

# Morningstar® Markets Observer

Q4 2018 Data as of September 30, 2018

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# Market Overview



## Market Dashboard

Continuing the long-term trend, the U.S. stock market outperformed international markets in the third quarter. While emerging markets are cheaper based on fundamental measures, they have been affected by trade-war rhetoric and a rising U.S. dollar. The Morningstar Style Box reveals a startling one-year performance from all growth categories, driven by the technology sector.

| Equities              | 12 Month Yield | Return (%) |      |      |       |       |        | Fundamental Measures |     |     |      |
|-----------------------|----------------|------------|------|------|-------|-------|--------|----------------------|-----|-----|------|
|                       |                | YTD        | 3 Mo | 1 Yr | 3 Yrs | 5 Yrs | 10 Yrs | P/E                  | P/B | P/S | P/C  |
| S&P 500               | 2.1            | 10.6       | 7.7  | 17.9 | 17.3  | 14.0  | 12.0   | 20.8                 | 3.4 | 2.3 | 14.0 |
| Russell 2000          | 1.2            | 11.5       | 3.6  | 15.2 | 17.1  | 11.1  | 11.1   | 18.6                 | 2.3 | 1.3 | 11.2 |
| MSCI EAFE             | 3.0            | -1.4       | 1.4  | 2.7  | 9.2   | 4.4   | 5.4    | 14.2                 | 1.6 | 1.2 | 9.6  |
| MSCI Emerging Markets | 2.6            | -7.7       | -1.1 | -0.8 | 12.4  | 3.6   | 5.4    | 12.8                 | 1.6 | 1.3 | 8.1  |

| Fixed Income            | Current Yield | Return (%) |      |      |       |       |        | Interest Rates |          |     |
|-------------------------|---------------|------------|------|------|-------|-------|--------|----------------|----------|-----|
|                         |               | YTD        | 3 Mo | 1 Yr | 3 Yrs | 5 Yrs | 10 Yrs | Current        | 1 Yr Ago |     |
| U.S. Aggregate          | 3.5           | -1.6       | 0.0  | -1.2 | 1.3   | 2.2   | 3.8    | 2 Yr Treasury  | 2.8      | 1.5 |
| U.S. Corporates         | 4.2           | -2.1       | 0.9  | -1.6 | 2.8   | 3.6   | 6.9    | 5 Yr Treasury  | 2.9      | 1.9 |
| High Yield              | 6.5           | 2.5        | 2.4  | 2.9  | 8.2   | 5.5   | 9.4    | 10 Yr Treasury | 3.1      | 2.3 |
| Municipals              | 2.9           | -0.4       | -0.2 | 0.3  | 2.2   | 3.5   | 4.8    | 20 Yr Treasury | 3.2      | 2.9 |
| Emerging Markets (US\$) | 6.4           | -3.0       | 2.3  | -1.9 | 6.0   | 5.4   | 7.5    | Prime Rate     | 5.3      | 4.3 |

| Broad Commodities     | Return (%) |      |      |       |       |        | Commodities     |          |       |
|-----------------------|------------|------|------|-------|-------|--------|-----------------|----------|-------|
|                       | YTD        | 3 Mo | 1 Yr | 3 Yrs | 5 Yrs | 10 Yrs | Current         | 1 Yr Ago |       |
| Bloomberg Commodity   | -2.0       | -2.0 | 2.6  | -0.1  | -7.2  | -6.2   | Brent Crude Oil | 83       | 58    |
| Morningstar Commodity | 5.2        | 0.8  | 12.2 | 2.0   | -7.5  | -4.0   | Gold            | 1,187    | 1,283 |

### 3-Month Return (%)

|       | Value | Blend | Growth |
|-------|-------|-------|--------|
| Large | 6.9   | 9.9   | 7.2    |
| Mid   | 2.4   | 4.0   | 7.9    |
| Small | 1.9   | 1.4   | 7.6    |

### 1-Year Return (%)

|       | Value | Blend | Growth |
|-------|-------|-------|--------|
| Large | 10.9  | 14.1  | 29.1   |
| Mid   | 9.7   | 10.4  | 24.8   |
| Small | 7.3   | 9.9   | 26.3   |

### 5-Year Return (%)

|       | Value | Blend | Growth |
|-------|-------|-------|--------|
| Large | 11.1  | 13.7  | 17.2   |
| Mid   | 11.8  | 11.7  | 12.9   |
| Small | 9.7   | 10.3  | 12.3   |

QM05

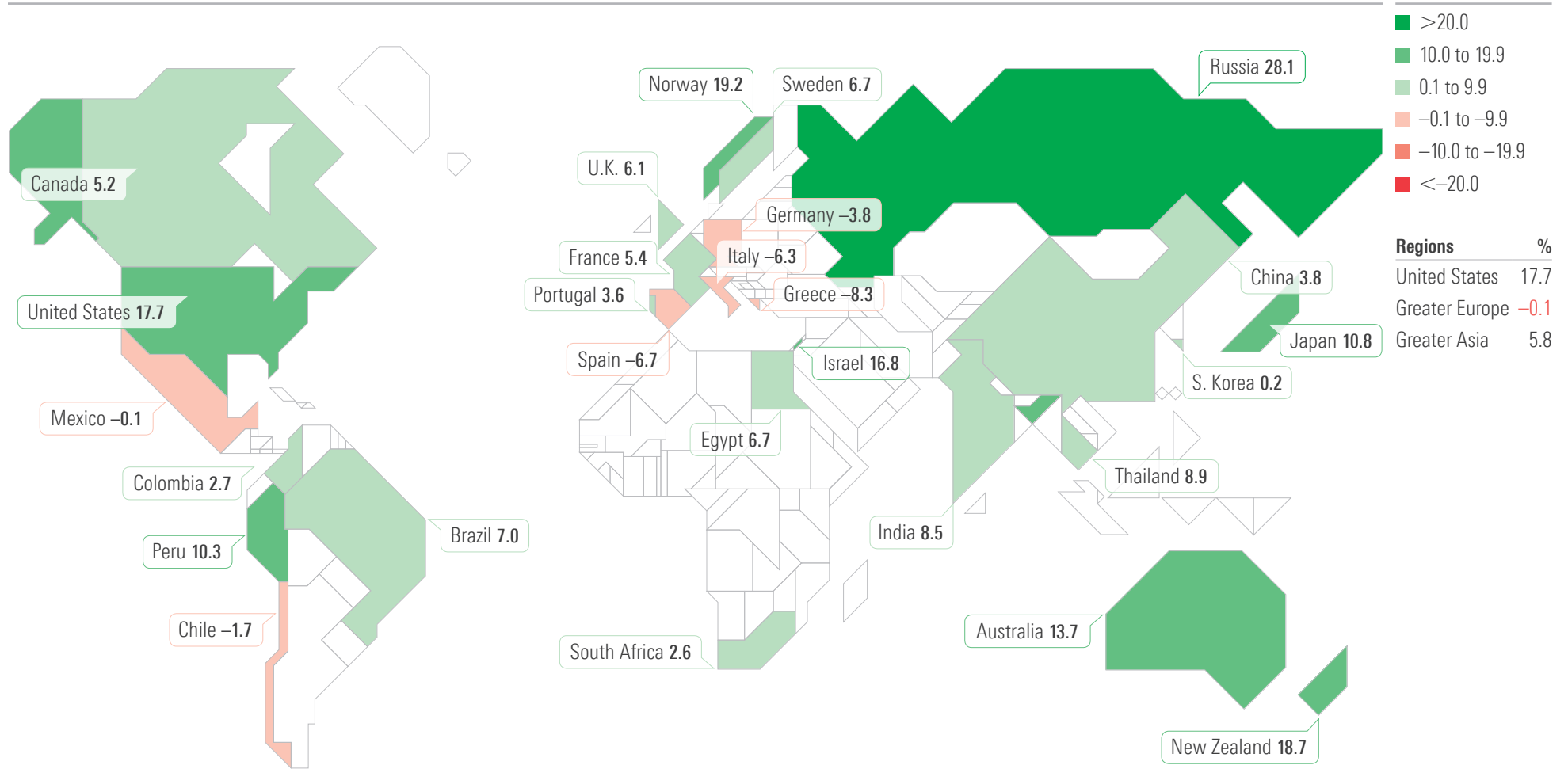
Source: Morningstar Direct. U.S. Aggregate—Bloomberg Barclays U.S. Aggregate Bond Total Return, U.S. Corporates—Bloomberg Barclays U.S. Corporate 5-10 Year Total Return, High Yield—Bank of America Merrill Lynch U.S. High Yield Master II Total Return, Municipals—Bloomberg Barclays Municipal Total Return, Fixed-Income Emerging Markets—J.P. Morgan EMBI Global Diversified Total Return, Gold—London Fix Gold PM Price Return. ©2018 Morningstar. All Rights Reserved.

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# Global Market Barometer

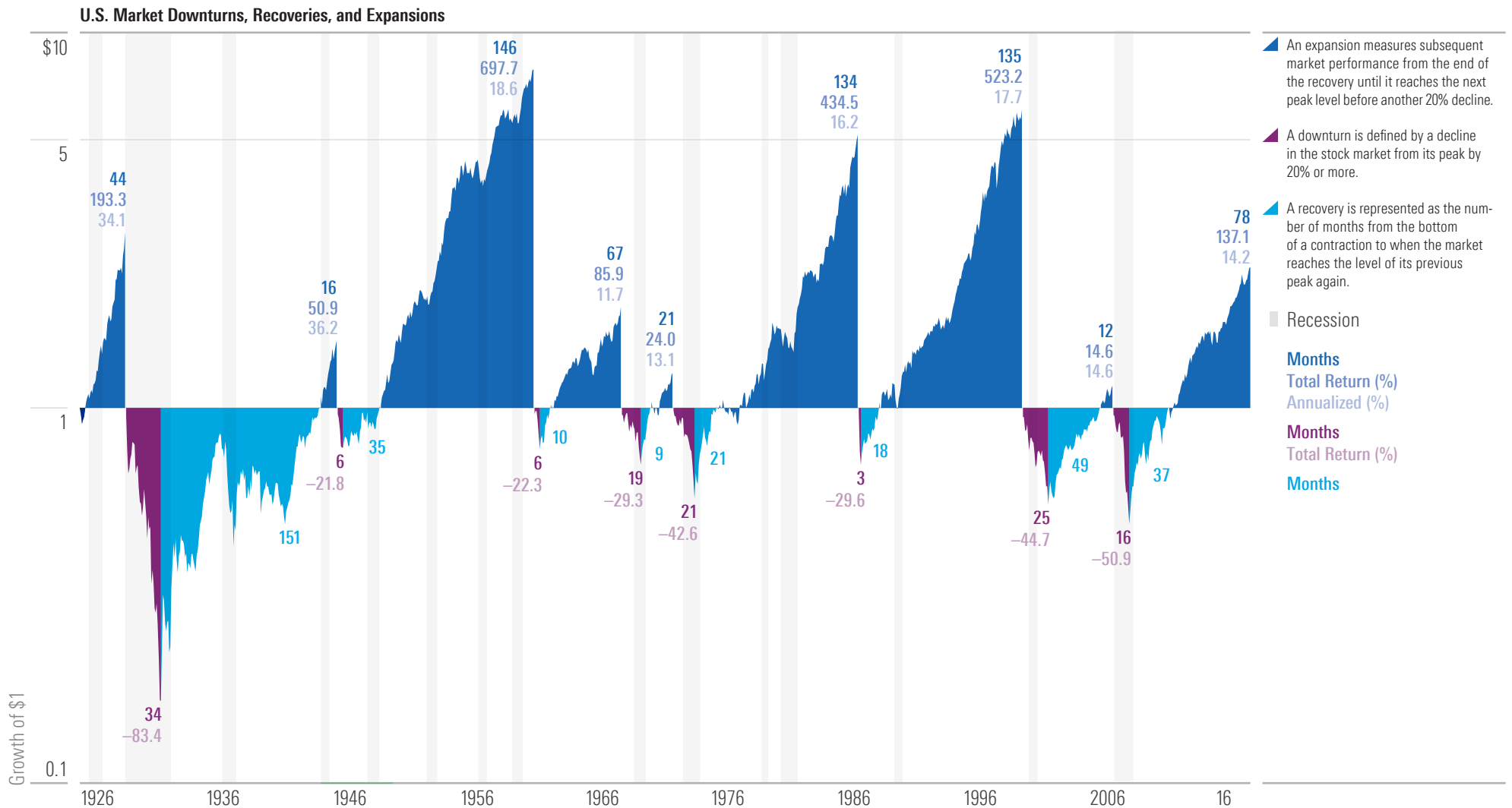
Most countries in the Morningstar coverage universe enjoyed positive (some even double-digit) trailing one-year returns. Germany, the engine of European growth, fell into negative territory in the past year as the country has been forced to adapt to challenges posed by globalization and rapidly changing technologies. Trade tensions between the United States and China could adversely affect developed and emerging economies alike going forward.

1-Year Trailing Returns of Morningstar Country Indexes in Base Currency by Percentage



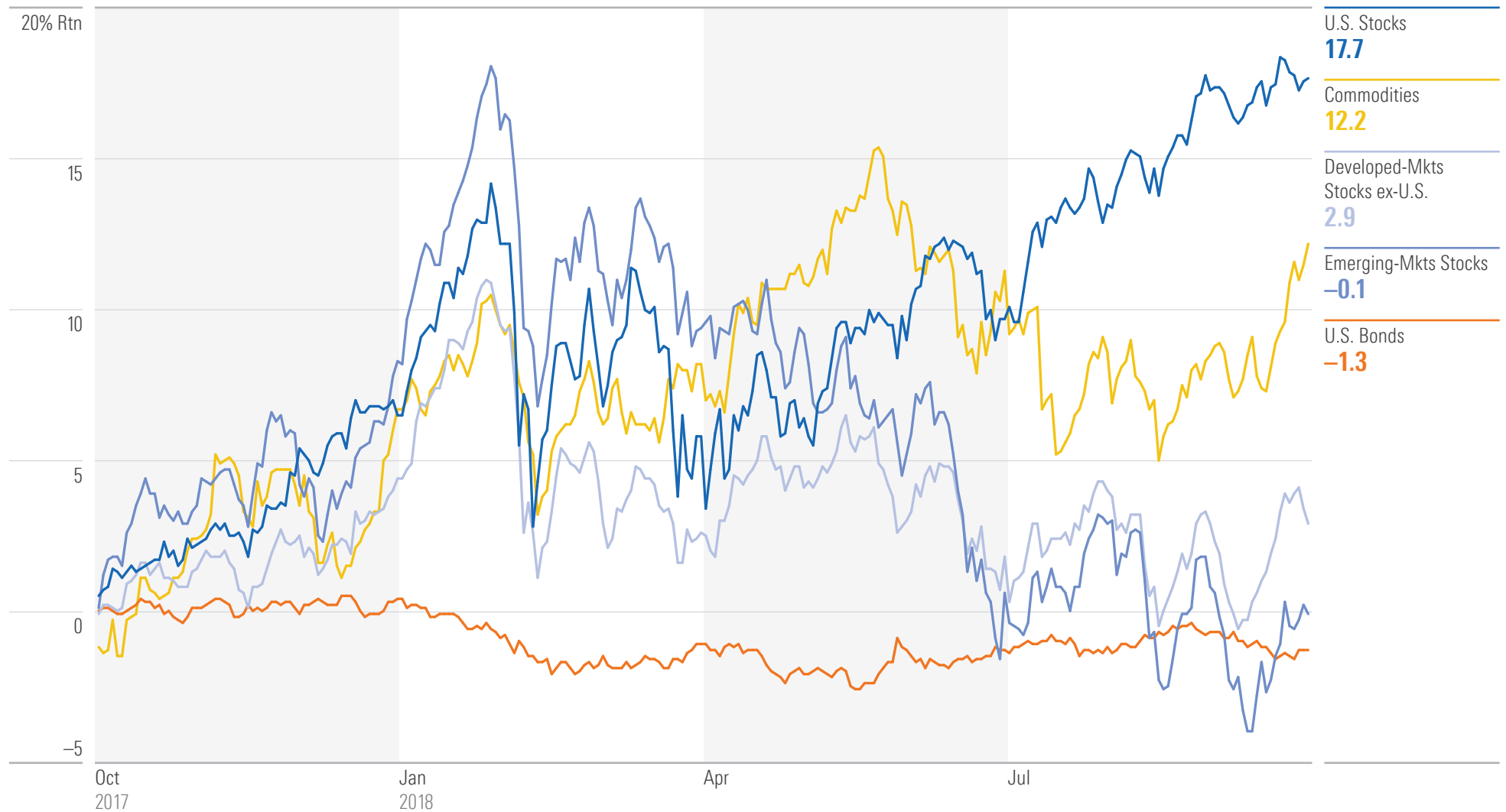
## Bear Markets Are Painful, but Markets Rise Over the Long Term

There have been eight market downturns since 1926, the most severe one being the Great Depression. More recently, during the “lost decade,” two consecutive downturns with little to no expansion discouraged U.S. investors. However, the market has returned 137.1% since the current expansion started in March 2012, and, based on previous expansionary episodes, there is ample potential for future growth.



## Trailing 12-Month Performance of Major Asset Classes

All major asset classes experienced elevated volatility during the past year because of geopolitical tensions and rising interest rates in the U.S. After moving in tandem at the beginning of the period, U.S. and international stocks diverged in May, with the U.S. accelerating upward and the rest of the world on the decline. After many years of weak performance, commodities were finally able to post double-digit returns, led by the rise in oil prices.

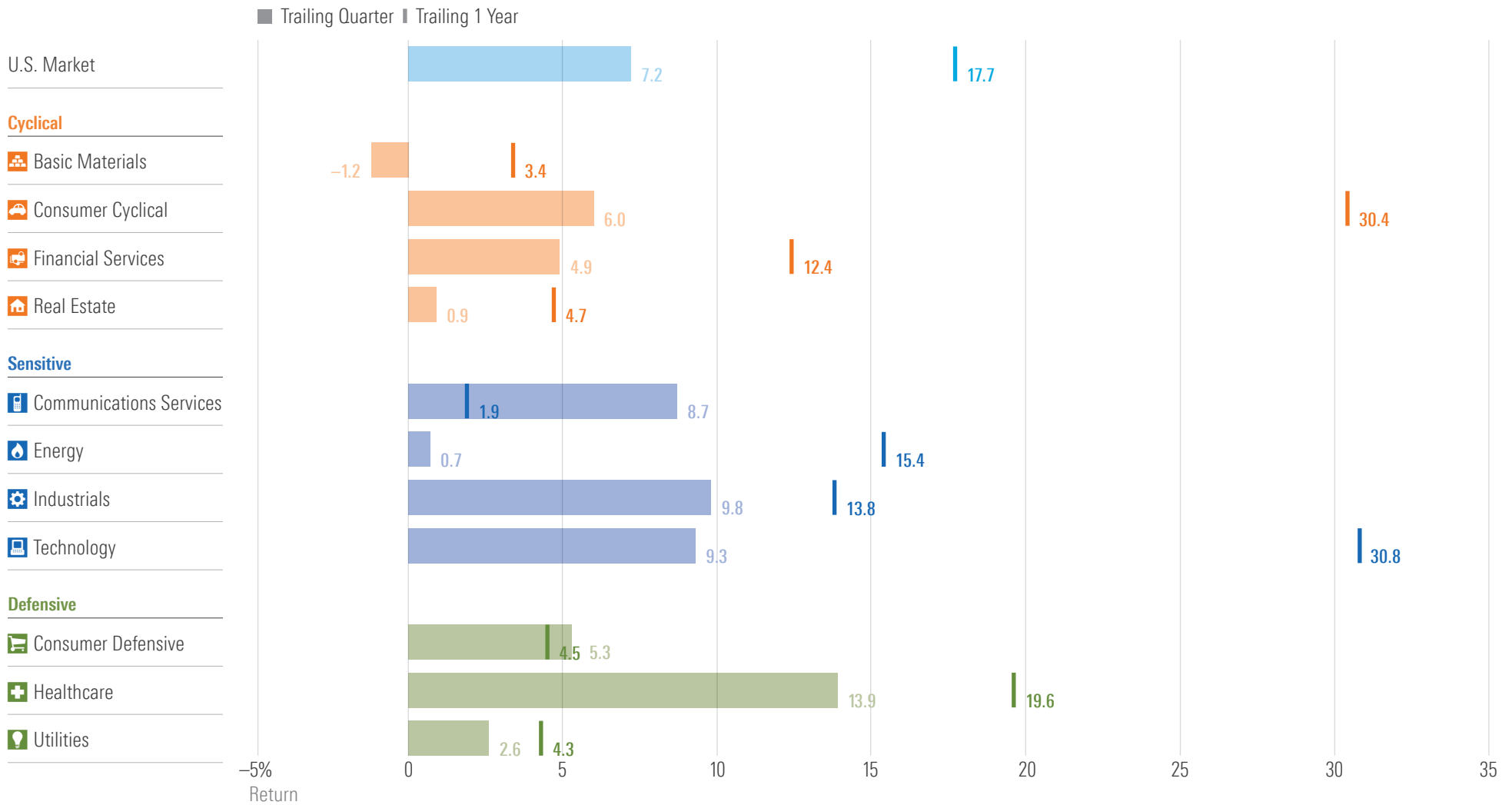


QM01

Source: U.S. stocks—Morningstar U.S. Market Index. Developed-markets stocks ex-U.S.—Morningstar Developed Markets ex-U.S. Index. Emerging-markets stocks—Morningstar Emerging Markets Index. U.S. bonds—Morningstar Core Bond Index. Commodities—Morningstar Long-Only Commodity Index. ©2018 Morningstar. All Rights Reserved.

## U.S. Sector Performance

Technology stocks posted the highest trailing-one-year return and also enjoyed a strong third quarter, propelling the entire large-cap-growth category. The consumer cyclical sector, to which Amazon belongs, continued to fare well, as tax cuts have given consumers more money to spend and corporations more aftertax income. Innovative new drug launches combined with strong advancements in drug pipelines drove strong returns in the healthcare sector.

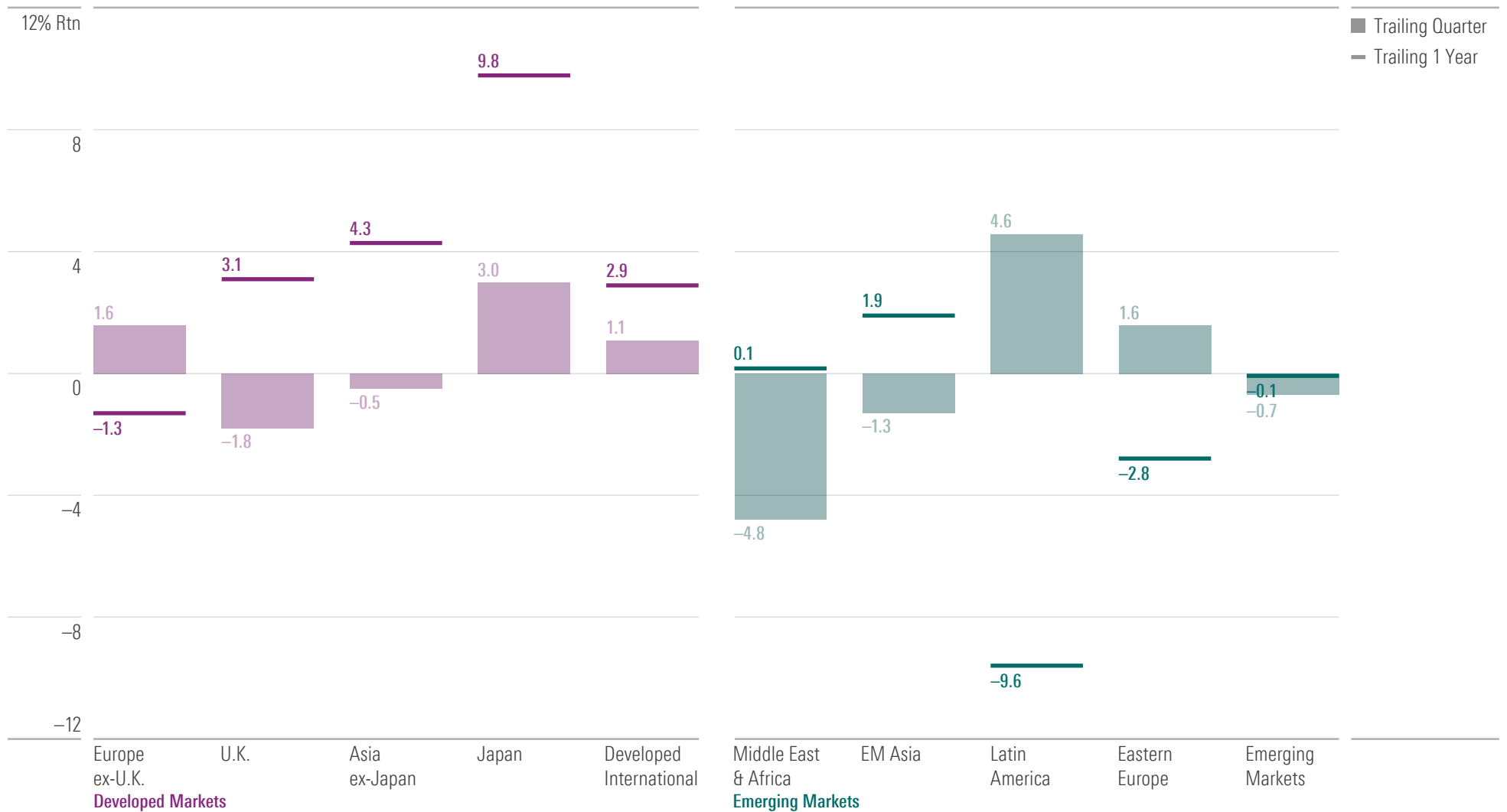


QM04

Source: Morningstar Sector Indexes, Morningstar Market Outlook 4Q 2018. ©2018 Morningstar. All Rights Reserved.

## International Stock Market Performance

After a disastrous 17.6% loss in the second quarter, Latin America bounced back with the strongest return among emerging-markets regions in the third quarter. Japan's economy grew at 3.0% in the second quarter, which makes it a bright spot among developed countries. The U.K. economy is stuck in a holding pattern as the country is waiting for an agreement on Britain's separation from the European Union.



## Asset-Class Winners and Losers

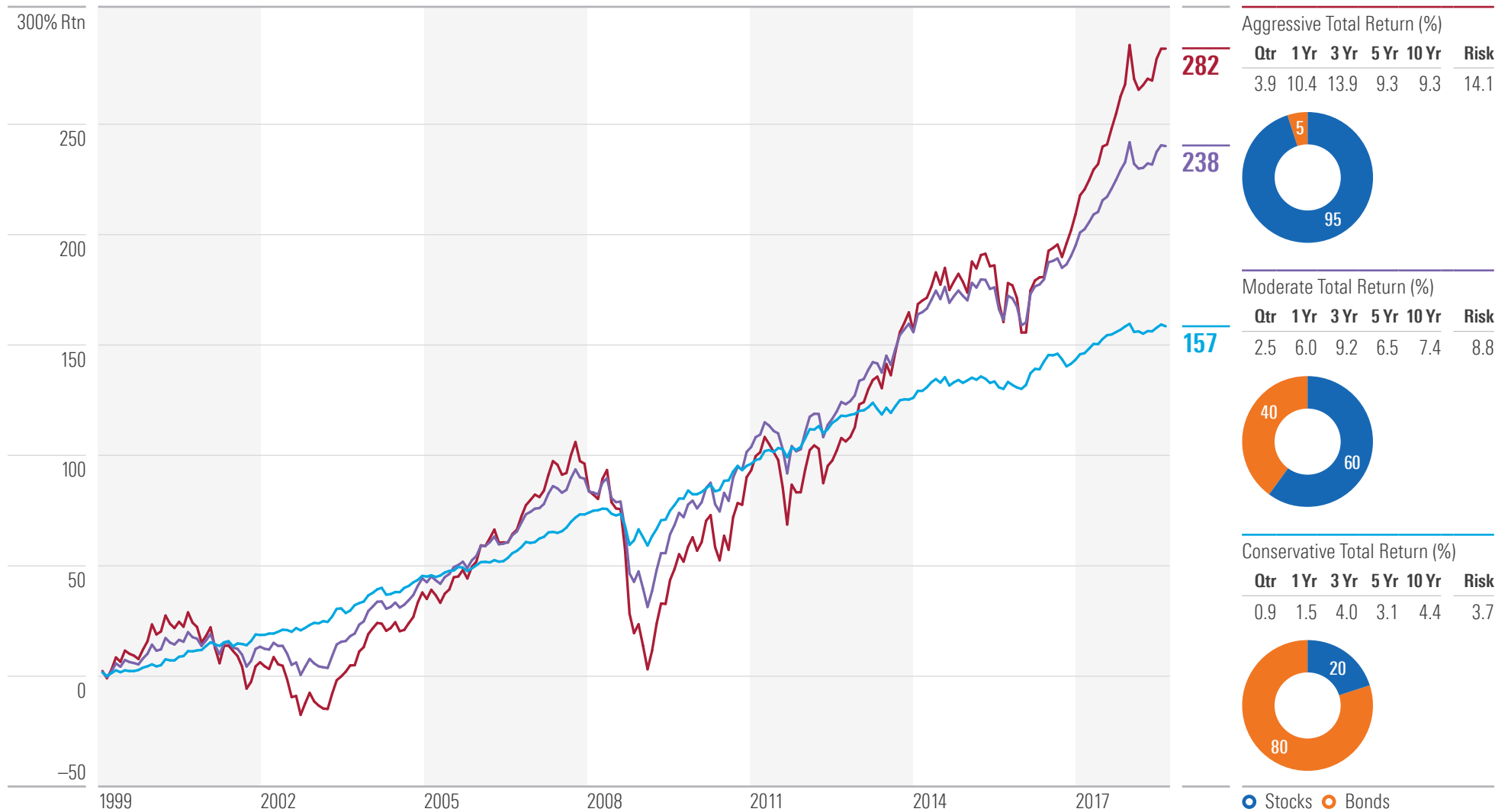
U.S. stocks, both large and small, delivered solid returns for the year to date, in stark contrast with international developed and emerging-markets stocks. Commodities also posted a decent gain because of the energy sector. Most fixed-income categories suffered as interest rates rose. High-yield bonds, however, managed to stay in positive territory because they are less sensitive to changes in interest rates than investment-grade bonds.

|                    | 2003 | 2004 | 2005 | 2006 | 2007 | 2008  | 2009 | 2010 | 2011  | 2012 | 2013 | 2014  | 2015  | 2016 | 2017 | YTD  | 2003–18 |
|--------------------|------|------|------|------|------|-------|------|------|-------|------|------|-------|-------|------|------|------|---------|
| Highest Return (%) | 53.3 | 25.9 | 35.0 | 36.1 | 39.4 | 14.1  | 83.8 | 28.4 | 9.4   | 19.7 | 37.9 | 13.6  | 1.8   | 20.3 | 36.0 | 11.4 | 12.0    |
|                    | 47.7 | 21.6 | 25.5 | 26.6 | 31.8 | -3.2  | 58.2 | 23.6 | 5.2   | 17.5 | 31.8 | 6.9   | 1.7   | 17.1 | 25.5 | 9.2  | 11.9    |
|                    | 42.4 | 20.4 | 15.9 | 17.0 | 12.7 | -22.2 | 37.7 | 21.8 | 5.0   | 16.5 | 22.0 | 4.9   | 1.3   | 12.9 | 22.7 | 5.2  | 10.0    |
|                    | 29.0 | 17.6 | 7.0  | 15.9 | 10.3 | -26.2 | 36.1 | 15.1 | 2.6   | 16.0 | 14.3 | 4.5   | -1.4  | 11.3 | 15.0 | 2.6  | 8.9     |
|                    | 27.0 | 11.5 | 5.8  | 13.0 | 8.6  | -33.8 | 24.8 | 13.4 | 0.6   | 15.8 | 7.4  | 3.9   | -1.8  | 11.2 | 14.7 | 2.2  | 8.7     |
|                    | 24.7 | 11.1 | 4.9  | 11.8 | 6.7  | -36.1 | 21.8 | 12.3 | -2.6  | 12.0 | 0.6  | 2.5   | -4.5  | 8.6  | 7.5  | -1.0 | 7.7     |
|                    | 22.5 | 9.5  | 2.7  | 4.9  | 6.0  | -36.2 | 20.9 | 11.4 | -5.3  | 11.2 | -1.8 | -0.8  | -4.9  | 4.6  | 4.5  | -1.1 | 4.9     |
| Lowest Return (%)  | 7.9  | 4.9  | 1.1  | 3.6  | 1.9  | -43.0 | 19.5 | 8.5  | -11.9 | 3.7  | -2.7 | -3.9  | -13.3 | 3.4  | 2.3  | -1.4 | 3.5     |
|                    | 2.7  | 3.0  | 0.7  | -0.2 | -0.7 | -53.8 | -1.4 | 7.1  | -18.6 | 2.5  | -3.7 | -24.4 | -26.3 | 1.2  | 1.5  | -7.5 | 2.8     |

- Small stocks
- Large stocks
- International-developed stocks
- Emerging-markets stocks
- Inter-term government bonds
- Inter-term corporate bonds
- High-yield bonds
- Commodities
- Moderate portfolio

## Performance of Risk-Based Portfolios

As expected, an aggressive portfolio with a larger allocation to stocks was able to deliver returns superior to its moderate and conservative counterparts over longer time periods. However, it also assumed a greater risk level and was therefore more likely to suffer losses in down markets. The conservative portfolio posted lower returns but also had much lower volatility, making it a good option for risk-averse investors.



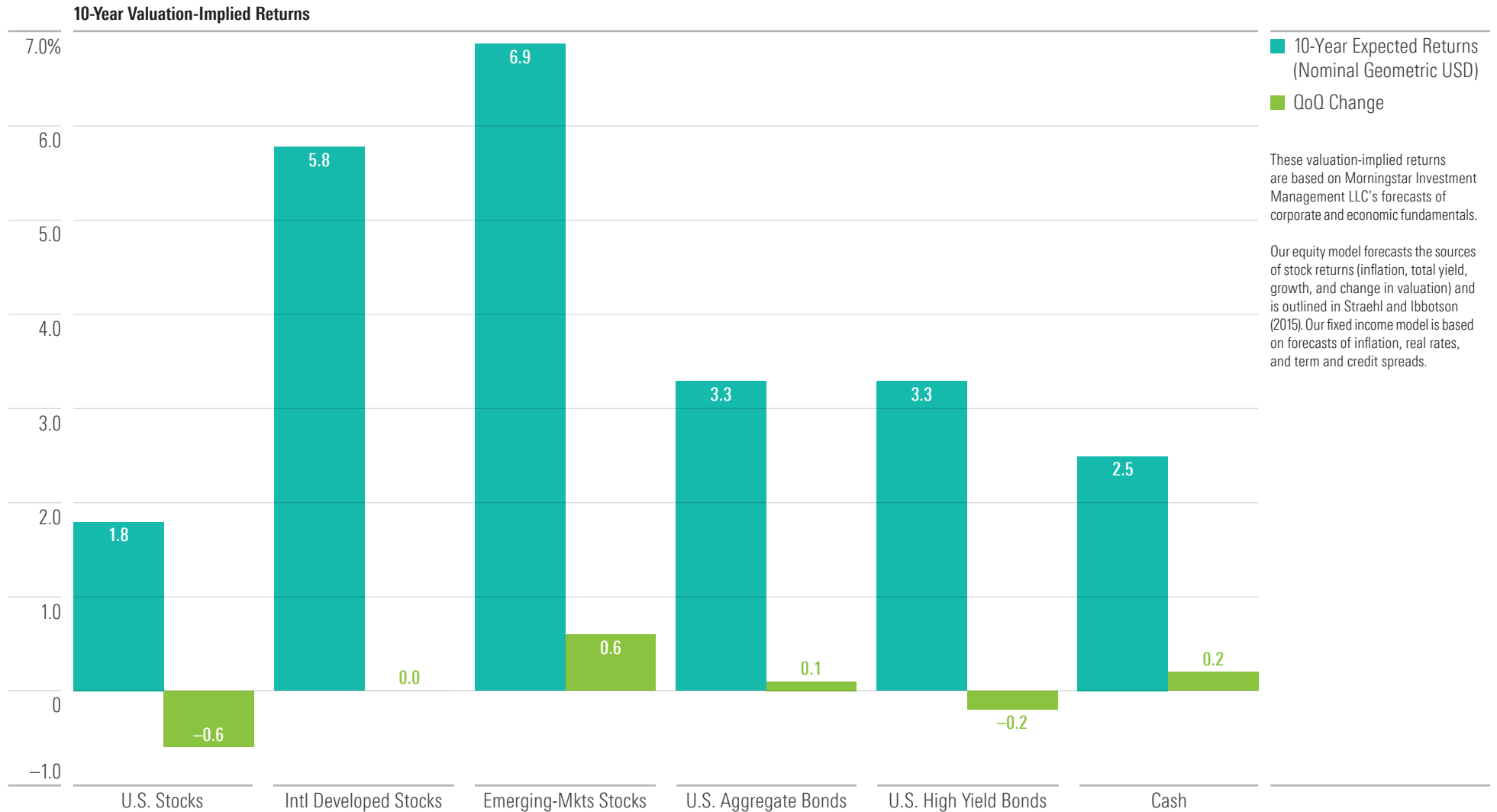
QAA2

Source: Conservative portfolio—Morningstar Conservative Target Risk Index. Moderate portfolio—Morningstar Moderate Target Risk Index. Aggressive portfolio—Morningstar Aggressive Target Risk Index. Returns for periods longer than one year are annualized. ©2018 Morningstar. All Rights Reserved.

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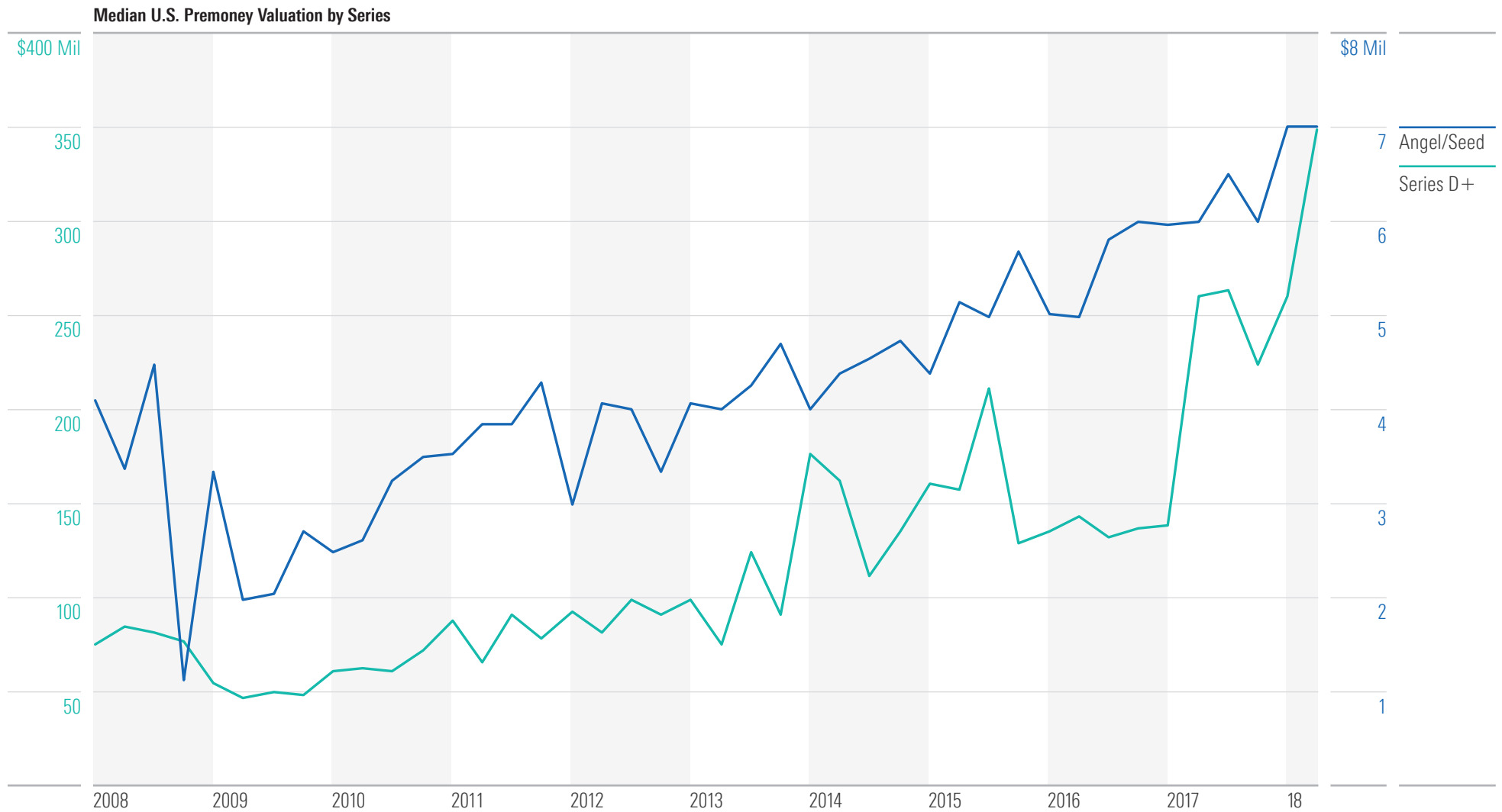
## Valuations to Limit Asset-Class Return Potential

Our research indicates emerging-markets and international developed equities will outperform U.S. equities over the next 10 years because of their more attractive relative valuation. Low starting yields and tight credit spreads depress the prospective returns of fixed-income asset classes.



## In the Venture Capital World, Companies Attract Higher Valuations

Valuations and deal sizes have been creeping higher because of a rise in available capital and competitiveness among investors. Angel and seed valuations have continued a multiyear trend upward. Late-stage premoney valuations increased sharply in the past year. This record-breaking performance can be attributed to a move by venture capital firms to raise larger funds, as well as increased interest and participation from nontraditional VCs such as sovereign wealth funds and corporate venture arms.



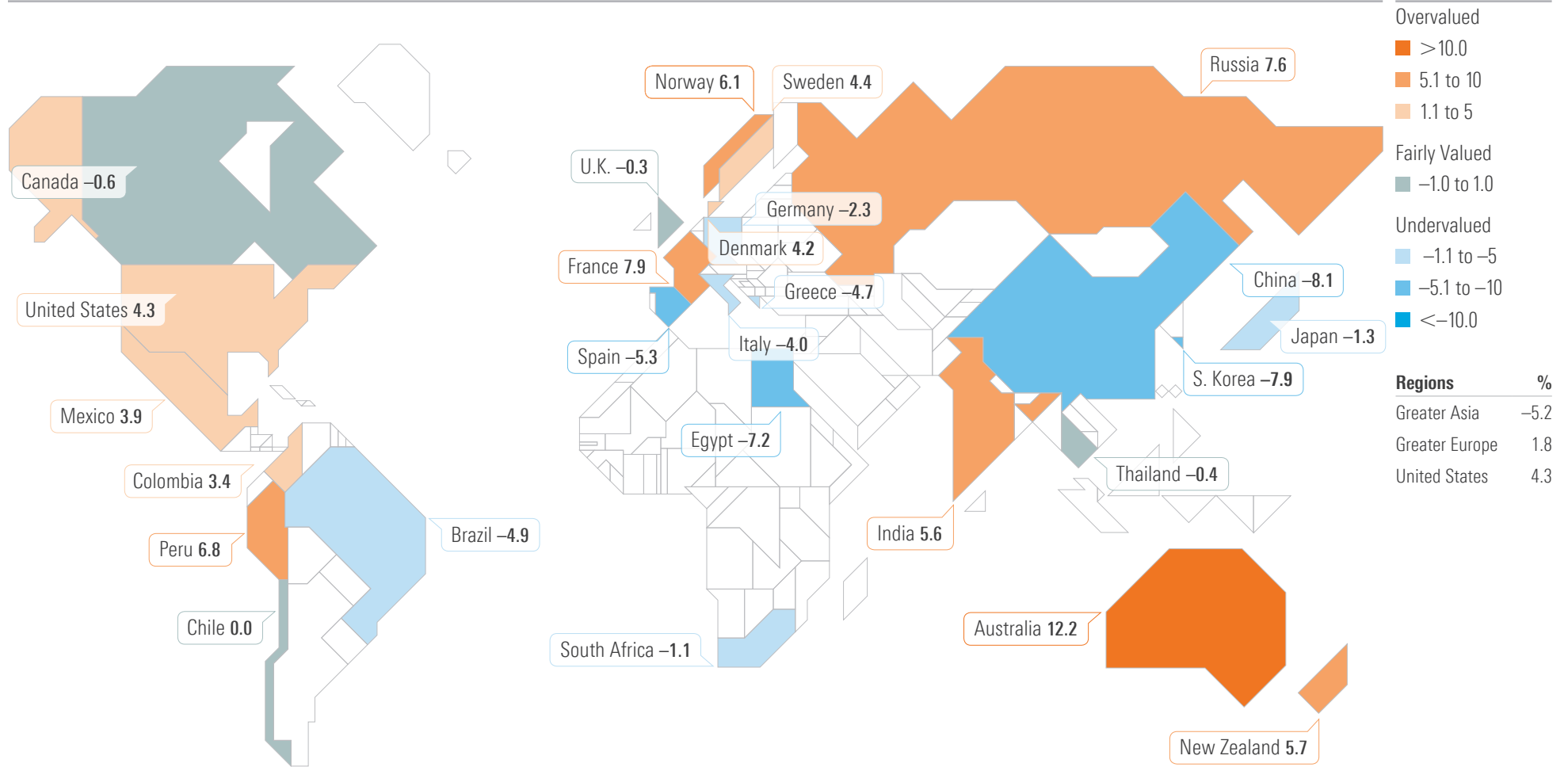
# Equities



# Morningstar Price to Fair Value by Country

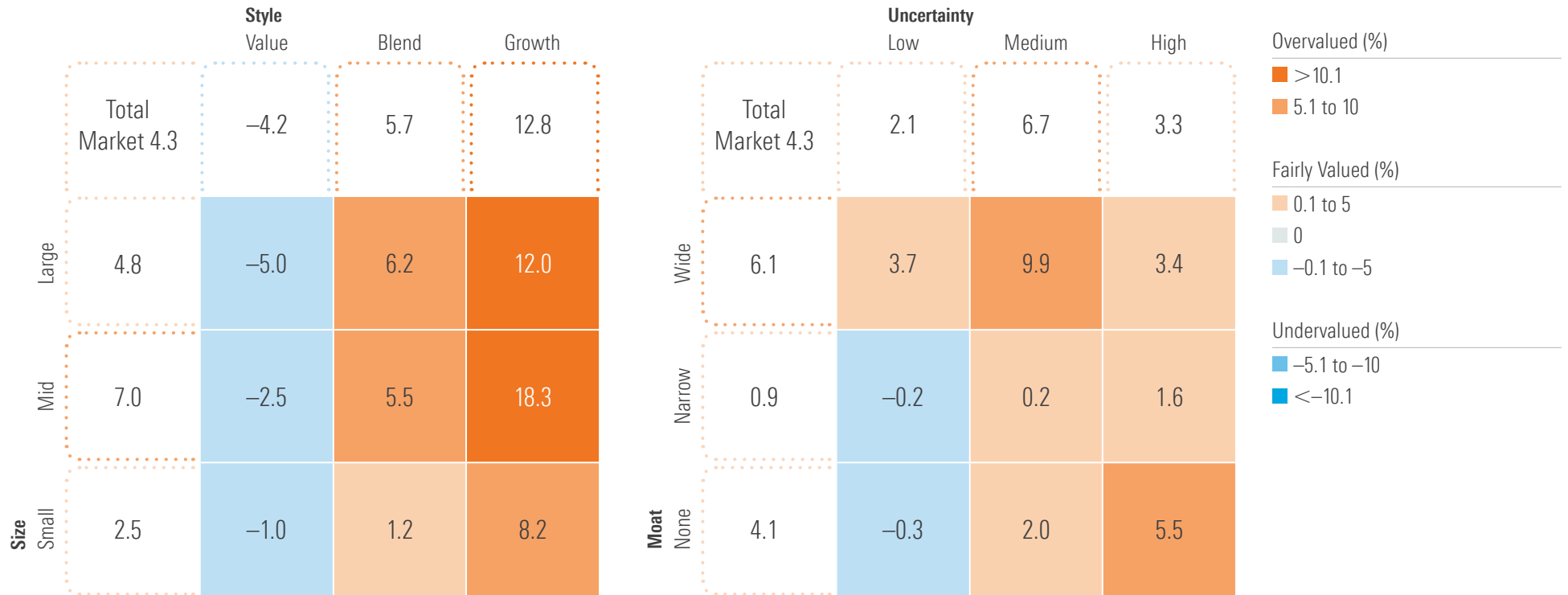
Marginal changes in valuations led to a relatively static quarter. Exceptions included Egypt, Canada and the United Kingdom, which more became undervalued, and Mexico, which became overvalued. The United States remained slightly overvalued (4.3%) but to a larger extent than last quarter (2.0%).

## Market-Cap-Weighted Valuation



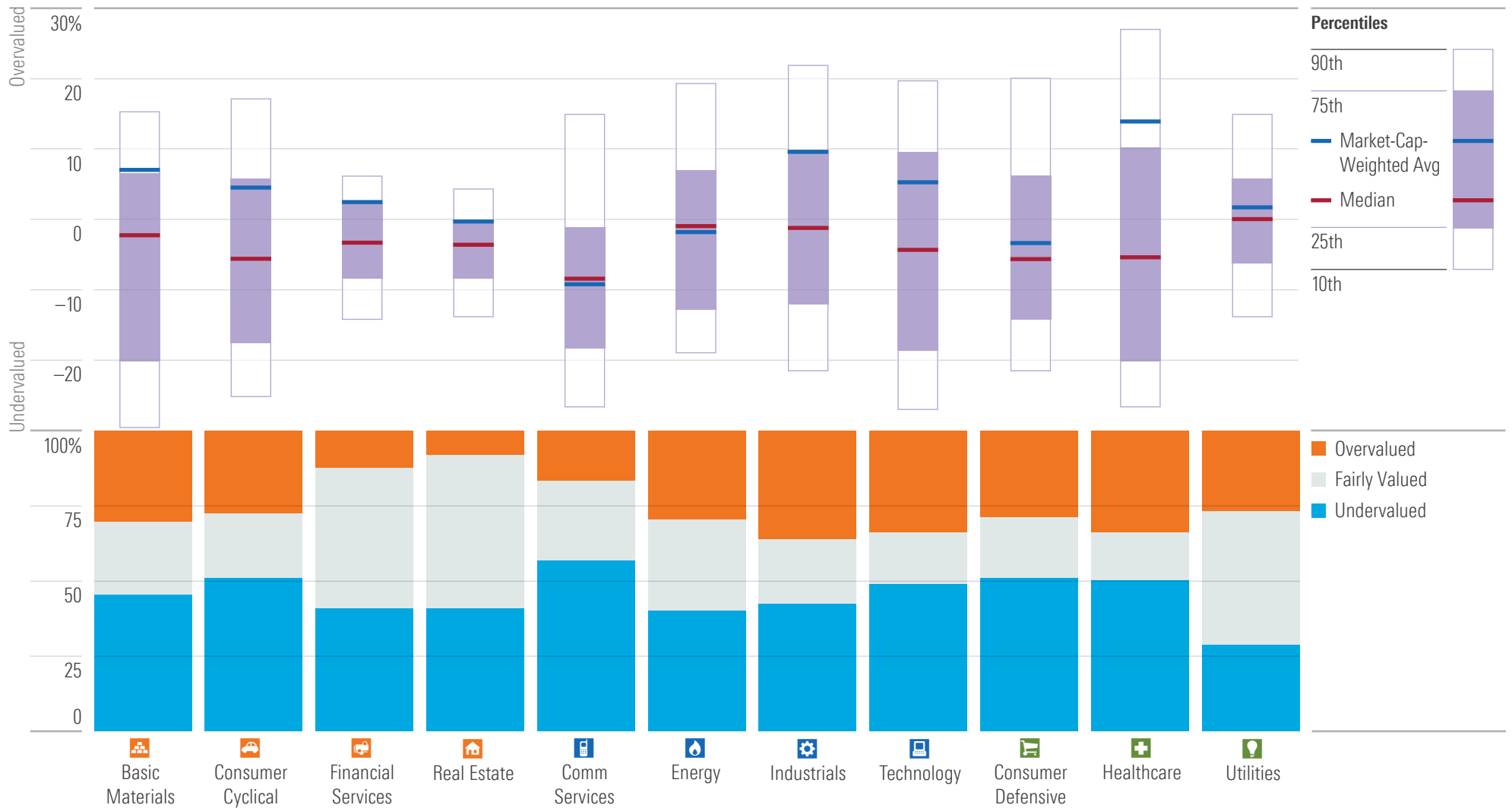
## Morningstar Price to Fair Value, U.S. Equity Style Boxes

The total U.S. market remains slightly overvalued on a market-cap-weighted basis. Growth continued to be the most overvalued area of the market, while value still presents buying opportunities. The 17% spread between large growth and large value is among the widest ever seen.



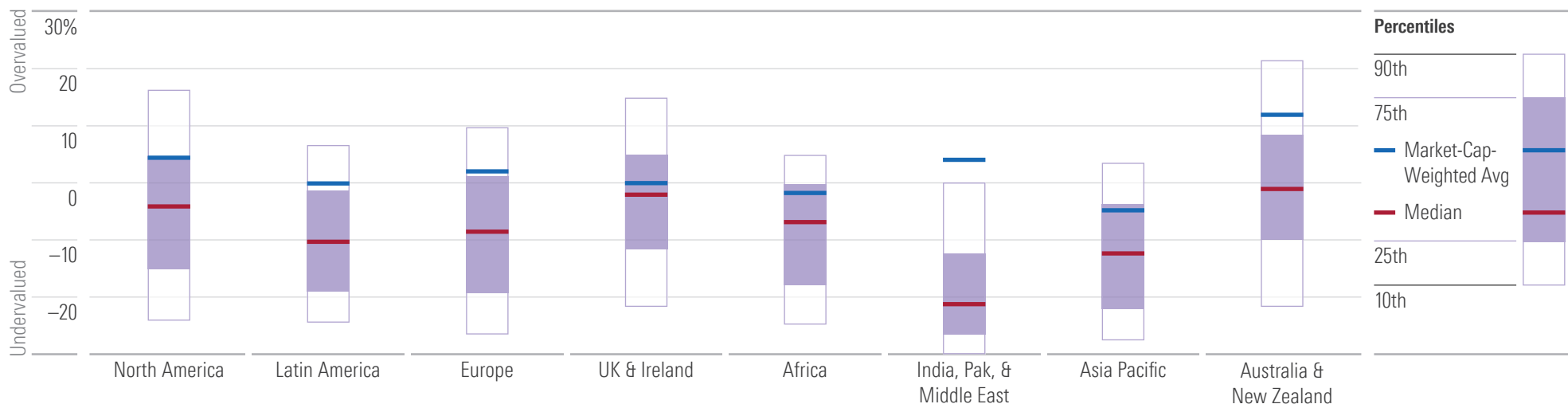
## Morningstar Price to Fair Value Distribution by U.S. Sector

In general, market-cap-weighted averages were higher than medians, which indicates that the largest stocks were more overvalued than their overall sector. The most overvalued sectors on a market-cap basis were healthcare and industrials, while communication services and consumer defensive were the only undervalued ones.



## Morningstar Price to Fair Value Distribution by Region

Morningstar calculates fair values for 53 countries. Most regions tend toward fairly valued this quarter (on a market-cap-weighted basis), with the exception of Australia & New Zealand, which remain overvalued but less so compared with last quarter (down almost 5%). In a rare occurrence, the market-cap-weighted average for the India, Pak, & Middle East region is above the 90th percentile, suggesting that the largest companies are much more overvalued than the average company.



### Top 10 Lowest-Valued Countries (Market-Cap-Weighted)

| Country     | Over/Undervalued by % | Uncertainty Rating | Number of Companies |
|-------------|-----------------------|--------------------|---------------------|
| Hong Kong   | -11.5                 | High               | 849                 |
| Argentina   | -10.2                 | Very High          | 49                  |
| Bangladesh  | -10.1                 | Very High          | 248                 |
| Turkey      | -9.5                  | Very High          | 341                 |
| China       | -8.1                  | High               | 2,625               |
| South Korea | -7.9                  | High               | 1,675               |
| Egypt       | -7.2                  | Very High          | 149                 |
| Nigeria     | -4.9                  | Very High          | 79                  |
| Brazil      | -4.9                  | High               | 259                 |
| Bulgaria    | -4.9                  | High               | 29                  |

### Top 10 Highest-Valued Countries (Market-Cap-Weighted)

| Country     | Over/Undervalued by % | Uncertainty Rating | Number of Companies |
|-------------|-----------------------|--------------------|---------------------|
| Finland     | 15.4                  | High               | 100                 |
| Australia   | 12.2                  | High               | 416                 |
| France      | 7.9                   | Medium             | 436                 |
| Russia      | 7.6                   | High               | 79                  |
| Peru        | 6.8                   | High               | 23                  |
| Taiwan      | 6.7                   | High               | 1,654               |
| Norway      | 6.1                   | High               | 157                 |
| New Zealand | 5.7                   | High               | 78                  |
| India       | 5.6                   | High               | 2,131               |
| Qatar       | 5.0                   | High               | 40                  |

QOE3

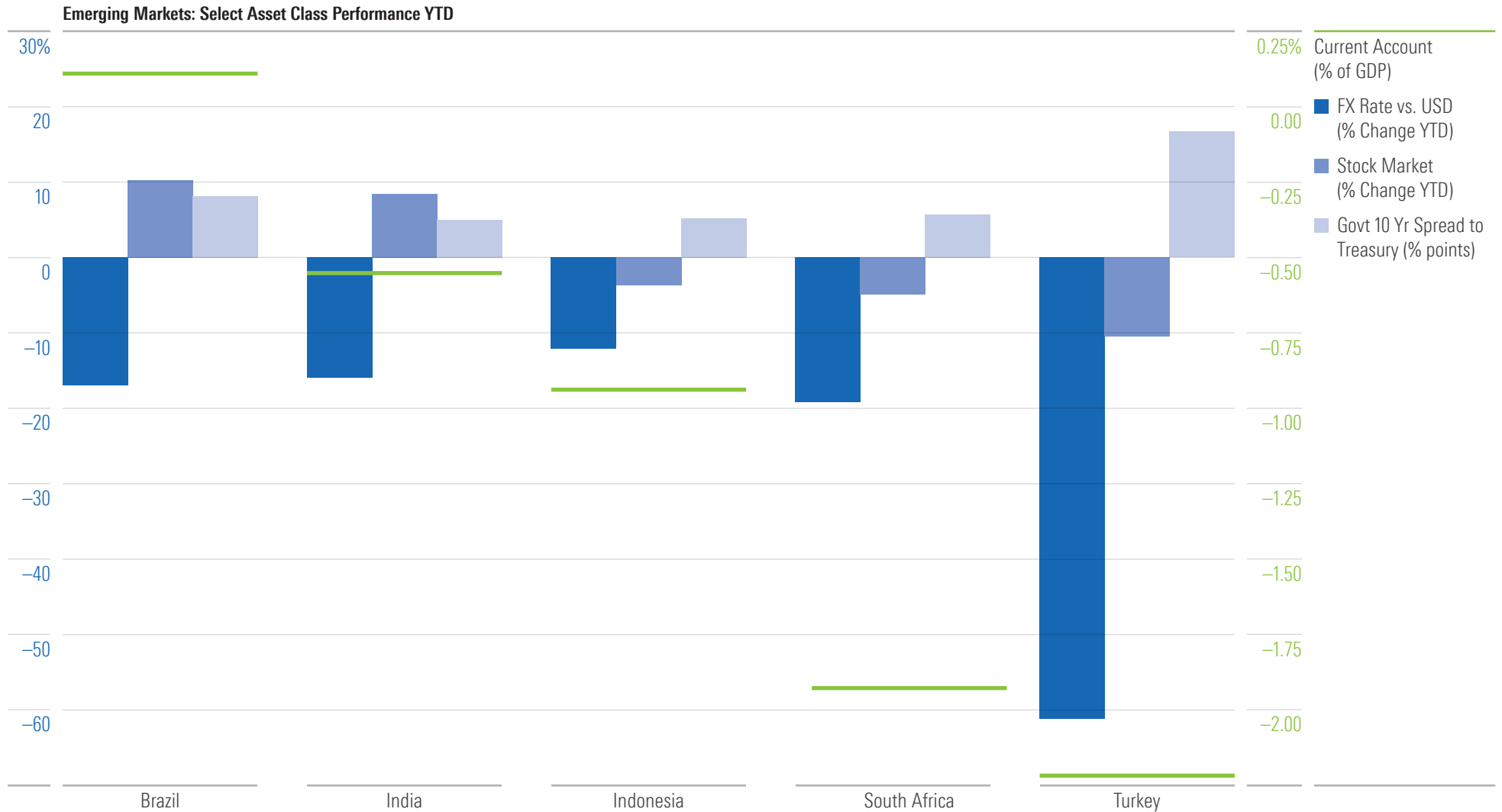
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Source: Morningstar quantitative and analyst fair value data. ©2018 Morningstar. All Rights Reserved.

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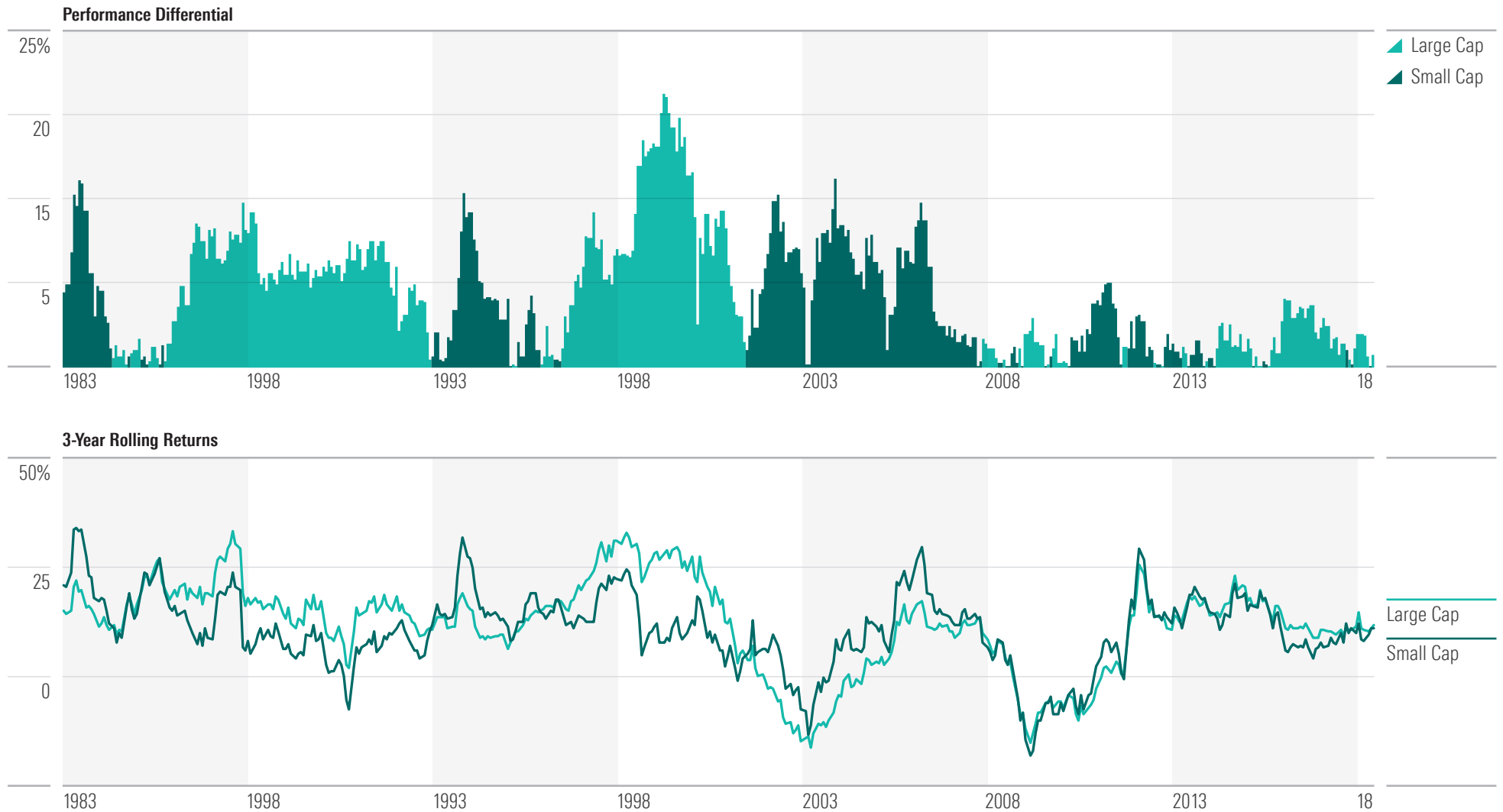
## Emerging-Markets Vulnerability

Some emerging markets have remained resilient despite broad market pressure. Countries with large current account surplus have generally done better than their peers, but even among those countries with wider current account deficits, equity and bond markets have been more resilient than in 2013 during the taper tantrum. Rather, country-specific developments appear to have been more important than broad macro trends.











## Large-Cap vs. Small-Cap Cycles

The variability between large-cap and small-cap equity returns (represented by the S&P 500 and Russell 2000, respectively) is shown below. Despite the alternating periods of performance, annualized long-term returns have been similar: 12.0% for large caps versus 11.8% for small caps since 1979. Furthermore, their performance differential has fallen substantially since the three-year period ending 2006. Their correlation increased to 0.96 since then, versus 0.75 over the full period.



## Sector Statistics

Investors should not focus on only value or growth but instead consider a combination of the two. Otherwise, focusing on just growth or value indexes can lead to wide variations in market sector weightings. In terms of price/book ratios, communication services and energy are the only sectors below their 15-year averages.

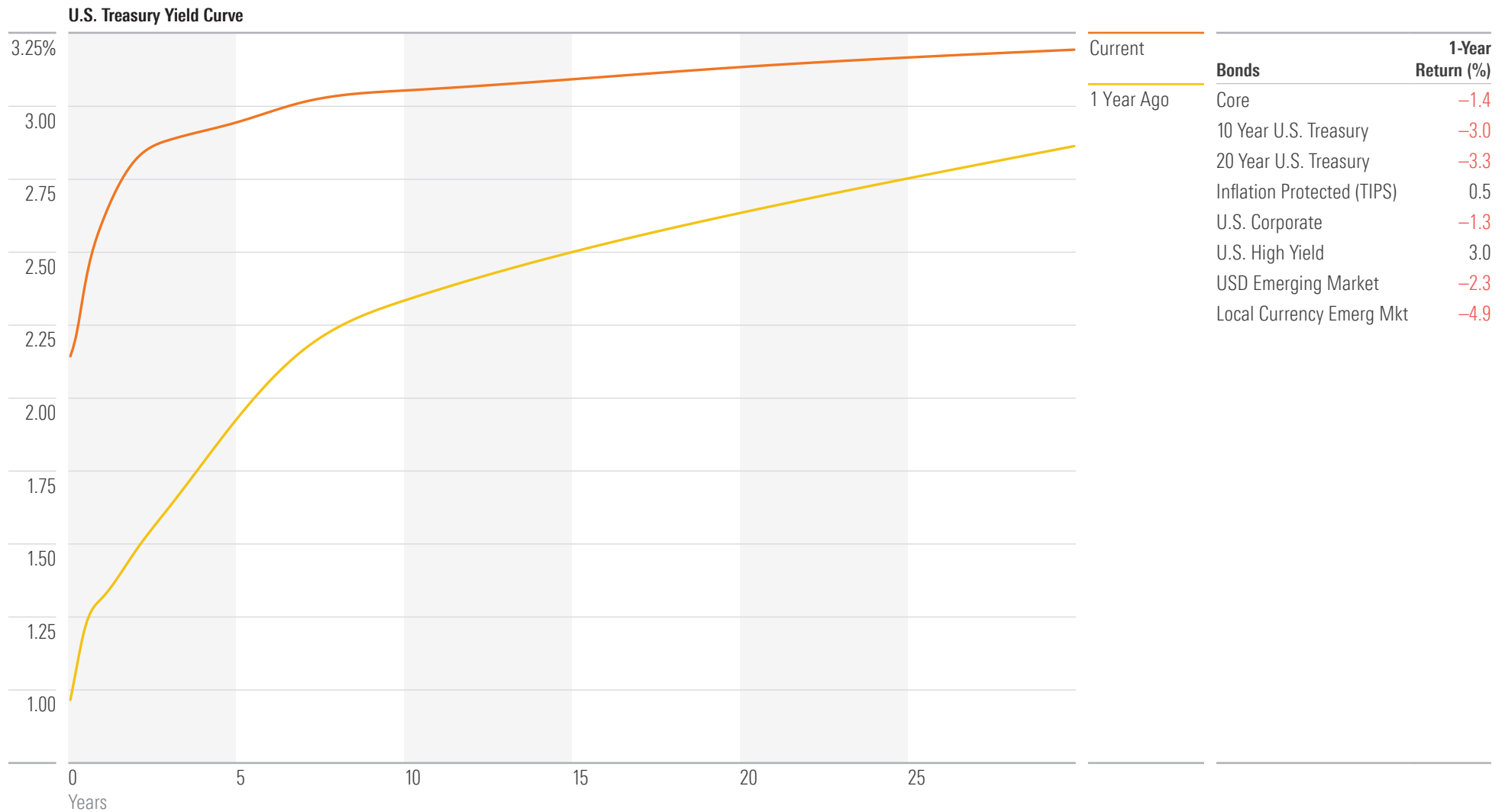
|  | Morningstar Index Weights (%) |            |             | Price to Earnings |           | Price to Book |           | Beta (3 Yr) | Dividend Yield (%) |
|--|-------------------------------|------------|-------------|-------------------|-----------|---------------|-----------|-------------|--------------------|
|  | U.S. Market                   | U.S. Value | U.S. Growth | Current           | 15 Yr Avg | Current       | 15 Yr Avg |             |                    |
| Morningstar U.S. Market  | —                             | —          | —           | 20.4              | 17.6      | 3.2           | 2.5       | 1.0         | 1.9                |
| <b>Cyclical</b>  |                               |            |             |                   |           |               |           |             |                    |
|  Basic Materials         | 2.7                           | 4.1        | 1.6         | 20.4              | 18.6      | 2.7           | 2.7       | 1.3         | 1.8                |
|  Consumer Cyclical       | 12.5                          | 5.4        | 18.3        | 21.7              | 18.7      | 5.6           | 3.0       | 1.1         | 1.4                |
|  Financial Services      | 15.6                          | 24.2       | 9.9         | 16.1              | 14.1      | 1.8           | 1.4       | 1.2         | 1.5                |
|  Real Estate             | 3.4                           | 2.8        | 2.7         | 26.0              | 28.6      | 2.3           | 2.2       | 0.8         | 4.3                |
| <b>Sensitive</b>   |                               |            |             |                   |           |               |           |             |                    |
|  Communications Services | 3.0                           | 5.4        | 1.9         | 8.9               | 18.1      | 1.9           | 2.2       | 0.7         | 2.7                |
|  Energy                  | 5.7                           | 8.6        | 3.5         | 17.2              | 15.4      | 1.9           | 2.1       | 1.1         | 2.7                |
|  Industrials             | 10.9                          | 6.5        | 9.7         | 19.6              | 18.5      | 4.2           | 3.1       | 1.1         | 1.8                |
|  Technology              | 22.7                          | 10.7       | 35.1        | 28.1              | 21.0      | 6.0           | 3.8       | 1.2         | 1.2                |
| <b>Defensive</b>   |                               |            |             |                   |           |               |           |             |                    |
|  Consumer Defensive    | 6.6                           | 13.2       | 1.7         | 19.4              | 19.0      | 4.0           | 3.9       | 0.5         | 2.6                |
|  Healthcare            | 14.2                          | 12.0       | 15.5        | 29.0              | 20.8      | 4.2           | 3.5       | 1.0         | 1.5                |
|  Utilities             | 2.8                           | 7.0        | 0.1         | 16.9              | 16.5      | 1.9           | 1.8       | 0.1         | 3.2                |

# Fixed Income



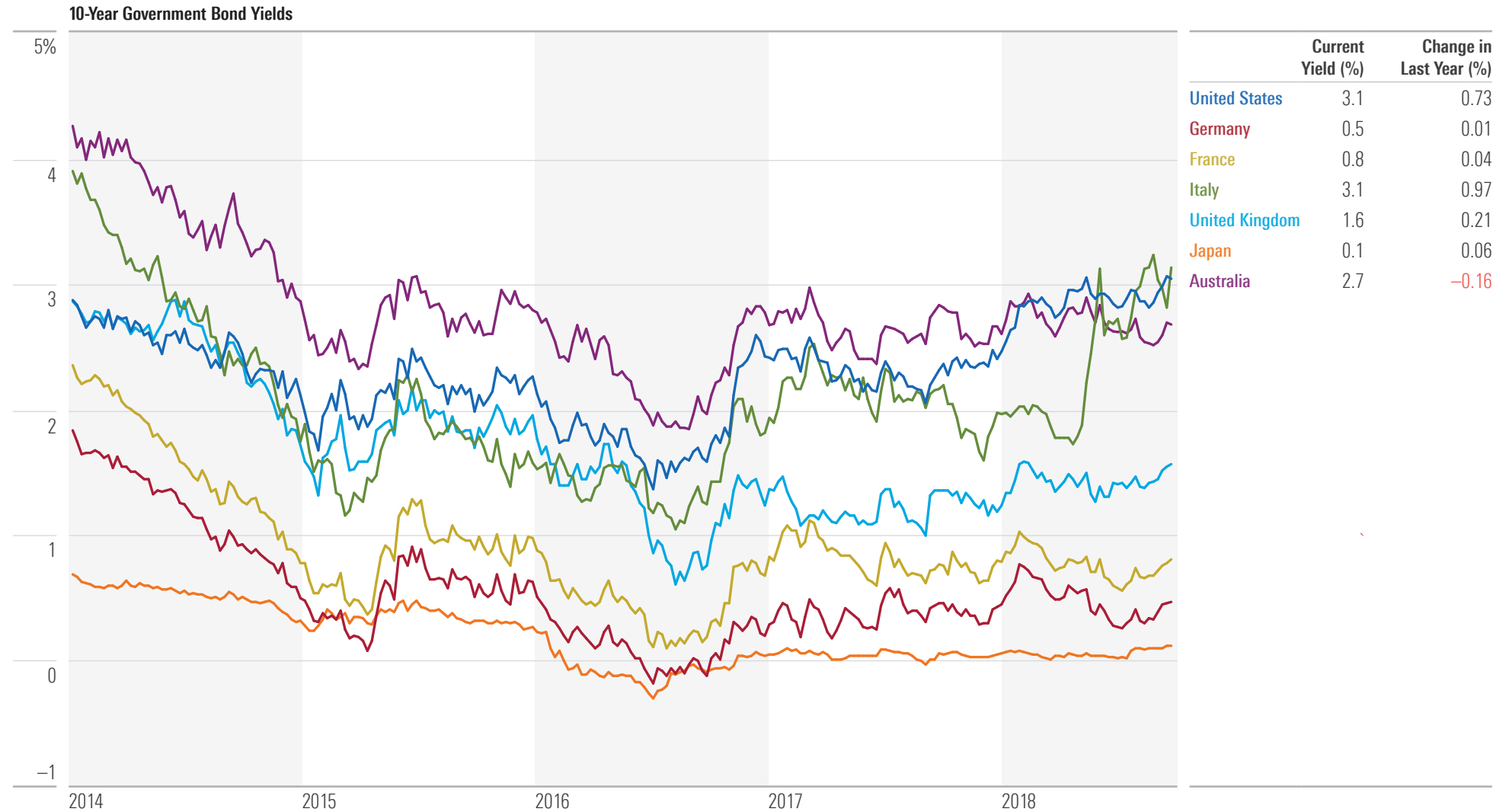
## The Short End of the U.S. Treasury Yield Curve Rises Significantly

The Federal Reserve raised the benchmark federal-funds rate by another quarter basis point to 2.25% in September 2018, which was the third rate hike this year and the eighth since December 2015. The yield curve has flattened compared with one year prior, with the short end rising more than the long end. In terms of one-year return, U.S. high-yield bonds had the best return and local-currency emerging-markets bonds had the worst return.



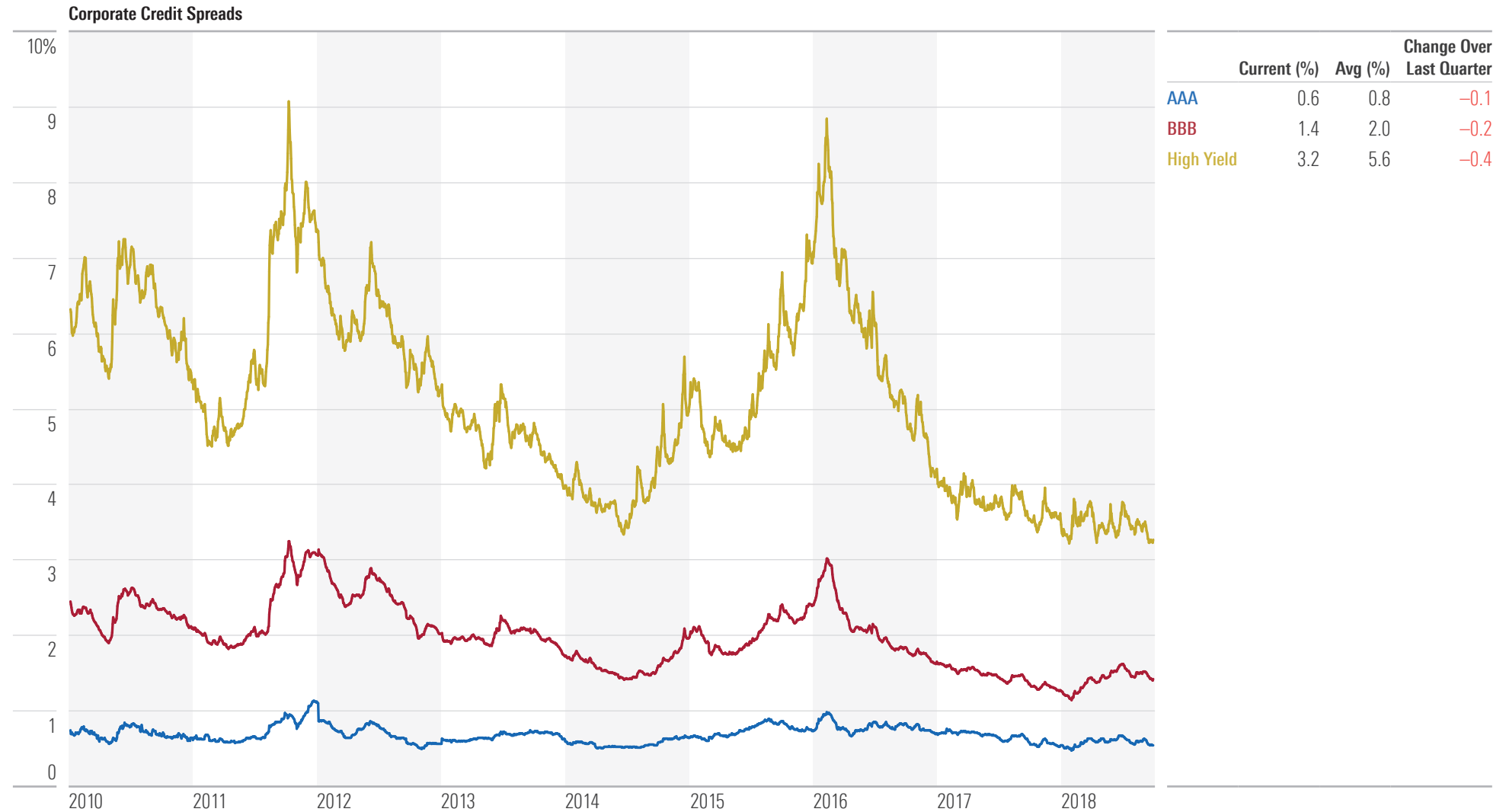
## The United States Has One of the Highest Yields in the Developed World

The 10-year U.S. Treasury yield has risen to 3.1%, 2.6 percentage points above the German yield. Italian and U.K. rates have also risen in the past year, while rates remained flat in Germany and France. The U.S. rate is relatively higher than European rates in large part because the European Central Bank is still implementing quantitative easing, whereas the Federal Reserve has ended its quantitative easing program and has hiked rates multiple times since.



## High-Yield Spreads Remain Tight After Steep Decline in 2016

Across the credit spectrum, corporate spreads remained flat so far in 2018 and are still tighter than historical averages. In 2016, high-yield credit spreads narrowed from almost 9% to just under 4% as many energy bonds rebounded after a bankruptcy scare. Given still-tight spreads, excess return potential is limited. High-yield bond funds saw \$21 billion in outflows in the first three quarters of 2018, despite consistent positive returns.



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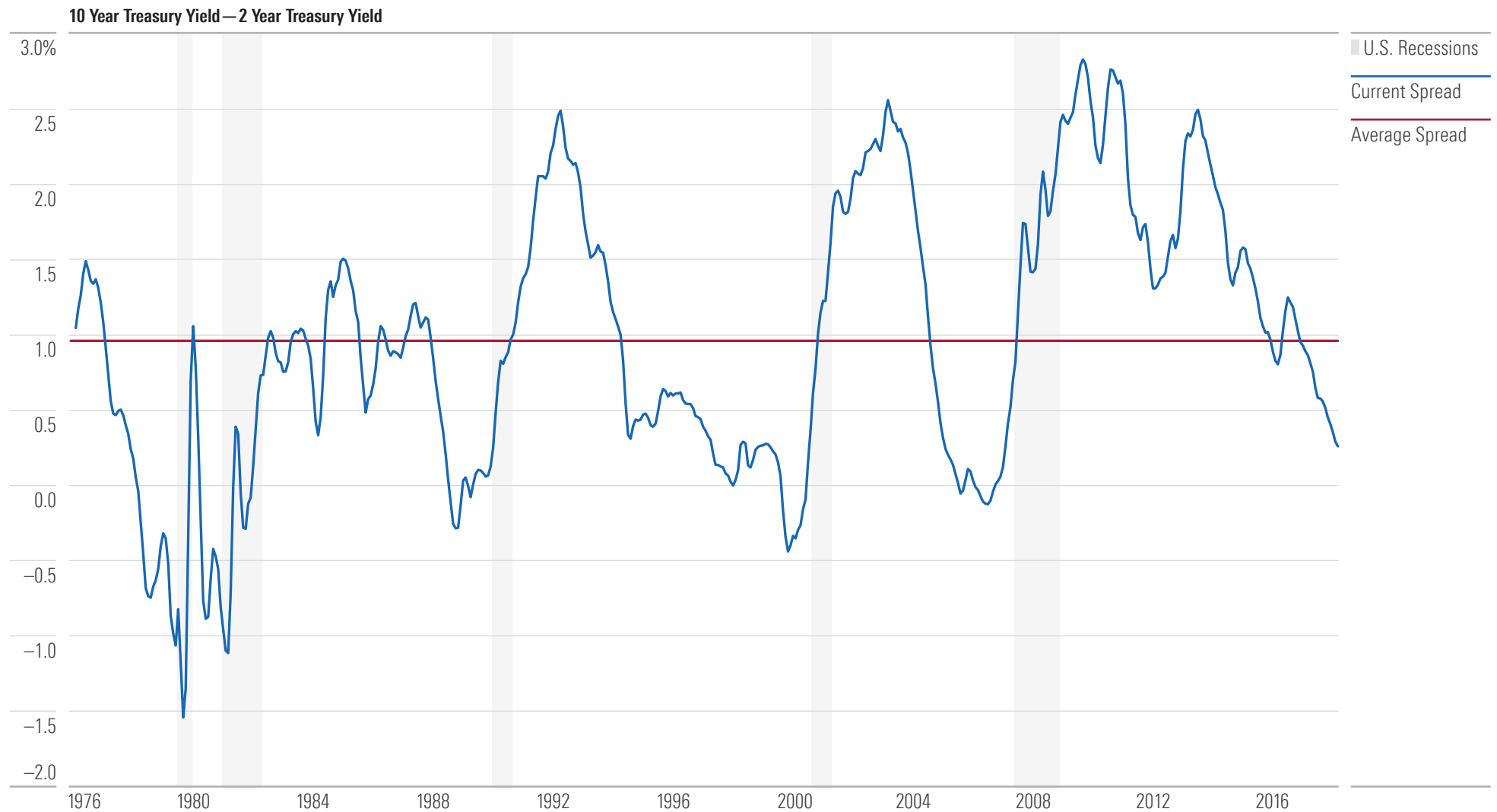
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Source: Bank of America Merrill Lynch Corporate Spread Indexes from the Federal Reserve, Morningstar calculations. ©2018 Morningstar. All Rights Reserved.

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## An Inverted Yield Curve Has Been a Good Recession Indicator

The image illustrates the yield differential between 10-year and two-year Treasuries. A normal yield curve occurs when long-term yields are higher than short-term ones, which would be a positive number on this chart. When the difference becomes negative, however, we have an inverted yield curve, and historically that has happened before every major recession in the past 40 years. Today, the 10-year/two-year spread has fallen below the long-term average but remains slightly above zero.

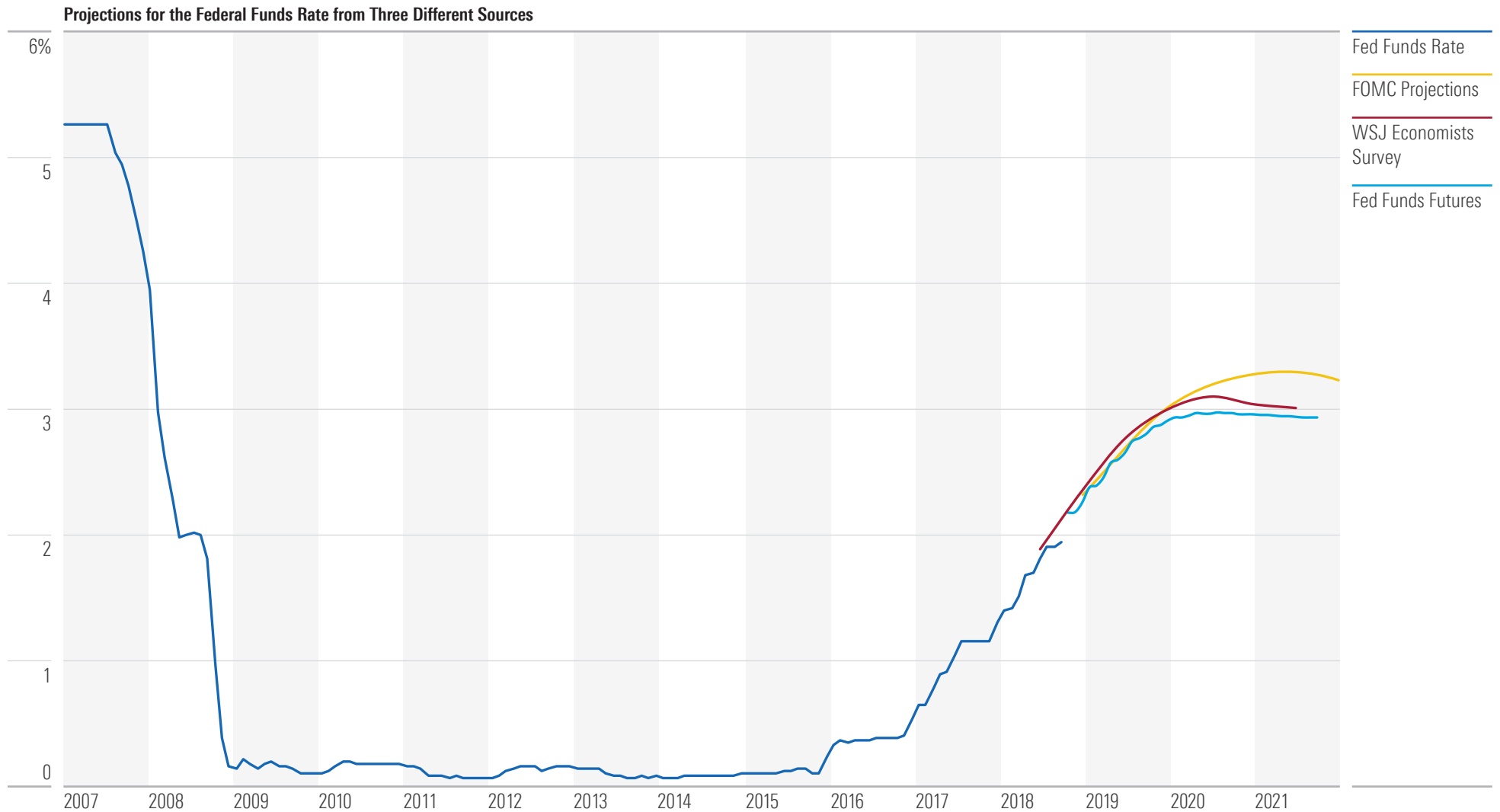


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### 3 Different Projections for the Federal-Funds Rate

Projections from three different sources agree that U.S. interest rates will continue to rise this year. A rise in the federal-funds rate may influence, but does not necessarily imply, an accompanying rise in long-term rates. Interestingly, the market has lower expectations than the economists at the Federal Reserve and the ones surveyed by The Wall Street Journal.

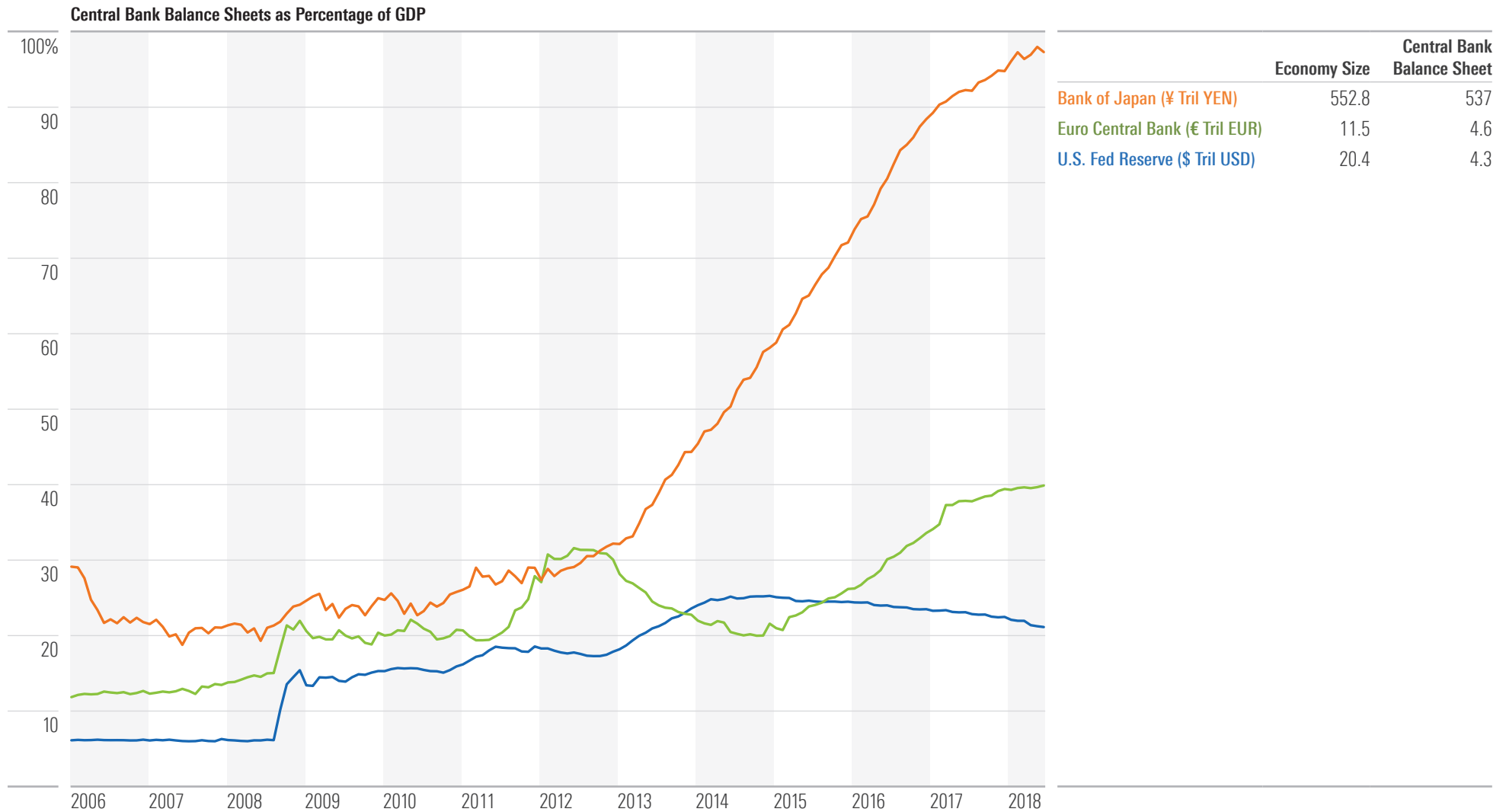


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Source: Federal Reserve, The Wall Street Journal, Chicago Mercantile Exchange, Morningstar calculations. © 2018 Morningstar. All Rights Reserved.

## U.S. Fed Tightens While Other Central Banks Continue With Their Asset Purchases

The European and Japanese central banks have continued apace with their bond purchases. The U.S. remains the exception, as the Federal Reserve halted its large scale asset purchases in December 2014 and has since allowed some of those holdings to mature. This difference in policy trajectories is one reason behind the widening gap between U.S. (3%) and Japanese (0%) 10-year Treasury interest rates.



# Funds

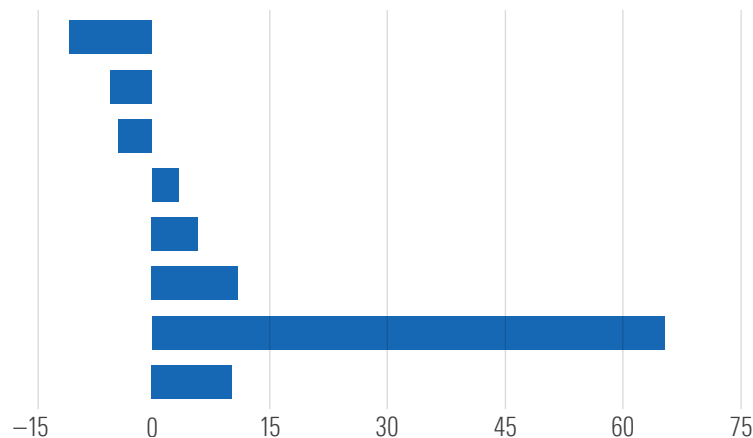


## Top- and Bottom-Performing Morningstar Categories

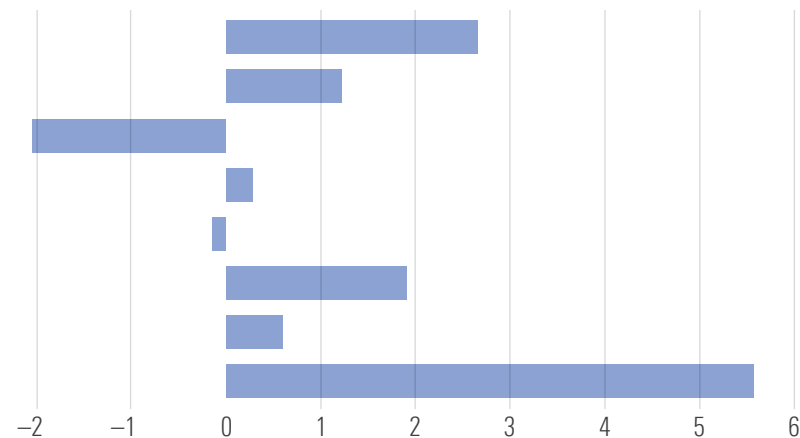
Taxable-bond funds received impressive flows last quarter, over \$60 billion, while posting only a 0.6% gain. U.S. equity funds achieved the highest return among Morningstar Category groups, at 5.6%. Yet, equity investors are shifting assets from the U.S. large-value and large-growth categories. The allocation category also performed strongly, while commodities suffered negative returns in the third quarter.

Trailing Quarter Flows (\$ Bil)

Allocation  
Alternative  
Commodities  
International Equity  
Municipal Bond  
Sector Equity  
Taxable Bond  
U.S. Equity



Trailing Quarter Returns (%)



| Top-Performing Morningstar Categories | U.S. Category Group | Return (%)       |                 |                         | Bottom-Performing Morningstar Categories | U.S. Category Group  | Return (%)       |                 |                         |            |
|---------------------------------------|---------------------|------------------|-----------------|-------------------------|--|----------------------|------------------|-----------------|-------------------------|------------|
|                                       |                     | Trailing Quarter | Trailing 1 Year | Quarterly Flow (\$ Mil) |  |                      | Trailing Quarter | Trailing 1 Year | Quarterly Flow (\$ Mil) |            |
| Health                                | Sector Equity       | 10.6             | 19.9            | 7,619                   | Equity Precious Metals                   | Sector Equity        | -15.3            | -20.4           | 872                     | >20        |
| Industrials                           | Sector Equity       | 7.7              | 11.7            | 397                     | India Equity                             | International Equity | -7.8             | -8.0            | -101                    | 10 to 20   |
| Large Growth                          | U.S. Equity         | 7.5              | 23.2            | -7,232                  | Bear Market                              | Alternative          | -7.2             | -19.1           | -146                    | 0 to 10    |
| Small Growth                          | U.S. Equity         | 7.0              | 24.4            | 5,126                   | China Region                             | International Equity | -6.5             | -4.8            | 1,267                   | -10 to 0   |
| Large Blend                           | U.S. Equity         | 6.7              | 15.4            | 12,331                  | Commodities Precious Metals              | Commodities          | -5.5             | -8.5            | -2,278                  | -20 to -10 |
| Mid-Cap Growth                        | U.S. Equity         | 6.5              | 20.3            | -157                    | Commodities Agriculture                  | Commodities          | -5.4             | -14.0           | -147                    | <-20       |
| Communications                        | Sector Equity       | 6.2              | 5.2             | 2,028                   | Long Government                          | Taxable Bond         | -2.9             | -3.7            | 8,676                   |            |
| Technology                            | Sector Equity       | 5.6              | 24.2            | 1,544                   | Pacific/Asia ex-Japan Stk                | International Equity | -2.7             | 0.5             | -662                    |            |
| Large Value                           | U.S. Equity         | 5.5              | 10.8            | -5,157                  | Diversified Emerging Mkts                | International Equity | -2.5             | -3.6            | 3,039                   |            |
| Commodities Energy                    | Commodities         | 4.3              | 33.7            | -262                    | Emrg-Mkts Local-Currency Bond            | Taxable Bond         | -2.4             | -7.7            | 258                     |            |

QMF10

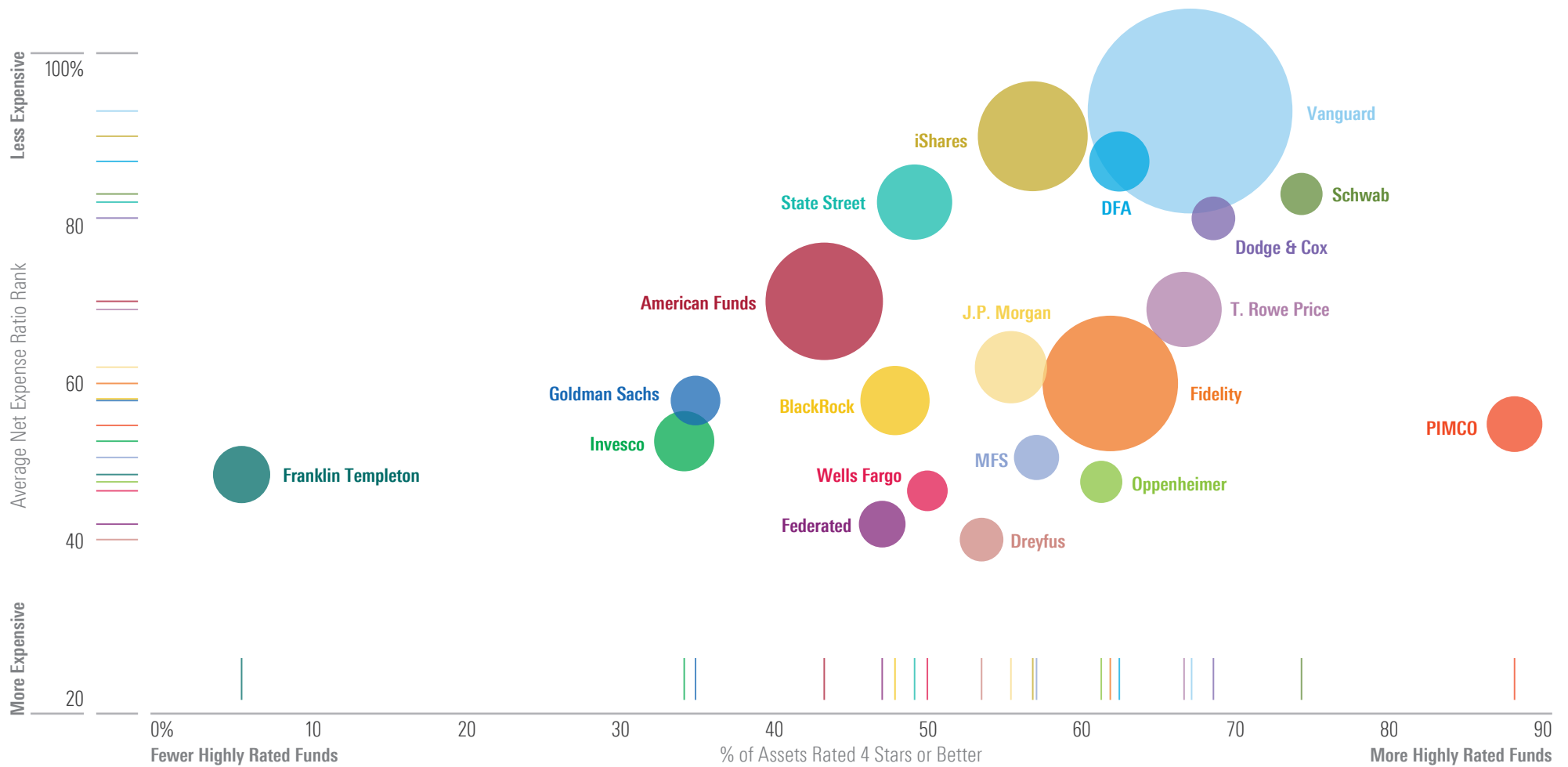
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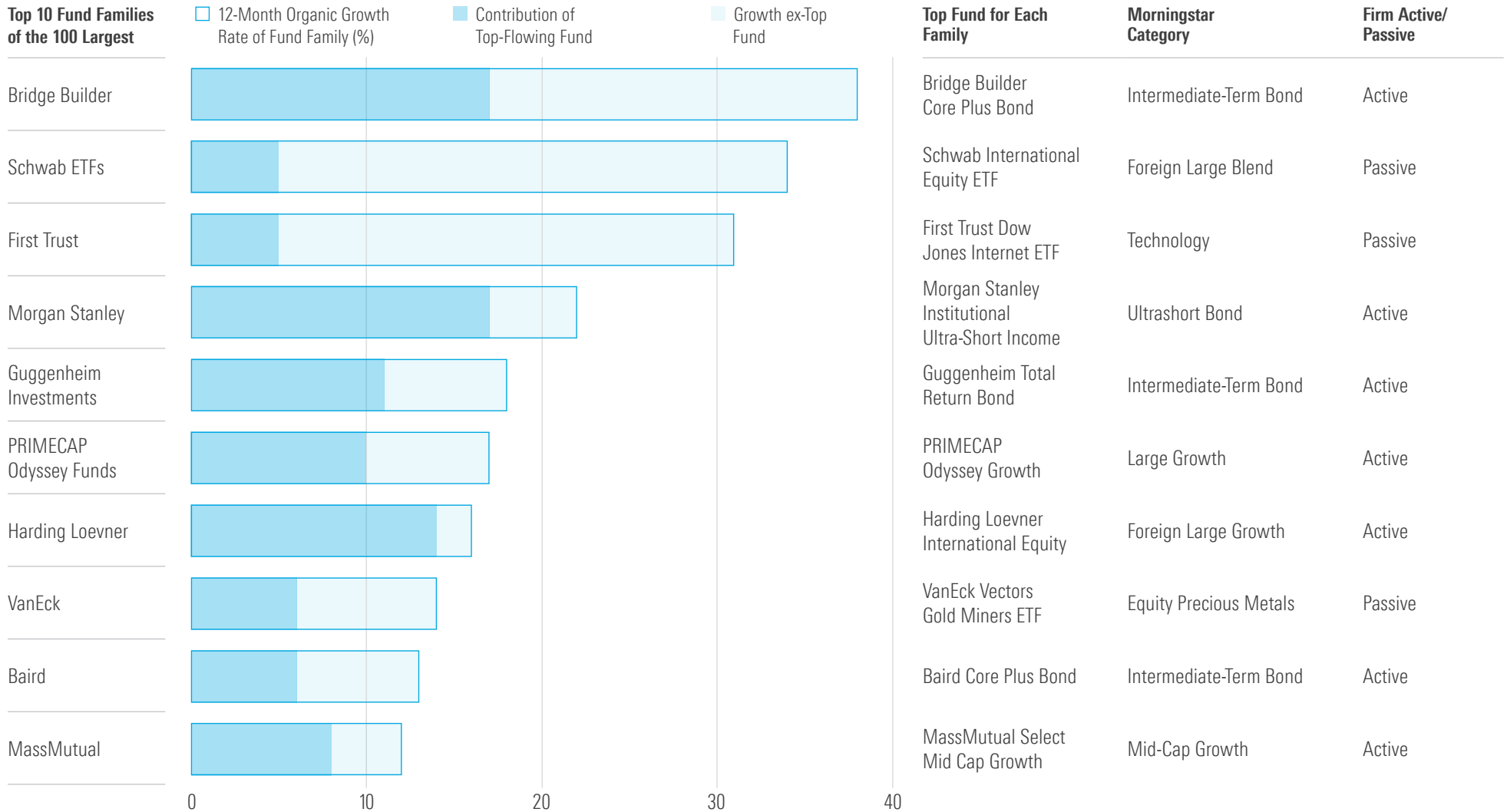
## Top 20 Fund Companies: Relationship Between Ratings, Expenses, and Assets

Morningstar Ratings are symmetrically distributed across funds, but investors prefer funds with above-average long-term results. Therefore, most fund companies in the graph below have over 50% of their assets in higher-rated funds. PIMCO has delivered superior performance while maintaining average fees. Conversely, Franklin Templeton has lost \$106 billion over the past three years with weak performance.



## Fastest-Growing Fund Families

Schwab ETFs and Edward Jones' Bridge Builder funds achieved the two highest trailing-12-month organic growth rates for the sixth consecutive quarter. These results continue to underscore the trend to low-fee funds and fee-based accounts. Interestingly, seven out of the ten fastest-growing firms are focused on active management, indicating that active is far from dead and can still gain significant assets.

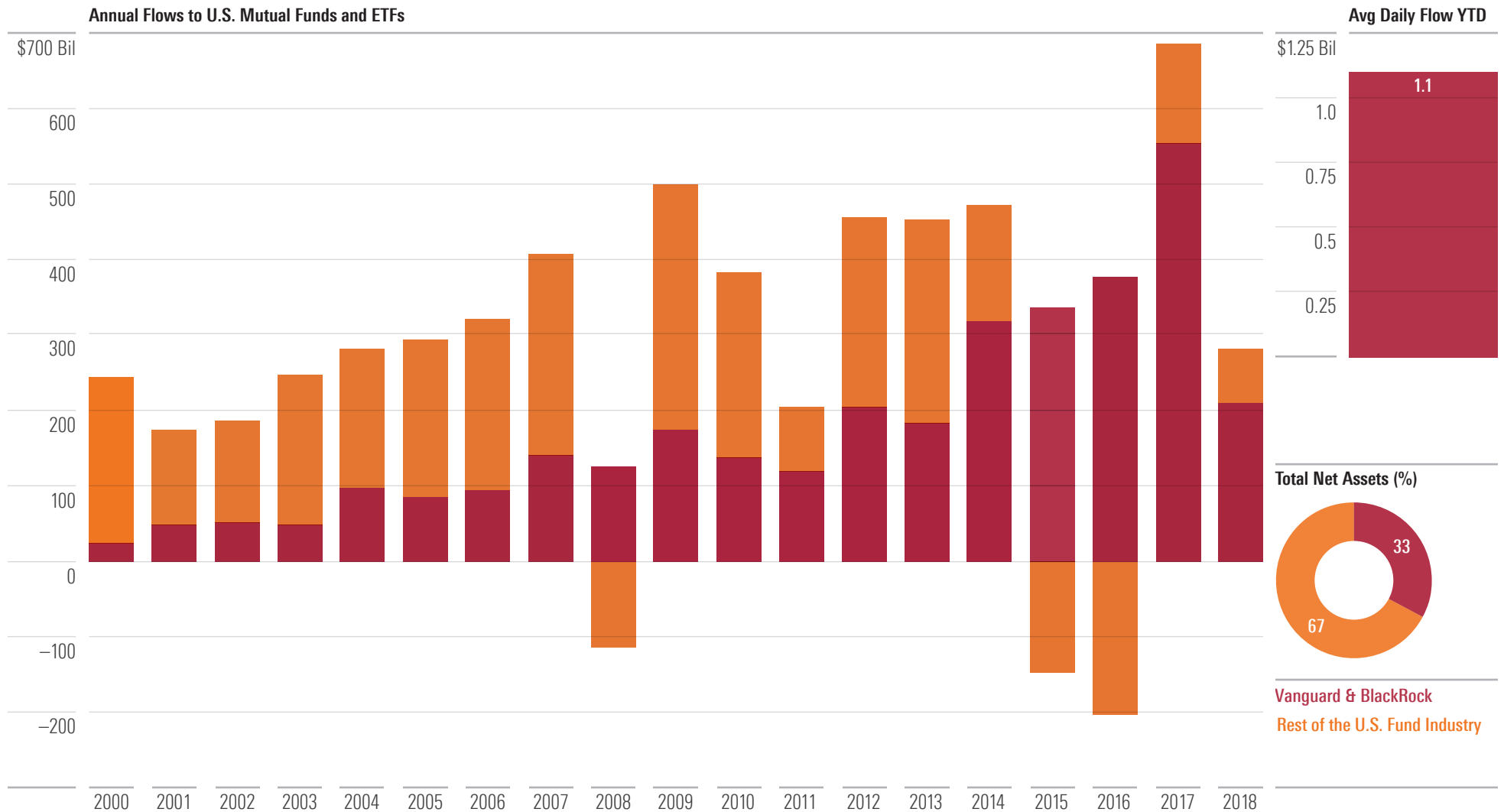


QFF7

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## Vanguard and BlackRock vs. the Rest of the Fund Industry

Vanguard and BlackRock (including iShares) have maintained an incredible 18-year record of consecutive positive inflows, even when the rest of the U.S. fund industry had aggregate outflows in 2008, 2015, and 2016. The two firms contributed 76% of the industry's inflows in year-to-date 2018, compared with 9% in 2000. Combined, they now manage one third of U.S. mutual fund and exchange-traded fund assets.

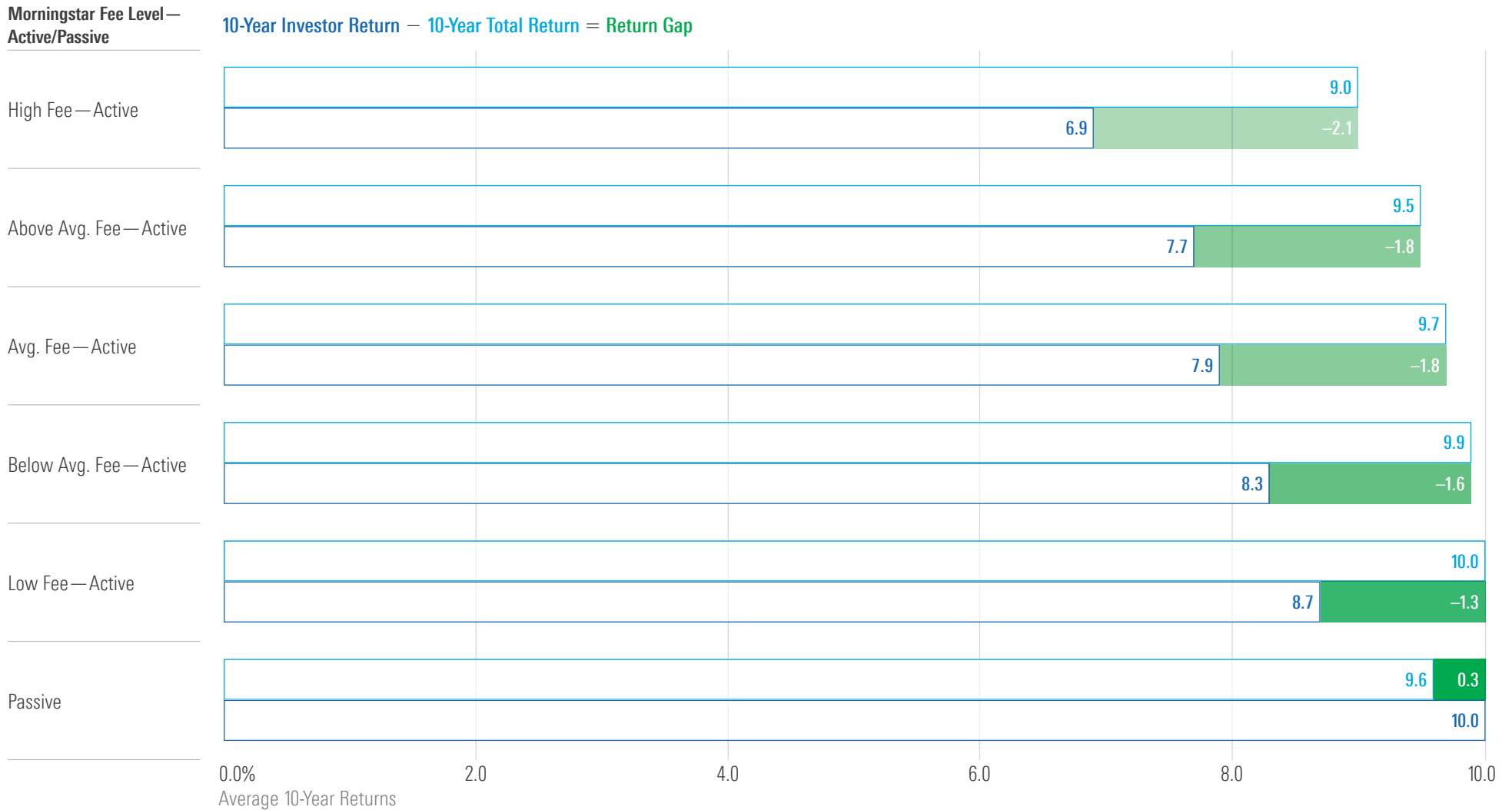


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Source: Morningstar Direct. Data as of 9/30/2018. © 2018 Morningstar. All Rights Reserved.

## Passive Investors Get Higher Total Returns and a Lower Return Gap

Morningstar Investor Returns take into account monthly fund flows and monthly returns to estimate a typical investor's experience in a fund. Over the past 10 years, investor returns in most Morningstar Fee Levels lagged total returns because investors are notoriously bad market-timers. However, the lower the fees, the shorter the return gap. Thus, investors who choose less expensive funds tend to market-time less and are therefore less likely to miss out on a fund's potential returns.

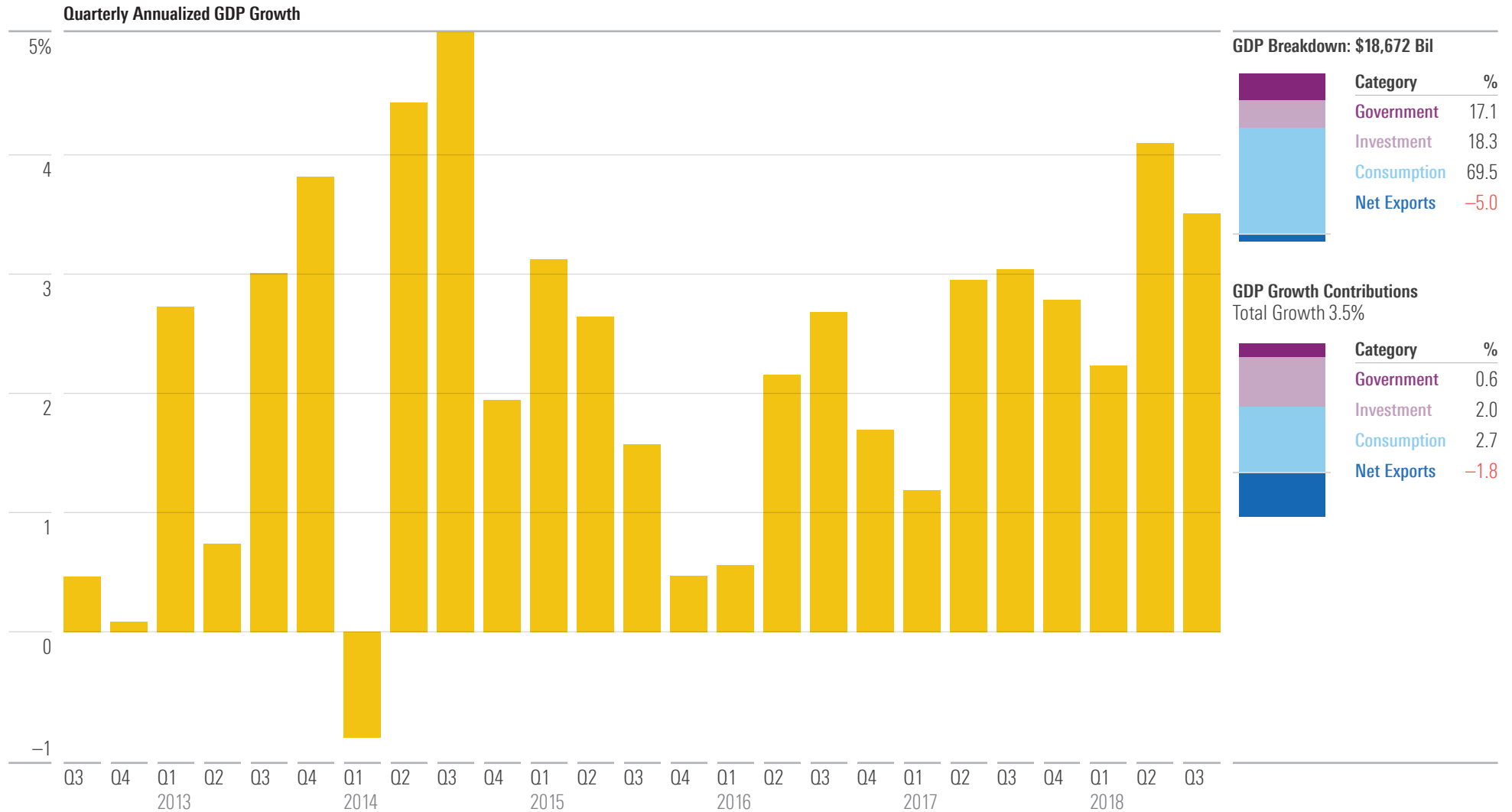


# Economic Indicators



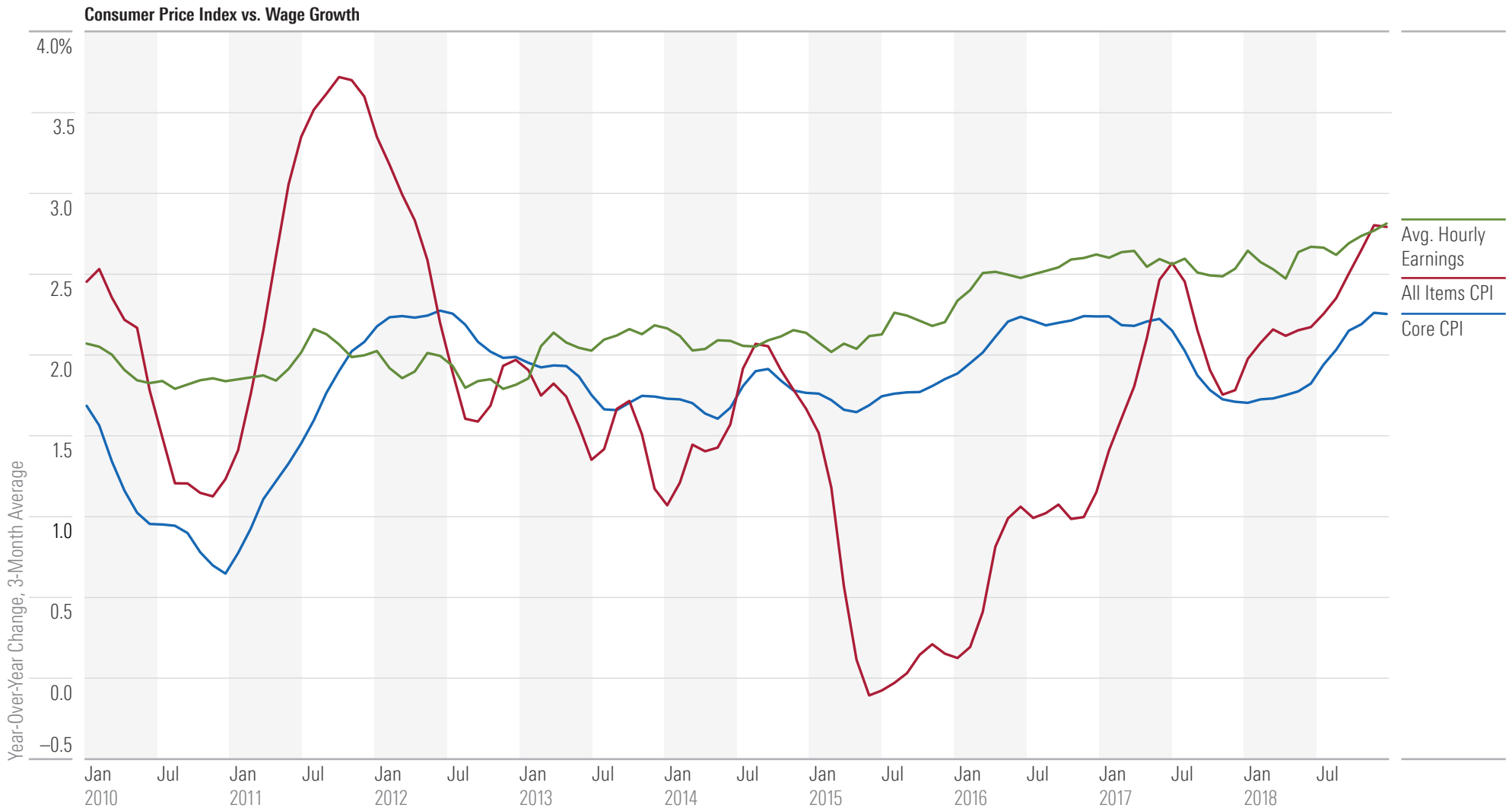
## Latest U.S. GDP Growth Continues on a Robust Track

The first estimate of third-quarter GDP showed the U.S. economy growing 3.5%, following a 4.1% expansion in Q2. Private consumption continued to grow at a healthy pace, though residential fixed investment growth was negative for the third straight quarter. Business fixed investment was also relatively weak, as was export growth, while import growth surged. Government spending accounted for about 0.5 percentage points of the 3.5% headline rate.



## With Inflation Firming, Markets Prepare for Higher Interest Rates

Inflation breached the Fed's target in July for the first time in more than six years. While Fed policymakers have said they would like to see inflation remain "modestly" above target for "a temporary period" (i.e., more than just one month), their latest economic projections indicate they expect inflation to be above target for much of next year. In conjunction with historically low unemployment and accelerating nominal wage growth, the market is increasingly pricing in higher interest rates down the road.



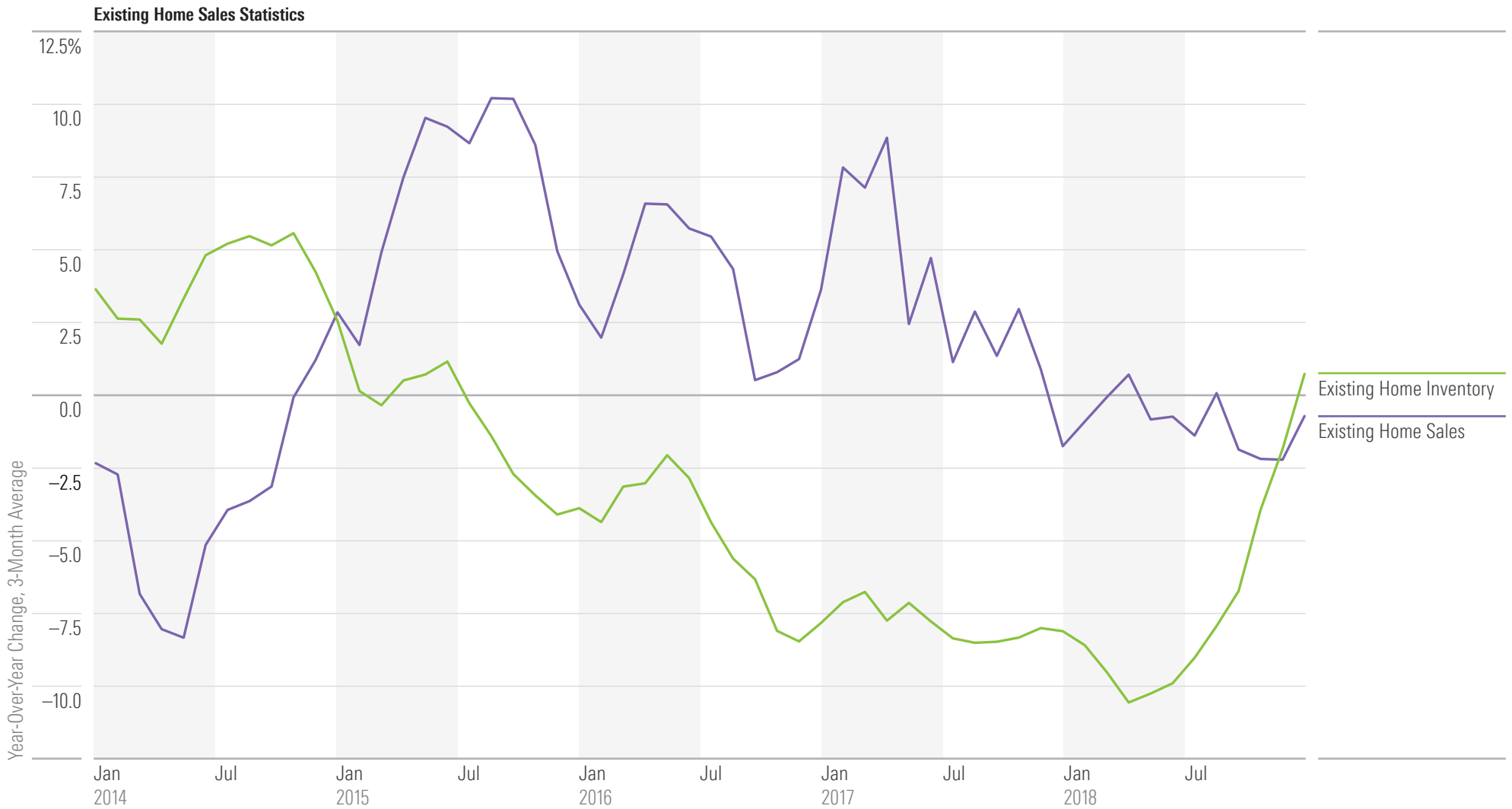
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Source: Bureau of Labor Statistics, Morningstar calculations. ©2018 Morningstar. All Rights Reserved.



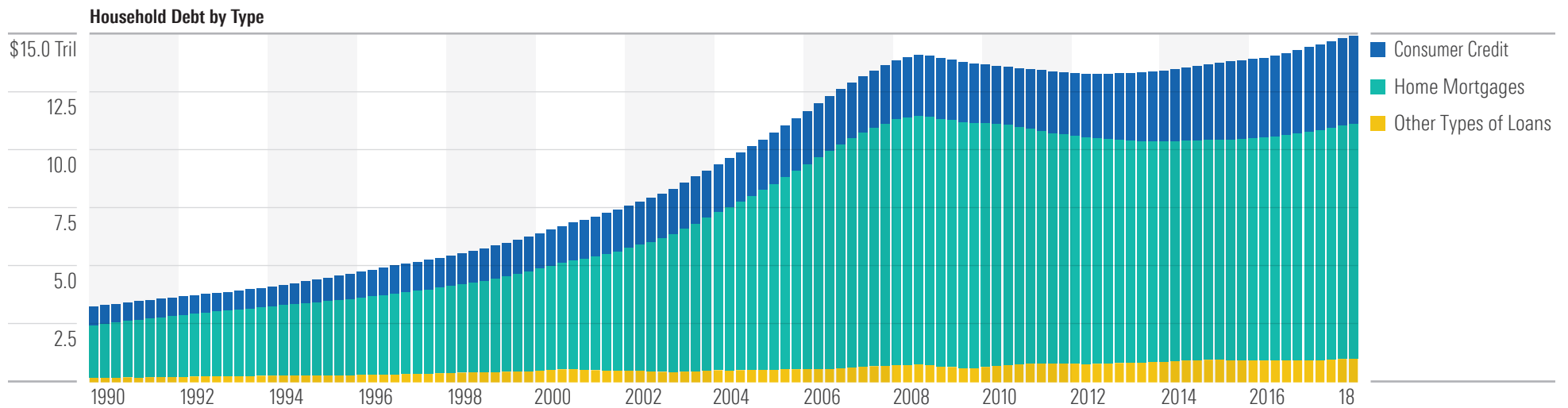
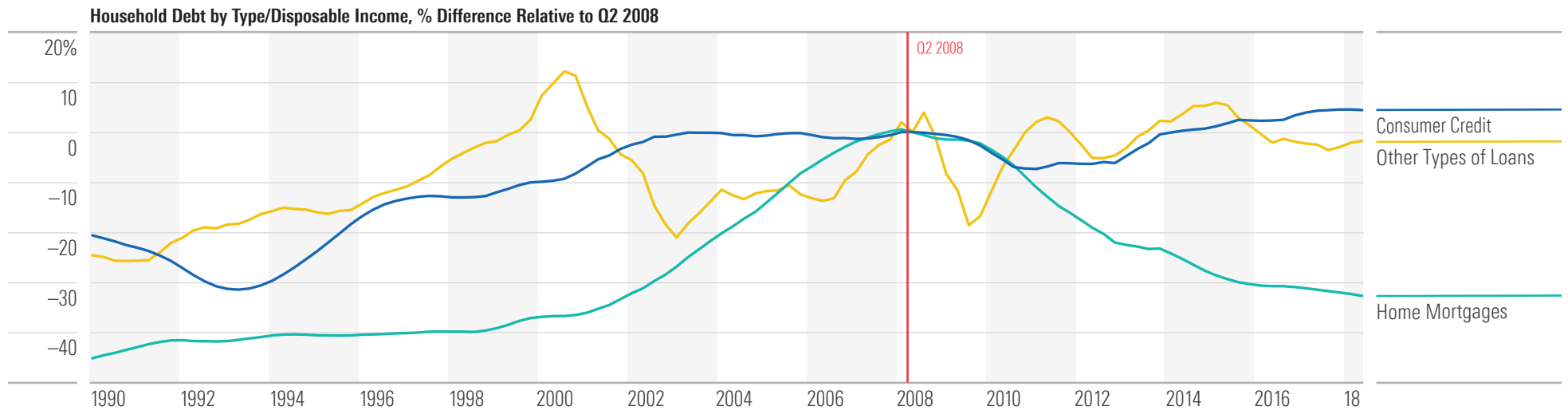
## The Economy Is Booming, the Housing Market Is Not

The recent acceleration in U.S. economic growth has largely bypassed the housing market. Housing inventories are on the rise for the first time since 2014, while existing home sales growth has been flat to slightly negative for more than a year. Affordability remains a major issue, as the median national mortgage rate has increased by around 0.6 percentage points over the past 12 months, while median home prices continue to increase nearly twice as fast as median household income.



## Household Balance Sheets Are Still on Solid Footing Relative to Pre-Crisis Levels

While total household debt has eclipsed 2008 highs in dollar terms, the ratio of household debt to disposable income is still considerably lower than its pre-crisis peak. Indeed, the ratio of mortgage debt (by far the largest component of household debt) to disposable income is more than 30% below its Q2 2008 peak. Consumer credit, which includes credit card debt, has expanded more quickly, but has not significantly outpaced disposable income growth.

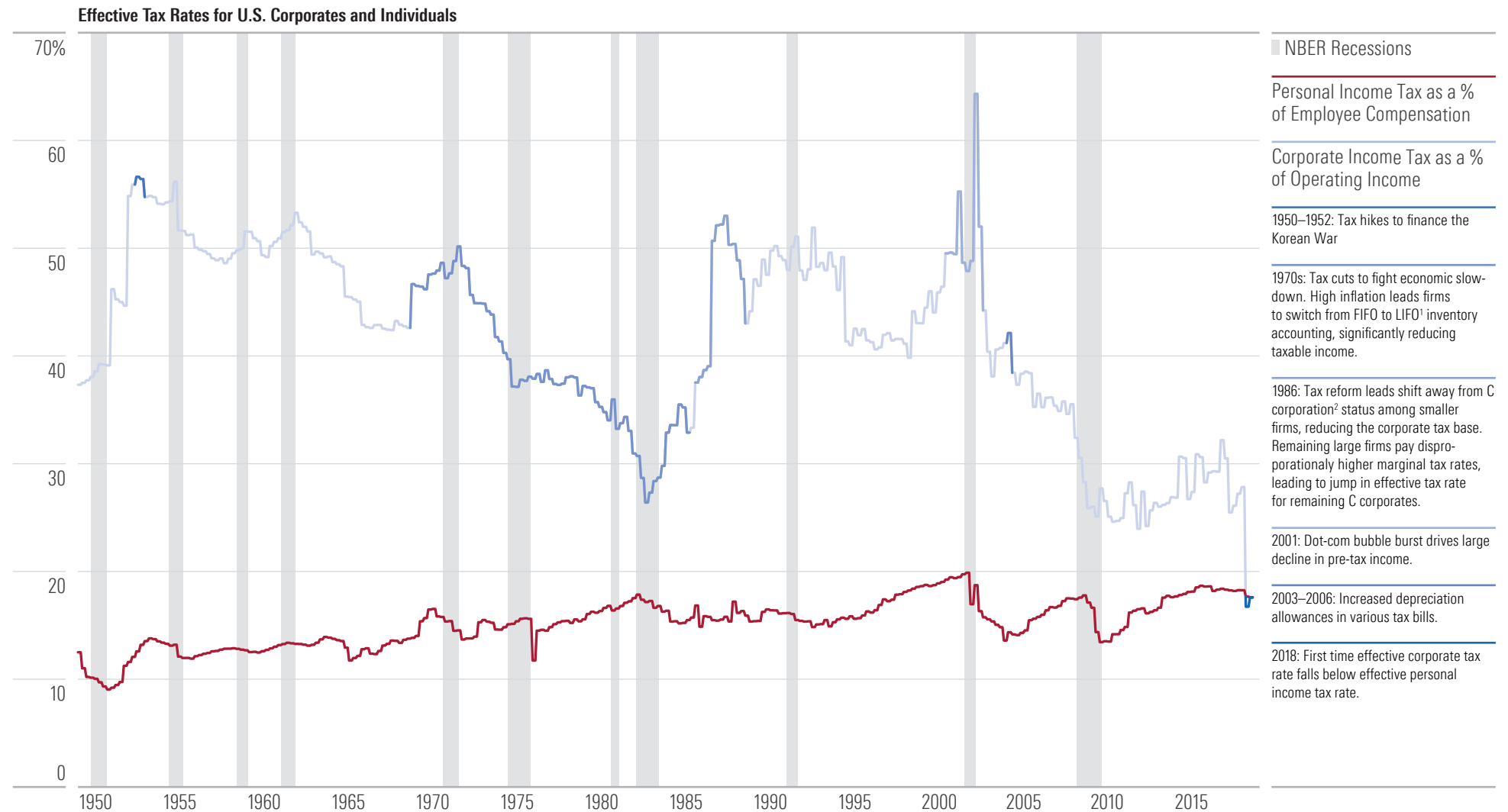


QEI105

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## For the First Time, Corporate and Individual Effective Income Tax Rates Are Equal

From 1950-2000, the corporate effective income tax rate oscillated between 40-50%, excluding the inflationary 1970s and early 80s (see sidebar below). More generous depreciation allowances from tax bills passed in the early 2000s and again after the Great Recession helped keep the effective corporate rate well below 40% for much of the last 15 years. The 2017 Tax Cuts and Jobs Act brought the effective corporate rate below 20% for the first time, on par with the individual effective income tax rate.



QEI104

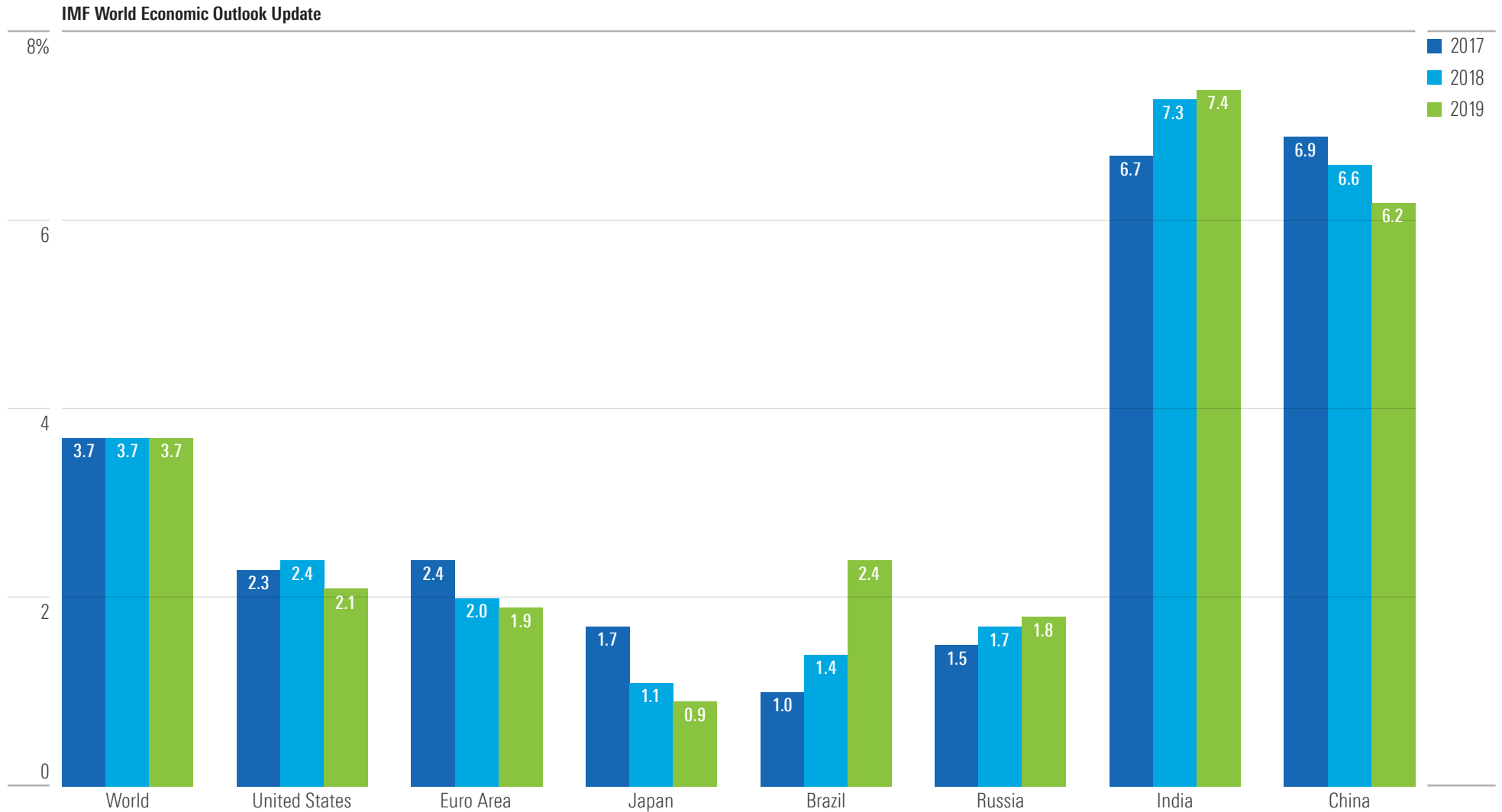
41

Source: NBER (National Bureau of Economic Research), BEA (U.S. Bureau of Economic Analysis). Note: Effective tax rate is the sum of federal, state, and local taxes paid as a share of pre-tax income.

<sup>1</sup>FIFO=First in, first out; LIFO=Last in, last out. <sup>2</sup>C corporations are subject to corporate income tax. S corporations, also called “pass-throughs,” are subject to personal tax rates, similar to partnerships and sole proprietorships.

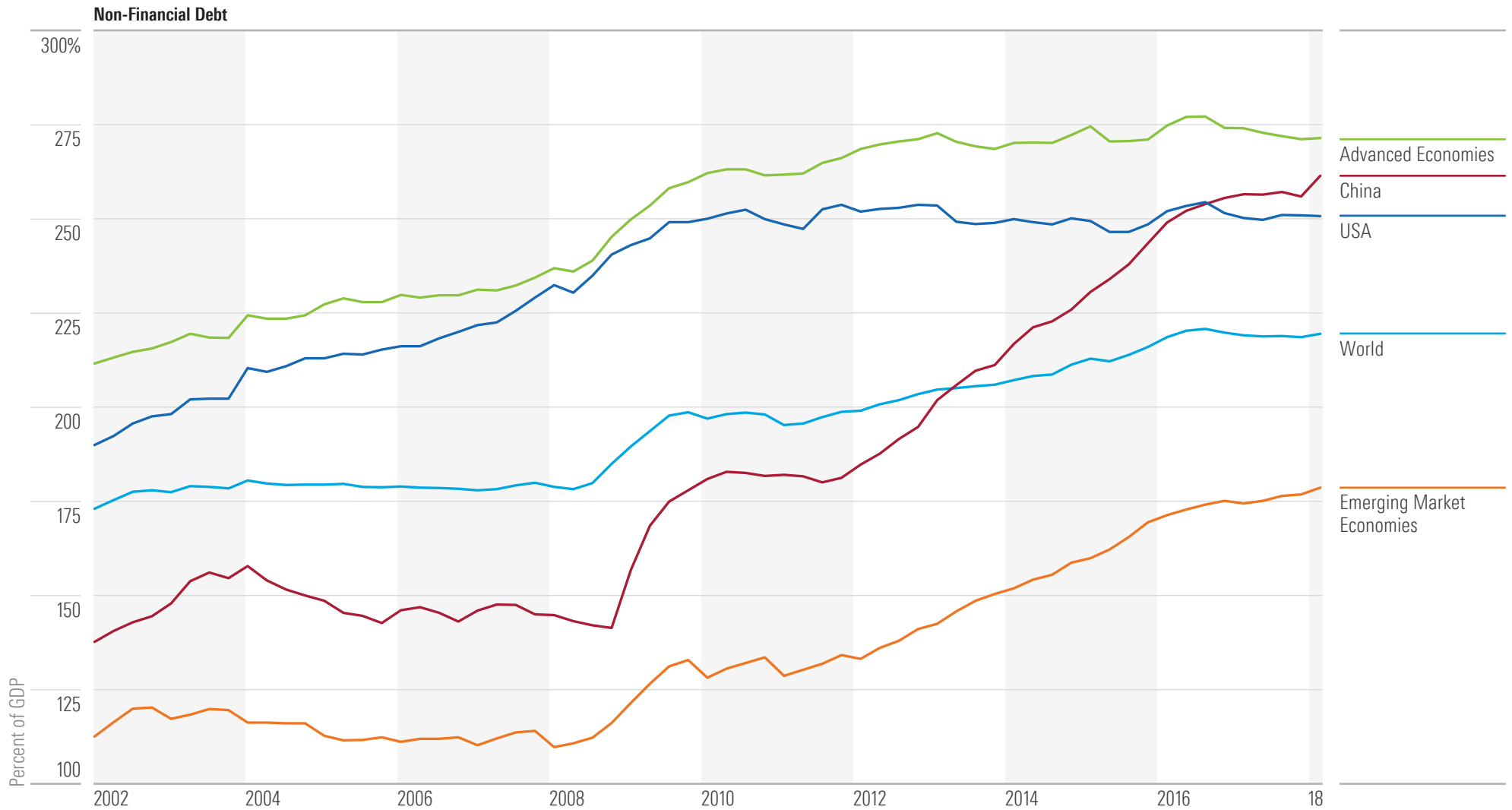
## IMF World Growth Rate Remains Strong Despite First Shots of Trade War

The current IMF world growth rate of 3.7% is projected to remain steady through 2019, but with the balance of risks more heavily skewed to the downside due to growing barriers to international trade and higher oil prices amid geopolitical tensions. Moreover, potentially positive surprises are counterbalanced by a weaker outlook for emerging markets and the belief that the economic expansion has peaked in some major economies.



## Himalayas of Debt

Since the financial crisis, enhancements to the capital strength of most banks have reduced the vulnerability of the banking system. In the meantime, however, non-financial debt has grown throughout the world, but especially in China. Credit growth is known to be a leading indicator of future declines and potential crises. Since China is centrally controlled, however, the outcome is likely to be different from how it would play out in the U.S. or Europe.



QEI109

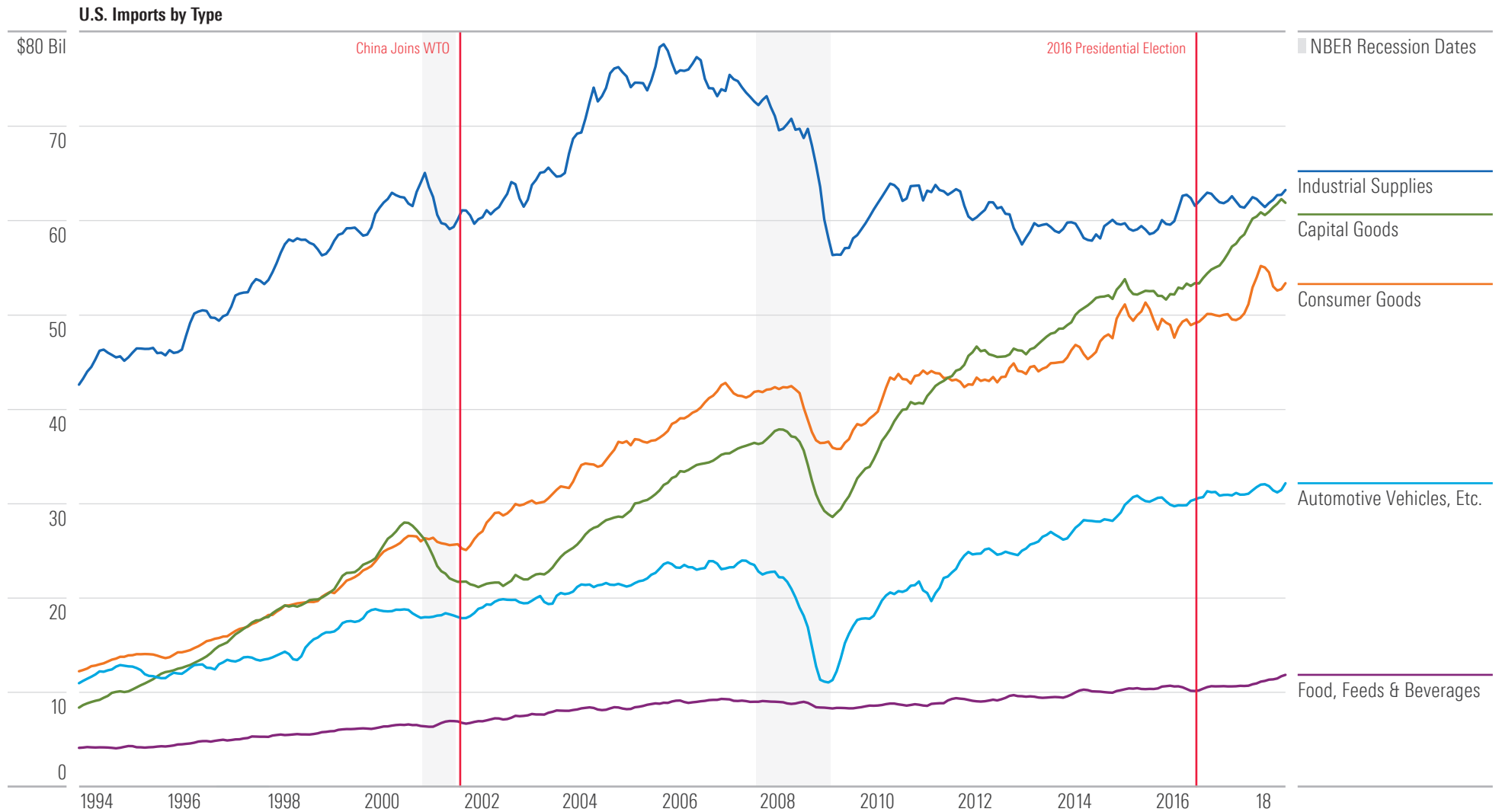
43

Source: BIS (The Bank for International Settlements). ©2018 Morningstar. All Rights Reserved.

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## U.S. Imports Have Continued to Trend Higher Despite Trade Tensions

U.S. imports increased significantly following China's ascension to the WTO in 2001. Dislocations in global supply chains following the Great Recession took their toll on some industrial goods, but other import categories have largely resumed their pre-crisis pace of growth, a trend that has persisted in 2018. Whether import patterns will eventually show meaningful change in response to the Trump administration's trade policies remains an open question, but there is little evidence of it so far.



QEI106

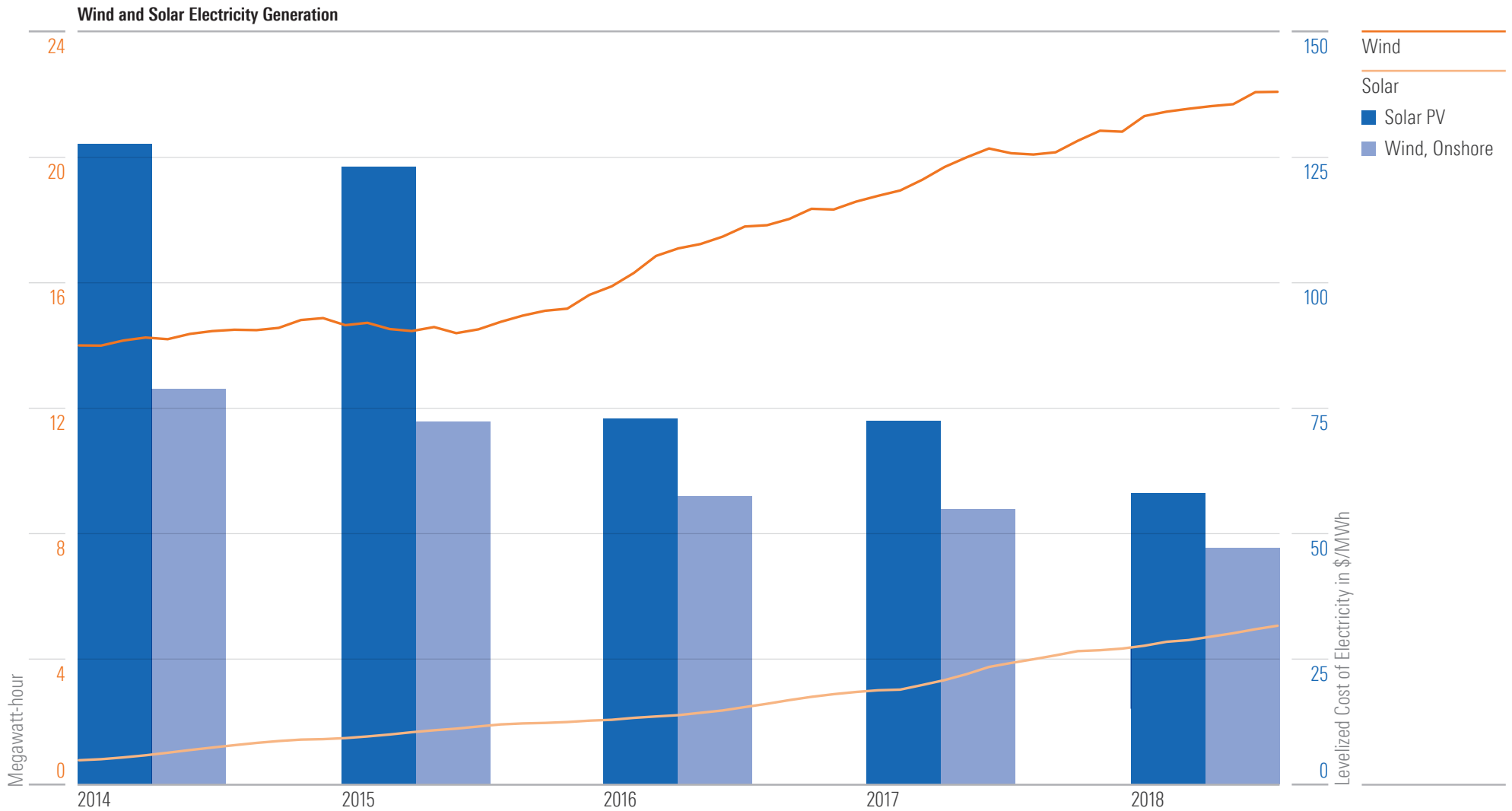
44

\*Data are in real terms (2012 dollars). Source: U.S. Census Bureau. ©2018 Morningstar. All Rights Reserved.

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## Here Comes the Sun Blowin' in the Wind

Although renewables still only account for roughly 10% of net electricity generation, wind and solar power generation has risen sharply over the last four years as the levelized cost of electricity (LCOE) has gone down. As a point of comparison, 2018 nuclear and coal LCOEs are \$90.10/MWh and \$79.50/MWh, respectively. Federal tax credits for renewable generation facilities have the potential to reduce the realized cost of renewables even further.



# Index and Disclosure



## Index Definitions

The **Morningstar Style index** family consists of 16 indexes that track the U.S. equity market by capitalization and investment style to create an integrated system. The indexes were built using a comprehensive and non-overlapping approach based on the methodology of Morningstar Style Box.

The **Morningstar Sector index** family consists of 14 indexes—three Super Sector and 11 Sector indexes that track the U.S. equity market using a consumption based analysis of economic sectors in a comprehensive, non-overlapping structure. The sector indexes are consumer defensive, healthcare, utilities, basic materials, consumer cyclical, financial services, real estate, communications services, energy, industrials, and technology.

The **Morningstar Global Equity indexes** offer a consistent view of global investment opportunities by applying the same rules for every market around the world. Covering 97% of stocks by market capitalization, the indexes encompass 45 countries in both developed and emerging markets. The index family is designed to work as an integrated system, allowing for meaningful global views across market capitalization and regions.

The **Morningstar Target Risk index** family is designed to meet the needs of investors who would like to maintain a target level of equity exposure. The index family provides global equity market risk levels that are scaled to fit five equity market risk profiles: aggressive, moderately aggressive, moderate, moderately conservative, and conservative.

The **S&P 500® index** includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

The **Russell 2000 index** measures the performance of the 2,000 smallest companies in the Russell 3000 index.

The **MSCI EAFE index** captures the returns of large and mid-cap equities across developed markets in Europe, Australasia, and the Far East, excluding the U.S. and Canada.

The **MSCI Emerging Markets index** captures the returns of large and mid-cap equities across 23 emerging markets countries. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

The **Barclays U.S. Aggregate Bond index** is a broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency).

The **Barclays U.S. 5–10 Year Corporate Bond index** measures the investment return of U.S. dollar denominated, investment-grade, fixed rate, taxable securities issued by industrial, utility, and financial companies with maturities between 5 and 10 years.

The **BofA Merrill Lynch U.S. High Yield Master II Index** tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch).

The **Barclays Municipal Bond index** measures the broad market for investment grade, tax-exempt bonds with a maturity of at least one year.

The **JP Morgan EMBI Global Diversified index** tracks the performance of dollar-denominated sovereign bonds issued by a selection of emerging market countries. The index limits the weights of countries with larger debt stocks by only including a specified portion of these countries' eligible current face amounts of debt outstanding.

The **London Fix Gold PM index** is the price of gold per ounce at 15:00 GMT determined by the five members of the London Gold Pool.

The **Bloomberg Commodity index** represents 20 commodities, which are weighted for economic significance and market liquidity.

The **Bloomberg Livestock index** reflects the returns of an unlevered investment in futures contracts on livestock commodities. The index consists of two commodity futures (lean hogs and live cattle).

The **Bloomberg Grains index** reflects the returns of an unlevered investment in futures contracts on precious metals commodities. The index consists of three commodity futures (corn, soybeans, and wheat).

The **Bloomberg Precious Metals index** reflects the returns of an unlevered investment in futures contracts on livestock commodities. The index consists of two commodity futures (gold and silver).

The **Bloomberg Industrial Metals index** reflects the returns of an unlevered investment in futures contracts on industrial metals commodities. The index consists of four commodity futures (copper, aluminum, zinc, and nickel).

The **Bloomberg Energy index** reflects the returns of an unlevered investment in futures contracts on energy commodities. The index consists of five commodity futures (natural gas, WTI crude oil, Brent crude oil, unleaded gasoline, and heating oil).

The **Morningstar® Long-Only Commodity index** is a fully collateralized commodity futures index that is long all 20 eligible commodities and uses a dollar weighted open interest weighting scheme.

The **Brent Crude Oil index** tracks the spot price of Brent Crude oil.

The **Morningstar U.S. Market index** covers the top 97% market capitalization of the U.S. equity markets.

The **Morningstar Developed Ex U.S. index** captures the performance of the stocks located in the developed countries across the world. Stocks in the index are weighted by their float capital, which removes corporate cross ownership, government holdings and other locked-in shares.

The **Morningstar Emerging Markets index** captures the performance of the stocks located in the emerging countries across the world. Stocks in the index are weighted by their float capital, which removes corporate cross ownership, government holdings and other locked-in shares.

The **Morningstar Core Bond index** is a broad investment-grade index that includes the largest, most important sectors of the investment-grade U.S. bond market. The index is comprised of the Morningstar U.S. Government Bond, U.S. Corporate Bond and U.S. Mortgage Bond indexes.

The **Morningstar Intermediate U.S. Government Bond index** includes U.S. Treasury and U.S. government agency bonds with maturities between four and seven years. The Morningstar Intermediate Corporate Bond index includes U.S. corporate bonds with maturities of between four and seven years.

The **Morningstar U.S. Corporate Bond index** includes U.S. corporate bonds with maturities of more than one year and at least \$500 million outstanding.

The **Morningstar Short-Term Core Bond index** includes all bonds in the Morningstar Core Bond Index that have maturities between one and four years.

The **Morningstar Emerging Markets Composite Bond index** includes the most liquid sovereign and corporate bonds issued in U.S. Dollars (USD) by the governments and corporations of the most prominent emerging markets.

The **Morningstar U.S. Mortgage Bond index** tracks approximately 98% of the fixed-rate mortgages issued by Ginnie Mae, Fannie Mae and Freddie Mac.

The **Morningstar Long-Term U.S. Government Bond index** includes U.S. Treasury and U.S. Government Agency bonds with maturities of seven years or longer.

The **Morningstar Long-Term Corporate Bond index** includes U.S. corporate bonds with maturities of seven years or longer.

The **Barclays U.S. Corporate High Yield index** represents the universe of fixed rate, non-investment grade debt.

The **Barclays U.S. Corporate High Yield ex-Energy index** represents the universe of fixed rate, non-investment grade debt not in the energy sector.

The **Barclays U.S. Treasury 7-10 Year Bond index** measures the performance of U.S. Treasury securities that have a remaining maturity of at least seven years and less than ten years.

The **Barclays U.S. Treasury 20+ Year Bond index** represents the performance of U.S. Treasury securities that have a remaining maturity of greater than 20 years.

The **Barclays Emerging Markets Local Currency Broad Bond index** represents the performance of the sovereign, local currency bond markets of emerging market countries. The Barclays Municipal Bond index is representative of the broad market for investment grade, tax-exempt bonds with a maturity of at least one year.

The **Citigroup WGBI Non-USD 5+ Year Bond index** measures the performance of fixed-rate, local currency, investment grade sovereign bonds. It comprises debt from over 20 countries.

The **S&P/LSTA Leveraged Loan index** tracks the universe of syndicated leveraged loans.

The **MSCI China A Local Currency index** captures large and mid-cap equities listed on the Shanghai and Shenzhen exchanges.

## Disclosures

Past performance is no guarantee of future results. This is for illustrative purposes only and not indicative of any investment. The information, data, analyses, and opinions presented herein do not constitute investment advice, are provided solely for informational purposes, and therefore are not an offer to buy or sell a security or invest in a specific asset class or strategy. An investment cannot be made directly in an index. The data assumes reinvestment of all income and does not account for taxes or transaction costs. Diversification does not eliminate the risk of experiencing investment losses. Holding a portfolio of securities for the long-term does not ensure a profitable outcome, and investing in securities always involves risk of loss.

Risk and return are measured by standard deviation and compound annual return, respectively. Standard deviation measures the fluctuation of returns around the arithmetic average return of the investment. The higher the standard deviation, the greater the variability (and thus risk) of the investment returns.

**Stocks** are not guaranteed and have been more volatile than the other asset classes.

**Small company stocks** are more volatile than large company stocks and are subject to significant price fluctuations, business risks, and are thinly traded.

**Government bonds and Treasury bills** are guaranteed by the full faith and credit of the United States government as to the timely payment of principal and interest. Bonds in a portfolio are typically intended to provide income and/or diversification. U.S. government bonds may be exempt from state taxes and income is taxed as ordinary income in the year received. With government bonds, the investor is a creditor of the government.

With **corporate bonds** an investor is a creditor of the corporation and the bond is subject to default risk. Corporate bonds are not guaranteed.

**High-yield corporate bonds** exhibit significantly more risk of default than investment grade corporate bonds.

Only insured **municipal bonds** are guaranteed as to the timely payment of principal and interest by issuer. However, insurance does not eliminate market risk. A municipal bond investor is a creditor of the issuing municipality and the bond is subject to default risk. Municipal bonds may be subject to the alternative minimum tax (AMT) and state and local taxes, and federal taxes would apply to any capital gains distributions.

**International bonds** are not guaranteed. With international bonds the investor is a creditor of a foreign government or corporation. International investments involve special risks such as fluctuations in currency, foreign taxation, economic and political risks, liquidity risks, and differences in accounting and financial standards.

**International stocks** involve special risks such as fluctuations in currency, foreign taxation, economic and political risks, liquidity risks, and differences in accounting and financial standards. Liquidity is typically lower in emerging markets than in developed markets. The risk of principal and return may be significantly greater than that of other developed international markets.

**Sector investments** are narrowly focused investments that typically exhibit higher volatility than the market in general. Sector investments will fluctuate with current market conditions and may be worth more or less than the original cost upon liquidation.

**Growth and value stocks:** Although value stocks have outperformed growth stocks, please keep in mind that each type of stock carries unique risks which include, but are not limited to, economic risk, market risk, company risk, and strategy risk.

**Gold/commodity** investments will be subject to the risks of investing in physical commodities, including regulatory, economic and political developments, weather events, natural disasters, and market disruptions. Exposure to the commodities markets may subject the investment to greater volatility than investments in more traditional securities, such as stocks and bonds.

Holders of **preferred stock** are usually guaranteed a dividend payment and their dividends are always paid out before dividends on common stock. In event that the company fails, there's a priority list for a company's obligations, and obligations to preferred stockholders must be met before those to common stockholders. On the other hand, preferred stockholders are lower on the list of investors to be reimbursed than bondholders are.

Mutual funds are sold by prospectus, which can be obtained from your financial professional or the company and which contains complete information, including investment objectives, risks, charges and expenses. Investors should read the prospectus and consider this information carefully before investing or sending money.

Holding an exchange-traded fund does not ensure a profitable outcome and all investing involves risk, including the loss of the entire principal. Since each ETF is different, investors should read the prospectus and consider this information carefully before investing. The prospectus can be obtained from your financial professional or the ETF provider and contains complete information, including investment objectives, risks, charges and expenses. ETF risks include, but are not limited to, market risk, market trading risk, liquidity risk, imperfect benchmark correlation, leverage, and any other risk associated with the underlying securities. There is no guarantee that any fund will achieve its investment objective. In addition to ETF expenses, brokerage costs apply. Fees are charged regardless of profitability and may result in depletion of assets.

**Credit/default risk:** Debt securities are subject to credit/default risk, which is the risk associated with the issuer failing to meet its contractual obligations either through a default or credit downgrade.

**Interest-rate risk:** Debt securities have varying levels of sensitivity to changes in interest rates. In general, the price of a debt security tends to fall when interest rates rise and rise when interest rates fall. Securities with longer maturities and mortgage securities can be more sensitive to interest rate changes.

This publication contains certain forward-looking statements which involve known and unknown risks, uncertainties, and other factors that may cause the actual results to differ materially from any future results expressed or implied by those projected statements. Past performance does not guarantee future results.