over a negotiated solution.”<sup>102</sup> Ely Ratner, former deputy national security adviser to Vice President Joe Biden, also observes that “all signs are now pointing toward a harder US line against China,”<sup>103</sup> primarily due to mounting pressures on President Trump to hold China accountable for its “unfair trade and investment practices.”<sup>104</sup>

While we do not expect a disruptive trade war, trade frictions will lead inevitably to some market volatility.

### **Bitcoin and the Unsteady Cryptocurrency Mania**

As many of our clients know, we believe that a picture (or quite a few in this case) is worth a thousand words.

There is no doubt that the rise in bitcoin’s price has pushed it into bubble territory. As discussed below, bitcoin’s meteoric rise in a short time has dwarfed the rise seen during the dot-com bubble.

We also believe that cryptocurrencies have moved beyond bubble levels in financial markets, and even beyond the levels seen during the Dutch “tulipmania” between 1634 and early 1637.

We have compared bitcoin and ether, two of the largest cryptocurrencies by market capitalization, to the Gouda variety of tulip bulbs. We have used prices compiled by Peter Garber, who was then a professor of economics at Brown University.<sup>105</sup> After considerable research, we believe that the prices for tulips reproduced in his work are the most comprehensive price series available. While numerous books and articles have been written about tulipmania, we are not aware of any other source with such extensive and detailed pricing information.

We suggest looking at Exhibits 45, 46 and 47 as a triptych. Exhibit 45 shows the price action of the Nasdaq, the S&P 500 and the Japanese TOPIX before and after their respective peaks. Exhibit 46 adds the price action of bitcoin and tulip bulbs to the equity market indices—both the equity and tulip bubbles are dwarfed by the price moves in bitcoin. Even more astonishing, when ether’s price index is added, in Exhibit 47, the price moves of equities, tulips and even bitcoin become barely visible.

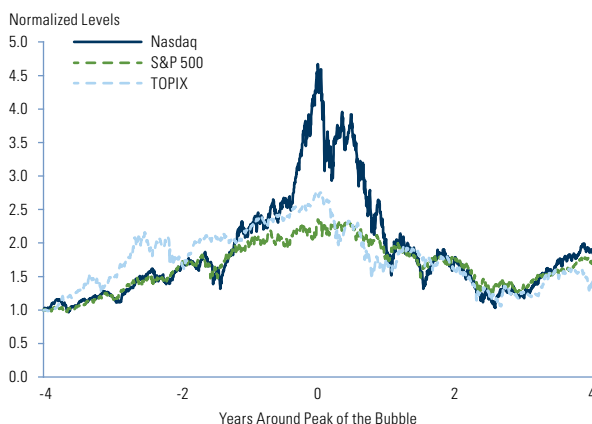
The mania surrounding cryptocurrencies is probably even better illustrated by the price surges seen in companies that announce some type of affiliation with blockchain technology or cryptocurrencies. According to press reports, two such companies are The Crypto Company and Long Blockchain Corp. The company references are not intended to form the basis for an investment decision and are included solely to provide examples of price surges.

Croe, Inc., an early-stage sports bra and fitness apparel company, entered into a share purchase agreement with The Crypto Company on June 7, 2017. The new entity, still called The Crypto Company, describes itself as a blockchain consulting company with a portfolio of digital assets.<sup>106</sup> Its third-quarter filings reported a fair value of cryptocurrency investments of \$900,110.<sup>107</sup> From its launch on September 27 to December 18, when the SEC temporarily halted trading in The Crypto Company, the stock had surged a mind-boggling 17,324%.

Long Blockchain Corp. came into existence on December 21, 2017, when Long Island Iced Tea Corp. announced that the company was shifting its primary focus toward the “exploration

## Exhibit 45: Equity Bubbles

The Nasdaq, S&P 500 and TOPIX all experienced bubbles towards the end of the 20th century.



Data spans from December 1987 through March 2002.  
 Note: Using the peaks for Nasdaq (March 2000), S&P 500 (March 2000), and TOPIX (December 1989).  
 Source: Investment Strategy Group, Datastream.

of and investment in opportunities that leverage the benefits of blockchain technology.”<sup>108</sup> As a result of the change in the strategic direction of the company, the name was changed to Long Blockchain Corp. The stock appreciated 109% through the end of the year.

The price moves in cryptocurrencies and in the share price of companies with new cryptocurrency or blockchain affiliations remind us of a comment by a Dutch historian, Theodorus Schrevelius. He wrote, in 1648, 11 years after the collapse of tulip prices, that “our descendants doubtless will laugh



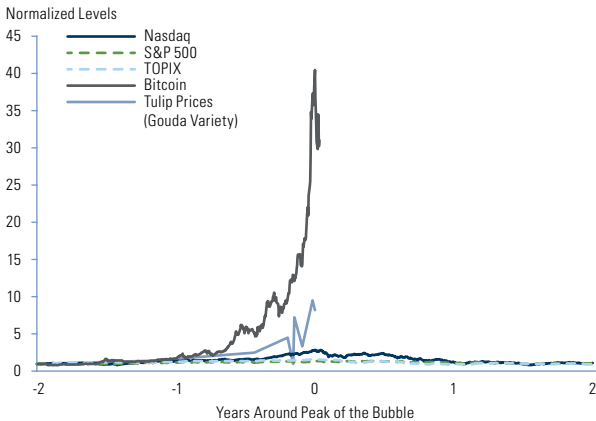
We believe the current incarnation of cryptocurrencies will not persist over the long run.

By permission Chip Bok and Creators Syndicate, Inc.



### Exhibit 46: Bitcoin in the Context of Equity Market Bubbles and Tulips

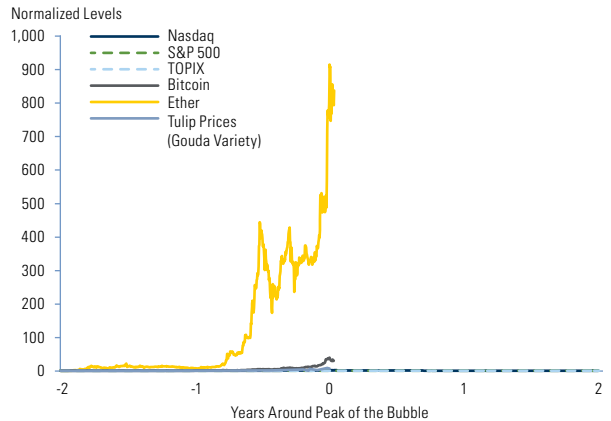
Both the equity and tulip bubbles are dwarfed by the price moves in bitcoin.



Data through December 31, 2017.  
 Source: Investment Strategy Group, Datastream, Bloomberg, Peter M. Garber, "Famous First Bubbles: The Fundamentals of Early Manias," 2000, MIT Press, Cambridge MA. Anne Goldgar, "Tulipmania: Money, Honor, and Knowledge, in the Dutch Golden Age," 2007, University of Chicago Press, Chicago. E.H. Krelage, "Bloemenspeculatie in Nederland. De Tulpomanie van 1636-'37 en de Hyacintenhandel van 1720-'36," 1942, P.N. Kampen & Zoon, Amsterdam."

### Exhibit 47: Ether in the Context of Equity Market Bubbles, Bitcoin and Tulips

Compared with ether's price move, those of equities, tulips and bitcoin are barely visible.



Data through December 31, 2017.  
 Note: Exhibit uses December 19, 2017 as Ether's recent peak.  
 Source: Investment Strategy Group, Datastream, Bloomberg, Peter M. Garber, "Famous First Bubbles: The Fundamentals of Early Manias," 2000, MIT Press, Cambridge MA. Anne Goldgar, "Tulipmania: Money, Honor, and Knowledge, in the Dutch Golden Age," 2007, University of Chicago Press, Chicago. E.H. Krelage, "Bloemenspeculatie in Nederland. De Tulpomanie van 1636-'37 en de Hyacintenhandel van 1720-'36," 1942, P.N. Kampen & Zoon, Amsterdam."

at the human insanity of our Age, that in our times, the tulip flowers have been so revered.”<sup>109</sup>

We think the concept of a digital currency that leverages blockchain technology is viable given the benefits it could provide: ease of execution globally, lower transaction costs, reduction of corruption since all transactions could be traced, safety of ownership, and so on. But bitcoin does not provide any of these key advantages. Quite the contrary. Not only is there no ease of execution, but settlement often takes as many as 10 days. In late 2017, the price discrepancies among 17 US exchanges for one bitcoin amounted to \$4,156, or about a 31% difference between the high and low prices.<sup>110</sup> Transaction costs have skyrocketed, and frequent hacking has wiped out entire wallets and exchanges of their bitcoin holdings.

While we do not know if bitcoin or any other cryptocurrency will double or triple from prevailing prices, we do not believe that these

cryptocurrencies will retain their value in the long run in their current incarnation.

One of the spillover effects of the cryptocurrency mania is that some investors may be led to believe that the US dollar will lose its status as the global reserve currency, to be replaced by cryptocurrencies of the new era. Since the GFC, many pundits have put forth arguments about the end of the US dollar. Obviously, we view the unsteady cryptocurrencies as no match for the “Steady as She Goes” dollar.

We should also add that we do not believe a collapse in bitcoin will have major contagion effects on the global economy or financial markets. At the peak of the dot-com bubble in March 2000, the combined market capitalization of Nasdaq and S&P 500 information technology stocks was 101% of US GDP and 31% of world GDP. The aggregate market capitalization of cryptocurrencies is 3.2% of US GDP and 0.8% of world GDP.

Since much more of the trading and ownership of bitcoin is in Asia, it is more appropriate to consider world GDP as the reference point.

While we acknowledge the rising threat this combination of risks poses for the outlook, we do not believe the “Unsteady as She Goes” undertow will

**There is no doubt that the rise in bitcoin’s price has pushed it into bubble territory.**

imperil either the global economic expansion or the bull market in global equities in 2018. The longer-term outlook, however, is not as sanguine. We discuss our total return expectations for the next one and five years in the following section.

## One- and Five-Year Expected Total Returns

As we weigh the supporting drivers of market returns in a “Steady as She Goes” outlook against the destabilizing factors of the “Unsteady as She Goes” undertow, we recommend our clients invest their portfolios based on the former. Our one- and five-year annualized expected returns and tactical tilts are based on a “Steady as She Goes” outlook.

However, we also recommend clients evaluate their strategic asset allocation to ensure their ability to withstand unpredictable shocks emanating from domestic politics, escalating geopolitical tensions, increasing cyberattacks and terrorist attacks, and other challenges to the global order. Since we do not believe that we or anyone else can accurately predict the nature, timing or severity of such possible shocks, we do not think it is appropriate to adjust a portfolio tactically in anticipation of their occurrence. Doing so could relegate an investor to the sidelines for a long time.

In formulating our expected returns for equities, we focus on three components: earnings growth, market multiples at the terminal point (end of 2018 and end of 2022 for the one- and five-year expected returns, respectively) and dividends. For fixed income assets, we focus on the path of short rates, the coupon income, the term premium between short-maturity Treasury securities and longer-maturity securities, and the spread between Treasury securities and other instruments. The most important drivers of our return forecasts are the assumptions for equity market valuations and the term premium at the end of each period, and

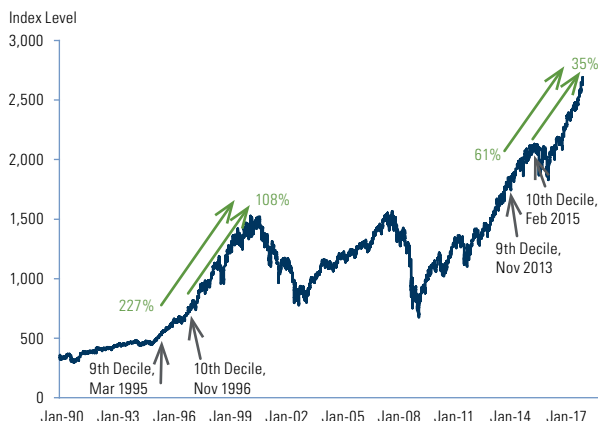
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**We do not believe that these cryptocurrencies will retain their value in the long run in their current incarnation.**

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## Exhibit 48: Historical Crossing of the 9th and 10th Deciles

Using expensive valuations to exit equities in this latest bull market would have meant a very early exit.



Data through December 31, 2017.

Note: Showing CAPE valuation deciles and total returns.

Source: Investment Strategy Group, Robert Shiller, Datastream.

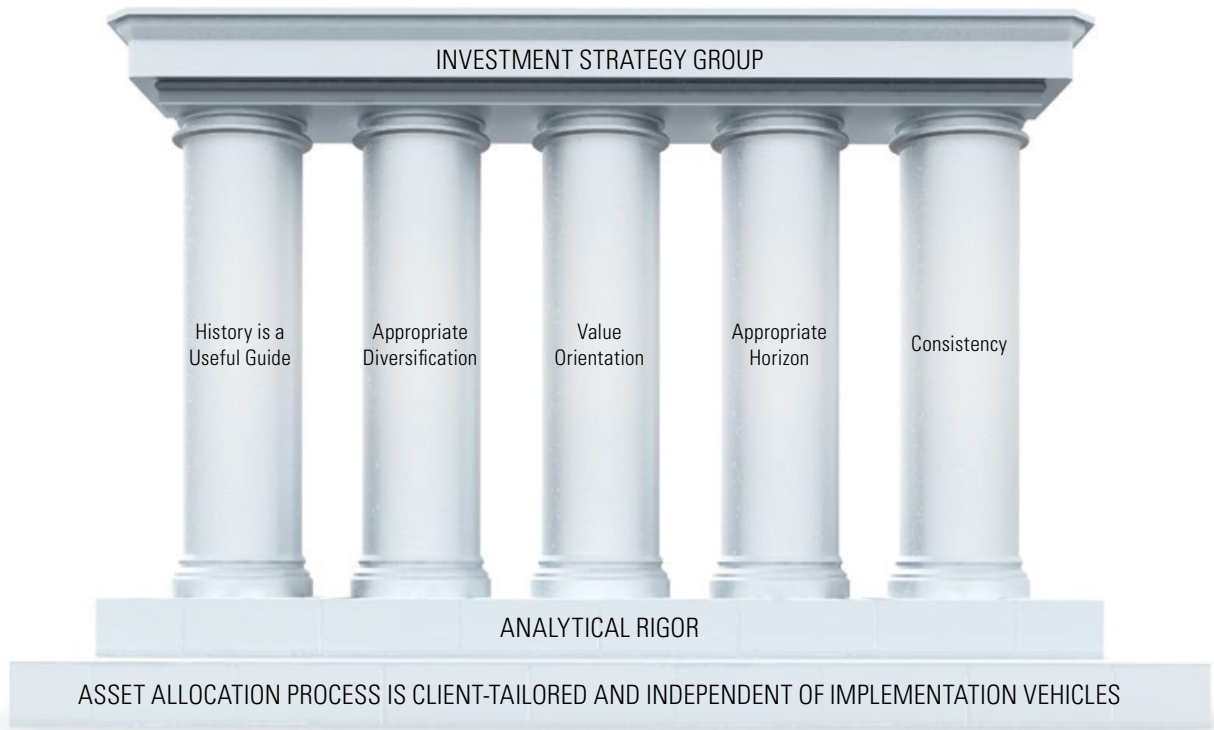
the probability we assign to having a recession over the next five years. Not surprisingly, we have more confidence in our 2018 expected returns than in our five-year forecasts.

As discussed earlier, we have been in a regime of low inflation and low volatility of inflation since April 1996. It is important to distinguish our view of a regime shift from other views driven by claims that “things are different this time.” As shown on the next page, the first pillar of our investment philosophy is that history is a useful guide. In our 2011 *Outlook, Stay the Course*, we urged our clients to be particularly cautious when they hear the siren words “things are different this time.”

When it comes to being in a different regime, we have simply observed that the US economy has been in distinct inflation regimes in the post-WWII period and that these regimes influence average market multiples. We are currently in a regime that mirrors one that spanned January 1958 through

August 1966. In environments with such low inflation and low volatility of inflation, average equity valuations are higher than averages over the longer period that spans 1958 to the present. These averages are relevant because we try to ascertain the levels of market overvaluation or undervaluation. The degree of overvaluation factors into our expected total returns.

## Pillars of the Investment Strategy Group's Investment Philosophy



It is important to note that we do not rely on mean reversion for our terminal values. Some of our clients may remember that we tried to dispel the myth of mean reversion in our 2013 *Outlook, Over the Horizon*. Mean reversion assumes that a time series, such as a history of price-to-book, is stationary and that its long-term mean does not change. As a result, price-to-book would be expected to revert to its long-term mean.

Looking across nine different valuation metrics in the US, Europe and Japan, we cannot find any statistical evidence of mean reversion. Equity valuations are bounded time series: there is some upper bound since valuations cannot reach infinity, and there is a lower bound since most valuations cannot go below zero. Having upper and lower bounds, however, does not imply valuation time series are stationary and revert to the same long-term mean.

For example, the current statistical significance of mean reversion in the Shiller CAPE is 37%; in other words, there is only 37% confidence that there is mean reversion in the Shiller CAPE and 63% confidence that it is not a mean-reverting time series. Furthermore, even if someone chose to proceed with 37% confidence in a valuation metric, the time it

would take for current valuations to revert to the long-term mean is about 28 years. Thus, we cannot use a long-term average valuation metric and mean reversion to determine where equity valuations will be in the next one or five years.

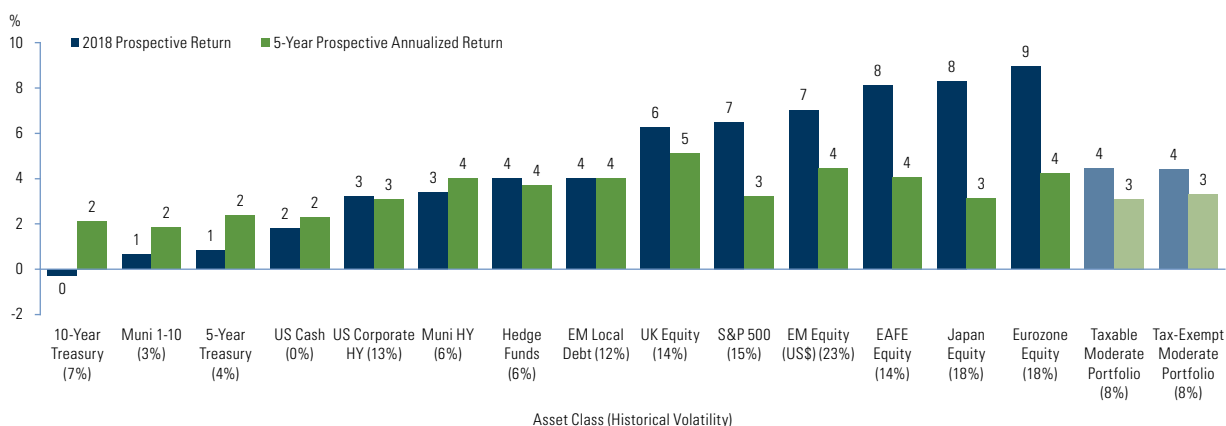
If we had used the Shiller CAPE metric or even a metric that blends different valuation metrics to exit the equity markets when valuations entered the ninth or 10th decile, we would have recommended exiting the market in March 1995 for the ninth decile or November 1996 for the 10th decile, forgoing meaningful returns.

Similarly, using valuations in the ninth or 10th deciles to exit the market in this latest bull market would have meant a very early exit, as shown in Exhibit 48. In both these rallies, being so early would have been the same as being wrong.

Why is all this nuanced discussion about regime shifts and mean reversion relevant? We provide this background so that our clients know that valuations are only one of the many inputs into our investment recommendations and view any five-year forecast with some degree of caution: such forecasts are laden with assumptions and uncertainties. Our five-year forecasts are our best attempt to provide a general framework

## Exhibit 49: ISG Prospective Total Returns

One and five year expected returns are below historical realized averages.



Data as of December 31, 2017.

Note: Historical volatility is measured over the current regime of low and stable inflation, beginning in April 1996.

Source: Investment Strategy Group. See endnote 111 for list of indices used.

Forecasts have been generated by ISG for informational purposes as of the date of this publication. There can be no assurance the forecasts will be achieved. Indices are gross of fees and returns can be significantly varied.

for expected returns across asset classes for the intermediate term. They are designed to provide a broad picture of the overall direction of returns so that our clients can make better-informed decisions about allocating their assets in this environment of low expected returns that coincides with rising political and geopolitical risks whose occurrence, duration and impact are uncertain.

Our forecast returns are shown in Exhibit 49. Better global economic growth in 2018 and stable-to-improving profit margins likely will result in high-single-digit earnings growth across most developed and emerging market equities. US earnings per share are supplemented by our estimate of a \$10 boost from the recently enacted corporate tax cuts. Also in 2018, in the UK, we expect mid-single-digit earnings growth. Incorporating dividends and some multiple contraction, which is justified by current high valuations, we expect equity returns to range from a low of 6% in the UK to a high of 8% in non-US developed and emerging market equities. We assign a higher probability that returns this year will exceed our base case across markets, as we did in our 2017 *Outlook, Half Full*.

We expect government bonds to deliver negligible returns given the very low starting level of rates, the three expected hikes in the federal funds rate and the continued reduction of reinvestment of the securities on the Federal Reserve's balance sheet.

We should note that we have tested for mean reversion in 10-year Treasury bonds and found they are not mean-reverting to a long-term average; they are mean-reverting to long-term secular trends.

Based on these forecast returns, we expect a moderate-risk diversified portfolio that includes tax-exempt bonds to return 4.5% in 2018 and that includes of taxable bonds to return 4.4%.

Our five-year returns are lower for equities across the board because we have assigned a 60% probability of a recession in the next five years. A recession will inevitably result in a drop in earnings and valuation levels. Hence, our expected return for a moderate-risk portfolio comprised of tax-exempt bonds drops to 3.1% annualized, and one comprised of taxable bonds drops to 3.3% annualized.

### Our Tactical Tilts

Importantly, we believe that 2018 returns can be enhanced by a series of tactical tilts. While our overall level of risk allocated to tactical tilts is well below the peak levels of prior years, we have slightly increased our risk exposure over the course of the year by adding some new tilts to the portfolios. These tactical tilts are driven by our view of 2.6% growth in the US, 3.4% growth globally, still-favorable monetary policy in key countries, and supportive or, at minimum, neutral fiscal policy.

**Underweight Fixed Income:** We continue to recommend underweighting US fixed income securities. As shown in Exhibit 49, we expect returns of about 1% across high-quality intermediate-duration government securities and near zero returns for the 10-year Treasury. We expect the 10-year Treasury bond yield to range between 2.5% and 3% by the end of 2018, partly driven by our expectation of three 25 basis point increases in the federal funds rate. Of course, if financial conditions were to ease owing to a continued strong rally in equity markets, the pace of hikes might increase, resulting in greater downside to bonds. Given the modest returns in bonds, we recommend underweighting fixed income to fund our tactical tilts, given their higher expected returns, as outlined below. We also reflect our view of rising rates in a tilt focused on the three-year part of the Treasury curve. As shown earlier, we have seen significant flows into bond funds since the trough of the financial crisis and believe that any rapid increase in rates would reverse these flows and have a multiplier effect on rates.

**Overweight to High Yield:** Although we have been reducing the size of our tactical allocation to high yield assets in recent years as spreads have tightened, we continue to recommend an overweight to generic high yield bonds, high yield energy bonds and high yield bank loans. Put simply, we think this long recovery will keep defaults well below average levels, providing attractive loss-adjusted incremental yield to investors. We expect returns of about 3% for both high yield bonds and high yield energy bonds this year, with the latter benefiting from oil prices remaining in our \$45–65 forecast range from continued OPEC production discipline. Our 4–5% total return expectation for bank loans is further supported by our expectation of a rising rate environment, as the coupon rate on bank loans resets higher when LIBOR rises.

**Modest Overweight to US Banks:** We maintain a modest overweight to US banks despite their 45% total return over the last two years. Banks are a natural beneficiary of federal fund rate hikes, particularly since about 60% of the change in their net interest margin is driven by short rate fluctuations. Moreover, consensus bank earnings estimates embed only two hikes this year versus our expectation of three, providing scope for some

upside. The same could be said for tax reform, as banks' largely domestic earnings will now benefit from lower corporate taxes. Finally, banks will likely also benefit from a more favorable regulatory environment under the Trump administration, especially if banks are able to return excess capital. We forecast a return of about 7%, which is below last year's total return of 10.5%.

**Overweight US Energy Infrastructure Master Limited Partnerships (MLPs):** We initiated a tactical allocation to energy MLPs in late January 2016 and added to the position last year given significant underperformance. We think MLPs are well positioned to deliver double-digit tax-advantaged returns this year based on:

- Attractive valuations that are below historical averages, both in absolute terms and relative to the S&P 500
- Continued growth in US oil and gas production that supports growing cash flows
- More stable oil prices given OPEC production discipline
- A return to mid-single-digit distribution growth rates after last year's high-profile cuts
- An 8% yield that we believe is well covered from cash flow

**New Allocation to Our Systematic Downside Mitigation Tilt:** We initiated a position in our new systematic downside mitigation tilt in November of last year. This is the first purely systematic, entirely rules-based strategy employed within tactical asset allocation. The approach ranks stocks in the US large-cap universe each month across 15 different fundamental and technical variables and then shorts the 100 highest-scoring stocks against a long position in the broader market in equal size. The tilt seeks to capture the underperformance of these companies relative to the market, an approach that has generated attractive risk-adjusted returns in both up and down markets historically and that is especially effective when equity returns are negative. We feel this approach is a valuable addition to the tactical portfolio when valuations are elevated, but we are not yet comfortable recommending an outright underweight position in equities.

**Overweight Spanish Equities:** We maintain an overweight to Spanish equities on a currency-hedged basis. This tactical tilt was first introduced

in August 2013, and we have adjusted the size of this tilt multiple times. We recommend Spanish equities because:

- They are one of the most attractively valued developed equity markets and investors have not discounted much earnings growth
- Banks make up the largest sector of this equity market and will benefit from gradually rising interest rates
- They have an attractive dividend yield of 3% that is well covered by cash flow

We do not expect the reverberations of Catalonia's independence movement to negatively impact Spain's economic growth trajectory.

#### Allocation to 2018 Euro Stoxx 50 Dividend

**Futures Contract:** We have a very modest allocation to a 2018 dividend futures contract based on our view that dividends will be higher than the futures contract price. We believe that Eurozone companies, especially banks, can raise their dividends on the back of strong earnings growth in 2017, strong expected earnings growth in 2018 and the completion of the Basel III banking regulation.

**Overweight to Japanese Equities:** We recommend an overweight to Japanese equities—implemented with downside protection. The rationale for this tactical tilt is:

- Japanese earnings and profit margins have risen to multi-decade highs
- The improvement in profitability has been broad-based across sectors
- Management practices seem to be focusing more on return on equity, dividends and buybacks
- Foreign flows into Japanese equities have recently turned modestly positive, providing significant upside to our return expectations

#### Allocation to a Series of Relative Value Developed

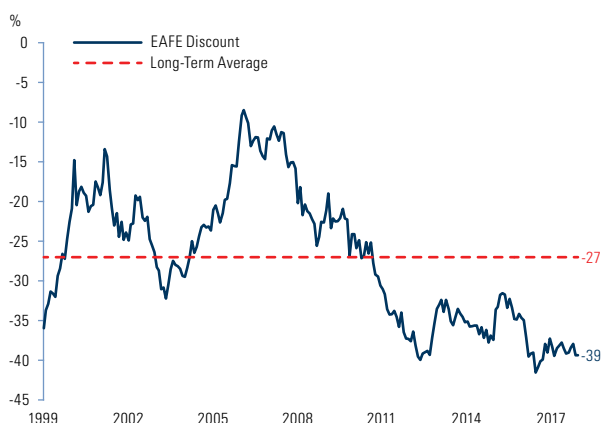
**Market Currency Tilts:** We have a set of four relative value currency trades with mid-single-digit return expectations.

- Japanese yen depreciation versus the US dollar as the Bank of Japan maintains a highly accommodative monetary policy while the Federal Reserve continues its path of steady

### Exhibit 50: EAFE Markets' Valuation

#### Discount to US

EAFE equities trade at below-average valuations compared to those in the US.



Data through December 31, 2017.

Source: Investment Strategy Group, MSCI, Datastream.

Note: Based on price/book, price/10-year average earnings, price/10-year average cash flow, price/peak earnings and price/peak cash flow.

rate hikes. We expect this tilt to be further supported by the flow of funds out of Japan into the US and elsewhere.

- Euro depreciation versus the US dollar as the ECB remains on hold through 2018 while the Federal Reserve raises rates. We expect the tilt to be supported by some repatriation of euro-based earnings by US corporations as they respond to the lower tax rates.
- Swedish krona appreciation versus the euro because Sweden is further along in the economic cycle than the Eurozone. It has less spare capacity and higher core inflation and inflation expectations. It is also marginally cheap relative to our valuation models.
- UK pound appreciation versus the US dollar because we expect the UK to avoid a hard Brexit, inflation in the UK is above Bank of England target levels and the pound is undervalued relative to our valuation models.

A question that often arises when our clients see our higher expected returns for EAFE equities relative to US equities is, why not underweight US equities in favor of EAFE equities to a larger degree than our current tactical tilts? EAFE valuations are cheaper than US valuations, as shown in Exhibit 50: EAFE equities are trading at a 39% discount to US equities compared with a historical average discount of 27%.

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At first glance, given our higher expected returns for EAFE equities and the total returns seen in 2017, clients may think a higher allocation is warranted. However, the higher 2017 returns in EAFE equities were not due to better earnings growth, higher dividends or multiple expansion; in fact, EAFE returns were 15.8% in local-currency terms, lagging the US equity returns of 21.8%. It is only because of the weaker performance of the US dollar that unhedged EAFE returns at 25.6% appear attractive to a US dollar-based investor.

Given our strategic recommendation to US dollar-based clients to hedge half of their EAFE currency exposure, and our view of very modest US dollar appreciation versus the euro and yen in 2018, we do not expect US dollar depreciation to drive EAFE outperformance.

From a local-currency perspective, the outperformance is very modest and we think the incremental volatility from underweighting US equities to fund an overweight to EAFE equities is not rewarded at this time.

For a longer investment horizon, we prefer maintaining our strategic overweight to US equities. We prefer the sector exposure of US equity benchmarks with a greater allocation to the faster-growing information technology and health care sectors. We also prefer the greater resilience and more favorable demographics of the US relative to the Eurozone and Japan. Finally, 40% of the earnings of S&P 500 companies is sourced from outside the US, so a portfolio of US multinationals already has significant exposure to growth outside the country.

Our 2018 and five-year return expectations are based on the continuation of the “Steady as She Goes” outlook for 2018 and 2019. We have based our investment recommendation to remain fully invested in equities on our expectation of modest single-digit returns across asset classes and a very low probability of recession. However, we also know that the “Unsteady as She Goes” undertow can throw up shocks to the global economy.

Since we cannot predict these shocks with any degree of certainty, we recommend basing investments on the more favorable “Steady as She Goes” outlook while being cognizant of the growing risks and making sure that each portfolio is sufficiently well diversified and has the right allocation to high-quality fixed income to withstand such shocks.

## Key Takeaways

As we often say, forecasting is difficult under the best of circumstances but particularly so after a nearly nine-year-long economic expansion and bull market. 2018 brings the additional challenges of even higher valuations and a stronger undertow of political and geopolitical risks.

Nevertheless, there are nine key takeaways from our 2018 *Outlook*:

- **Improving growth:** We expect global economic activity to accelerate this year, with modestly higher GDP growth rates in the US, Eurozone and many emerging market economies but a small slowdown in the UK, Japan and China.
- **Supportive fiscal policy:** In the US, the new Tax Cuts and Jobs Act of 2017 (TCJA) will boost growth by about 0.3 percentage point in 2018. Germany's fourth budget surplus in as many years is a potential source of fiscal stimulus and higher growth.
- **Still-accommodative monetary policy:** US monetary conditions will still be relatively easy because of the slow and steady pace at which the Federal Reserve is hiking the federal funds rate. At the same time, the ECB may let quantitative easing end later in 2018, and the BOJ is likely to stay on hold.
- **Low recession risk:** Favorable monetary and fiscal policies and the absence of imbalances substantially reduce the probability of a recession in key developed and emerging market countries.
- **Remain vigilant:** Despite a favorable economic and policy backdrop, there is no shortage of global risks, including rising polarization in the US, growing populism globally, heightened geopolitical tensions, further spread of terrorism and increasing proliferation of serious cyberattacks.
- **China concerns:** China remains a big source of uncertainty in the long run as a result of its growing debt burden. Capital controls, a stronger government hand in the economy and faster global growth have lowered near-term risks. There is also potential for a notable deterioration in the US-China relationship under the Trump administration driven by changing trade and foreign policy toward China.



- **Stay invested:** The collective impact of these various risks is not yet sizable enough to undermine our core view: that we are in a longer-than-normal US recovery that supports equity returns, which are likely to exceed those of cash and bonds. Thus, we recommend staying invested in equities with some tactical tilts to certain US equity sectors, US high yield bonds, and European and Japanese equities, all funded out of fixed income securities.
- **Modest returns:** While we recommend clients remain invested, we have modest return expectations and think a market correction of 5–10% is likely sometime in 2018, albeit from potentially higher-than-current prices. We expect that a moderate-risk, well-diversified taxable portfolio will have a return of about 4% in 2018.
- **Impact of TCJA on asset allocation:** The impact of the TCJA on clients' strategic asset allocation is negligible for both taxable and tax-exempt clients. The lower federal tax rates marginally raise the allocation to hedge funds in states without state and local taxes; however, the allocation to hedge funds is reduced in higher-tax states and deployed into fixed income and private equity for clients suitable for alternative investments.

# 2018 Global Economic Outlook: Pulling in Sync

FOR THE FIRST TIME IN A DECADE, the major economies of the world are finally pulling in the same direction. Consider that all 45 economies tracked by the OECD were on pace to expand in 2017, while two-thirds of them had faster growth than in the prior year. Such synchronized activity creates a strong tailwind for 2018, with the OECD forecasting that every one of its tracked countries will expand again.

To be sure, accommodative monetary policies from the major central banks, along with a collective pivot away from outright fiscal austerity, have helped unify growth. In the United States, the gradual pace of the Federal Reserve's rate hikes has contributed to easier-than-expected financial conditions that have encouraged companies to hire and invest. The same could be said for recently passed tax reform, which is likely to provide an incremental boost to corporations and households alike. The Eurozone economy has improved dramatically as well, thanks in part to the accommodative policies of the ECB and pent-up demand for investment spending. At the same time, worries about sovereign creditworthiness have receded, as all Eurozone



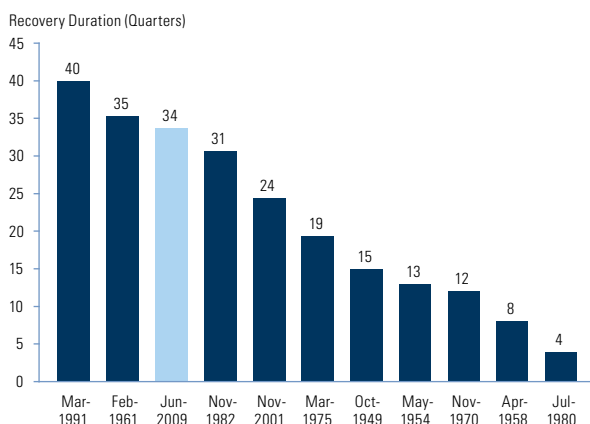
countries are forecast to have fiscal deficits smaller than 3% of GDP in 2018 for the first time since the inception of the euro. And bold policies in Japan—such as pegging 10-year rates at zero and deploying a large fiscal stimulus package—have helped extend its run of positive GDP reports to the longest span in decades. Of equal importance, stronger trade across the globe has lifted GDP growth in emerging markets and helped offset the potentially negative impact of slower credit creation in China.

In parallel to this rising tide of global activity, the populist sentiment that threatened to capsize the global expansion in recent years has been receding. France averted the higher uncertainty that would have accompanied a far-right victory in its recent presidential election, and Catalonia's separatist government failed in its attempt to declare independence from Spain. Similarly, a new electoral system in Italy has reduced the risk stemming from a populist victory in upcoming elections.

Even so, we acknowledge that ripples from a disruptive shock could still rock the boat in 2018, as discussed in Section I of this year's *Outlook*. An unexpected increase in inflation would be particularly troublesome today given current bond and equity valuations. A surprise US recession could be equally damaging. Still, we don't yet accord a high probability to any of these risks derailing the current economic trajectory. Instead, given the breadth of the economic acceleration that took hold in 2017, we expect the global economy to sustain its rhythm this year (see Exhibit 51).

## Exhibit 52: Duration of Post-WWII US Expansions

This recovery is now the third-longest since WWII.



Data as of Q4 2017.

Note: The recovery is measured from the business cycle trough.

Source: Investment Strategy Group, National Bureau of Economic Research.

## United States: Going the Distance

It is often said that life is a marathon, not a sprint. The same could be said for the US economic expansion. At nearly nine years, its extended run already ranks as the third-longest in post-WWII history (see Exhibit 52). By early 2018, it will overtake the current runner-up.

But far from showing signs of fatigue, the US expansion seems to be hitting its stride. The Institute of Supply Management (ISM) Composite Index<sup>112</sup> stands near its highest level in 20 years (see Exhibit 53). Similarly, the Goldman Sachs Current Activity Indicator (CAI)—a real-time proxy for GDP

## Exhibit 51: ISG Outlook for Developed Economies

		United States		Eurozone		United Kingdom		Japan	
		2017	2018 Forecast	2017	2018 Forecast	2017	2018 Forecast	2017	2018 Forecast
Real GDP Growth*	Annual Average	2.30%	2.20–3.00%	2.30%	2.00–2.75%	1.50%	1.00–2.00%	1.80%	1.20–2.00%
Policy Rate**	End of Year	1.50%	2.25%	(0.40%)	(0.40%)	0.50%	1.00%	(0.10%)	(0.10%)
10-Year Bond Yield***	End of Year	2.41%	2.50–3.00%	0.43%	0.50–1.00%	1.19%	1.25–1.75%	0.05%	0.00%
Headline Inflation****	Annual Average	2.00%	1.75–2.50%	1.50%	0.80–1.60%	3.00%	2.00–2.75%	0.20%	–
Core Inflation****	Annual Average	1.80%	1.80–2.30%	0.90%	0.80–1.30%	2.70%	2.00–2.75%	0.80%	0.40–1.10%

Data as of December 31, 2017.

Source: Investment Strategy Group, Goldman Sachs Global Investment Research, Bloomberg.

\* 2017 real GDP is based on Goldman Sachs Global Investment Research estimates of year-over-year growth for the full year.

\*\* The US policy rate refers to the top of the Federal Reserve's target range. The Eurozone policy rate refers to the ECB deposit facility. The Japan policy rate refers to the BOJ deposit rate.

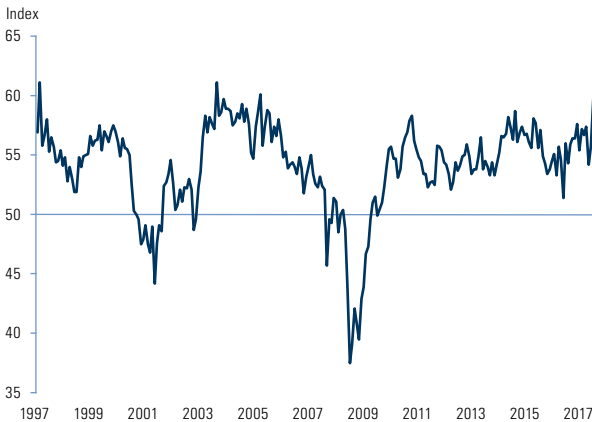
\*\*\* For Eurozone bond yield, we show the 10-year German Bund yield.

\*\*\*\* For 2017 CPI readings, we show the latest year-over-year CPI inflation rate (November). Japan core inflation excludes fresh food, but includes energy.

Note: Forecasts have been generated by ISG for informational purposes as of the date of this publication. There can be no assurance the forecasts will be achieved.

### Exhibit 53: US ISM Composite Index

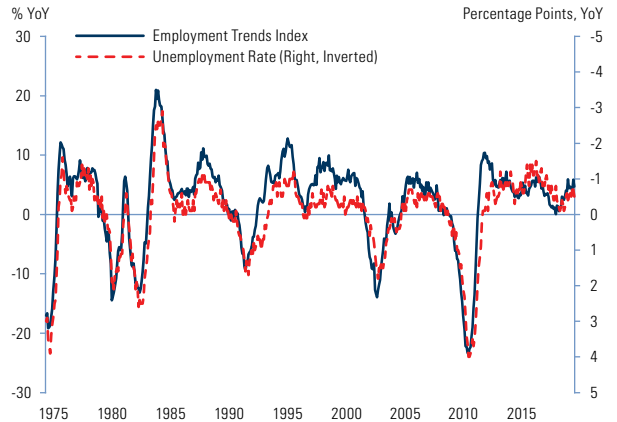
Business surveys, near their highest levels in 20 years, suggest a pickup in growth.



Data through November 2017.  
Source: Investment Strategy Group, Haver.

### Exhibit 54: US Employment Trends Index

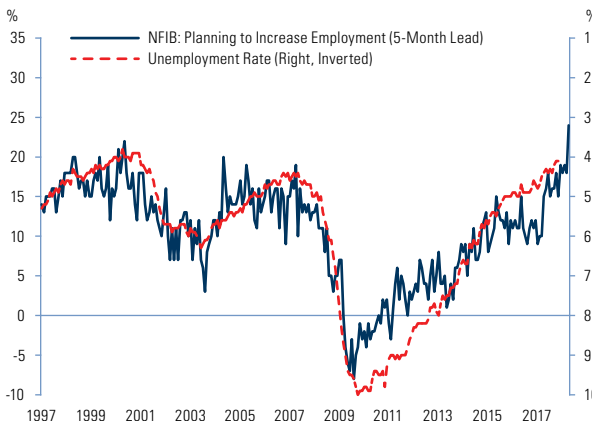
Leading indicators suggest unemployment has further to fall.



Data through November 2017.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 55: US Corporate Plans to Increase Employment

Companies' hiring intentions are at an all-time high.



Data through November 2017.  
Source: Investment Strategy Group, Haver.

growth based on 57 weekly and monthly economic variables—registered a brisk 4% annualized pace in the fourth quarter of 2017. Real GDP growth is not far behind, with both the third and fourth quarters of 2017 tracking near 3%.

As the US economy enters 2018 with strong momentum, we expect another year of above-trend growth. In fact, our forecast features real GDP growth reaching 2.2–3.0% in 2018, a likely pickup from last year's 2.3% pace. There are three key drivers to this story: a resilient US consumer, improving business investment and supportive policy. We discuss each below.

#### A Resilient US Consumer

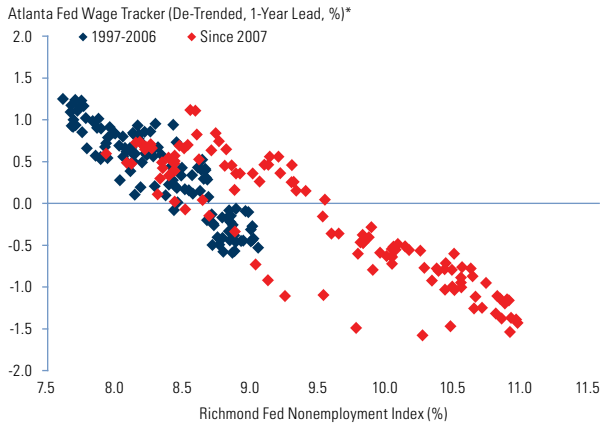
We believe consumer spending should benefit from several tailwinds this year, a notable development in an economy where consumption represents about 70% of GDP. Chief among these is ongoing strength in the labor market, which is expanding the pool of employed consumers. Here, the Conference Board

Employment Trends Index—composed of eight leading labor market indicators—suggests the unemployment rate is likely to fall further this year (see Exhibit 54). The same message is evident in the new all-time high of the National Federation of Independent Business (NFIB) index of companies planning to increase employment (see Exhibit 55). Our forecast agrees, calling for the unemployment rate to reach 3.7% by the end of 2018, as

**We believe consumer spending should benefit from several tailwinds this year, a notable development in an economy where consumption represents about 70% of GDP.**

### Exhibit 56: US Labor Market Slack vs. Wage Growth

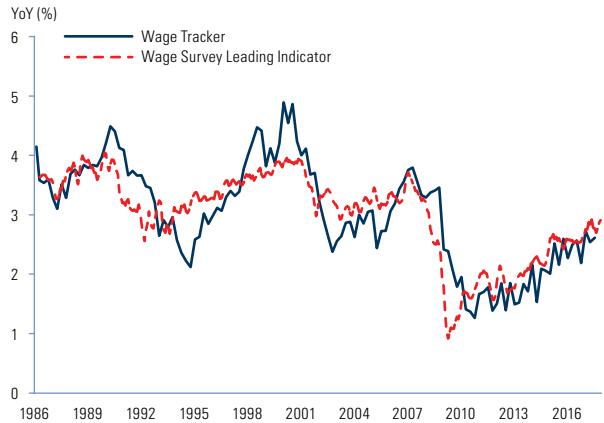
Lower unemployment is still associated with faster wage growth.



Data as of November 2017.  
 Source: Investment Strategy Group, Federal Reserve Bank of Atlanta, Federal Reserve Bank of Richmond.  
 \* The Atlanta Fed Wage Tracker is de-trended using a LOWESS smoother. This helps capture the relationship between broad labor-market slack and wage growth, after adjusting for productivity and inflation trends affecting wage growth.

### Exhibit 57: Goldman Sachs US Wage Growth Measures

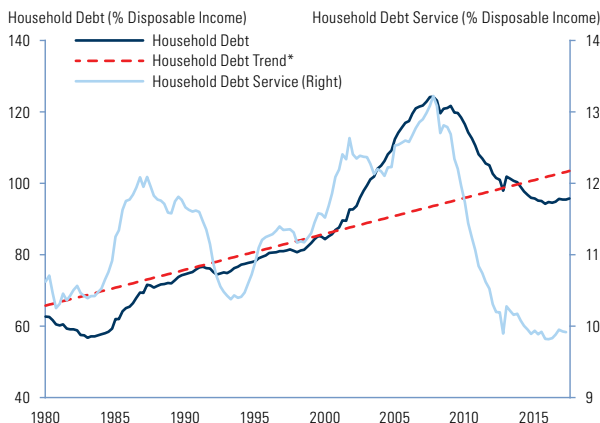
Leading indicators point to gradually rising wage growth.



Data through November 2017.  
 Source: Investment Strategy Group, Goldman Sachs Global Investment Research.

### Exhibit 58: US Household Debt and Debt Service

Consumer deleveraging is well advanced, removing a headwind to growth.



Data through Q3 2017.  
 Source: Investment Strategy Group, Datastream, Federal Reserve Board, US Commerce Department.  
 \* Household debt trend defined up until 2006, the onset of the housing bubble.

disposable income. While the precise response of wages to falling unemployment is hotly debated in economic circles, the relationship has remained positive even in this business cycle (see Exhibit 56). Goldman Sachs' Wage Survey Leading Indicator is also signaling a gradual rise in wages (see Exhibit 57).

Consumers' good fortunes are not limited to an improving labor market. Last year's strong equity gains coupled with continued home price appreciation lifted household net worth as a share of disposable income to an all-time high. These improvements continue a trend that has seen households' debt-to-income ratio fall significantly, while lower interest rates have pushed debt service ratios to historic lows (see Exhibit 58). Taken together, higher net worth and lower debt service costs should decrease consumers' need for precautionary saving and boost spending, underpinning our forecast of solid 2–3% private consumption growth this year.

monthly payroll gains of around 145,000 should continue to exceed growth in the labor force. If our forecast is correct, it would represent the lowest unemployment rate since the late 1960s.

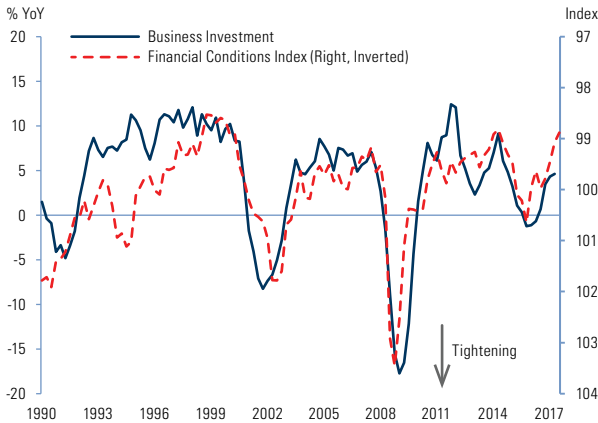
These job gains are also expected to put upward pressure on wages, boosting consumers'

### Improving Business Investment

While last year's strong capital spending growth was no doubt aided by the rebound in oil prices and thus energy investment, there is more to the story. Put simply, the backdrop for broader business investment is incredibly supportive.

### Exhibit 59: Goldman Sachs US Financial Conditions Index and Business Investment

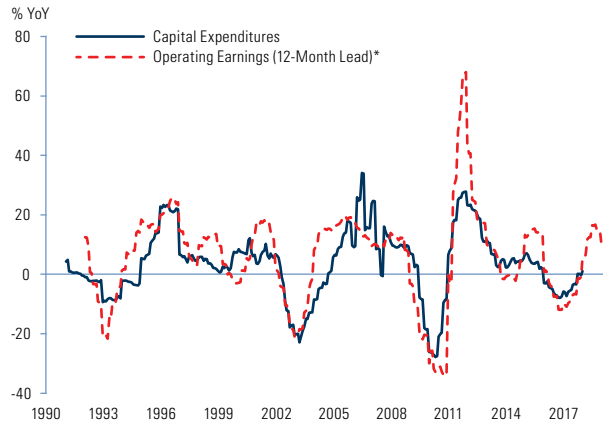
Easy financial conditions are supportive of corporate investment.



Data through Q4 2017.  
Source: Investment Strategy Group, Goldman Sachs Global Investment Research, Datastream.

### Exhibit 60: S&P 500 Capital Expenditures and Operating Earnings

Today's strong earnings growth bodes well for future capital spending.



Data as of December 2017.  
Source: Investment Strategy Group, Bloomberg.  
\* Operating earnings defined as earnings less interest and tax.

Capital expenditures (capex) should benefit not only from the solid consumer demand discussed in the previous section, but also from a supportive combination of today's easy financial conditions (see Exhibit 59), healthy earnings growth (see Exhibit 60) and optimistic business sentiment (see Exhibits 61). On the last point, both the Duke CFO Optimism Index<sup>113</sup> and the NFIB Small Business Optimism Index<sup>114</sup> registered cycle highs at the end of 2017.

The recently passed tax reform package represents a further upside risk to business investment. Keep in mind that under the new law, firms can fully expense capital expenditures only in the year they are made, creating a strong incentive to pull capital spending forward to maximize the value of this tax shield. Moreover, passage of tax reform has removed the uncertainty that likely delayed some capital expenditures last year. If so, that pent-up spending is likely to be deployed in 2018.

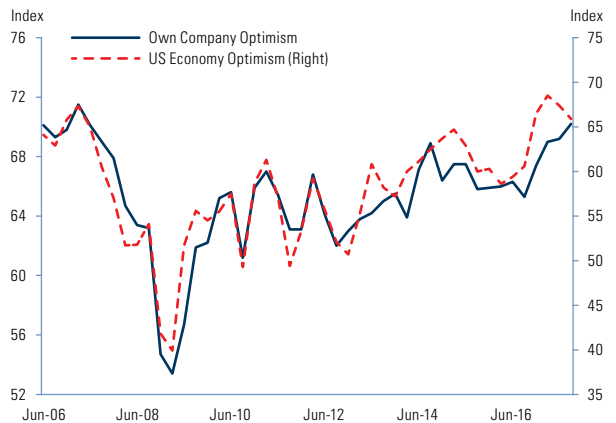
Taken together, these developments support our expectation for mid-single-digit growth in business investment this year.

#### Supportive Policy

Fiscal policy will support US growth this year and next, aided by both residual spending on hurricane reconstruction efforts and the implementation of newly passed tax reform. Corporate spending is

### Exhibit 61: Duke CFO Outlook Survey

Chief financial officers' confidence at cycle highs is also supportive of capex this year.

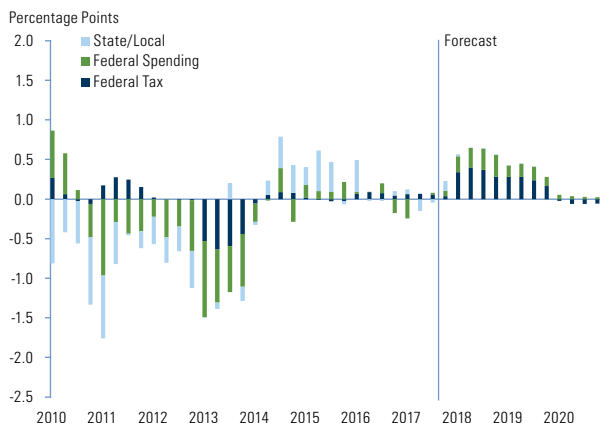


Data as of Q3 2017.  
Source: Investment Strategy Group, Haver.

likely to benefit from lower tax rates and incentives to repatriate overseas profits, in addition to immediate expensing of capex, which will reduce the after-tax cost of investment in machinery and equipment. At the same time, household disposable income is likely to get a boost; taxes will decrease or stay the same for 90% of middle class tax payers through 2021, according to the Joint Committee on Taxation (JCT).<sup>115</sup> These various

## Exhibit 62: Estimates of the Effect of Fiscal Policy on US Real GDP Growth

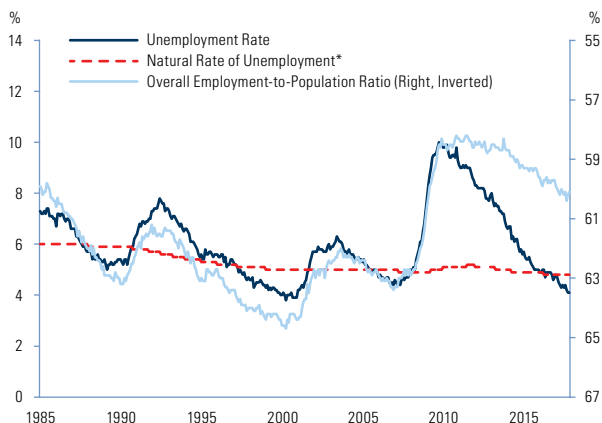
Fiscal policy will be a tailwind to growth over the next two years.



Data through Q3 2017, forecasts through Q4 2020.  
Source: Investment Strategy Group, Goldman Sachs Global Investment Research.

## Exhibit 63: Measures of US Labor Market Slack

Alternative measures of unemployment suggest some remaining slack in the labor market.



Data through December 2017.  
Source: Investment Strategy Group, Federal Reserve, Datastream.  
\* Long-term rate.

impacts are expected to lift average real GDP growth by around 0.4 percentage points in both 2018 and 2019, according to our colleagues in Global Investment Research (see Exhibit 62).

Of course, with fiscal stimulus arriving nearly nine years into an economic expansion, some worry about a rapid rise in inflation, in turn necessitating an aggressive response from the Federal Reserve. While this scenario is possible, we consider it unlikely for four reasons. First, the growth impact of this stimulus is modest because tax cuts are among the least effective forms of fiscal stimulus, according to the Congressional Budget Office (CBO).<sup>116</sup> Second, the slack evident in broader measures of labor supply makes a significant acceleration in wage inflation improbable (see Exhibit 63). Keep in mind that it took unemployment falling significantly below the

non-accelerating inflation rate of unemployment (NAIRU) amid a surge in military spending in the 1960s before inflation accelerated. For context, that would correspond to the unemployment rate falling to around 3.25% today and staying there.

Third, headline inflation remains well below the Federal Reserve's 2% target. In fact, core personal consumption expenditures (PCE) inflation has remained below its target 97% of the time since September 2008. Lastly, the Federal Reserve is acutely aware of the risks its actions pose to the business cycle, with Chair Janet Yellen acknowledging that "an abrupt tightening would risk disrupting financial markets and perhaps even inadvertently push the economy into recession."<sup>117</sup> This being the case, we expect the Federal Reserve to proceed cautiously with three hikes this year, a pace well below the historical average.

**With fiscal stimulus arriving nearly nine years into an economic expansion, some worry about a rapid rise in inflation, in turn necessitating an aggressive response from the Federal Reserve.**

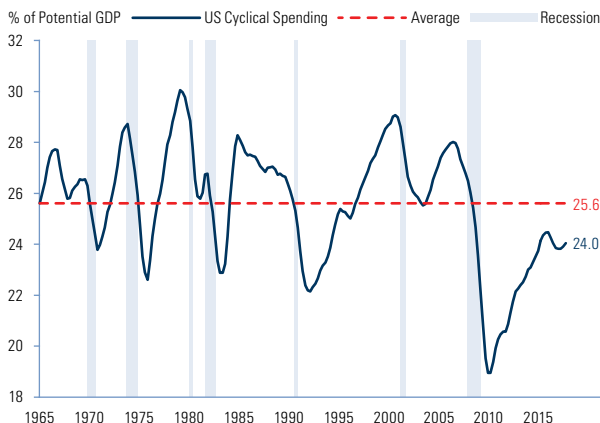
### Our View of US Growth

Given that the Federal Reserve is unlikely to tighten policy aggressively, we believe the major risk to this expansion will arise from economic imbalances or an exogenous shock. Yet neither of these risks is probable enough to undermine our central case. The depth of the financial crisis and the measured pace of the recovery have left the cyclical parts of the economy well below average



## Exhibit 64: US Cyclical Spending

There is scope for business and consumer spending to increase in the US economy.



Data through Q3 2017.

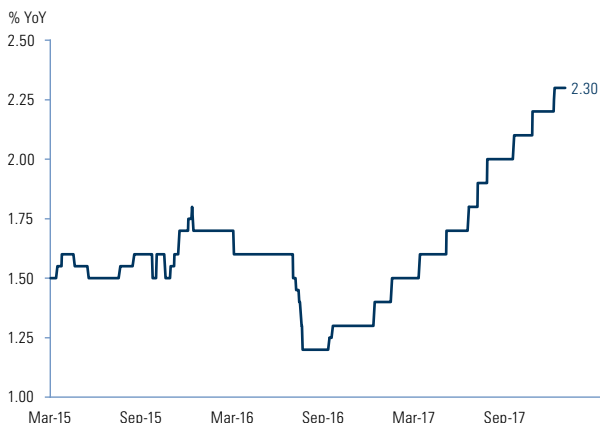
Note: 4-quarter average. Cyclical spending is investment plus consumer durables spending.

Source: Investment Strategy Group, Datastream.

## Exhibit 65: 2017 Consensus Eurozone GDP

### Growth Forecast

Eurozone economic activity has significantly exceeded expectations over the last year.



Data through December 2017.

Source: Investment Strategy Group, Bloomberg.

levels despite the nearly nine-year expansion (see Exhibit 64). At the same time, the probabilities we place on a variety of potentially disruptive shocks remain low (see Section I of this year's *Outlook*). Finally, the risk of a destabilizing rise in oil prices is significantly lower than in the past given today's bloated oil inventories and the much faster supply response of US shale oil. As a consequence, we accord only 10% odds to a recession in 2018.

Put simply, we see the protracted run of the US economy going the distance for another year.

## Eurozone: Finding Its Footing

For much of the post-crisis period, the Eurozone economy has struggled to gain a foothold. While the area's double-dip recession and sovereign bond crisis in 2011 are the most obvious examples, ongoing political uncertainty and lingering concerns about its banking system have hobbled the region's recovery that began in 2013. Consider that annual real GDP growth over the intervening years has been consistently below 2%, making it the second-slowest recovery since 1970 over much of this period.

But changes are afoot. As seen in Exhibit 65, the consensus forecast for 2017 GDP growth improved dramatically over the course of the year, and actual GDP growth was around 2.5% in late

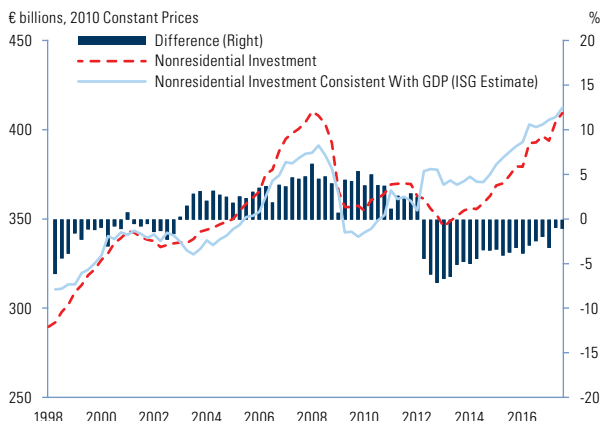
2017. Accordingly, full-year growth is likely to be almost a percentage point higher than the 1.4% analysts expected at the outset of the year.

Part of that improvement relates to better political visibility across the Eurozone. Once the existential threat brought about by a far-right victory in the French presidential election was averted, focus shifted to the potential for incremental structural reforms and broader EU integration. Of course, Germany's difficulties in forming a governing coalition are a headwind for French President Emmanuel Macron's European reform plans, but they are unlikely to completely derail them or undermine Germany's economic boom. Meanwhile, the Catalan independence risk in Spain has been contained, as pro-independence leaders will likely abandon their confrontational strategy. Even the upcoming elections in Italy have been made less worrisome by a new electoral system that reduces the risk of control by the populist Five Star Movement party at the expense of policy efficiency.

We see other fundamental drivers sustaining above-trend growth in the Eurozone this year. As is the case in the US, strength in the job market is growing the pool of employed consumers. More specifically, employment has been expanding at a rate of nearly 1.5% in the past year, a pace well above trend<sup>118</sup> and equivalent to US monthly payroll gains of about 170,000 workers. This

## Exhibit 66: Eurozone Nonresidential Investment

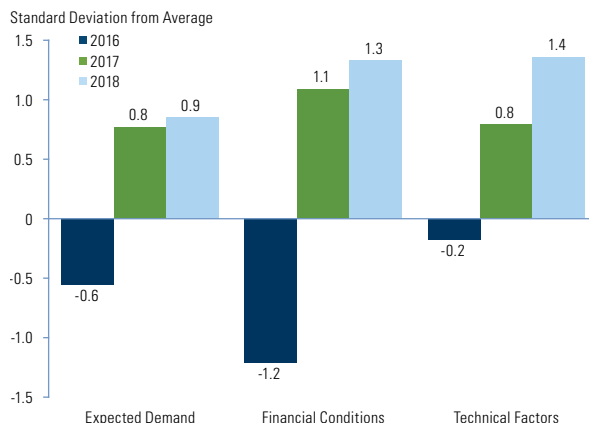
Eurozone investment should move higher, based on its historical relationship with GDP.



Data through Q3 2017.  
Source: Investment Strategy Group, Eurostat.

## Exhibit 67: Factors Behind Eurozone Companies' 2-Year Ahead Capex Plans

Key factors that influence business investment stand at their highest levels in years.



Data as of December 2017.  
Source: Investment Strategy Group, European Commission.

strength has pushed the unemployment rate down rapidly by about one percentage point a year to 8.8%, the lowest reading since early 2009.

Such solid employment gains not only support consumption but also brighten the outlook for capital spending. Here, the level of investment remains low relative to GDP, suggesting that pent-up demand remains. With more favorable financial conditions and declining political risks, our models forecast this “investment gap” will close further (see Exhibit 66), a view corroborated by the European Commission’s semi-annual investment survey of manufacturers (see Exhibit 67). Optimistic corporate confidence is also likely to boost capex, with the Ifo Business Climate Index standing at its highest level in 48 years. Against this backdrop, we expect solid 4–5% investment growth in 2018. We believe that economic policies will also be supportive of growth and that fiscal policy will be mildly expansionary, and the ECB has committed to continue buying assets until at least September 2018. With core inflation at just 1%, the ECB is in no rush to tighten policy and can afford to keep financial conditions accommodative for the time being.

In short, ongoing job growth, improving confidence, still-supportive policy and pent-up investment spending should underpin another year of above-trend growth. In fact, we expect a small acceleration of GDP growth, from 2.3% last year to 2.0–2.75% in 2018. With a still sizable amount

of economic slack to deplete, the Eurozone has scope to sustain such above-trend growth beyond even 2018. Far from stumbling anew, it seems the Eurozone recovery has finally found its footing.

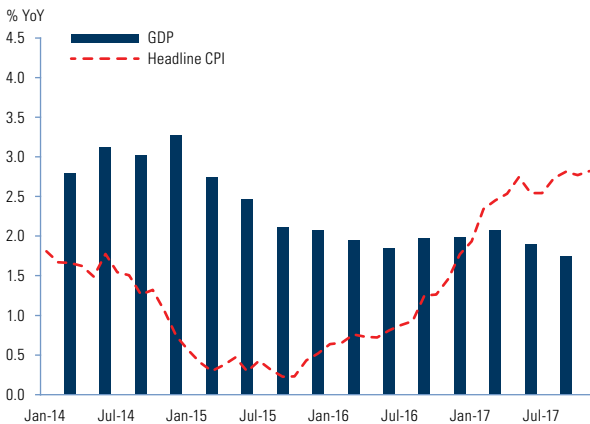
## United Kingdom: The Fog of Uncertainty

The trajectory of the UK economy continues to be obscured by the thick fog of Brexit uncertainty. Although the gloomiest predictions of a recession never materialized, UK GDP growth has nonetheless slowed from around 2.5% to 1.5% in the wake of the EU Referendum, bucking the trend of improving global activity. Moreover, the sizable depreciation of the pound that followed has sharply accelerated inflation to 3%, denting consumers’ real disposable income growth. Productivity growth has also suffered, suggesting Brexit may lower future potential growth in the UK.

The combination of high inflation and slowing growth (see Exhibit 68) has made calibrating the correct policy stance more difficult for the Bank of England (BOE). Although its preemptive easing after the referendum no doubt helped avoid the worst outcome, the BOE has little choice but to gradually remove this accommodation in light of inflation that is now well above its 2% target and an unemployment rate that sits at a 42-year low. Yet tightening financial conditions at a time

## Exhibit 68: UK GDP Growth vs. Inflation

High inflation has forced the Bank of England to hike rates despite slowing growth.



Data through Q3 2017.  
Source: Investment Strategy Group, Haver.

when growth is already slowing, and when the UK government is experiencing an internal power struggle to define its Brexit-related negotiating position, clearly raises the risk of a policy error.

Against this cloudy backdrop, we expect the UK economy to grow 1.0–2.0% in 2018 and the BOE to hike rates twice over the course of the year. Our forecast seeks to balance the positive impact from strong Eurozone growth—which is aiding UK business investment and exports—against the ongoing drag from Brexit concerns. Here, recent progress between the EU and the UK government increases the odds of a “soft Brexit,” or one with a long transitional agreement that provides the UK with continued access to the EU single market through 2020 or possibly longer. In addition, GDP should benefit from more neutral fiscal policy after several years of austerity that acted as a drag on growth. Thus, the upside and downside risks to our forecasts are balanced.

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**With a still sizable amount of economic slack to deplete, the Eurozone has scope to sustain such above-trend growth beyond even 2018.**

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## Japan: On a Winning Streak

Last year extended the recent winning streak for Japan. Real GDP growth accelerated from 2016 and has now been positive for seven consecutive quarters, the longest streak in 28 years. In turn, economic slack has all but disappeared, and the country’s 2.8% unemployment rate is at its lowest level since 1994. While improving global demand among Japan’s export markets has no doubt contributed to these improvements, the bold policies that are part of Abenomics—a negative policy rate coupled with yield curve control and a large fiscal stimulus package—seem to be bearing fruit as well.

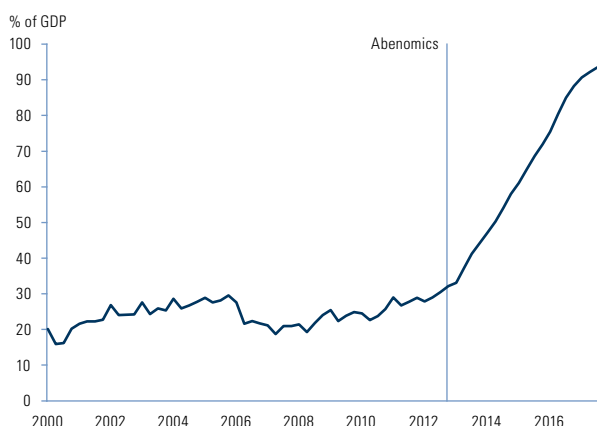
We expect Japan’s good fortune to continue this year. Exports should benefit from solid growth among Japan’s main trading partners, while domestic demand should get a boost from rising wages, continued strong business investment and supportive government policies. Here, the government remains focused on increasing long-term growth and lifting inflation to 2%, most recently through a set of measures announced in late 2017. These spending packages not only seek to enhance Japan’s human capital and worker productivity, but also seek to prioritize growth over fiscal consolidation. Further measures are under consideration, including tax incentives designed to promote investment and higher wages.

In this favorable environment, we expect the economy to grow by 1.2–2.0% in 2018. While another year of above-trend GDP growth will likely reduce the unemployment rate further, we expect only a modest increase in core inflation (CPI, excluding fresh food), to 0.4–1.1%. Demand pressures are clearly rising, but the pass-through to higher inflation is a slow and variable process.

With inflation still well below the Bank of Japan’s (BOJ’s) 2.0% target, we expect the central bank to remain on hold in 2018 by keeping the deposit rate at -0.1%, keeping the target for the 10-year Japanese government bond (JGB) yield at 0% and continuing to expand its balance sheet through asset purchases (see Exhibit 69). While it is not our central case expectation, if core inflation were to approach 1.0% or if a growing divergence between the BOJ and other developed market central banks were to cause significant yen volatility, there is a small risk that the BOJ could

### Exhibit 69: Bank of Japan Balance Sheet

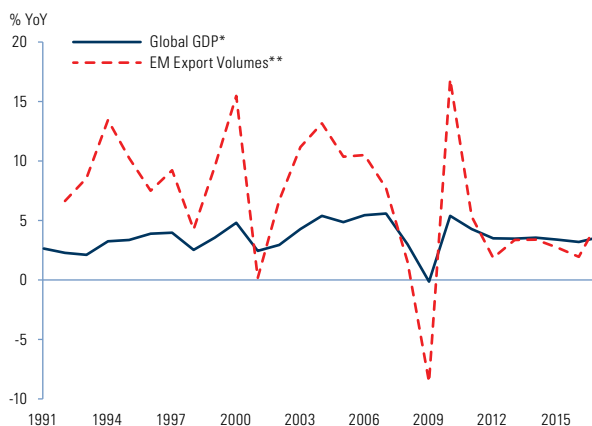
The Bank of Japan has aggressively expanded its balance sheet to combat low inflation.



Data through Q3 2017.  
Source: Investment Strategy Group, Haver.

### Exhibit 70: Global GDP vs. EM Exports

Emerging market exports are levered to global growth.



Data through 2016. Forecasts through 2017.  
Source: Investment Strategy Group, IMF, Netherlands Bureau for Economic Policy Analysis.  
\* PPP weighted.  
\*\* Year-on-year percent changes of annual volumes.

raise the deposit rate and the yield target on the 10-year JGB by 10 basis points in the second half of the year.

### Emerging Markets: Riding a Rising Tide

The rising tide of global activity was a key driver of emerging market (EM) economies last year. Better-than-expected growth in the main developed markets spurred demand for EM exports that—in volume terms—grew faster than global GDP for the first time since 2011 (see Exhibit 70). Easy financial conditions also helped, as global interest rates remained depressed given a neutral or easing policy stance among most central banks. The US Federal Reserve’s three hikes and the beginning of its balance sheet reduction were an exception, but even these were not sufficient to turn the tide on global rates.

**Better-than-expected growth in the main developed markets spurred demand for EM exports that—in volume terms—grew faster than global GDP for the first time since 2011.**

As a result, EM economies expanded briskly. Aggregate GDP growth rose to 4.8%, half a percentage point higher than in the previous year. The advance was also broad-based, with more than 90% of EM economies in expansion last year. This already high tide was lifted further by unexpectedly strong growth in China and the ongoing recoveries in Brazil and Russia after their respective recessions.

While we don’t expect the tide to ebb, the growth story for emerging markets faces more crosscurrents in 2018. On the one hand, stronger activity in the US, Europe and Japan should provide a tailwind to EM exports. Similarly, GDP should benefit from accelerating growth in Brazil, India and Russia.

On the other hand, the further moderation in Chinese growth we expect is likely to weigh on activity across emerging markets, particularly if trade tensions with the US escalate.

Moreover, we see two reasons why EM central banks will shift toward a neutral or even more hawkish stance. First, the monetary policy normalization we forecast for the US and Eurozone will pressure EM central banks to follow suit. Second, inflation pressures are likely to finally rise from their seven-year trough given already diminished economic slack coupled with another year of above-trend growth.

Against this backdrop, we expect EM GDP growth to rise modestly, to 4.7–5.1% in 2018, with risks to the upside and downside of our forecast roughly balanced.

## China

The Chinese economy surprised to the upside on two fronts last year. Not only did it grow faster than expected, but it managed to do so while lowering its reliance on debt. This leaner credit diet marked a stark departure from recent years, when the economy needed ever larger amounts of debt to sustain a high but slowing growth rate. Two factors made this shift possible. First, the government increased its own spending and infrastructure investment. Second, Chinese exports benefited from stronger economic growth among the country’s main trading partners, particularly in the US, Eurozone and Japan. Combined, these factors provided a large enough demand boost to offset the slower pace of credit growth.

We expect these competing forces to persist in 2018. The government is likely to continue reducing its reliance on credit, which will result in a further moderation in fixed asset investment growth. This is especially the case for real estate investment, which slowed sharply last year. Keep in mind that although the pace of credit expansion is slowing, the absolute level of debt weighing on the economy remains high and continues to increase—we estimate that the debt-to-GDP ratio rose to 284% in 2017, a seven percentage point increase from 2016 (see Exhibit 71). But as it did last year, we expect Chinese fiscal policy will stay accommodative to cushion this headwind, while export growth should remain strong in a favorable global economic environment.

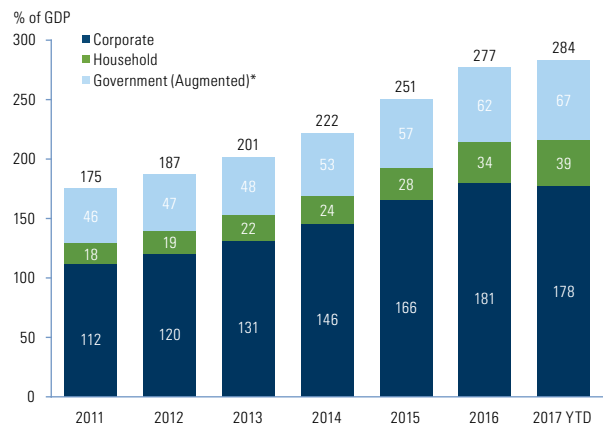
Against this backdrop, we project China’s GDP growth to slow modestly, to 6.1–6.9% in 2018 from an estimated 6.8% in 2017. Despite the moderation in GDP growth, we expect headline inflation to pick up, to 1.8–2.8%, reflecting a rebound in food prices while core inflation (excluding energy and food) eases modestly. The risks to our near-term outlook are balanced, but we remain concerned about China’s high and rising debt in the medium term.

## India

The Indian economy suffered from two self-inflicted wounds last year. First, the currency exchange initiative, or “demonetization,” launched

## Exhibit 71: China Total Debt by Sector

While debt is increasing at a slower pace, it remains at a high level.



Data through November 2017.

Source: Investment Strategy Group, Datastream, CEIC, IMF.

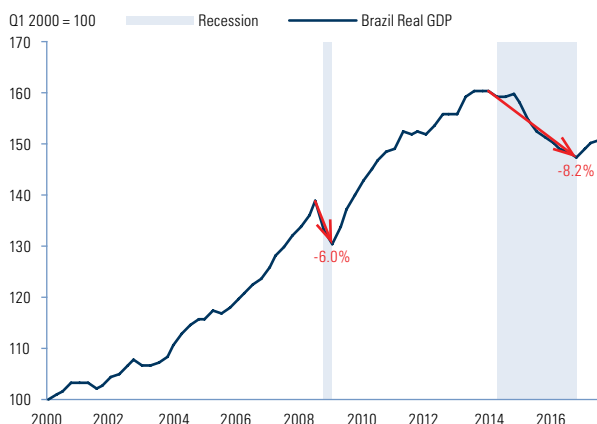
\* Includes central and local government debt and the debt of LGFVs.

in late 2016 resulted in prolonged cash shortages that hobbled economic activity. Second, the rollout of a national goods and services tax in July 2017 disrupted consumption growth. Although both policies are expected to benefit India’s potential growth in the long run, their short-run impacts were clearly negative. In fact, GDP growth slowed by more than half a percentage point last year, to 6.5%.

As these two headwinds fade, we expect GDP growth to reach 7.0–8.0% this year. Although consumption will remain the key driver of growth, we see several factors that could foster the start of a new business investment cycle in India. First, many private sector firms have reduced their debt burden in recent years, providing them with more room to invest now. Consider that borrowing by nonfinancial companies has dropped from 52.8% of GDP in the second quarter of 2013 to 45.3% in the second quarter of 2017, according to data from the Bank for International Settlements. Second, the government has announced a bank recapitalization plan that should ultimately help public banks increase their lending, which could encourage stronger investment. Finally, the government has taken steps to improve the ease of doing business in India, including streamlining the bankruptcy process, simplifying taxpaying, instituting legal protections for minority investors and increasing access to credit.

## Exhibit 72: Brazil Real GDP

Brazil has emerged from its multi-year recession.



Data through Q3 2017.  
Source: Investment Strategy Group, Haver.

### Brazil

Last year marked an inflection point for the Brazilian economy after it had suffered its worst recession on record (see Exhibit 72). Although the recovery has been anemic thus far—with GDP expanding less than 1% last year and still standing more than 6% below its pre-recession level—it has nonetheless arrested the dramatic decline in economic activity. Keep in mind that GDP dropped by 8.2% between early 2014 and the beginning of 2017, exceeding even the 6% drop brought on by the global financial crisis.

Although the Brazilian outlook remains challenging, we expect the recovery to continue on the back of improving consumption and accommodative monetary policy. Indeed, growing domestic demand aided by rising employment, increasing real monthly earnings and easy financial conditions should boost consumption. Meanwhile, the central bank seems determined to maintain these easy financial conditions, having cut the policy rate by more than seven percentage points

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**Although the Brazilian outlook remains challenging, we expect the recovery to continue on the back of improving consumption and accommodative monetary policy.**

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since October 2016. With inflation now below 3% for the first time since March 1999 and year-ahead expectations below the midpoint of its target range, the central bank has cover to extend easy monetary policy in the year ahead. In fact, we see scope for an additional 25–50 basis points of interest rate cuts in early 2018, despite an uncertain presidential election later in the year.

In contrast, growth is unlikely to get any assistance from fiscal stimulus given today's elevated debt levels. Moreover, it is uncertain whether the administration led by President Michel Temer has the will or capacity to reduce public debt through structural reforms. The government is already struggling to pass key legislation representing reform of the pension system, an important first step in stabilizing the public debt-to-GDP ratio. Unfortunately, the window for passing meaningful reforms may be closing with the approaching presidential elections, to be held in October 2018.

All told, we expect the Brazilian economy will grow by 1.75–2.75% this year.

### Russia

Like the Brazilian economy, the Russian economy continues to recover from a deep recession that ended in late 2016. The recovery has received important help not only from the rebound in oil prices, but also from supportive monetary policy. In fact, lower rates have been a crucial offset to the relatively tight fiscal policy made necessary by the erstwhile bear market in oil prices and imposition of Western sanctions.

The outlook for 2018 is mixed. Given that oil prices are near the top of our forecast range already and Russian oil production is likely to remain flat in order to comply with the OPEC oil production cut agreement, the burden of sustaining the nascent recovery rests largely with the non-oil sector. Yet there are encouraging signs on this front. Real disposable income growth, which dipped significantly during the recession, is slowly improving and should support a further rebound in household consumption. Business investment is also expected to improve, reflecting both easy financial conditions and the fact that capacity utilization rates in the manufacturing sector are already back at pre-recession levels.

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While fiscal policy is not expected to loosen, monetary policy just might. Even with slack in the economy slowly disappearing, the central bank has cover to ease monetary policy further now that the inflation rate has fallen to 2.8%, below the central bank's 4.0% target and at a record low in the post-Soviet era.

Against this mixed backdrop, we project a modest increase in GDP growth, to 1.5–2.5% in 2018.

# 2018 Financial Markets Outlook: The Enduring Bull

FEW WOULD HAVE EXPECTED THE FINANCIAL CRISIS TROUGH OF 2009 to give rise to one of the greatest bull markets of all time. Yet nearly nine years later, this advance is second in length only to the almost-decade-long period that preceded the technology bubble in 2000. Its stamina has been matched by its vigor. Including last year's 22% total return, the S&P 500 is now four times as high as its financial crisis low point. Over this period, it has generated a remarkable 17% annualized price return that has been exceeded less than 1% of the time in the last 72 years.

These notable gains are not limited to equities or US assets. Measured across the same time span, US corporate high yield has appreciated at a 13% annualized pace. Even more striking, the total return generated by the MSCI All Country World Index (excluding the United States) has never been higher over comparable nine-year periods since 1996.

After such a long and spirited bull run, investors are naturally concerned about fatigue setting in. To be sure, there is no shortage of concerns, as we discussed in Section I. Even worse, market participants are exposed to these risks at a time when asset valuations are expensive by historical standards,





making their investments more vulnerable to adverse shocks. Consider that an average of the valuation ranks across US stocks, 10-year Treasuries and credit spreads has been lower 82% of the time over the last seven decades.

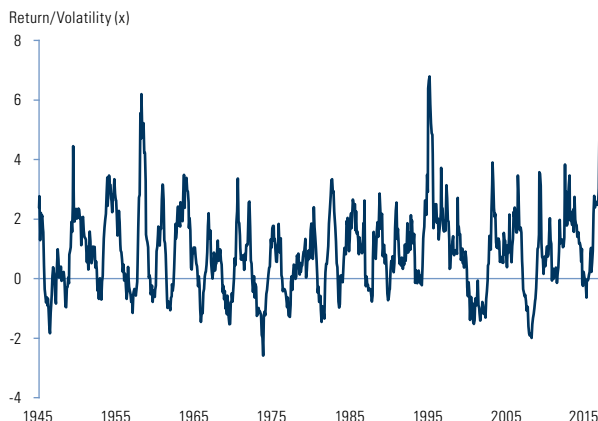
Still, we should not confuse a mature bull with a decrepit one. For the first time in a decade, the major economies of the world are all expanding at the same time, providing a foundation for global profits that fundamentally supports risk assets. The same could be said for US tax reform, as it will significantly boost the profits of US firms this year by lowering their tax rates. More broadly, today's globally synchronized growth supports the 10% odds we place on a US recession. Keep in mind that recessions have historically been the key driver of losses in risk assets. Indeed, the S&P 500 has generated positive annual total returns 87% of the time during economic expansions in the post-WWII period.

While this backdrop would typically be consistent with rapidly rising inflation and an aggressively tightening Federal Reserve, we expect neither in 2018. Instead, the Federal Reserve is likely to hike rates just three times in response to a gradual normalization in inflation toward its target by year-end. This last point is important, because environments of low and stable inflation have been associated with higher valuation multiples in the past.

Based on the foregoing, we continue to recommend that clients maintain their strategic allocation to risk assets, although we acknowledge that returns are likely to be lower going forward. While we do not expect the bull's endurance to falter in 2018, we must nonetheless remain vigilant for signs of exhaustion.

### Exhibit 73: S&P 500 Rolling 12-Month Risk-Adjusted Price Return

Last year's US equity volatility-adjusted performance was in the top percentile since 1945.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

### US Equities: Overdrive

Although US stocks have been driving in the fast lane for much of this bull market, last year they shifted into overdrive. Not only was 2017's nearly 20% price gain in the top quartile of post-WWII returns, but it was also achieved with the lowest annualized volatility on record. In fact, the S&P 500's worst peak-to-trough decline during the year was just 2.8%, the smallest of any past calendar year. This unusual combination of strong returns and muted volatility placed 2017's risk-adjusted return in the top 1% of observations since 1945 (see Exhibit 73).

Such a smooth ride naturally raises concerns about potholes on the road ahead. At nearly nine years, this bull market is already quite old by

### Exhibit 74: ISG Global Equity Forecasts—Year-End 2018

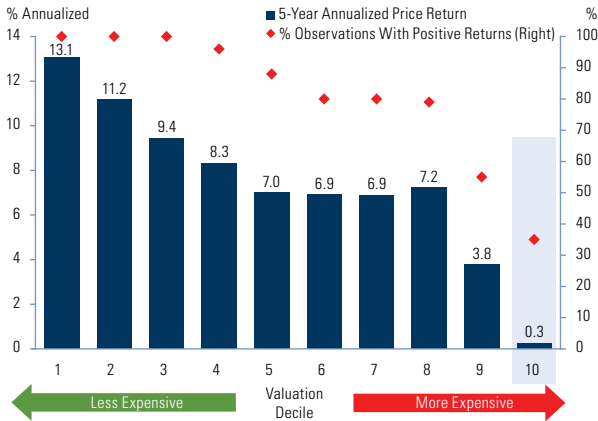
	2017 YE	End 2018 Central Case Target Range	Implied Upside from End 2017 Levels	Current Dividend Yield	Implied Total Return
S&P 500 (US)	2,674	2,750–2,850	3–7%	1.9%	5–8%
Euro Stoxx 50 (Eurozone)	3,504	3,625–3,750	3–7%	3.3%	7–10%
FTSE 100 (UK)	7,688	7,725–8,025	0–4%	4.0%	5–8%
TOPIX (Japan)	1,818	1,900–1,970	5–8%	1.8%	6–10%
MSCI EM (Emerging Markets)	1,158	1,180–1,250	2–8%	2.0%	4–10%

Data as of December 31, 2017.  
Source: Investment Strategy Group, Datastream, Bloomberg.

Note: Forecasts have been generated by ISG for informational purposes as of the date of this publication. There can be no assurance the forecasts will be achieved. Indices are gross of fees and returns can be significantly varied. Please see additional disclosures at the end of this *Outlook*.

### Exhibit 75: US Equity Price Returns from Each Valuation Decile

Subsequent returns from high valuation levels have been muted historically.



Data as of December 31, 2017.

Source: Investment Strategy Group, Bloomberg, Datastream, Robert Shiller.

Note: Based on five valuation metrics for the S&P 500, beginning in September 1945: Price/Trend Earnings, Price/Peak Earnings, Price/Trailing 12m Earnings, Shiller Cyclically Adjusted Price/Earnings Ratio (CAPE) and Price/10-Year Average Earnings. These metrics are ranked from least expensive to most expensive and divided into 10 valuation buckets ("deciles"). The subsequent realized, annualized 5-year price return is then calculated for each observation and averaged within each decile.

Past performance is not indicative of future results.

### Exhibit 76: Odds of Various S&P 500 One-Year Total Returns During US Economic Expansions

The health of the US economy is a key driver of market performance.



Data as of December 31, 2017.

Note: Based on data since 1945.

Source: Investment Strategy Group, Bloomberg.

historical standards, now less than one year shy of the nearly decade-long advance that culminated with the technology bubble in 2000. Moreover, last year's gains pushed valuations deeper into their 10th decile, indicating the S&P 500 has been cheaper at least 90% of the time historically. Such elevated valuations in the past have weighed on equity returns over the subsequent five years and lowered the odds of positive outcomes (see Exhibit 75).

While we certainly acknowledge these risks, we do not think they undermine the case for remaining invested in 2018. As we have argued over the last several years, bull markets most frequently die not

from old age but rather from recessions. Consider that nearly three-fourths of bear markets—defined here as equity price declines of 20% or more—occurred during US economic contractions. With our forecast placing only 10% odds on a recession this year, we believe the economic backdrop remains favorable for stocks (see Section II, United States).

This close relationship between the health of the US economy and market performance is evident in Exhibit 76. Note that the S&P 500 has generated positive annual returns 87% of the time during economic expansions in the post-WWII period, significantly raising the

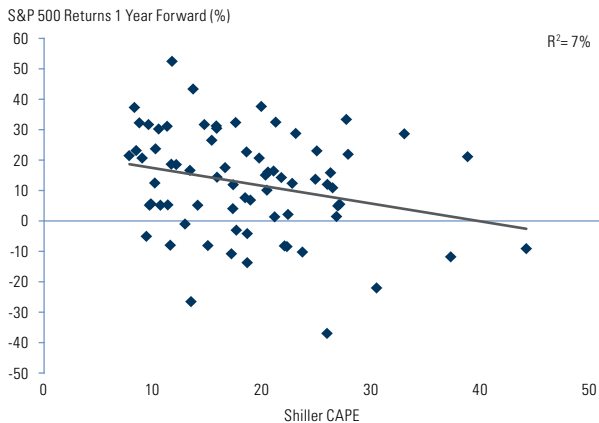
hurdle to underweight stocks when the economy is still growing. There is also a clear upward skew to these annual returns, with nearly two-thirds of them delivering a double-digit gain but just 4% registering a loss of the same magnitude. Put simply, markets frequently surprise to the upside during expansions, even at high valuations—as the double-digit returns of the last two years remind us.

Of course, it is precisely these strong returns and today's elevated valuations

**The S&P 500 has generated positive annual returns 87% of the time during economic expansions in the post-WWII period, significantly raising the hurdle to underweight stocks when the economy is growing.**

### Exhibit 77: S&P 500 Shiller CAPE vs. Subsequent Calendar-Year Total Return

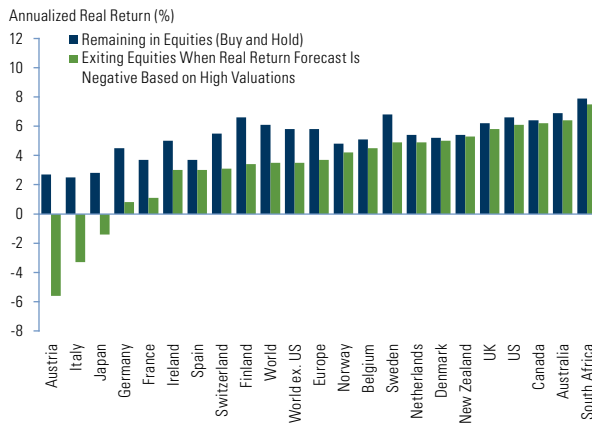
Starting valuation multiples tell us little about potential returns over the next year.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Bloomberg, Robert Shiller.

### Exhibit 78: Real Returns of Portfolios Based on Mean Reversion, 1900–2012

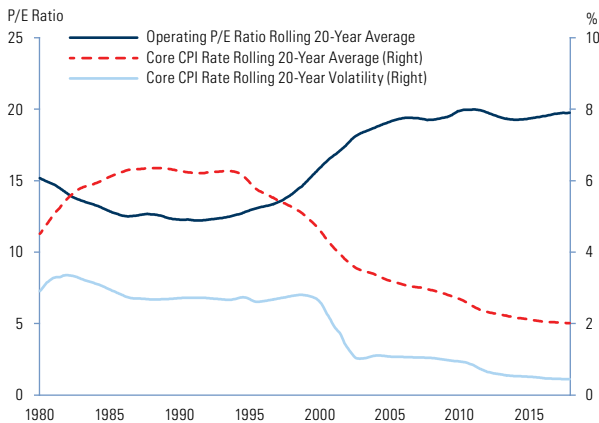
Selling equities based solely on expensive valuations has underperformed a buy-and-hold approach over time.



Data as of December 31, 2012.  
Source: Investment Strategy Group; Elroy Dimson, Paul Marsh and Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns*, Princeton University Press, 2002.

### Exhibit 79: S&P 500 P/E Ratio and US Inflation

Structurally declining inflation and lower inflation volatility have contributed to higher multiples.



Data through November 30, 2017.  
Source: Investment Strategy Group, Bloomberg, Standard & Poor's.

expensive valuations has been a losing one over time (see Exhibit 78). After all, the S&P 500 has returned more than 67% since first entering its ninth valuation decile in November of 2013, a time at which many were already calling US equities a bubble. In short, valuations alone are a poor tactical timing signal.

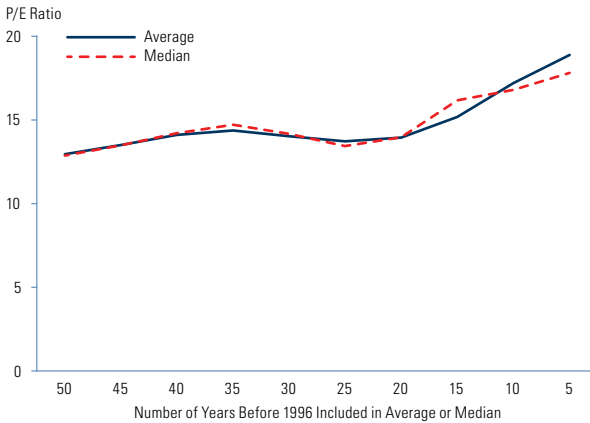
It is also important to consider the macroeconomic backdrop when gauging how expensive the market is today. As discussed in Section I, P/E ratios have shifted higher in the last 20 years on the back of structurally declining inflation and lower inflation volatility (see Exhibit 79). Importantly, these higher market multiples are not simply the byproduct of the averages including the extreme valuations of the technology bubble, as the trend was already evident by the mid-1990s (see Exhibit 80). This persistent upward drift in valuations is perhaps best highlighted by the fact that the P/E ratio based on trailing operating earnings has spent 74% of the last three decades above its long-term average. The same is true even for trend-based P/E ratios (see Exhibit 81).

The upshot is that today's benign macroeconomic environment justifies higher valuation multiples. In fact, a simple model based on inflation and unemployment—which has explained about 70% of the past variation in P/E ratios—shows that valuations *should* be in their 10th decile (see Exhibit 82). Yet in contrast to the

that worry investors as we enter 2018. Yet we should not confuse an expensive market with one that is certain to generate a loss, especially over shorter holding periods. That point is made clear by Exhibit 77, which shows that starting valuations tell us very little about potential returns over the next year, explaining only 7% of their variation historically. Moreover, history teaches us that a strategy of selling equities based solely on

### Exhibit 80: S&P 500 Trend P/E Based on Different Lookback Periods Starting in 1996

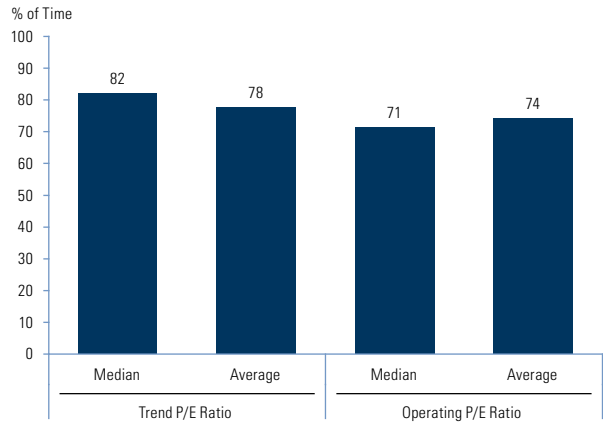
The trend of higher valuation multiples was evident even before the technology bubble.



Data through December 31, 1996.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 81: S&P 500 P/E Ratio: Percentage of Time Spent Above Long-Term Average and Median

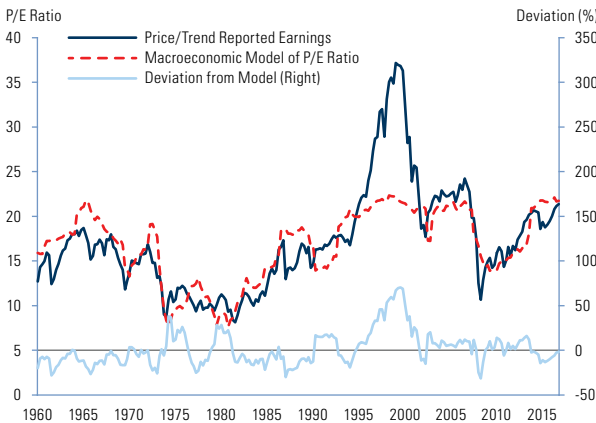
S&P 500 valuations have been above their long-term median and average levels more than 70% of the time since 1990.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 82: S&P 500 P/E Ratio: Actual vs. Macroeconomic Model

Today's benign macroeconomic environment justifies higher valuation multiples.



Data through September 30, 2017.  
Note: Macroeconomic model based on the US unemployment rate, inflation level and stability of inflation.  
Source: Investment Strategy Group, Bloomberg, BLS.

technology bubble of the late 1990s, today's P/E ratio is just in line with its model-implied value rather than significantly above it.

Keep in mind that the S&P 500's long-term average P/E multiple—which many investors use to gauge fair value—was forged over a period when inflation volatility was much higher and

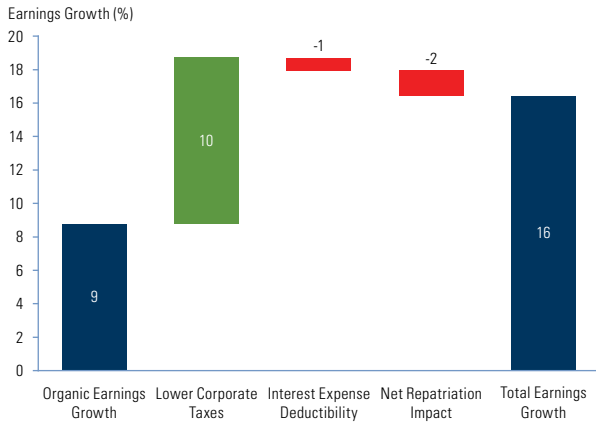
the risk-free rate averaged 4.5%. In contrast, the risk-free rate today is just 1.25–1.50%. Moreover, the Federal Reserve's estimate of the long-run equilibrium interest rate has fallen to 2.75%, nearly two percentage points below its pre-crisis level. Thus, today's structurally lower interest rates justify higher valuations because we are discounting all future cash flows at a lower rate, thereby increasing their present value.

Even so, with valuations already priced for a supportive economic backdrop and low rates, additional equity gains will depend on the strength of earnings. On this score, there is reason for optimism. As seen in Exhibit 83, we expect double-digit profit growth this year, driven in equal measure by the positive impact of tax reform and the continued expansion of the US and broader global economy. This last point is important, because even without changes to the US tax code, earnings were likely to grow a healthy 7–11% this year on the back of mid-single-digit revenue growth and modest margin expansion in a few cyclically depressed sectors (see Exhibit 84).

Still, we do not expect the total 15–18% earnings growth to translate directly into a comparable gain for the S&P 500. Keep in mind that investors typically consider the profits arising from such fast growth unsustainable and consequently apply a lower valuation multiple to them. We can see this in two ways. First, P/E ratios compressed 83% of the time by a median of 9%

### Exhibit 83: ISG S&P 500 2018 Earnings Growth Forecast

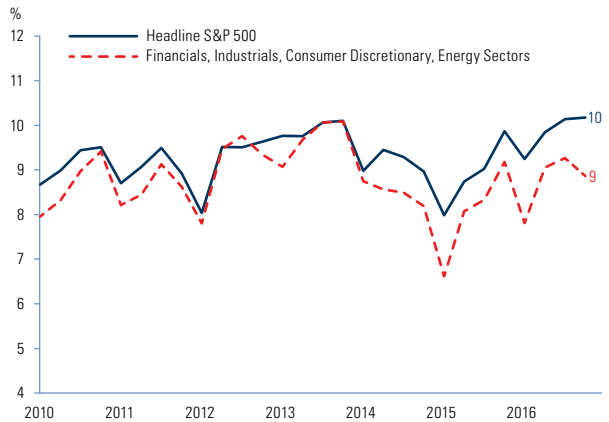
We expect double-digit profit growth this year.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 84: S&P 500 Profit Margins

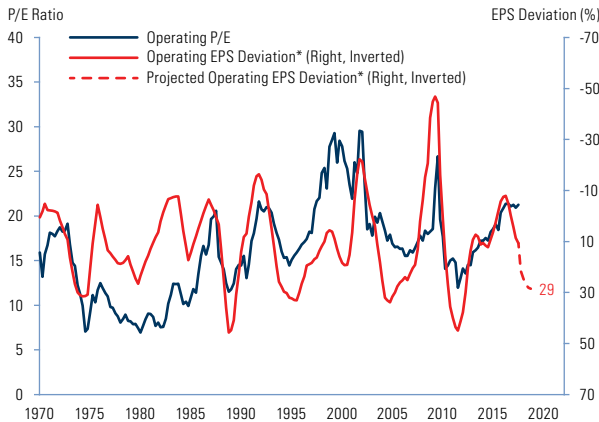
Modest margin expansion in a few cyclically depressed sectors could contribute to 2018 earnings.



Data through September 30, 2017.  
Source: Investment Strategy Group, Standard & Poor's.

### Exhibit 85: S&P 500 P/E Ratio vs. Earnings Deviation from 3-Year Average

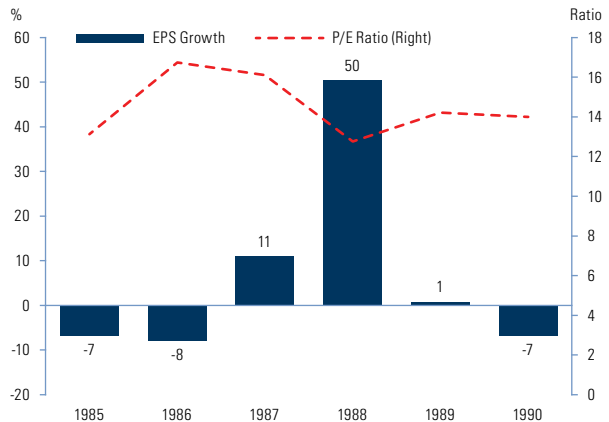
Valuation multiples fell in past periods when earnings were stretched from their 3-year average.



Data through September 30, 2017.  
Source: Investment Strategy Group, Bloomberg.  
\*Deviation from 3-year moving average. Projection through December 2018.

### Exhibit 86: S&P 500 EPS Growth and P/E Ratio in 1985–90

The 1988 tax cuts led to stronger earnings growth but lower valuation multiples.



Data through December 31, 1990.  
Source: Investment Strategy Group, Bloomberg.

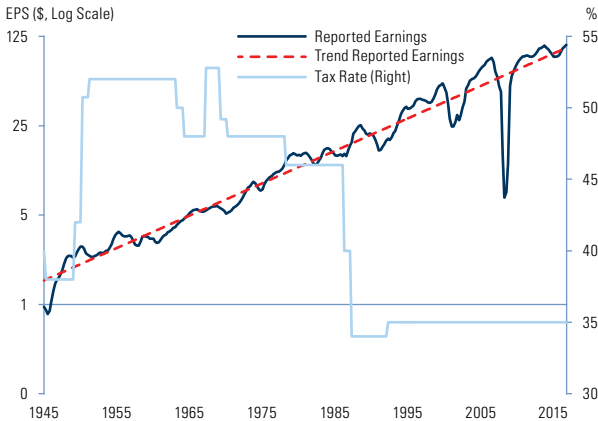
during historical periods when earnings growth was similar to our 2018 forecast. Second, valuation multiples fell 82% of the time by a median of 12% in past periods when earnings were as far above their three-year average as we expect they will be at the end of 2018 (see Exhibit 85).

This downward pressure on valuation multiples is particularly visible for tax-reform-related profits, as investors tend to view them as one-time gains.

As seen in Exhibit 86, P/E ratios fell 20% in 1988 as earnings growth benefited from the Reagan tax cuts. A similar, albeit smaller, 7% drop in the P/E multiple occurred in response to the Revenue Act of 1978. Put simply, changes in the corporate tax rate tend to shift the level of earnings but do not fundamentally change companies' long-term earning power. Indeed, the trend in the S&P 500's profit growth has been steady over the last seven

### Exhibit 87: S&P 500 Earnings vs. US Corporate Tax Rate

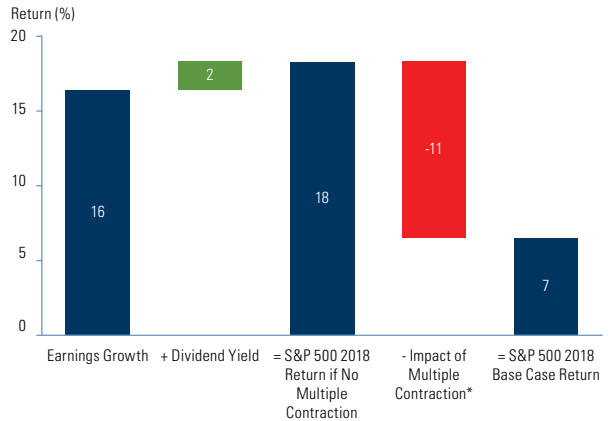
The trend of earnings growth has been steady despite varying tax rates over the past 70 years.



Data through September 30, 2017.  
Source: Investment Strategy Group, Bloomberg, Standard & Poor's, Haver.

### Exhibit 88: ISG S&P 500 2018 Central Case Return Decomposition

We expect multiple contraction to partially offset gains from earnings growth and dividends.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.  
\* Includes the compounding effect between earnings and multiples.

decades despite a variety of corporate tax rates (see Exhibit 87).

Based on the foregoing, our central case for equity returns this year calls for P/E multiples to compress about 11%, reflecting a combination of faster profit growth, some normalization in inflation and continued Federal Reserve rate hikes. Even so, that headwind will likely be more than offset by the robust earnings growth we expect coupled with a 2% dividend yield (see Exhibit 88). Taken together, these elements imply a 5–8% total return for US equities this year (see Exhibit 89).

Two rare technical analysis signals suggest the risks to this forecast are tilted to the upside. The weekly Relative Strength Index (RSI)—a well-

known momentum indicator—exceeded 80 for the first time since 1995 late last year. While this is typically considered a contrarian overbought signal, Exhibit 90 makes clear that such strong momentum in past episodes has actually persisted. Note subsequent returns over various time frames significantly exceeded the unconditional average. Even more striking, the S&P 500 was higher at some point in the following three, six and 12 months in every one of the 10 historical analogs.<sup>119</sup>

A similar message arises from an intermediate-length momentum signal called the Coppock curve. Although it has generated only 17 buy signals over the past 72 years—most recently in July of 2016—these signals have collectively provided attractive

### Exhibit 89: ISG S&P 500 Forecast—Year-End 2018

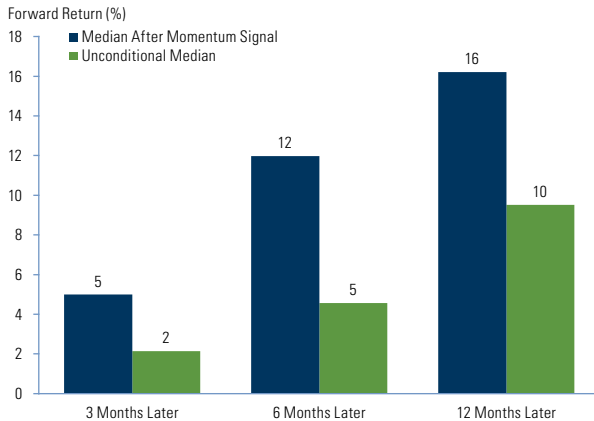
2018 Year-End	Good Case (25%)	Central Case (60%)	Bad Case (15%)
End 2018 S&P 500 Earnings	Op. Earnings \$155 Rep. Earnings \$140 Trend Rep. Earnings \$125	Op. Earnings \$150–155 Rep. Earnings \$135–140 Trend Rep. Earnings \$125	Op. Earnings ≤ \$144 Rep. Earnings ≤ \$87 Trend Rep. Earnings ≤ \$125
S&P 500 Price-to-Trend Reported Earnings	23–25x	20–23x	15–16x
End 2018 S&P 500 Fundamental Valuation Range	2,875–3,125	2,500–2,875	1,875–2,000
End 2018 S&P 500 Price Target (Based on a Combination of Trend and Forward Earnings Estimates)	3,000	2,750–2,850	2,000

Data as of December 31, 2017.  
Source: Investment Strategy Group.

Note: Forecasts and any numbers shown are for informational purposes only and are estimates. There can be no assurance the forecasts will be achieved and they are subject to change. Please see additional disclosures at the end of this *Outlook*.

### Exhibit 90: S&P 500 Forward Returns After Strong Weekly Momentum Signals

Strong momentum has historically led to strong returns in the months that followed.



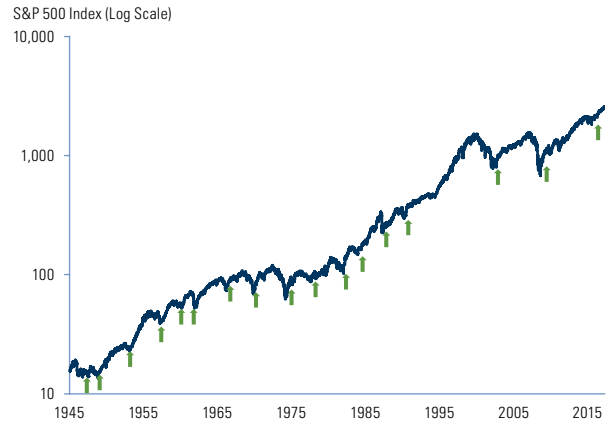
Data as of December 31, 2017.

Note: Episodes when the weekly Relative Strength Index of the S&P 500 exceeds 80 for the first time in at least three months. Ten observations since WWII.

Source: Investment Strategy Group, MKM Partners, Bloomberg.

### Exhibit 91: Coppock Curve Buy Signals Since 1945

One of only 17 buy signals since 1945 was triggered in July 2016.



Data through December 31, 2017.

Source: Investment Strategy Group, Bloomberg.

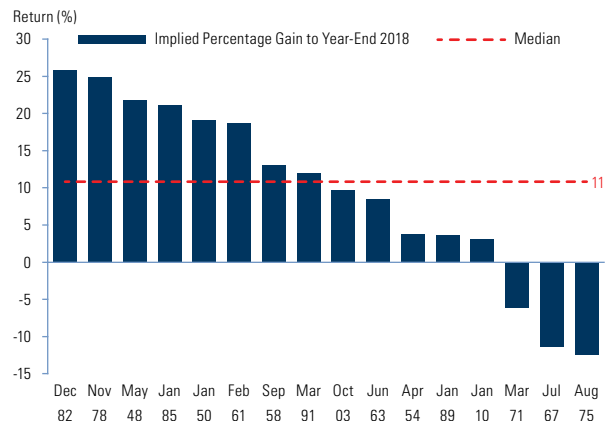
low-risk entry points for long-term investors (see Exhibit 91). If we took the median path of S&P 500 prices after past signals, it would imply the market will gain 11% this year, with 81% odds of a positive outcome (see Exhibit 92). Considering the above, we accord a 25% probability to our good-case scenario of the S&P 500 reaching 3,000 by year-end.

To be clear, we are not Pollyannaish. There are many legitimate risks that could undermine our forecast, not the least of which is a disorderly backup in bond yields. Yet here, our work suggests that rates still have significant room to increase before they become a headwind for stocks (see Exhibit 93). After all, 89% of S&P 500 debt is fixed-rate and only 10% matures each year. Thus, it would take a number of years before higher rates would meaningfully impact aggregate interest expense.

We are also aware of increasingly bullish sentiment. As shown in Exhibit 94, cash balances among retail brokerage accounts recently hit an all-time low, which historically has been a bearish signal. But we note those previous low-cash periods happened to coincide with the onset of economic contractions, which was undoubtedly the primary cause of the bear markets that followed. Given the still-low odds we place on recession this year, we think today's extended bullishness is a better reason to expect a market correction than an end to this bull market.

### Exhibit 92: Implied S&P 500 Gain Based on Paths of Historical Coppock Buy Signals

The paths of previous Coppock buy signals point to high odds of a positive return this year.



Data as of December 31, 2017.

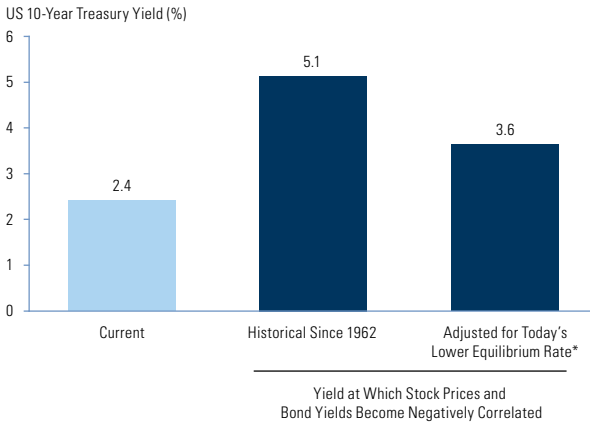
Source: Investment Strategy Group, Bloomberg.

While we have also noted several other worrisome developments in this year's *Outlook*, their collective impact is not yet sizable enough to undermine our core view: a longer-than-normal US expansion that will support equity returns that are likely to exceed those of cash and bonds. And though we give some weight to the concerns mentioned in the preceding paragraphs, we do



### Exhibit 93: Inflection Point for Negative Correlation Between Bond Yields and Stock Prices

Typically stocks and rates move in the same direction until yields reach levels far above those seen today.



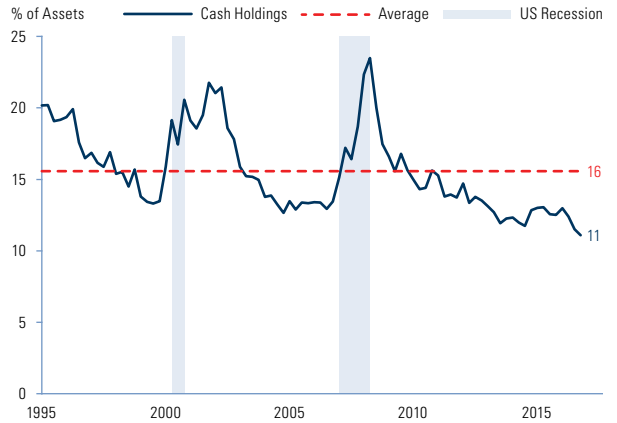
Data as of December 31, 2017.

Source: Investment Strategy Group, Bloomberg, Federal Reserve.

\*Adjusts for the reduction of 1.5 percentage points in the long-run equilibrium nominal rate, in line with the shift in Federal Reserve projections since 2012.

### Exhibit 94: Charles Schwab Client Cash Holdings as a Percentage of Assets

Cash balances among retail brokerage accounts recently hit an all-time low.

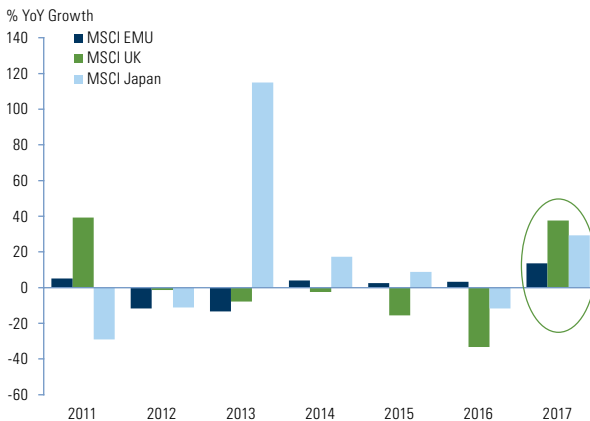


Data through September 30, 2017.

Source: Investment Strategy Group, Charles Schwab, NBER.

### Exhibit 95: EAFE Earnings Growth

In 2017, profits rose in each major EAFE market for the first time since 2010.



Data through December 31, 2017.

Source: Investment Strategy Group, MSCI, Datastream.

not believe they are pressing enough to act upon. In turn, we recommend that clients maintain their strategic weight in US equities, although we acknowledge that today's higher valuations will increase the penalty if our forecast is wrong.

Said differently, with US equities currently in overdrive, we need to be increasingly mindful of overheating.

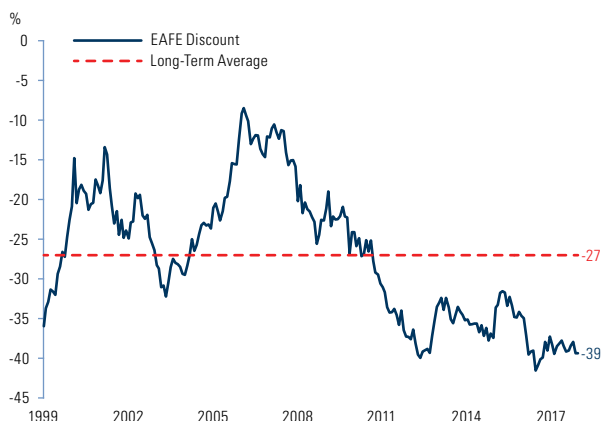
### EAFE Equities: The Cyclical Sweet Spot

Europe, Australasia and the Far East (EAFE) equities enter this year with the benefit of three strong tailwinds. First, global GDP growth is accelerating, which has boosted the region's earnings in the past. This dynamic was evident last year, as a modest pickup in global growth generated not only the highest level of EAFE earnings since the global financial crisis, but also the fastest growth rate since 2010. This growth was also broad-based, with every major EAFE market—Eurozone, Japan and the UK—producing higher profits for the first time in nearly a decade (see Exhibit 95). Importantly, this robust earnings growth is likely to continue in 2018, as we expect above-trend GDP growth in economies that represent nearly 75% of EAFE companies' sales.

Second, this upturn in earnings growth is occurring against a backdrop of undemanding valuations. While EAFE equity valuations based on normalized fundamental metrics—such as trend earnings—are slightly expensive on an absolute basis compared to their history, they remain cheap relative to other global equity markets, especially the US (see Exhibit 96). Moreover, EAFE valuation multiples have scope to rise meaningfully above their historical average levels—as they have in the US—given similarly favorable macroeconomic conditions, such as

## Exhibit 96: EAFE Markets' Valuation Discount to US

EAFE equities trade at below-average valuations compared to those in the US.



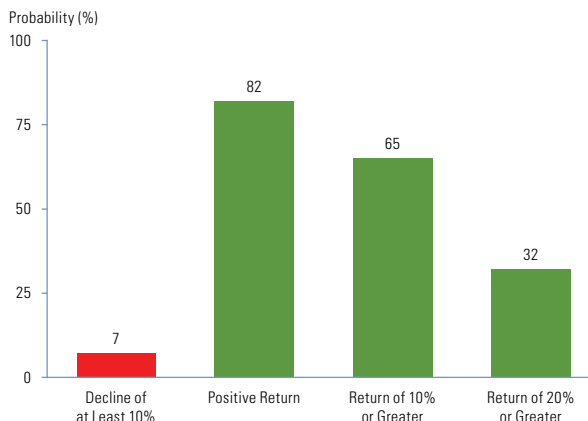
Data through December 31, 2017.

Source: Investment Strategy Group, MSCI, Datastream.

Note: Based on price/book, price/10-year average earnings, price/10-year average cash flow, price/peak earnings and price/peak cash flow.

## Exhibit 97: Odds of Various EAFE One-Year Total Returns During US Economic Expansions

EAFE equities have posted positive returns when the US economy is expanding.



Data as of December 31, 2017.

Note: Based on data since 1969.

Source: Investment Strategy Group, Datastream, NBER.

above-trend growth, low and stable inflation, and still-accommodative policy.

Finally, although last year EAFE equities underperformed in local currency relative to both US and emerging market equities, the silver lining to this dark cloud may become apparent in 2018. Investors searching for recent underperformers may find EAFE equities compelling, particularly given their favorable fundamentals and attractive relative valuations.

Even so, EAFE is not immune to the risks discussed in Section I of this year's *Outlook*. Chief among these is a US recession, which would no doubt nullify our constructive stance. Yet with our forecast according just 10% odds to that downside risk over the next year, the economic backdrop remains favorable. After all, EAFE equities have posted positive returns and upside surprises much more frequently than large losses when the US economy is still expanding (see Exhibit 97).

**Investors searching for recent underperformers may find EAFE equities compelling, particularly given their favorable fundamentals and attractive relative valuations.**

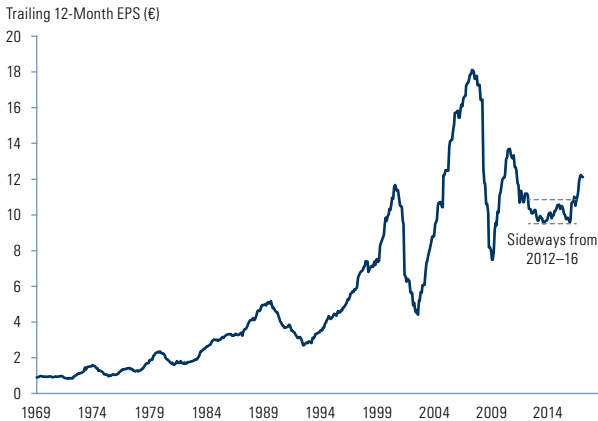
## Eurozone Equities: The Ascendancy of Earnings

An important shift in the composition of Eurozone equity returns occurred in 2017. Whereas expanding P/E multiples and dividend income had been the primary drivers of positive total returns since 2009, last year saw earnings growth take on that mantle. This shift was particularly notable because Eurozone profits had been range-bound—at nearly half their 2007 peak level—for the last five years (see Exhibit 98). Of equal importance, the 12% growth that lifted earnings out of this range was broad-based, with nine of the 11 sectors posting higher profits.

While we do not expect profit growth in 2018 to match last year's pace, we do think earnings will continue to be the dominant driver of equity returns. Keep in mind that earnings benefited from a pickup in both global and Eurozone GDP growth last year, a condition that is likely to persist. This backdrop is particularly favorable for Euro Stoxx 50 companies for three reasons. First, accelerating and above-trend Eurozone GDP growth boosts domestic sales, which represent half of the total revenue mix. Second, faster global GDP growth benefits the remaining nondomestic half of sales. Finally, Euro Stoxx 50 firms are

## Exhibit 98: MSCI EMU Trailing 12-Month Earnings per Share

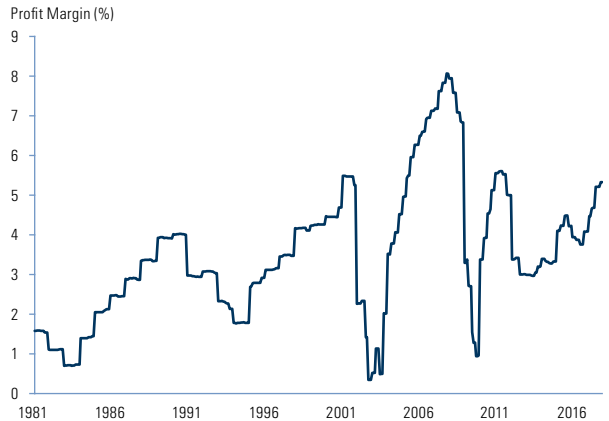
Last year earnings finally broke out of their narrow post-2012 range.



Data through December 31, 2017.  
Source: Investment Strategy Group, Datastream.

## Exhibit 99: Eurozone Profit Margins

Profit margins have scope to expand further, supporting earnings growth.



Data through November 30, 2017.  
Source: Investment Strategy Group, Datastream.

highly sensitive to small changes in sales because their expenses are dominated by fixed costs. As a result, their profit margins expand rapidly on each incremental sale once these fixed costs are covered. While margins moved higher last year, they remain well below previous peaks and hence have ample scope for upside (see Exhibit 99).

Based on the foregoing, our central case calls for 9% earnings growth in 2018. As we did last year, we expect dividend income of around 3% to contribute positively to returns while P/E multiples decline, reflecting a combination of strong profit growth, some normalization in inflation and the gradual reduction of ECB asset purchases. Taken together, these elements imply a total return of 9% this year, driven once again by the ascendancy of earnings growth.

Within the Eurozone, we are tactically overweight Spanish equities. Here, we are drawn to attractive valuations, receding political uncertainty, GDP growth momentum across the continent and an embedded overweight to banks, which stand to benefit from rising rates. We are also overweight the 2018 Euro Stoxx 50 dividend futures contract, where we expect actual dividends to exceed what is currently discounted by the market.

## UK Equities: Not-So-Great Expectations

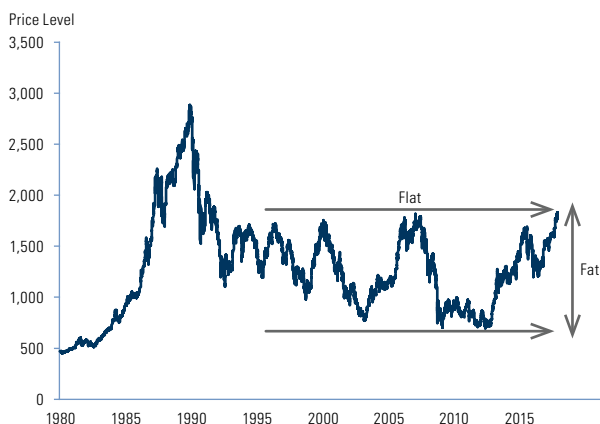
Last year the UK equity market found itself in a tug-of-war. While improving global activity pulled in favor of UK equities' international exposure, a combination of slowing domestic GDP growth, rising interest rates and an appreciating currency pulled in the opposite direction. This tension stifled investor appetite for UK stocks, resulting in one of the lowest total returns among all the major equity markets last year.

Unfortunately, we expect this discord to persist in 2018. To be sure, there are clear tailwinds for UK stocks. These companies should benefit from improving global GDP growth, as nearly three-quarters of their sales come from outside the UK. The FTSE 100 is also well-positioned from a sectoral standpoint, as the index's still-depressed commodity sectors should be supported by the stable commodity price environment we expect this year. Moreover, the UK's financial sector stands to benefit from rising interest rates. That these sectors account for nearly half of the FTSE 100's market capitalization only strengthens the tailwind.

Yet there are also countervailing headwinds. In contrast to improving global demand, we expect UK domestic GDP growth to decelerate slightly this year. Meanwhile, the higher rates we expect effectively tighten financial conditions for other sectors, which may ultimately dwarf the benefit

## Exhibit 100: TOPIX Price Level

Japanese equities may be on the verge of breaking out of their 26-year trading range.

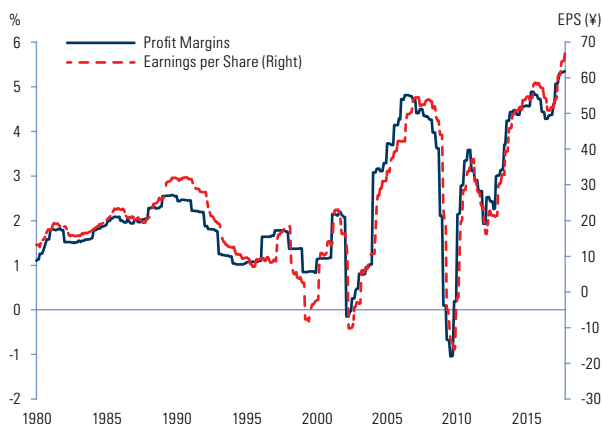


Data through December 31, 2017.

Source: Investment Strategy Group, Goldman Sachs Global Investment Research, Bloomberg.

## Exhibit 101: Japanese Earnings and Profit Margins

Japanese profits have broken out to new highs.



Data through November 30, 2017.

Source: Investment Strategy Group, Datastream.

they provide to financial sector profits. Finally, our forecast for further modest British pound appreciation represents a drag on the hefty portion of FTSE 100 sales denominated in other currencies.

As a result of these crosscurrents, we expect only 5% earnings growth this year, the lowest of our forecasts across the major developed markets. As in the Eurozone, the FTSE 100's P/E multiple is likely to decline, given ongoing Brexit uncertainty and tightening monetary policy. Combined with the FTSE 100's 4% dividend yield, these components imply a 6% total return in 2018, also our lowest forecast among the major EAFE equity markets.

## Japanese Equities: A Rising Sun

The nearly three decades since the peak of Japan's asset bubble have not been kind to investors in Japanese equities. Consider that over this period, stocks have delivered an 11% loss on a total return basis. Even worse, a series of false dawns along the way have enticed investors to reengage in Japanese stocks just as another bust was emerging. This boom/bust cycle is evident in Exhibit 100, which shows the resulting "fat and flat"<sup>120</sup> range for Japanese equity prices over this period. With the TOPIX at the high end of the range once again, investors are naturally wondering if Japanese stocks will finally break out or stumble anew.

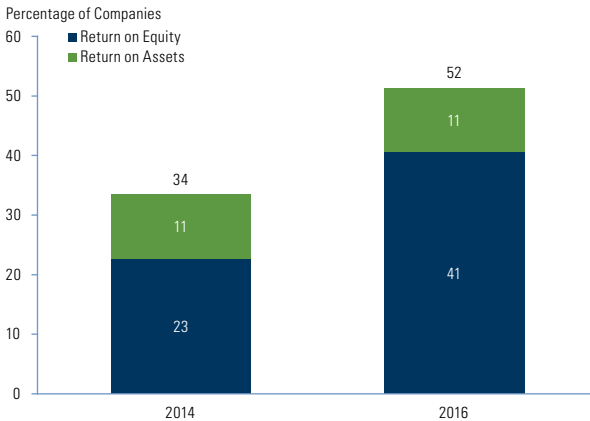
We see several reasons to be optimistic. First, earnings have already broken out of their historical range and recently made new highs, yet equity prices have lagged, providing scope for upside (see Exhibit 101). Second, a structural improvement in profitability seems to be underway, evident in the fact that last year's earnings growth was not simply a function of a weak yen or rising sales, as it had been in years past. Instead, Japanese corporate management appears to be improving. As seen in Exhibit 102, a growing number of Japanese companies are explicitly embracing profitability targets. At the same time, a renewed focus on returning capital to shareholders is taking hold, with firms increasingly undertaking buybacks and boosting their dividends.

Given these positive developments, we forecast an 8% total return for Japanese equities this year, driven by 6% earnings growth and a 2% dividend yield. We assume valuation multiples will be largely unchanged, as the tailwind of still-supportive monetary policy is offset by lingering investor concerns about the longevity of these improvements. If realized, our total return target implies that Japanese equities will, at long last, break out of their long-term trading range. In turn, technical analysis suggests such a breakout could lead to an explosive move higher, making our central-case forecast too conservative.

Even so, we are mindful that Japanese equities have unsuccessfully tried to break out of this range five times since 1992. Of equal importance,

## Exhibit 102: Percentage of Japanese Firms With Medium-Term Profitability Targets

Japanese management is increasingly embracing shareholder-friendly practices.

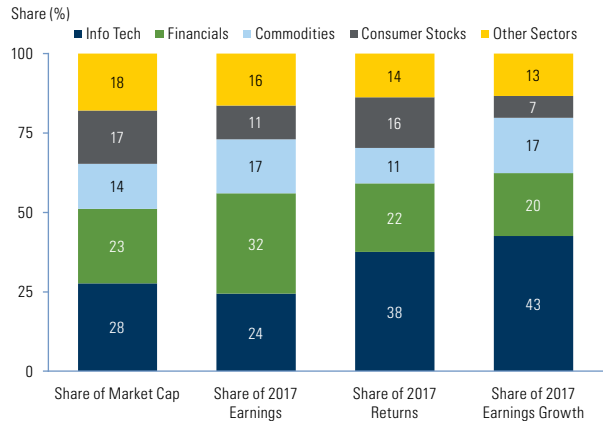


Data as of January 2017.

Source: Investment Strategy Group, Japan Investor Relations Association, Hiromi Suzuki, "Japan Strategy Views: Corporate Government Reform Update," Goldman Sachs Global Investment Research, January 9, 2017.

## Exhibit 103: MSCI Emerging Markets Index Sector Breakdown in 2017

Information technology played an outsized role in EM returns and earnings growth in 2017.



Data as of December 31, 2017.

Source: Investment Strategy Group, MSCI, Datastream, I/B/E/S.

each of these failed breakouts was followed by a significant price decline. Given these crosscurrents, we continue to recommend a tactical overweight to Japanese equities, but are willing to do so only with downside protection.

## Emerging Market Equities: Tech-Tonic Shift

While last year's headlines focused on emerging market equities' sizable 38% gain—in addition to their outperformance relative to developed market equities—the real story was the ascendancy of the information technology (IT) sector. Consider that IT stocks gained 61% in 2017, their best showing since 2009 and enough to represent 38% of emerging market equities' total gain.

**We are mindful that Japanese equities have unsuccessfully tried to break out of this range five times since 1992 and each of these failed breakouts was followed by a significant price decline.**

Even more striking, the IT sector now represents about a quarter of the MSCI EM Index's earnings and 28% of its market capitalization (see Exhibit 103), double the weight from just four years ago. That the top five stocks in MSCI EM are now technology companies only adds to the sector's hegemony.

We expect the IT sector's reign to continue in 2018. We also expect emerging market equities to more broadly benefit from improving global growth, albeit to a lesser extent than in 2017. More specifically, we forecast earnings growth to slow from 24% last year to 9% in 2018, based on a smaller acceleration in emerging market nominal GDP growth, more modest memory-chip price increases and less of a tailwind from commodity prices, given their already sizable advances and slowing growth in China's property sector.

Moreover, we believe valuation multiples are likely to contract modestly from their current post-crisis highs, reflecting concerns around rising global rates, lingering geopolitical risks and uncertain election outcomes in key emerging market countries. Combining emerging market equities' 2% dividend yield with the above assumptions, our forecast implies a total return of 7% in 2018.

While that return is attractive on an absolute basis, we see three reasons

for a more cautious tactical stance in the near term. First, there is scope for disappointment on fourth-quarter earnings, as consensus expectations remain elevated despite challenging base effects and a fading boost from commodities. Second, a more hawkish shift in US trade policy is likely this year (see Section I), making several large emerging market countries vulnerable. Finally, the current two-year rally marks the longest period on record without a 10% correction, increasing the risk of a pullback in this volatile asset class.

Based on the foregoing, we remain tactically neutral on emerging market equities. That said, we continue to explore relative investment opportunities as the fundamental tectonic plates of emerging market countries and sectors shift in different directions.

## 2018 Global Currency Outlook

After several years of broad US dollar outperformance, 2017 marked a sharp reversal of fortune. As seen in Exhibit 104, the greenback was bettered by every G-10 currency last year and all but a handful of emerging market currencies. The net result was a 9% loss for the US dollar, its first since 2012.

Several themes underpinned this decline. While the Federal Reserve delivered on incremental

tightening that should have been bullish for the US dollar in 2017, the repricing of policy and growth prospects outside the US turned out to be more important. This was particularly true for European currencies, such as the euro and British pound, which stood out as clear winners. Meanwhile, faster global growth, recovering commodity prices and slower-than-feared progress on US protectionist trade policies were broadly supportive for emerging market currencies. Even so, weakness in the Turkish lira and Brazilian real served as a reminder that such favorable macroeconomics can still be trumped by domestic politics.

We expect the interplay of these themes to remain the dominant differentiator among currencies in 2018. Of equal importance, because these factors are no longer universally aligned in favor of the US dollar, we expect strength in certain currencies to be offset by weakness in others, yielding relatively flat returns for the greenback this year. Our tactical positioning reflects this view, as we are long the pound and Swedish krona, but short the euro and yen.

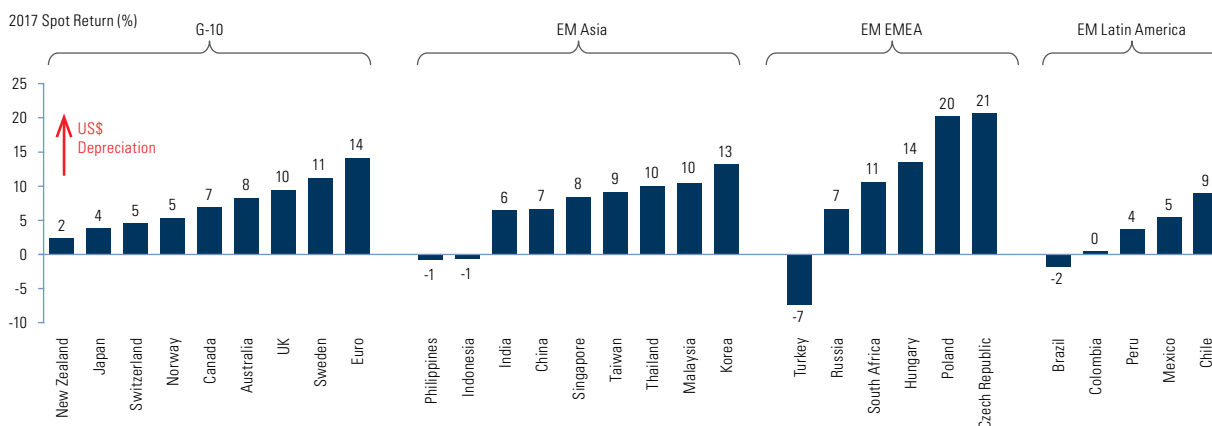
We discuss our view on the US dollar more broadly, and on each of these currencies, next.

### US Dollar

Following four years of uninterrupted US dollar appreciation, last year's 9% retreat was a stark reminder that nothing lasts forever. Even so,

## Exhibit 104: 2017 Currency Moves (vs. US Dollar)

The dollar weakened against nearly all major currencies in 2017.

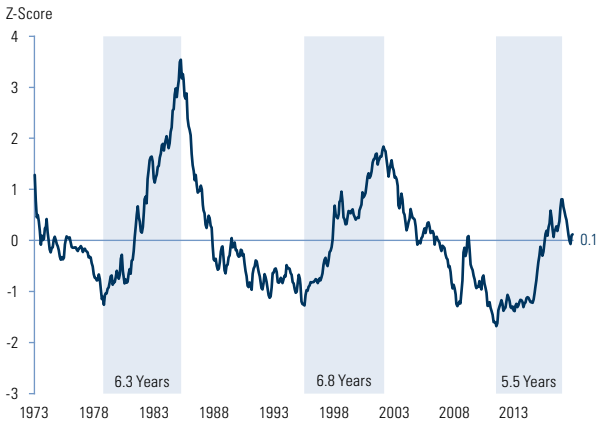


Data as of December 31, 2017.

Source: Investment Strategy Group, Bloomberg.

### Exhibit 105: US Dollar Real Effective Exchange Rate

Dollar valuations are back to their long-term average.



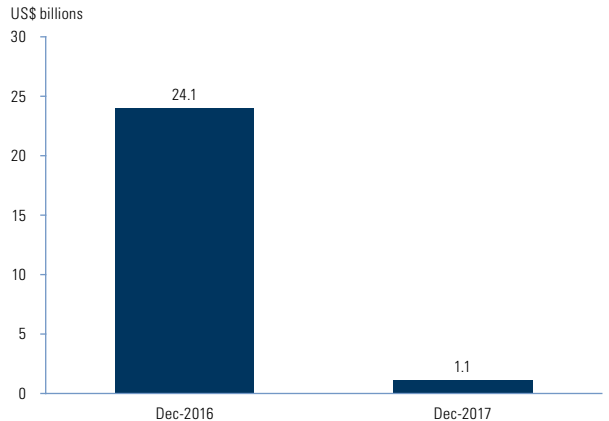
Data through November 30, 2017.

Note: Z-score is calculated on data since 1973 and represents the number of standard deviations from the mean. Shaded areas highlight periods of dollar strength.

Source: Investment Strategy Group, Datastream.

### Exhibit 106: US Dollar Non-Commercial Net Long Positioning

Speculative positioning in the US dollar is relatively neutral today.



Data as of December 31, 2017.

Note: Sum of net CFTC non-commercial positions in Australian dollar, Japanese yen, New Zealand dollar, euro, Swiss franc, British pound and Canadian dollar.

Source: Investment Strategy Group, CFTC.

we should keep this decline in perspective. The greenback is still 16% higher than where it began 2014. Moreover, last year's weakness has eliminated the dollar's valuation premium, bringing it back in line with its long-term average and in the middle of the ranges seen during the two previous US dollar bull markets in 1982 and 2002 (see Exhibit 105).

While valuation is no longer a headwind for further appreciation, the US dollar faces other drags that we expect will leave it relatively flat for the year. This is not to say an orderly path lies ahead. Instead, we see several reasons why the US dollar will be more volatile in 2018, presenting investable opportunities in both directions.

Chief among the drivers exerting upward pressure on the US dollar is the market's still-sanguine pricing of just two Federal Reserve hikes in 2018. As discussed in this year's fixed income outlook, we believe a combination of ongoing US growth, a further diminution of labor-market slack and some normalization in inflation will support three hikes in 2018, as will the recently passed US tax reform package. Here, the deemed repatriation provision and lower tax rate should encourage corporations to repatriate some portion of the \$3.3 trillion they hold in overseas cash and retained foreign earnings. While it is true that the bulk of these foreign earnings is already held in US dollar assets, the greenback could still enjoy a tailwind from repatriation of the portion that is not.

There is also potential for the US administration to make good on its campaign promise of implementing a fiscally expansive infrastructure program. While the odds of approval remain low, passage of such a plan would represent a clear upside risk for the US dollar, given the upward pressure it would place on the pace of Federal Reserve tightening. It is also worth mentioning that several technical price indicators suggest the US dollar may be bottoming after testing key support levels—and this at a time when the market is not positioned for further strength (see Exhibit 106).

The ongoing convergence of global monetary policy is a counterbalance to these bullish US dollar arguments. Keep in mind that currency movements are based on relative fundamentals. While we expect above-trend US growth and further Federal Reserve tightening this year, other central banks are also withdrawing accommodation against a backdrop of improving growth. Consider that the central banks of Canada and England raised their respective policy rates from extraordinarily low levels last year, and the ECB and the Swedish central bank (Riksbank) both signaled their intention to stop buying assets, effectively tightening monetary policy. We expect the trend of global monetary policy convergence to continue, potentially eroding the yield advantage of US assets and thereby weighing on the dollar.

Taken together, these competing forces will likely leave the US dollar little changed on the year.

## Euro

For the euro, 2017 was a banner year. The currency ended a three-year losing streak against the US dollar and was also the best-performing G-10 currency by a wide margin. In fact, the euro's 14% advance against the US dollar was its biggest in more than a decade and its third-largest since the multi-country currency was created in 1999.

Unfortunately for euro bulls, an encore of this magnitude is unlikely in 2018. Put simply, last year's highly visible event risks—a National Front victory in the French elections, the potential for a US border adjustment tax and the risk of further fallout from Brexit—never materialized, leading to a sizable relief rally. The ECB also signaled incrementally less monetary easing and an eventual end to its asset purchase program in response to better economic growth.

With these event-risk fears now quelled and better visibility on the path of ECB policy, we expect the drivers behind the euro's performance to be more mixed in 2018. On the one hand, we believe the yield differential between the US and the Eurozone may narrow as the ECB joins the Federal Reserve in withdrawing accommodation. Such monetary policy convergence implies less downward pressure on the common currency from domestic investors selling euros to purchase higher yielding offshore assets (see Exhibit 107). On the other hand, national elections in Italy and possibly in Spain later this year may rekindle concerns about the existential threat posed by populist politics, weighing on the euro.

These crosscurrents are likely to keep the euro in a trading range this year, which we believe will offer tactical opportunities in both directions. With the euro trading near the top of that range against the dollar, we currently hold a small short position.

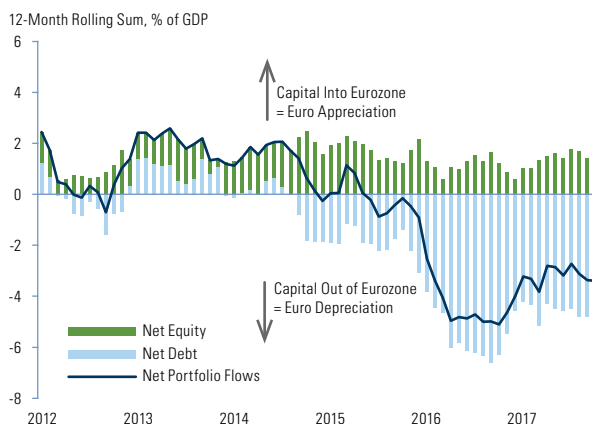
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**With these event-risk fears now quelled and better visibility on the path of ECB policy, we expect the drivers behind the euro's performance to be more mixed in 2018.**

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## Exhibit 107: Eurozone Net Portfolio Flows

Policy convergence with the US could support the euro by leading to lower outflows from the Eurozone.



Data through October 31, 2017.

Note: Q3 2017 data used to calculate Q4 2017 percentage of GDP.

Source: Investment Strategy Group, Haver.

## Yen

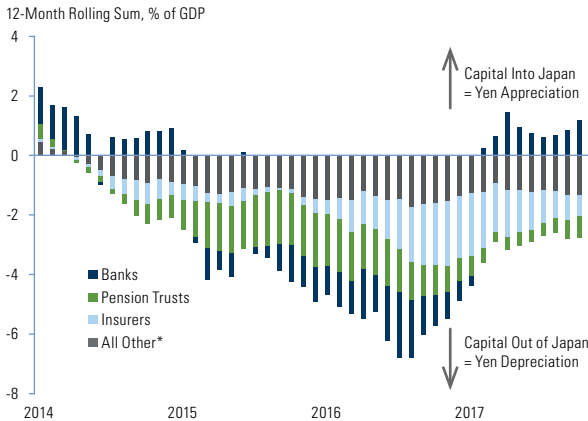
Last year tested the patience of yen investors, as the currency spent the bulk of 2017 moving sideways versus the US dollar. In the end, the yen appreciated by about 4%, a relatively modest move by historical standards. Still, this appreciation in the face of much tighter monetary policy in the US naturally raises the question of whether the depreciation of the yen has run its course, especially with Abenomics<sup>121</sup> now in its sixth year.

We believe the yen will depreciate in 2018 for several reasons, although we acknowledge that the risks to our view are more balanced than in recent years. Chief among these is monetary policy, with the BOJ likely to keep rates negative or close to zero this year by maintaining highly accommodative monetary policy. In turn, we believe Japanese investors will continue selling low-yielding domestic assets—placing downward pressure on the yen—in order to fund purchases of higher yielding offshore assets (see Exhibit 108). For instance, Japanese life insurers—which manage a sizable \$4.3 trillion of financial assets—have stated they may increase their exposure to unhedged foreign bonds if interest rates in the US and Eurozone diverge further from those in Japan.<sup>122</sup> With both the Federal Reserve and ECB likely to tighten policy this year, such divergences seem probable.



### Exhibit 108: Japanese Net Purchases of Foreign Securities by Investor Type

Additional buying of foreign assets by Japanese investors could put downward pressure on the yen.



Data through November 30, 2017.

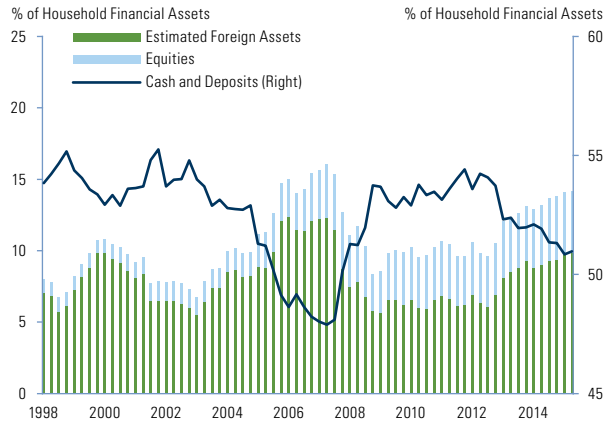
Note: Bank transactions are typically currency-neutral and do not impact exchange rates.

Source: Investment Strategy Group, Haver.

\* All Other defined as central bank, general government, financial instruments firms, investment trust management companies and others.

### Exhibit 109: Share of Cash and Risky Assets in Japanese Household Financial Assets

Strong 2017 global equity performance may encourage additional outflows from yen-denominated assets.



Data through September 30, 2017.

Source: Investment Strategy Group, Nomura, Bank of Japan.

Japanese corporations are also likely to place downward pressure on the currency, as they continue to sell yen to invest in foreign operations with better growth prospects. Retail investors are another potential source of yen weakness. Here, last year’s surge in global equity prices may encourage additional outflows from yen-denominated assets into foreign investments, as Japanese investors have historically been emboldened by improving risk-asset performance (see Exhibit 109).

Of course, there are several upside risks to the yen as well. First, the BOJ could begin articulating an endpoint to its near-zero interest rate policy. While we believe any adjustments would be gradual and come near the end of 2018, such a shift would erode the yield differential that currently favors US dollar assets. Second, new BOJ leadership appointments later this year raise uncertainty around a shift in policy, although we expect the status quo will prevail. Third, any increase in global uncertainty that boosts risk aversion could lead investors back into the yen as a liquid hedge, as we saw in the first quarter of 2017. Finally, after five years of weakness, we believe the yen remains undervalued.

While we give due weight to the risks above, we do not think they are sufficiently probable to undermine our core view—namely, that diverging

monetary policy between the Federal Reserve and the BOJ continues to favor yen weakness in 2018.

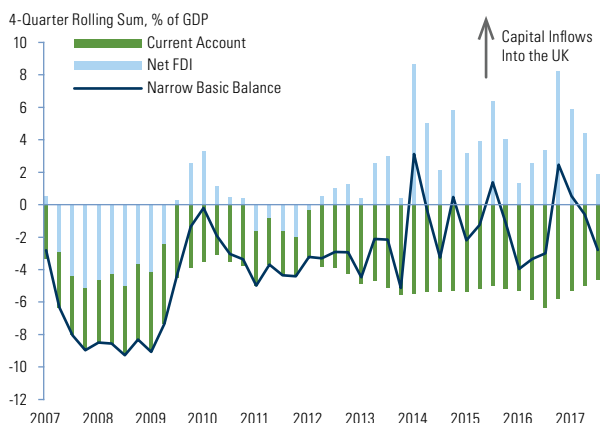
#### Pound

After three years of consecutive losses against the US dollar, the pound posted its best annual performance in over a decade, partially reversing the double-digit decline suffered in the wake of the 2016 European Union membership referendum. In fact, the pound’s 10% appreciation made it one of the best-performing currencies against the US dollar last year. While the currency’s recent strength has marginally eroded its inexpensive valuation, we see further scope for the pound to strengthen moderately.

A key component of our constructive view is predicated on the UK avoiding a “hard Brexit.” To be sure, there remain many unresolved issues with no easy solutions, including future access to the single market and frictionless movement within Ireland. Additionally, Prime Minister Theresa May’s political standing continues to be tested by members of her party as well as the opposition in response to her various political missteps. Even so, we believe the odds of an economically destabilizing Brexit outcome are marginally lower after separation principles were agreed to in December. In turn, these basic guidelines set the stage for more detailed trade negotiations

## Exhibit 110: UK Narrow Basic Balance

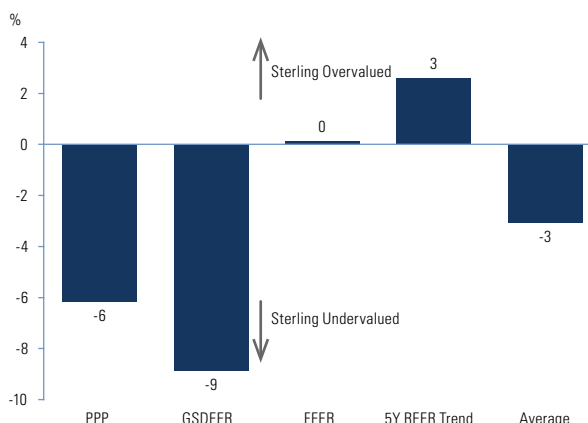
Foreigners continue to support the pound by investing in UK-domiciled assets and firms.



Data through September 30, 2017.  
Source: Investment Strategy Group, Haver.

## Exhibit 111: British Pound Long-Term Valuation Measures

The pound remains undervalued, providing further scope for upside.



Data as of December 31, 2017.  
Source: Investment Strategy Group, IMF, BIS, Goldman Sachs Global Investment Research, PIIE.

between the European Union and the UK in the spring. Ultimately, we believe, these discussions will result in a long transition period for the UK with continued access to the single market.

We believe the pound also benefits from several other tailwinds. First, domestic inflation is running well above the BOE's target, increasing the likelihood the BOE will raise rates twice this year. In turn, higher yielding UK portfolio assets would be enticing to foreign investors, particularly from Japan and the Eurozone, where benchmark rates remain low. Second, foreigners continue to buy pounds to invest in UK-domiciled assets and firms, which is vital to funding the UK's sizable 4.6% of GDP current account deficit (see Exhibit 110). Finally, we believe the pound remains undervalued, providing further scope for upside (see Exhibit 111).

### Emerging Market Currencies

US dollar weakness was a major driver of the 6% appreciation of emerging market (EM) currencies in 2017<sup>123</sup> (see Exhibit 112). It also helped boost EM sentiment by relieving downward pressure on the renminbi and making China's tighter capital controls more effective in stemming outflows. These benefits were bolstered by faster global growth and firming commodity prices, both of which aided demand for EM and Chinese exports. Yet despite this "Goldilocks" backdrop, EM currencies only managed to recoup the losses they

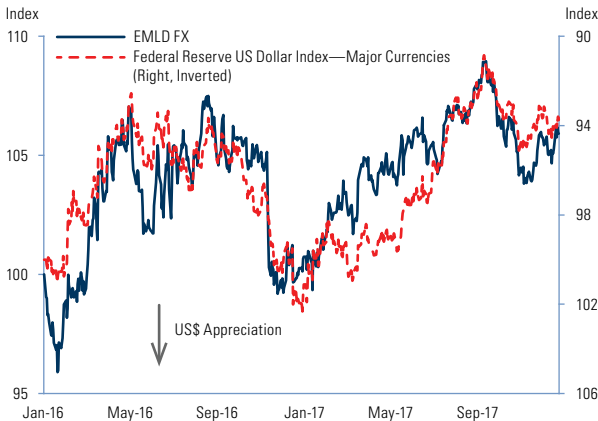
suffered in the immediate aftermath of the 2016 US presidential election.

The outlook for 2018 is mixed. On the one hand, we expect EM currencies to benefit from a firm global growth backdrop as well as their still-undemanding valuations. More broadly, emerging markets are also better prepared to deal with higher US interest rates today than during the infamous 2013 "taper tantrum," thanks to proactive steps they have taken to reduce their vulnerability to similar external shocks.

On the other hand, EM currencies face several headwinds that make a long position tactically unattractive. First, we expect both the US dollar and oil prices to be relatively range-bound in 2018, removing two key sources of support from last year. Second, we expect the narrowing in yield differentials with the US experienced last year to extend into 2018, weighing on returns as local rates fail to keep pace with US rates and EM real rates remain low. Third, positioning is quite vulnerable, as dedicated EM investors have shifted from the most underweight positions in currencies since the global financial crisis to the most overweight.<sup>124</sup> Finally, EM currencies are disproportionately impacted by the key risks we are monitoring this year, including more aggressive US trade actions against China, a breakdown of NAFTA negotiations, a military flare-up in North Korea or the Middle East, and a faster-than-expected slowdown in China.

## Exhibit 112: EM Local Debt Currencies vs. US Dollar Trade-Weighted Index

US dollar weakness was a major driver of EM currency appreciation in 2017.



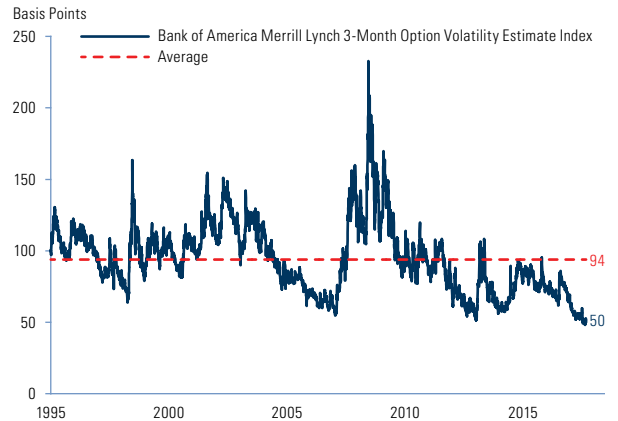
Data through December 31, 2017.

Note: Series are indexed to January 1, 2016.

Source: Investment Strategy Group, Datastream, Federal Reserve.

## Exhibit 113: 3-Month US Bond Implied Volatility

Fixed income implied volatility has fallen to record lows.



Data through December 31, 2017.

Source: Investment Strategy Group, Bank of America Merrill Lynch, Bloomberg.

Given these countervailing forces, we think a large unidirectional move is less likely than more idiosyncratic opportunities in 2018. For example, the Mexican peso has appreciated 10% above its 2017 trough as investors priced out the risk of a protracted trade war with the US. Yet these gains could be quickly erased if NAFTA negotiations break down (Eurasia Group puts those odds at 45%) or the leading leftist candidate wins the July 2018 presidential election.

We continue to watch these developments closely for potentially attractive tactical opportunities.

## 2018 Global Fixed Income Outlook

Last year represented another in a series of false dawns for those expecting a bear market in bonds.

**We believe the odds of an economically destabilizing Brexit outcome are marginally lower after separation principles were agreed to in December of 2017.**

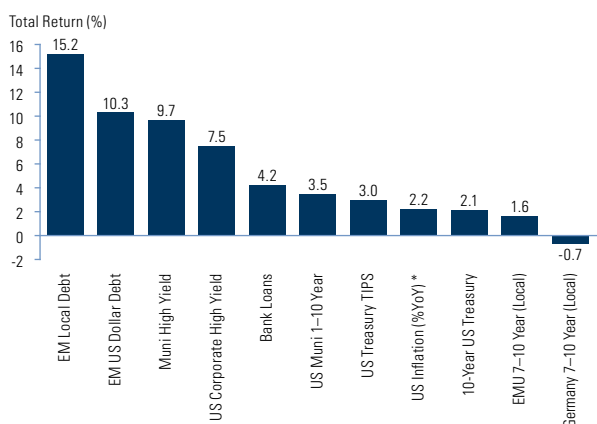
To be sure, interest rates have repeatedly defied higher forecasts—our own included—throughout the post-crisis period. The common denominator in recent years has been persistently low inflation, with 2017 being no exception. After all, US core PCE inflation has been below the Federal Reserve’s 2% target for all but four months since 2008, while the March 2017 core CPI inflation print was weaker than 99% of its monthly predecessors since 1960.

Such low inflation is not limited to the US. Today’s core inflation rates in Japan, the Eurozone and the US all stand in the bottom third of their respective historical distributions. This subdued pricing pressure—and the accommodative monetary stance it justifies—has also pushed fixed income implied volatility to record lows (see Exhibit 113). Of course, bond investors are not complaining, as nearly every fixed income category posted a positive return last year (see Exhibit 114).

While we certainly do not expect surging prices, inflation rates are likely to increase modestly in 2018. A key part of this story is our expectation for continued above-trend global GDP growth, as it should underpin further employment gains that ultimately support higher wages. At the same time, some of last year’s anomalous weakness

## Exhibit 114: Fixed Income Returns by Asset Class

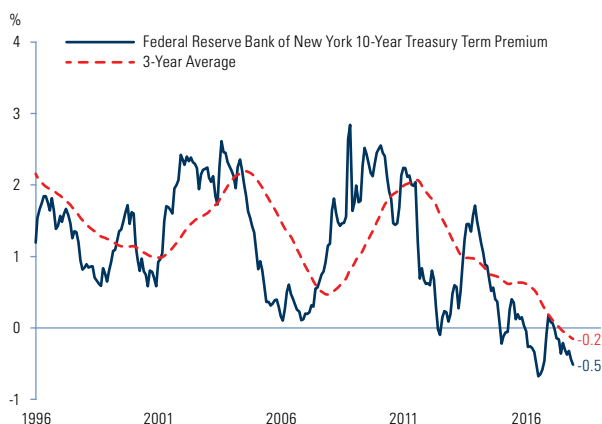
Nearly every fixed income category posted positive performance in 2017.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Datastream.  
\* Inflation data as of November 2017.

## Exhibit 115: 10-Year Treasury Term Premium

We expect the term premium to rise from historically depressed levels.



Data through December 31, 2017.  
Source: Investment Strategy Group, Federal Reserve Bank of New York, Haver.

in certain inflation categories should cycle out of the yearly calculation. Of equal importance, this recovery in inflation readings will likely generate a positive feedback loop for inflation expectations, just as last year's weakness dampened them.

Interest rates are also likely to be supported by policy this year. In the US, tax reform is providing a fiscal boost to growth at the same time that we expect the Federal Reserve to hike interest rates three times. More broadly, other large central banks around the globe have articulated plans to follow the Federal Reserve's lead by removing some monetary accommodation, which should lift currently depressed global term premiums (see Exhibit 115). Consider that 2018 will be the first year since the ECB began quantitative easing in March 2015 that its purchases of government bonds will be less than the total issuance.

While we expect only a modest increase in global interest rates, bonds are still likely to underperform cash given today's meager coupon levels. We therefore recommend investors favor credit over duration risk by remaining overweight US corporate high yield credit versus investment grade fixed income and that clients fund various tactical tilts from their high-quality bond allocation.

Even so, investors should not completely abandon their bond allocation in search of higher yields. As global interest rates increase, investment grade fixed income offers hedging properties

against unexpected shocks, in addition to reducing portfolio volatility and generating income.

In the sections that follow, we review the specifics of each market.

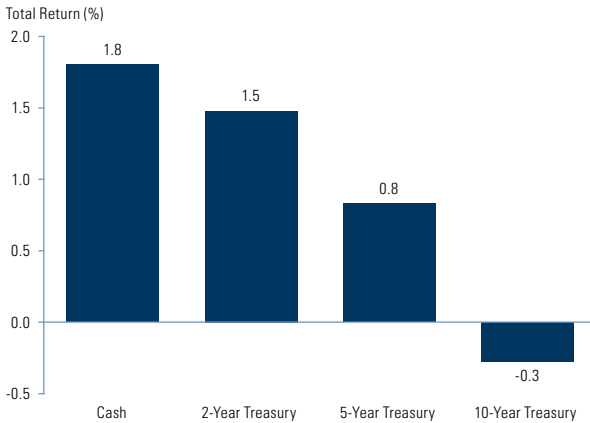
### US Treasuries

Last year was a study in contrasts for the short and long end of the US Treasury market. While the 10-year yield was little changed for 2017, the 2-year yield moved sharply higher by nearly 70 basis points—generating a yearly percentage change that has been exceeded only 8% of the time since 1976. That the bulk of this move unfolded in just the last few months of the year made it even more striking. The net result was a dramatic flattening of the yield curve.

We expect this divergence to abate in 2018, with Treasury yields at both ends of the curve moving higher. On the short end, yields are likely to rise in response to the three Federal Reserve interest rate increases we forecast. While this pace would surpass the two hikes currently priced by bond forward contracts, we believe it is far from inappropriately hasty. Even if our forecast materializes, it would represent a tightening pace that is less than half of the historical median, slow relative to what economic models of US monetary policy—such as Taylor rules<sup>125</sup>—would prescribe and just in line with the FOMC's own projections. Moreover, the Federal Reserve has scope to raise rates by at least this much in 2018 considering that

### Exhibit 116: 2018 US Treasury Return Projections

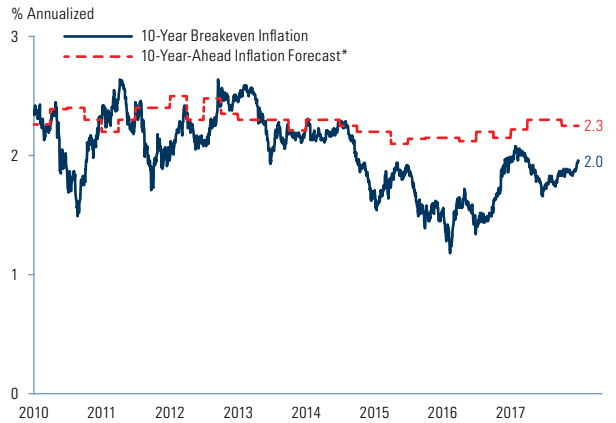
We expect cash to outperform bonds as rates rise.



Data as of December 31, 2017.  
Source: Investment Strategy Group.

### Exhibit 117: US 10-Year Breakeven Inflation Rate and Consensus Inflation Rate Forecasts

Breakeven inflation rates remain stubbornly below consensus expectations.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.  
\* Based on the Survey of Professional Forecasters.

the three hikes it delivered last year have already been offset by easier financial conditions (reflecting tighter credit spreads, stable long rates, a weaker US dollar and higher equity prices).

Rates should also move higher at the long end of the curve, albeit to a lesser degree. Here, many of the forces that kept 10-year Treasury yields flat in 2017 are likely to abate, particularly the transitory drags from downward inflation surprises and year-end portfolio rebalancing flows following last year's strong equity gains. At the same time, continued gains in US employment should erode labor slack further, putting modest upward pressure on wage growth. Finally, yields at the long end of the curve are likely to get a lift from the many large central banks that have articulated plans to remove some monetary accommodation this year.

Although we expect interest rates to rise, a disorderly backup in yields is unlikely. As discussed in the US economic outlook in Section II, a rapid rise in inflation that would necessitate an aggressive response from the Federal Reserve is at odds with the response of inflation to low unemployment rates in the 1960s, ongoing global deflationary headwinds and the Federal Reserve's own sensitivity to overtightening monetary policy. Consider Chair Janet Yellen's own words: "An abrupt tightening would risk disrupting financial markets and perhaps even inadvertently push the

economy into recession."<sup>126</sup> This last observation is important, because although many worry about Federal Reserve leadership changes this year, incoming chair Jerome Powell's views on monetary policy have been aligned with the FOMC consensus in the past.

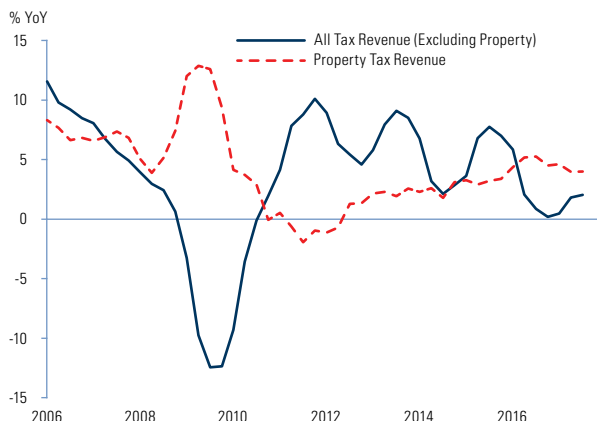
Overall, we expect 10-year rates to increase to 2.5–3.0% this year. Given today's scant coupon levels, even the modest increase in yields we expect would result in bonds underperforming cash (see Exhibit 116). As a result, we remain comfortable funding tactical tilts out of investment grade fixed income.

#### Treasury Inflation-Protected Securities (TIPS)

In 2017, TIPS performed like nominal bonds, delivering low-single-digit positive returns. This modest gain is made more impressive by the fact that it was achieved despite a string of disappointing inflation reports that left breakeven inflation rates depressed. Consider that current breakeven inflation rates imply just 2.0% of average annual headline CPI inflation over the next 10 years (see Exhibit 117). Echoing the same point, the Federal Reserve's preferred measure—five-year average inflation, five years from now—stands at just 1.8%. Both of these readings are below the consensus of professional forecasters, implying that there is actually a negative inflation premium in the TIPS markets.

## Exhibit 118: US State and Local Government Revenue Growth

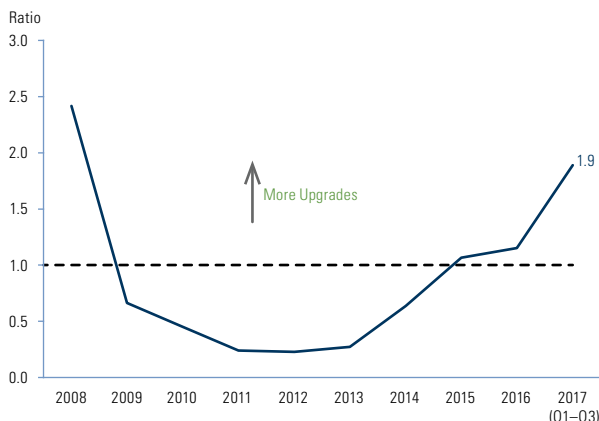
Revenues from property taxes have grown at a solid rate in the past year, outpacing other revenue sources.



Data through September 30, 2017.  
Note: Year-over-year growth of 4-quarter averages.  
Source: Investment Strategy Group, Bloomberg.

## Exhibit 119: Moody's Municipal Issuer Rating Upgrade-to-Downgrade Ratio

Upgrades have outpaced downgrades in three out of the past four quarters for the Moody's universe.



Data through September 30, 2017.  
Source: Investment Strategy Group, Moody's.

From this lowly starting point, we think that breakeven inflation rates will increase in 2018 for the reasons cited in the introduction to this section: a recovery in the rate of inflation, wage support from above-trend GDP growth and higher inflation expectations. In turn, we expect positive total returns from TIPS in 2018. Even so, TIPS' absolute returns are expected to be modest, as their eight-year duration will make it difficult for coupon income to meaningfully exceed principal losses as rates rise. Furthermore, given TIPS' unfavorable tax treatment, we continue to advise US clients with taxable accounts to use municipal bonds for their strategic allocation.

### US Municipal Bond Market

Municipal bonds finished 2017 on a sour note. Unexpected changes to issuance guidelines in the just-passed tax laws encouraged borrowers to accelerate issuance, leading to a surge of supply that pushed yields higher late last year. The result was a rare 1.4% quarterly loss for the asset class.<sup>127</sup>

Needless to say, tax reform will have a significant impact on this market. While demand from individuals—who constitute the largest investor base for municipal bonds—is largely unaffected, the same cannot be said for demand from financial firms. These firms represent a quarter of total demand, and for them, lower corporate tax rates will reduce the incentive to

invest in municipal bonds going forward, creating a clear headwind for the market.

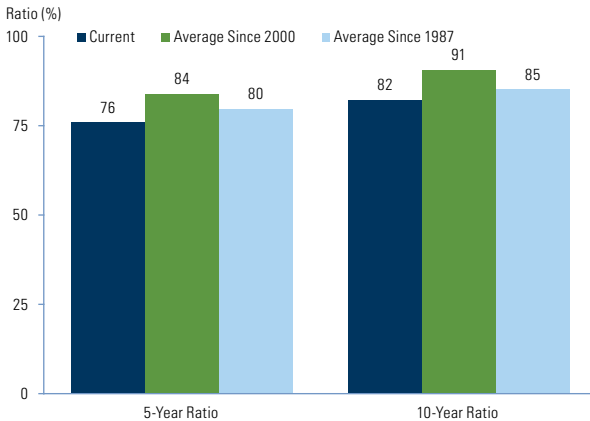
Even so, that lower demand is likely to be more than offset by reduced supply. As mentioned above, tax changes have introduced important restrictions on who is allowed to borrow in the tax-exempt market. As a result, the equivalent of 14% of all the debt issued over the last decade may no longer be eligible, creating a net supply deficit that is likely to support municipal bond prices.

Tax reform is also likely to directly impact municipal borrowers. Keep in mind that property tax revenue has been one bright spot for municipal finances, growing at a solid 4% rate last year (see Exhibit 118). Yet changes in the deductibility of mortgage interest and real estate taxes could negatively impact local property markets and reduce associated municipal revenue. This potential slowdown comes at a time when the 2% growth of broader state and local tax revenues<sup>128</sup> is already languishing below earlier projections, reflecting income tax shifting and sales tax leakage to online sales, among other factors. Still, strong US GDP growth and recent stock market gains, along with the fact that property taxes based on assessed values tend to lag changes in market values, suggest municipal revenue should see another year of low-single-digit growth.

Continued revenue growth is likely to further buttress fund reserves, which had already been

## Exhibit 120: Ratio of Municipal Bond Yields to Treasury Yields

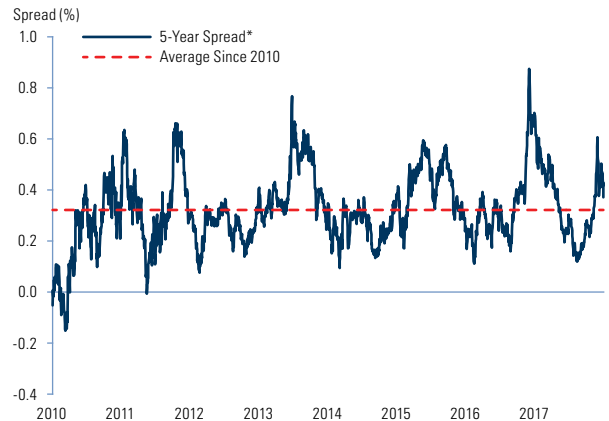
Municipal bonds now offer a smaller yield pickup versus Treasuries than they have in past periods.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

## Exhibit 121: Incremental Yield of Municipal Bonds Over Treasuries

While projected municipal returns are uninspiring, investors can still earn a small yield pickup compared to Treasuries.



Data through December 31, 2017.  
Source: Investment Strategy Group, Haver.  
\* Spread of 5-year AAA municipal bond yields over after-tax 5-year Treasury yields.

growing in recent years on the back of disciplined fiscal management.<sup>129</sup> In turn, we expect state and local governments will be able to make fiscal adjustments as needed, keeping default risk low. This fiscal prudence has also supported credit ratings. In fact, upgrades have outpaced downgrades in the Moody's universe in three out of the past four quarters (see Exhibit 119).

A key determinant of these recent ratings actions—such as Illinois' downgrade in June 2017 or Wisconsin's upgrade in August 2017—has been the pension outlook.<sup>130</sup> Consider that the correlation between pension funding ratios and state general obligation spreads has increased to almost 50% today from just 10% a decade ago.<sup>131</sup> Encouragingly, state and local pension funding levels have been stable in recent years as contribution rates have picked up, strong financial market gains have boosted plan assets and borrowers have been under increasing pressure to fix imbalances. In short, while pension liabilities remain a medium-term credit risk for the municipal bond market, the near-term outlook has marginally improved.

Based on the foregoing and slightly rich valuations, we expect just 1% returns for municipal bonds this year (see Exhibit 120). With our expected return below that of cash—but with more downside risk from rates and tax policy—we continue to recommend that clients fund various

tactical tilts from their investment grade fixed income allocation. This recommendation primarily reflects rate risk and not credit concerns, as we expect municipal defaults to remain rare events.

Outside of tilt funding, we recommend clients target their benchmark duration. While projected municipal returns are uninspiring, investors can still earn an extra 36 basis points of after-tax yield by owning five-year municipal bonds instead of same-maturity Treasuries—a yield pickup that stands slightly above the post-crisis average of 32 basis points (see Exhibit 121). For this reason, and because they offer important portfolio hedging characteristics, municipal bonds should remain the bedrock of the “sleep well” portion of a US-based client's portfolio.

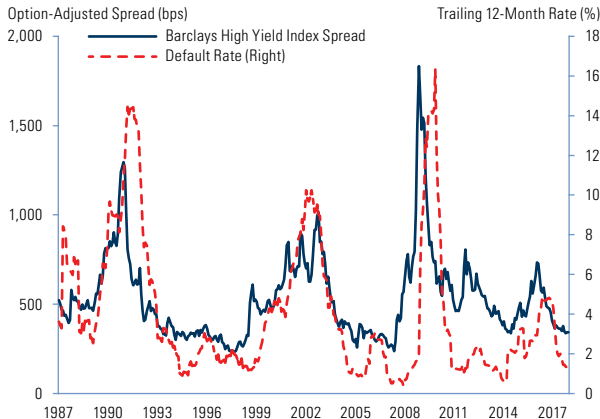
Moving further out the duration and credit risk spectrum, high yield municipal bonds currently offer an attractive 241 basis point incremental spread to investment grade bonds, close to their historical average. We think this spread will be able to absorb the increase in interest rates we expect this year despite high yield municipal bonds' 8-year duration, supporting a 4% return. Therefore, we recommend clients stay fully invested at their customized strategic weight.

### US Corporate High Yield Credit

In the spirit of the limbo dance, default rates among high yield issuers continued to set new lows in 2017.

## Exhibit 122: US High Yield Spreads and Default Rates

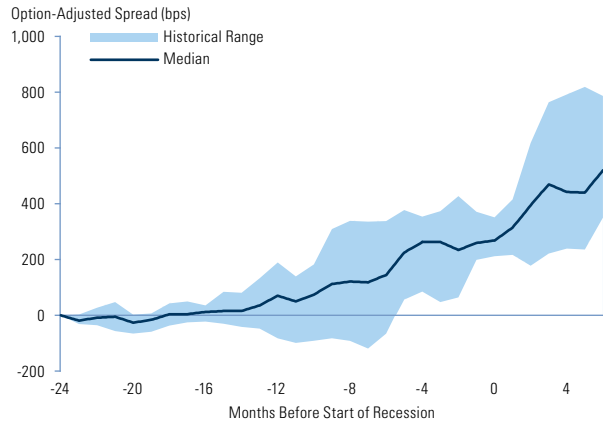
Defaults and spreads have been lower only 20% of the time over the last three decades.



Data through December 31, 2017.  
Source: Investment Strategy Group, Barclays, Moody's, Bloomberg.

## Exhibit 123: High Yield Spreads Around Recessions

Spreads have historically risen about a year before the onset of recession.



Data as of December 31, 2017.  
Source: Investment Strategy Group, Barclays, Bloomberg.

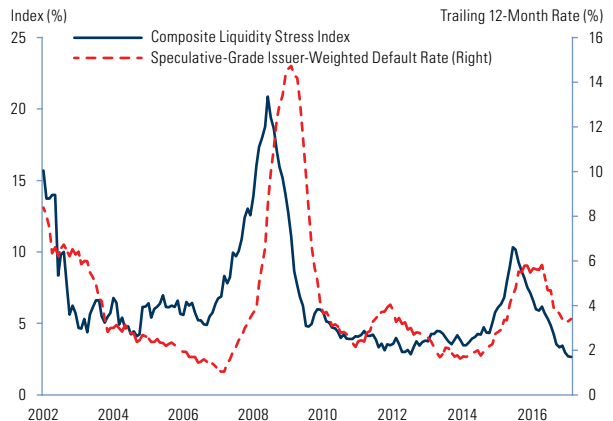
Over the last year, just 1.34% of high yield bonds defaulted on a par-weighted basis, among the lowest readings in the post-crisis period.<sup>132</sup> In fact, both high yield defaults and spreads—which compensate investors for the risk of default losses—have been lower than current levels only 20% of the time since 1987 (see Exhibit 122). This benign credit backdrop was welcome news for high yield investors, who enjoyed returns that bested investment grade bonds last year (see Exhibit 114).

But with default rates and spreads already so low, there is growing concern that the only direction for both is up. This is particularly true because the bulk of last year's credit improvement came from lower defaults in the formerly distressed commodity sectors, which have now recovered. Indeed, defaults attributable to energy and metals/mining debt fell from about \$48 billion in 2016 to just \$7 billion last year.<sup>133</sup> In contrast, default filings in non-commodity-related debt actually worsened modestly in 2017.

While we certainly acknowledge that the current rate of improvement in both defaults and credit spreads is unsustainable, we do not think that fact undermines the case for high yield credit in 2018. Our benign view on losses from defaults—which are the primary risk to high yield investors—stands at the root of our comfort in remaining tactically overweight. More specifically, several factors support our below-average 2% default forecast for 2018, which—if realized—will

## Exhibit 124: Moody's Liquidity Stress Index and High Yield Default Rates

Leading indicators are consistent with subdued high yield default rates going forward.



Data through November 30, 2017.  
Note: Moody's Liquidity Stress Index fall when corporate liquidity appears to improve and rises when it appears to weaken.  
Source: Investment Strategy Group, Moody's.

provide attractive loss-adjusted incremental returns to high yield investors.

The most important of these is our expectation of continued growth in the US economy. This factor is especially important because almost three-quarters of high yield companies' sales originate domestically. With low odds of a recession in the



### Exhibit 125: Moody's Oil & Gas Liquidity Stress Index

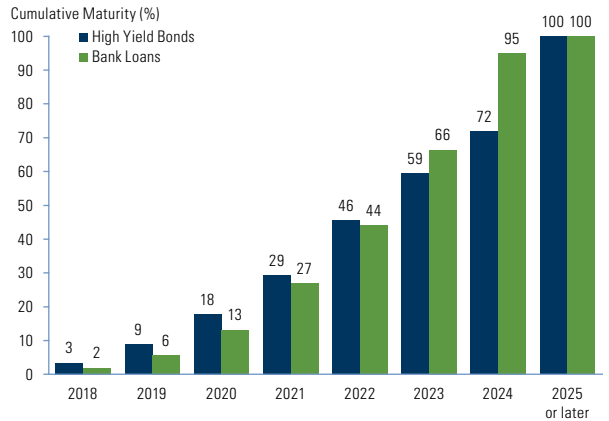
The energy sector has completely reversed the distress caused by collapsing oil prices in 2015–16.



Data through November 30, 2017.  
 Note: Moody's Liquidity Stress Index fall when corporate liquidity appears to improve and rises when it appears to weaken.  
 Source: Investment Strategy Group, Moody's.

### Exhibit 126: Cumulative US High Yield Debt Maturity by Year

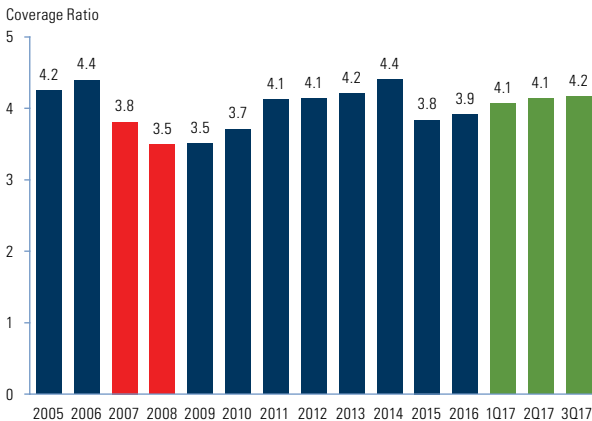
Less than 10% of existing debt is set to mature in the next two years.



Data as of December 31, 2017.  
 Source: Investment Strategy Group, JP Morgan.

### Exhibit 127: High Yield Par-Weighted Interest Coverage Ratio

Interest coverage stands near all-time highs, unlike in the pre-crisis period.



Data through Q3 2017.  
 Source: Investment Strategy Group, Barclays.

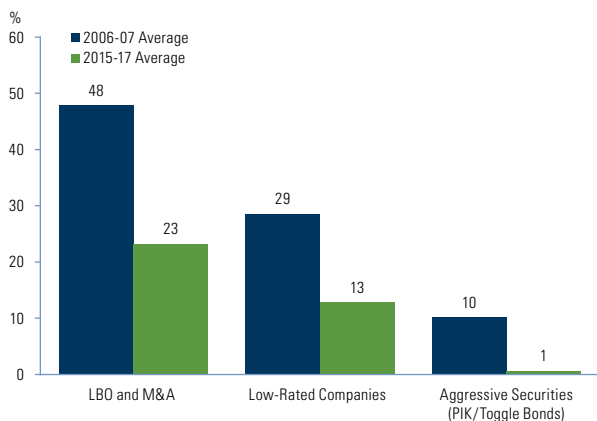
next two years based on our analysis, history suggests spreads are likely to remain well behaved (see Exhibit 123). The same could be said for defaults, where key leading indicators—such as Moody's Liquidity Stress Indicator (LSI) and covenant stress indices—are nearing all-time lows, suggesting fewer speculative-grade companies are experiencing liquidity problems or are at risk of

breaching financial covenants (see Exhibit 124). A similar message arises from Moody's Oil and Gas Sector LSI, which has completely erased the distress evident in 2015–16 on the back of stabilizing oil prices and better spending restraint on the part of non-defaulted energy companies (see Exhibit 125). Note both of these LSIs began to deteriorate in advance of previous default cycles. Lastly, our default model—which incorporates the leading characteristics of the Federal Reserve's Senior Loan Officer Opinion Survey and the percentage of distressed bonds in the high yield universe—is projecting just under 2% par-weighted defaults this year, consistent with our forecast.

Our view of low defaults is also corroborated by other factors. As seen in Exhibit 126, there is very little refinancing risk given that just 8.8% of existing debt matures in the next two years. The equivalent figure was higher last year, at 10.1%, suggesting high yield firms extended the maturity of their debt in 2017. Of equal importance, interest coverage stands near all-time highs, in stark contrast to the period preceding the financial crisis (see Exhibit 127). This point is further illustrated by Exhibit 128, which shows that today's high yield universe is much healthier than the pre-crisis cohort, regardless of measure. For example, the share of issuance represented by low-rated CCC bonds over the last two years is less than half of the 2006–07 average.

## Exhibit 128: Use of High Yield New-Issuance Proceeds

Today's high yield universe is much healthier than the pre-crisis cohort.

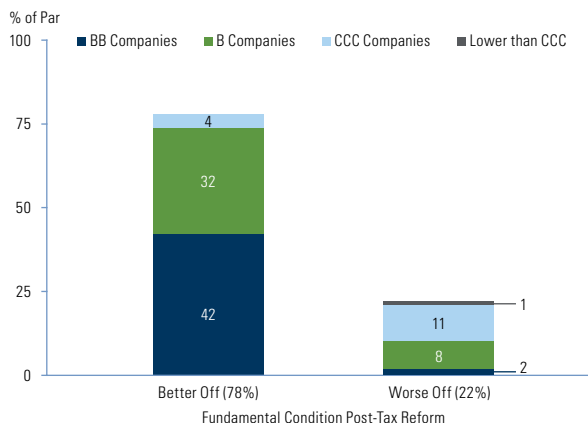


Data as of November 30, 2017.

Source: Investment Strategy Group, Bank of America Merrill Lynch, Bloomberg, Barclays.

## Exhibit 129: Percentage of High Yield Bonds Made Better or Worse Off by Tax Reform

The majority of high yield bonds will actually benefit from tax reform.



Data through December 31, 2017.

Source: Investment Strategy Group, JP Morgan.

Still, there are other concerns in the high yield market that extend beyond the risk of defaults. Chief among these is the impact of recently passed tax reform, particularly the bill's limitation of interest expense deductibility and its reduction of net operating loss carryforwards. To be sure, neither of these provisions is positive for highly leveraged firms.

Even so, these unfavorable components must be weighed against tax reform's advantageous elements to gauge their overall impact. Crucially, our work suggests that the bill's reduction in the corporate tax rate and treatment of capital spending as a fully deductible expense more than offset its negative impact for the vast majority of high yield firms. In fact, the equivalent of 78% of high yield bonds outstanding based on par value are better off under tax reform (see Exhibit 129).

Of course, investors are not oblivious to these supportive fundamentals. In high yield bonds, today's below-average spreads offer less of a buffer to absorb a backup in interest rates and already reflect our subdued default expectations. We therefore expect modest returns of about 3% for both general high yield bonds and high yield energy bonds this year, with the latter benefiting from oil prices remaining in our \$45–65 forecast range due to continued OPEC production discipline. Bank loans should perform marginally better than bonds, with a 4–5% return, reflecting their attractive 0.25-year duration and continued

investor demand for floating rates—a feature that is back in vogue now that 3-month LIBOR is above the 1% LIBOR floor that more than 90% of bank loans possess.

While these returns may pale in comparison to the 13.2% annualized gains high yield bonds have delivered since 2009, they remain attractive relative to investment grade fixed income, where we expect rising rates to generate worse returns. Even if interest rates remain little changed while the US economy continues to expand, the loss-adjusted return in high yield should still trump that of investment grade bonds, in our view. Therefore, we recommend clients maintain a modest tactical overweight to general high yield bonds, high yield energy bonds and bank loans.

### European Bonds

European bond prices *should* have been much weaker than they were last year. After all, a far-right victory in the French elections was avoided, the aftermath of Brexit was less disruptive than feared, the ECB reduced the pace of its asset purchases starting in March and the Eurozone economy grew firmly above trend. Yet despite this bearish backdrop for bonds, German 10-year rates rose only 25 basis points and ended the year at just 0.43%, a level that has been higher 93% of the time since 1989.

A key contributor to this counterintuitive performance was the ECB's convincing guidance,

itself motivated by tepid inflation readings. As German 10-year rates reached 0.6% in July of last year, the ECB began reassuring markets that it had no intention of terminating its asset purchase program in the near future. This message was reinforced at the October meeting, when the ECB announced that it would continue buying bonds at a pace of €30 billion per month for the upcoming January–September 2018 period. It also confirmed that it did not intend to raise its official deposit rate until well past the end of its asset purchases. In conjunction with smaller fiscal deficits and the ongoing scarcity of bunds (driven by excess demand from both regulatory requirements and continued ECB purchases), the ECB guidance ultimately provided ample support for bund prices.

We think 2018 will prove more challenging for European bonds. As discussed in Section II, Eurozone GDP growth remains firmly above trend, the unemployment rate is rapidly declining, and both inflation and wage growth appear to have bottomed—all conditions that support higher interest rates. At the same time, we expect the ECB to end its asset purchases later this year while also guiding the market to expect a gradual increase in the deposit rate starting in early 2019. Already, the reduced pace of ECB asset purchases is meaningfully shrinking its footprint in the bond market. As seen in Exhibit 130, 2018 will be the first year since the ECB began quantitative easing that its purchases of bonds will be less than the total net issuance.

With less ECB policy pressure on long maturity yields—coupled with continued above-trend Eurozone growth and some normalization in global term premiums—we expect 10-year bund yields to increase to 0.5–1.0% by the end of 2018. Periphery spreads should remain mostly range-bound this year, although they are vulnerable to any upside surprise in the level of global interest rates.

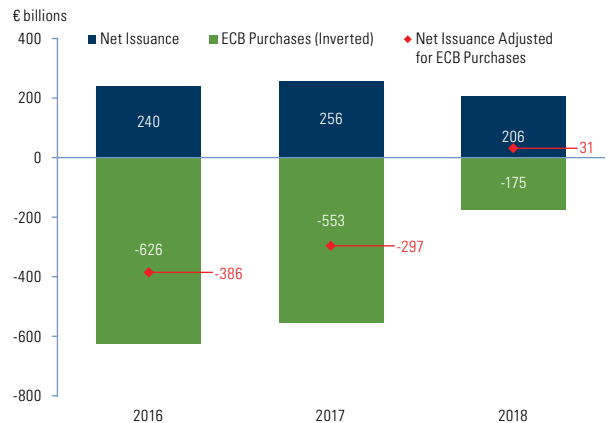
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**Crucially, our work suggests that the equivalent of 78% of high yield bonds outstanding based on par value are better off under US tax reform.**

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### Exhibit 130: Eurozone Government Bond Issuance and ECB Purchases

ECB purchases in 2018 will be less than total eurozone bond issuance for the first time since the beginning of QE.



Data as of December 31, 2017.  
Source: Investment Strategy Group, JP Morgan.

In the UK, persistently high inflation, more supportive fiscal policy and better visibility on the Brexit transitional arrangements support our view that the BOE will continue raising rates in 2018. We therefore expect gilt yields to reach 1.25–1.75% from 1.19% at the end of 2017.

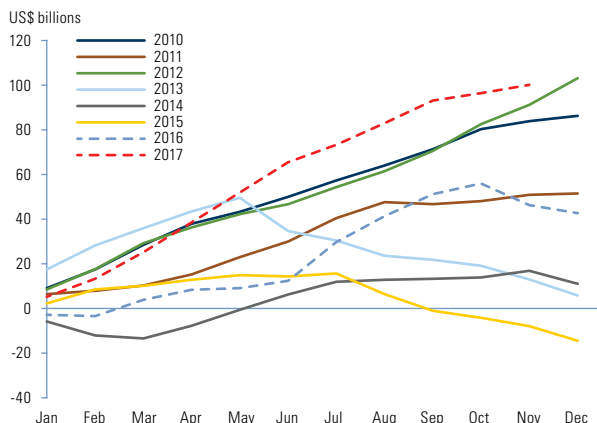
Based on the foregoing and the slim margin of safety offered by these debt instruments, we remain underweight European and UK bonds for European investors. After all, just a 2 basis point increase in German 10-year bund yields generates a capital loss sufficient to offset an entire year of coupon income. Even so, we advise European clients to retain some exposure to high-quality European bonds to protect against unforeseen negative events.

### Emerging Market Local Debt

For a second year in a row in 2017, everything that could go right for emerging market local debt (EMLD) did so in 2017. Stable US rates and low inflation in many emerging market countries allowed their central banks to ease policy, helping drive EMLD spreads to their post-crisis lows. This spread compression—along with EMLD’s attractive coupon income and US dollar weakness—helped generate a stellar 15.2% return last year. At the same time, volatility plunged into the mid-single digits, to levels seen less than 1% of the time since 2003.

### Exhibit 131: Annual Cumulative Inflows into EM Fixed Income Funds

EM bond inflows are estimated to have set a new record in 2017.



Data through November 30, 2017.

Note: Flows into hard and local currency.

Source: Investment Strategy Group, JP Morgan, EPFR Global, Bloomberg.

This rare combination of low volatility and strong returns gave EMLD its highest risk-adjusted return since 2013 and led to a resumption of strong inflows into the asset class (see Exhibit 131). In fact, inflows are estimated to have set a new record in 2017. Not surprisingly, dedicated investors reported the highest overweight positioning in emerging market rates since 2011.<sup>134</sup>

We think the outlook for 2018 is likely to be less favorable for several reasons. First, the rise in US long-term rates that we expect will put upward pressure on EMLD yields at a time when they sit at low levels last seen prior to the “taper tantrum.” Furthermore, withdrawal of large-scale monetary accommodation<sup>135</sup>—as the Federal Reserve is currently undertaking—could reduce flows into emerging market debt,<sup>136</sup> particularly if the process becomes disorderly. Indeed, the IMF estimates an orderly reduction in the size of the Federal

**Despite this favorable technical backdrop and supportive global growth, it is worth noting that the credit quality of EMD sovereigns remains at post-crisis lows.**

Reserve’s balance sheet and a rise in short-term rates could reduce portfolio flows by \$70 billion over the next two years. However, a disorderly withdrawal of foreign capital over a relatively short period could be far more disruptive. Consider that during 2013’s “taper tantrum,” emerging markets suffered about \$40 billion in outflows in just seven weeks as exchange rates depreciated sharply and EMLD lost 16%. Lastly, domestic developments will also impact EMLD returns in 2018, as countries representing 55% of the EMLD index face elections this year.

Considering these offsetting forces, our central case calls for mid-single-digit returns this year, but with room for a considerable increase in volatility. Thus, in our view, the expected risk-adjusted return does not justify a tactical EMLD long position at this time.

### Emerging Market Dollar Debt

Emerging market dollar debt (EMD) had another year of outperformance on the back of stable US rates and robust risk appetite. All told, it returned 10.3% despite a 0.6% drag from Venezuela’s much-anticipated default. In addition to EMD’s attractive 5.3% yield, returns were enhanced by spreads falling to 2.9%, their lowest level in more than three years (see Exhibit 132).

Consistent mid-single-digit returns over the last five years have catalyzed investor interest in this asset class, resulting in \$73 billion of inflows last year,<sup>137</sup> an all-time high. Sovereign issuers have been only too eager to meet this demand, pushing gross and net issuance to record levels in 2017. Such rapid issuance is expected to continue this year, led by the Gulf Cooperation Council (GCC) countries of Saudi Arabia, Qatar and Kuwait, as well as Argentina and Turkey.<sup>138</sup>

Despite this favorable technical backdrop and supportive global growth, it is worth noting that the credit quality of EMD sovereigns remains at post-crisis lows. In fact, countries accounting for a quarter of the EMD index still have a negative outlook from at least two rating agencies.

It is this confluence of rising US rates, low spreads and record issuance that moderates our outlook for EMD in 2018. We do not recommend a tactical position in EMD at this time and prefer to take credit risk through the highly correlated US high yield and bank loan markets.

### Exhibit 132: EM Dollar Debt Spread

Spreads have narrowed to their tightest level in more than three years.



Data through December 31, 2017.  
Source: Investment Strategy Group, JP Morgan, Datastream.

## 2018 Global Commodity Outlook

Sometimes there is less than meets the eye to commodity returns. This was true on two fronts in 2017. First, an investor in the S&P GSCI would have earned only 5% last year after factoring in the cost of rolling the futures contracts each month—significantly less than the 11% spot return. Second, that double-digit headline return belied significant dispersion among the underlying commodities, as investors in agriculture lost 13% while those in industrial metals gained 28% (see Exhibit 133).

We think this uneven performance is likely to persist in 2018. In oil, the stronger global growth we expect should support demand. Still, the supply response of US shale remains a downside risk, particularly with oil already near the top of our \$45–65 target range for the year. Meanwhile, the

key elements of our macroeconomic forecast—Federal Reserve tightening, modestly higher interest rates and a stable US dollar—are headwinds to gold prices.

We discuss the specifics of our outlook for oil and gold in the sections that follow.

### Oil: In Search of Equilibrium

Last year’s double-digit spot return in oil prices masked a tale of two halves. At its worst point mid-year, West Texas Intermediate (WTI) oil was down nearly 20% on continued worries about US shale growth and OPEC’s compliance with its announced production cuts. Yet oil advanced by more than 30% in the second half of the year, as these concerns were quelled by robust oil demand, spending discipline by US producers, an extension of OPEC production restraint and visible reductions in global oil inventories.

This interplay between supportive oil fundamentals and lingering concerns about US shale production and OPEC compliance is likely to dominate oil prices again this year. Thus far, it seems that a new equilibrium has emerged. Consider that current oil prices appear low enough to foster strong global demand and justify production restraint from OPEC and Russia, yet high enough for US producers to finance growth through organic cash flows instead of additional borrowing. The upshot is that the long-standing oil inventory glut continues to shrink rapidly at current prices, as evidenced by OECD inventory stockpiles now standing within 5% of their average levels (see Exhibit 134).

We expect this equilibrium to persist, with oil prices at \$45–65 per barrel in 2018. Prices in this range, as well as our expectation for above-trend global GDP growth, are likely to support robust

### Exhibit 133: Commodity Returns in 2017

Last year’s positive headline GSCI performance belied significant dispersion among underlying commodities.

	S&P GSCI	Energy	Agriculture	Industrial Metals	Precious Metals	Livestock
Spot Price Average, 2017 vs. 2016	13%	18%	-2%	25%	1%	2%
Spot Price Return	11%	12%	-3%	31%	13%	7%
Investor Return*	5%	5%	-13%	28%	11%	7%

Data as of December 31, 2017.

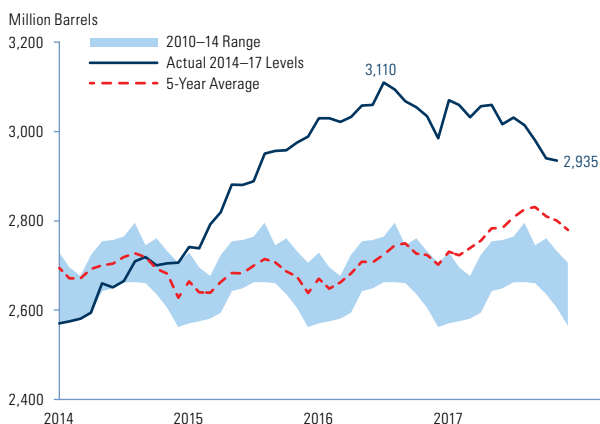
Source: Investment Strategy Group, Bloomberg.

\* Investor (or “excess”) return corresponds to the actual return from being invested in the front-month contract and differs from spot price return, depending on the shape of the forward curve. An upward-sloping curve (contango) is negative for returns, while a downward-sloping curve (backwardation) is positive.

Past performance is not indicative of future results. Investing in commodities involves substantial risk and is not suitable for all investors.

### Exhibit 134: OECD Petroleum Inventories

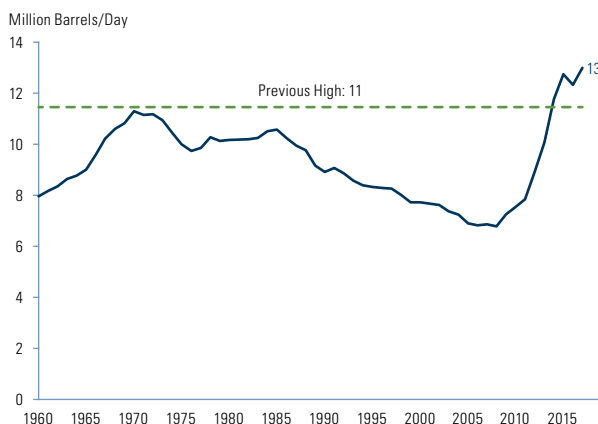
Inventories have declined from their peak in August 2016 and now stand within 5% of average levels.



Data through November 30, 2017.  
Note: November 2017 data based on preliminary estimate.  
Source: Investment Strategy Group, International Energy Agency.

### Exhibit 135: Annual US Crude Oil and Natural Gas Liquids Production

US production has rebounded to new all-time highs.



Data through December 31, 2017.  
Note: 2017 year-end figure based on estimates.  
Source: Investment Strategy Group, Energy Information Administration.

oil demand growth of more than 1.5 million barrels per day—meaningfully above the 10-year average of 1 million barrels per day—for a second consecutive year. This strong demand, coupled with continued OPEC restraint, should provide US shale with sufficient room to grow without oversupplying the market anew.

Of course, we realize that this is a potentially unstable equilibrium. While the level of OPEC compliance with stated production targets has been significantly higher than expected, today's oil prices could incentivize cheating, especially among large cash-strapped producers like Iraq and Iran. This risk is particularly acute now because the countries that have voluntarily pledged to keep production flat—who collectively represent a sizable 40% of the world's oil supply—face oil prices that have recovered to far more enticing levels.

Even so, the risks are not one-sided. It remains to be seen whether the unexpected rebound

in Libyan output that partially offset OPEC cuts elsewhere can be sustained in the absence of a unified government in Libya. Venezuela's precarious financial situation presents a similar upside risk to oil prices, as the country's continued inability to invest in its oil sector has already seen production decline by close to 20% in the past two years.

In the end, we expect Saudi Arabia to balance these risks through its traditional role as "swing producer," keeping OPEC production at or below last year's level. This would be consistent with recent comments by Saudi Arabia's energy minister, Khalid Al-Falih, who stated that the kingdom is "determined to do whatever it takes to bring inventories down to the five-year average."<sup>139</sup> Of equal importance, the kingdom has a vested interest in maintaining oil prices near current levels to support the partial sale or IPO of its national oil company (Saudi Aramco) later this year.

Like that of OPEC, the response of US shale also presents two-sided risks to oil prices. As seen in Exhibit 135, US production has already rebounded to new all-time highs, which could result in a number of geological, logistical and labor constraints. Already, shortages of fracking crews are causing an accumulation of uncompleted wells, raising questions about the industry's

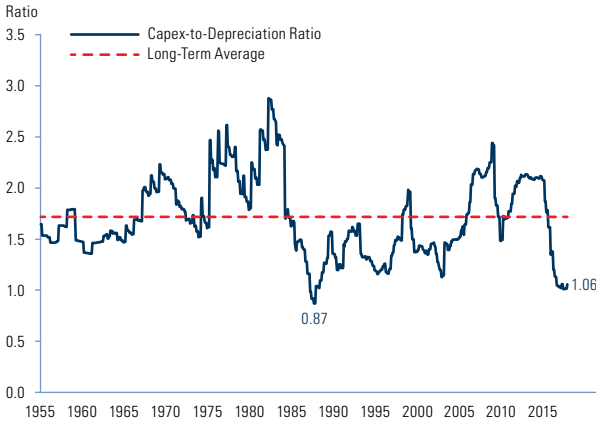
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**Barring a major disruption, we expect the global oil market to remain in a slight deficit in 2018, which should allow oil inventories to reach their five-year average.**

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### Exhibit 136: US Energy Sector: Ratio of Capex to Depreciation

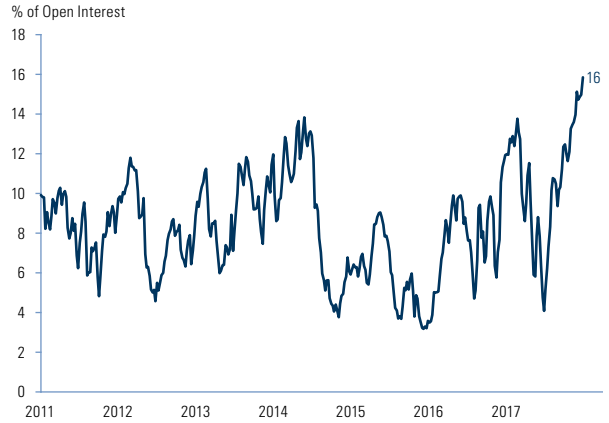
Today's low capex levels suggest there is upside to investment.



Data through November 30, 2017.  
Source: Investment Strategy Group, Empirical Research Partners.

### Exhibit 137: Net Speculative Length in Crude Oil and Petroleum Products

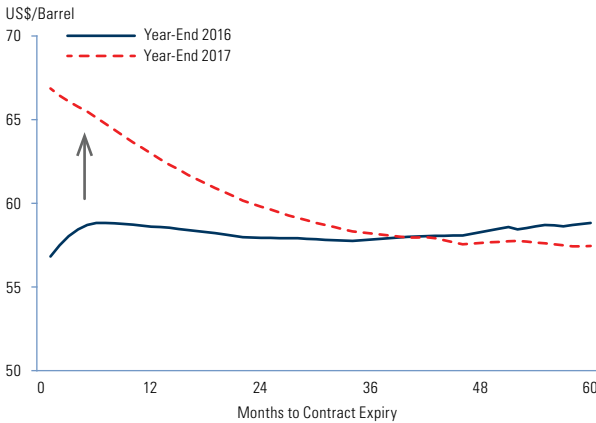
Net long oil positions stand at all-time highs, a negative condition from a contrarian standpoint.



Data through December 31, 2017.  
Note: Combined futures and options positioning across WTI, Brent, heating oil and gasoline.  
Source: Investment Strategy Group, CFTC, ICE.

### Exhibit 138: Brent 5-Year Forward Curve

Front-month prices have risen above forward prices, resulting in a downward-sloping curve.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

ability to increase activity any further. Those same questions are raised by other bottlenecks in the production process, including shortages of pressure pumping equipment and sand and water supplies, not to mention congested roads in Texas' Permian Basin.

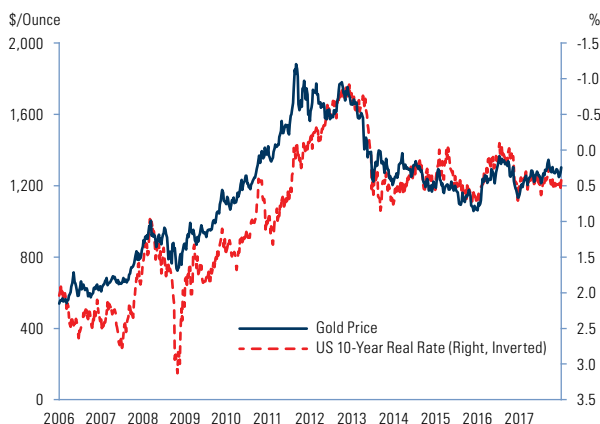
Still, these bullish oil risks are tempered by the fact that US shale producers have historically overcome similar concerns by exploiting

technological innovation. That same dynamic is likely to push US production to all-time highs this year, reflecting both the scope for investment to increase from today's depressed levels and the abundance of capital available to these firms (see Exhibit 136). Consider that energy-focused private equity funds raised \$50 billion in 2017 through October, on top of the more than \$160 billion in dry powder with which they started the year. Notably, 80% of that capital is intended for North America.<sup>140</sup> All told, we find the risks to US production to be skewed to the upside.

Against this backdrop and barring a major disruption, we expect the global oil market to remain in a slight deficit in 2018, which should allow oil inventories to reach their five-year average. Even so, the risks to near-term oil prices are tilted to the downside. As seen in Exhibit 137, net long oil positions already stand near all-time highs, a contrarian negative. At the same time, we begin the year with oil prices trading at the top of our 2018 range and meaningfully above long-term forward prices despite still-abundant inventories (see Exhibit 138). In light of these risks, we do not recommend taking a directional view on oil prices at this time. Instead, we prefer owning MLPs and high yield energy bonds, which we expect to benefit from increasing US energy volumes and range-bound prices.

### Exhibit 139: Gold Prices and US 10-Year Real Interest Rates

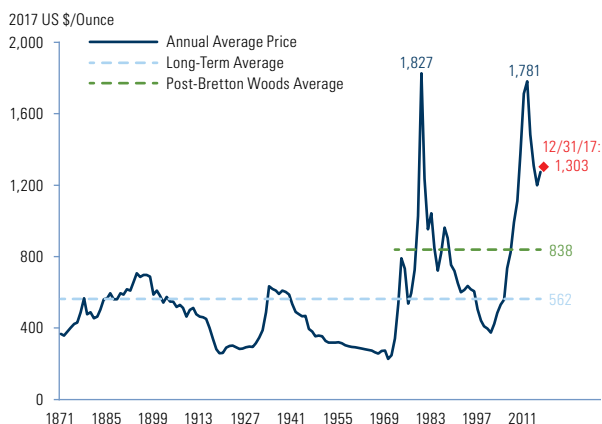
Higher rates raise the opportunity cost of holding gold.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

### Exhibit 140: Average Annual Gold Prices

Gold remains expensive relative to its inflation-adjusted long-term average price.



Data through December 31, 2017.  
Source: Investment Strategy Group, Bloomberg.

### Gold: Tarnished Luster

At a time when the world is abuzz with the merits of bitcoin as an alternative to fiat currencies, it is natural to wonder if gold might also be regaining its luster. After all, the yellow metal generated a solid 14% return last year, its second consecutive yearly gain and the strongest since 2010. Investor interest has also been perking up, with inflows into gold exchange-traded-funds (ETFs) recapturing more than half of the 2013–15 outflows. At the same time, emerging market central banks have continued to accumulate gold, driven mostly by Russia and Turkey.

Yet gold's luster is likely to be tarnished in 2018, as the weak dollar and stagnant interest rate backdrop that supported gold's performance last year are unlikely to persist. Put simply, the key elements of our macroeconomic forecast for 2018—Federal Reserve tightening, modestly higher interest rates and a stable US dollar—will likely drag on gold's performance. In particular, higher interest rates raise the opportunity cost of holding gold (see Exhibit 139), since gold generates no cash flow, offers no yield and must be physically stored at a cost. Not surprisingly, then, gold prices have declined in four of the last five Federal Reserve tightening cycles, with the only exception occurring during a period of dollar weakness in the mid-2000s. With our forecast calling for three Federal Reserve rate increases in 2018, this historical relationship does not bode well for gold prices. Nor does the fact that the price of gold remains

well above its long-term average, increasing its vulnerability to any adverse developments (see Exhibit 140).

Despite this challenging outlook, a number of idiosyncratic factors could still support gold prices this year. The stronger global growth we expect should lift jewelry demand, particularly in gold's two largest end markets—China and India. Meanwhile, emerging market central banks could accelerate their diversification of reserves into greater gold holdings. Finally, gold's allure as an inflation hedge could come back into vogue if the market begins to worry about the US economy overheating, although this is not our base case.

In light of these crosscurrents, we find that our views on currencies and interest rates are better expressed through direct positions in these asset classes rather than gold, leaving us tactically neutral the yellow metal.



# In Closing

JUST BECAUSE WE ARE ENTERING THE NINTH YEAR OF THE BULL market for equities does not mean it is necessarily over. We are abundantly aware that each new high the stock market has attained has brought a fresh round of warnings about rough seas ahead. Still, for going on five years now, we have stayed away from calling a peak in equity prices, encouraged by persistent supporting factors such as strong and relatively steady earnings growth, a sustained period of low and stable inflation, and a low probability of recession. After a year in which historically low volatility redefined smooth sailing for stocks, we don't see compelling reasons to change course now.

Even so, we have to acknowledge that the further we go in this market cycle, the greater the chance that something will go wrong. Faced with a range of risks that are inherently unpredictable, we must be vigilant in the months to come for developments that could cause our forecasts for the economy and asset class returns to get pulled under by the strengthening undertow. Should prevailing conditions change over the course of 2018, we will adjust and communicate our views accordingly.

## Abbreviations Glossary

**b/d:** barrels per day

**BIS:** Bank for International Settlements

**BLS:** Bureau of Labor Statistics

**BOE:** Bank of England

**BOJ:** Bank of Japan

**bps:** basis points

**CAI:** current activity indicator

**CAPE:** cyclically adjusted price-to-earnings ratio

**capex:** capital expenditures

**CBO:** Congressional Budget Office

**CFTC:** Commodity Futures Trading Commission

**CIA:** Central Intelligence Agency

**CPI:** consumer price index

**EAFE:** Europe, Australasia and the Far East

**EBITDA:** earnings before interest, taxes, depreciation and amortization

**ECB:** European Central Bank

**EM:** emerging market

**EMD:** emerging market dollar debt

**EMEA:** Europe, the Middle East and Africa

**EMLD:** emerging market local debt

**EMU:** European Monetary Union

**EPFR:** Emerging Portfolio Fund Research

**EPS:** earnings per share

**EPU:** Economic Policy Uncertainty

**ETF:** exchange-traded fund

**FAAMGs:** Facebook, Amazon, Apple, Microsoft and Google

**FAANGs:** Facebook, Amazon, Apple, Netflix and Google

**FDI:** foreign direct investment

**FEER:** fundamental equilibrium exchange rate

**FOMC:** Federal Open Market Committee

**FTSE 100:** Financial Times Stock Exchange 100 Index

**FX:** Forex, foreign exchange

**G-10:** Group of 10

**GCC:** Gulf Cooperation Council

**GDP:** gross domestic product

**GFC:** global financial crisis

**GSCI:** Goldman Sachs Commodity Index

**GSDEER:** Goldman Sachs Dynamic Equilibrium Exchange Rate

**GTI:** Global Terrorism Index

**IMF:** International Monetary Fund

**IPO:** initial public offering

**ISIL:** Islamic State of Iraq and the Levant

**ISM:** Institute of Supply Management

**JCPOA:** Joint Comprehensive Plan of Action

**JCT:** Joint Committee on Taxation

**JGB:** Japanese government bond

**LBO:** leveraged buyout

**LGFV:** local government financing vehicle

**LIBOR:** London Interbank Offered Rate

**LSI:** Liquidity Stress Indicator/Index

**M&A:** mergers and acquisitions

**MLP:** master limited partnership

**MSCI:** Morgan Stanley Capital International

**MSCI EM:** MSCI Emerging Markets

**MSCI EMU:** MSCI European Economic and Monetary Union

**NAFTA:** North American Free Trade Agreement

**NAIRU:** non-accelerating inflation rate of unemployment

**NFIB:** National Federation of Independent Business

**NIPA:** national income and product accounts

**OECD:** Organisation for Economic Co-operation and Development

**OPEC:** Organization of the Petroleum Exporting Countries

**PCE:** personal consumption expenditures

**P/E ratio:** price-to-earnings ratio

**PIIE:** Peterson Institute for International Economics

**PIK:** payment in kind

**PPP:** purchasing power parity

**REER:** real effective exchange rate

**RSI:** Relative Strength Index

**S&P:** Standard & Poor's

**TCJA:** Tax Cuts and Jobs Act

**TIPS:** Treasury Inflation-Protected Securities

**TTM:** Trailing twelve months

**WTI:** West Texas Intermediate

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