

# Asset Allocation Strategy

April 16, 2018

**Investment strategy guidance enhancements.**  
See page 2.

Darrell Cronk, CFA  
President, Wells Fargo Investment Institute and CIO, Wealth and Investment Management

**Global Asset Allocation Team**

Tracie McMillion, CFA  
Head of Global Asset Allocation  
Chris Haverland, CFA  
Global Asset Allocation Strategist  
Luis Alvarado  
Investment Strategy Analyst  
Ken Johnson, CFA  
Investment Strategy Analyst  
Michael Taylor, CFA  
Investment Strategy Analyst  
Veronica Willis  
Investment Strategy Analyst  
Bobby Zheng, CFA  
Investment Strategy Analyst

**Asset Class Strategists**

Paul Christopher, CFA  
Head of Global Market Strategy  
Brian Rehling, CFA  
Co-Head of Global Fixed Income Strategy  
George Rusnak, CFA  
Co-Head of Global Fixed Income Strategy  
Peter Wilson  
International Fixed Income Strategist  
Stuart Freeman, CFA  
Co-Head of Global Equity Strategy  
Sean Lynch, CFA  
Co-Head of Global Equity Strategy  
Scott Wren  
Senior Global Equity Strategist  
Sameer Samana, CFA  
Global Equity and Technical Strategist  
Peter Donisanu  
Investment Strategy Analyst  
Craig Holke  
Investment Strategy Analyst  
John LaForge  
Head of Real Asset Strategy  
Austin Pickle, CFA  
Investment Strategy Analyst  
Adam Taback  
Head of Global Alternative Investments  
Jim Sweetman  
Global Alternative Investments Strategist  
Justin Lenarcic  
Global Alternative Investments Strategist

## Focus on what you can control. And for the rest—use diversification.

Volatility has reawakened. Throughout March, and for most of the first quarter, we were reminded of this as many financial markets turned choppy and experienced declines.

The causes were many, but some clear catalysts included concerns over the possibility of a trade war, Federal Reserve (Fed) interest-rate policy, privacy issues related to social media companies, and the potential for additional technology-sector regulation. Still, volatility isn't necessarily a bad thing. In fact, it is a normal component of healthy and well-functioning markets, and it can present opportunities. Yet, fluctuating asset values can be unnerving, and fear can lead to impulsive decisions. In volatile periods, we believe that it is especially important for investors to consider the longer-term view.

### What should investors do?

Investors can't time or control the outcomes of events that roil markets. But they can plan for volatility by establishing a long-term investment plan that corresponds to their risk/return profile (the return they wish to achieve given the level of risk they are willing to take). Long-term, goals-based investors should view volatility episodes as a normal part of financial-market activity. Broad diversification across asset classes, geographies, market capitalizations, investing styles, interest-rate sensitivity, and currencies can help a portfolio weather periodic volatility—as one asset class, sector, or geography suffers, another often can mitigate the decline. To achieve the full benefit of diversification, we believe that investors should maintain their target asset mix through regular rebalancing. This includes selling



#### Important and controllable

- Development of a long-term investment plan (and revisiting that plan periodically to ensure your portfolio aligns with it)
- Portfolio diversification
- Rebalancing to capitalize upon market conditions



#### Important and uncontrollable

- Monetary and trade policy
- Market volatility
- Economic conditions

assets that have grown disproportionately in a portfolio and buying those that are below a portfolio's target allocation.

### Focus on what you can control

Our advice for investors is to focus on the elements that they can control. Start with having a clear investment plan, then move on to managing risk exposures and maintaining the flexibility to adjust when necessary. You might think of managing market volatility just as an airline pilot does when adjusting a flight path in the event that unanticipated turbulence or inclement weather affect it. Don't let short-term fluctuations derail your long-term strategy. Instead, use volatility to your potential advantage by revisiting your goals and by rebalancing regularly to your target allocation.

*Each month, this report highlights our investment strategy guidance. In this edition, we introduce a more refined, five-point rating scale for nearer-term asset class (and sector) advice. Additionally, we now are including 12-month rolling target prices for asset classes, the yen, and the euro. We believe that these investment guidance tools will allow communication of more refined and nuanced levels of conviction and the opportunity to more clearly identify risks and opportunities.*

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Global Economic Summary	Fixed Income	Equities	Real Assets	Alternative Investments	Currency Hedging Guidance	Investment Themes	Tactical Guidance	Capital Market Assumptions	Strategic and Tactical Asset Allocation
3	5	8	12	14	16	17	18	20	21

## Investment Strategy Guidance Enhancements

Starting this month, Wells Fargo Investment Institute is pleased to announce several investment strategy guidance enhancements.

### Five tiers of guidance recommendations (see pages 7, 10, 11, 15, and 19)

Wells Fargo Investment Institute (WFII) is moving to five tiers of investment guidance from the previous set of three guidance levels. The five-tiered system highlights WFII's highest conviction positions more clearly. The new guidance categories also identify asset class (and sector) opportunities that, while meaningful, may not meet a strong conviction threshold.

WFII's new five-tiered guidance will apply to all asset class and sector guidance that WFII provides. The new guidance naming conventions include the following:

- **Most favorable:** WFII's highest conviction guidance that indicates a strong desire to overweight an asset class (or sector) within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as offering investors a very attractive risk/reward opportunity.
- **Favorable:** Guidance that indicates a desire to overweight an asset class within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as providing investors with an attractive risk/reward opportunity.
- **Neutral:** Guidance that indicates a desire to maintain an asset class near the long-term (strategic) allocation guidance within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as providing investors with an acceptable risk/reward opportunity.
- **Unfavorable:** This WFII guidance level indicates a desire to underweight an asset class (or sector) within a portfolio. It also communicates that, over a tactical time frame, WFII does not view the asset class (or sector) as providing investors with an attractive risk/reward opportunity.
- **Most unfavorable:** WFII's highest conviction guidance indicating a strong belief in underweighting an asset class within a portfolio. This also communicates that, over a tactical time frame, WFII views the asset class (or sector) as offering investors a very unattractive risk/reward opportunity.

### New 12 month forward-looking market targets (see pages 6, 9, 13, and 16)

WFII's recent target guidance has been communicated as calendar year-end targets. Year-end targets will continue to be created, communicated, and updated (should our opinion change). In addition to the current year-end targets, WFII now is releasing 12 month forward-looking targets, updated on a quarterly basis.

The new 12-month forward targets will give investors a clear picture of our target outlook beyond year-end. By releasing 12-month forward targets, we hope to regularly provide clear guidance to the midpoint of our tactical time frame of 6 to 18 months. By providing both year-end targets and the new 12 month forward-looking targets, WFII's target outlook will provide consistent 12-month views on a quarterly basis throughout the year.

WFII will be communicating both high- and low-conviction ranges around the 12 month forward-looking targets. This will illustrate where WFII sees upside potential or downside risk outside of its base case. This added level of detail will apply only to WFII's 12 month forward-looking targets.

WFII's new 12 month forward-looking return targets will be published in the monthly Asset Allocation Strategy Report (this report). The graphical representation of these targets will be included in each monthly report, and the 12-month forward update will be refreshed at the beginning of each quarter. WFII plans to refresh its 12 month forward-looking market target updates (including its new high and low conviction ranges) in the April, July, October, and January Asset Allocation Strategy Report releases.

### Our enhanced investment guidance framework offers a clearer perspective

We are confident that these enhancements represent a step forward in WFII's strategy guidance. The five-level guidance framework will provide more specific granularity of WFII's views, and will communicate high conviction positions as well as more nuanced guidance. This enhanced investment guidance framework will increase the frequency of regular, periodic target guidance, and will allow communication of more refined levels of conviction and the opportunity to more clearly identify risks and opportunities.

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For additional information, please request our *Asset Allocation Special Report: Enhancing Our Investment Strategy Guidance*.

# Global Economic Summary

## United States

The final look at fourth-quarter U.S. gross domestic product (GDP) increased to a 2.9% annualized quarter-over-quarter (QoQ) expansion rate. Personal consumption growth beat expectations, at 4.0%.

March's nonfarm payroll data came in below expectations, with 103,000 jobs added to the economy. The unemployment rate held steady at 4.1%, while the participation rate declined to 62.9%. Wage growth picked up, with average hourly earnings improving to a 2.7% year-over-year (YoY) gain.

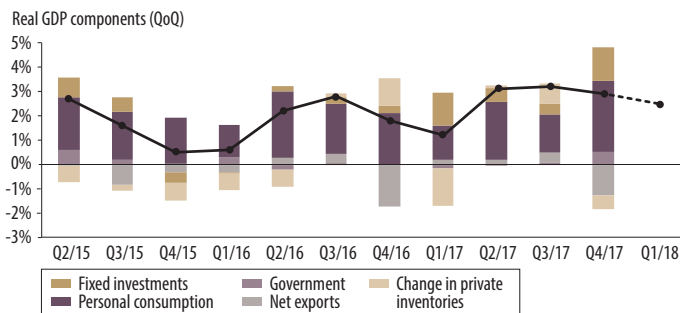
Headline inflation was mixed in February, with the Consumer Price Index (CPI) slowing to a 0.2% increase, yet rising by 2.2% YoY. Excluding the more volatile food and energy components, the CPI increased 0.2% for the month and 1.8% YoY.

The Institute for Supply Management (ISM) manufacturing and services survey data softened in March. The manufacturing survey declined from 60.8 to 59.3, while the services survey declined from 59.5 to 58.8 (a reading above 50 indicates expansion).

Consumer confidence declined to 127.7 in March—the first decline in 2018. Both the present-situation and future-expectations assessments weakened, yet they remain at very high levels.

The housing market was mixed in February. Building permits declined -4.1%, and housing starts were down -7.0%. Existing home sales increased 3.0%, to a seasonally adjusted 5.54-million-unit annual pace. New home sales decreased -0.6%, to a seasonally adjusted annual rate of 618,000 units.

### First-quarter U.S. GDP growth is expected to be tepid



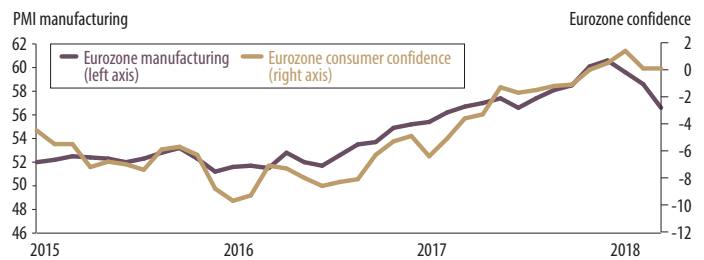
Source: Bloomberg, April 9, 2018.

## Europe

Some indicators have suggested that eurozone and U.K. economic activity have softened recently, but we continue to believe that growth generally will remain positive in Europe this year. For example, the Markit eurozone manufacturing purchasing managers' index (PMI) slowed to 55.3 in March from a multi-year high of 58.8 in January. This is the lowest index reading since January 2017, but it nevertheless continues to reflect favorable business conditions (a PMI reading above 50 reflects expanding activity).

A similar situation has developed in the U.K., where the manufacturing PMI recently has declined from a multi-year high set in November 2017. Yet, we believe that the PMI slowdowns of these two locales likely are driven by divergent themes. In the U.K., we expect household spending and business sentiment to remain subdued as Brexit-related uncertainties continue to influence the economy. For the eurozone, stronger-than-expected fourth-quarter trade likely pulled forward economic activity, contributing to slower first-quarter orders captured in PMIs.

### Business confidence has slowed, but consumer confidence remains robust



Source: Bloomberg, April 9, 2018.

## Asia

Our measures of Japanese economic activity have notably softened, largely influenced by softer industrial production readings. We believe that Japanese economic activity is likely to remain positive this year as employment conditions tighten and credit conditions continue to ease as reflected in the latest Tankan business-sentiment survey. As with the eurozone, we believe that stronger-than-expected fourth-quarter trade activity contributed to weaker-yet-transient first-quarter economic reports.

Chinese economic-activity measures continue to suggest stable-yet-slowing growth in 2018. Retail sales data, particularly relating to e-commerce, continues to expand at a stable clip. While concerns surrounding a housing-market bubble persist, recent reports of moderating prices support government efforts at curtailment of overheating activity. Credit conditions in China also point to more optimism, as loan demand from manufacturing and non-manufacturing firms recently has recovered to its highest level since 2014, according to People's Bank of China data.

Key economic statistics	First quarter 2018	Fourth quarter 2017	Third quarter 2017
<b>Global growth rates</b>			
U.S. real economic growth (GDP) <sup>1</sup>	2.5% <sup>a</sup>	2.9%	3.2%
Eurozone real economic growth <sup>2</sup>	2.6% <sup>a</sup>	2.7%	2.6%
Japanese real economic growth <sup>1</sup>	0.7% <sup>a</sup>	1.6%	2.4%
Chinese real economic growth <sup>2</sup>	6.7% <sup>a</sup>	6.8%	6.8%
<b>Key U.S. economic data</b>			
Unemployment rate	4.1%	4.1%	4.5%
Leading economic index (LEI)	0.3% <sup>a</sup>	0.6%	0.5%
Durable goods orders	-0.5% <sup>a</sup>	3.0%	2.4%
ISM manufacturing	59.3	60.8	56.6
ISM service	58.8	59.5	55.6
Retail sales	0.3% <sup>a</sup>	-0.1%	0.0%
Consumer confidence	127.7	130.0	124.9
New home sales (millions)	0.630 <sup>a</sup>	0.618	0.638
Existing home sales (millions)	5.55 <sup>a</sup>	5.54	5.67
U.S. Dollar Index	89.97	90.61	100.35
<b>U.S. inflation</b>			
Consumer Price Index (CPI)	-0.1%	0.2%	2.4%
Core CPI	0.2%	0.2%	2.1%
Producer Price Index (PPI)	0.3%	0.2%	3.0%
Core PPI	0.3%	0.2%	2.7%
Personal consumption expenditures (PCE)	N/A	0.2%	1.8% <sup>b</sup>
Core PCE	N/A	0.2%	1.6% <sup>b</sup>

<sup>1</sup> Annualized QoQ % change; <sup>2</sup> Year-over-year % change; <sup>a</sup> Bloomberg survey estimate. <sup>b</sup> YoY references February 2018; Source: Bloomberg, FactSet, April 16, 2018. See end of report for important definitions and disclosures.

## Global Economic Summary

### Wells Fargo Investment Institute forecasts

**GDP growth:** Data continue to reflect broad advancement in the global economy. We believe that the U.S. economy is in the latter stages of recovery, but we do not expect a recession this year. Further, a contraction in 2019 seems unlikely at this point in time. Economic conditions in China have stabilized; yet we believe that regulators' efforts to curb excess lending will weigh on China's growth rate. The outlook for Europe continues to improve as trade, employment, and investment activity gain pace. Japan also is experiencing a robust economic expansion, which has largely gone unnoticed.

**Inflation:** We expect inflationary pressures to stabilize in developing economies and gain pace in advanced economies in 2018. U.S. inflation continues to rise as labor-market conditions tighten, while policies could limit international trade. Stable commodity prices and a rebound in the credit cycle should help moderate inflationary pressures in emerging markets (EMs). Labor-market slack and weakness in wage growth are expected to be headwinds to inflation in international developed markets (DMs) in 2018.

**Unemployment rate:** The strong labor market is slowly raising wages and producing job openings broadly across the domestic economy. This trend has been reflected in the U.S. unemployment rate recently falling to multi-year lows. Similar developments are underway in Europe and Japan.

#### Global economy

	2018 year-end targets	2017	2016
<b>Domestic GDP growth</b>	2.9%	2.3%	1.5%
<b>Domestic inflation</b>	2.4%	2.1%	2.1%
<b>Domestic unemployment rate</b>	3.9%	4.1%	4.7%
<b>Global GDP growth</b>	3.7%	3.7% <sup>1</sup>	3.2%
<b>Developed-market GDP growth</b>	2.3%	2.3% <sup>1</sup>	1.7%
<b>Developed-market inflation</b>	2.0%	1.7%	1.3%
<b>Emerging-market GDP growth</b>	4.7%	4.7% <sup>1</sup>	4.3%
<b>Emerging-market inflation</b>	4.3%	5.0%	5.7%
<b>Eurozone GDP growth</b>	2.0%	2.7%	1.8%
<b>Eurozone inflation</b>	1.6%	1.4%	1.1%

Wells Fargo Investment Institute forecasts. Forecasts are based on certain assumptions and views of market and economic conditions, which are subject to change. GDP = gross domestic product; <sup>1</sup>IMF estimate as of December 31, 2017. See end of report for important definitions and disclosures. Sources: FactSet, Bloomberg, International Monetary Fund, and Wells Fargo Investment Institute; as of April 16, 2018.

# Fixed Income

## Market summary

Most fixed-income classes gained in March. U.S. high-yield (HY) debt was the only class that declined (-0.6%), while Treasury Inflation-Protected Securities (TIPS) rose 1.1%. Year to date, international markets generally outperformed domestic markets as most U.S. bond classes reflected first-quarter losses, fueled by rising rates.

### Market observations

**U.S. fixed income:** At Jerome Powell's first Federal Open Market Committee meeting as Fed chair, the Fed raised the fed funds rate by 0.25%. Despite this rate hike, U.S. bond classes delivered positive monthly performance. Late-March fixed-income strength stemmed from a "risk-off" trade as the equity market struggled with global-trade concerns. We believe that the U.S. economy will continue to expand in 2018, with a slight pickup in inflation, causing yields to rise modestly from current levels.

Yield-curve flattening continued, and we believe that this trend presents a tactical investment opportunity. Last month, we recommended increasing exposure on the short end of the curve (we now have a "favorable" view on short-term securities), and decreasing exposure to longer-term taxable holdings. We believe that risk-adjusted return prospects favor shorter-duration holdings. Additionally, we believe that shorter-term investment grade corporate securities (especially Financials) offer a compelling risk/return profile, as their recent yield increase stems mainly from technical pressures that we expect will correct over time.

HY corporates underperformed in March. We are unfavorable on HY as we expect continued weakness over the next 12 months. We favor moving up in credit quality.

Municipals rose by 0.4% last month as taxable yields declined. Tax season often brings some market weakness, but we believe that municipals will strengthen in coming quarters as reduced supply offers support and a large reinvestment in June could be beneficial. We view any municipal weakness as a buying opportunity. We favor a quality bias and a more defensive bond structure.

**Developed markets:** The U.S. Dollar Index (DXY) fluctuated around 90.00 in March, but ended slightly weaker, enabling unhedged DM bonds (+1.9%) to outperform hedged issues (+1.4%). While currency gains were small, capital appreciation fueled strong returns—as equity-market volatility and Treasury-bond gains pushed European sovereign yields lower—with 10-year German Bund yields ending near 0.5%, around the 2018 lows. In dollar terms, U.K. Gilts were the best performers, as yields on longer-maturity issues fell despite rising expectations of Bank of England tightening and higher short-term rates. Solid British pound gains also benefited U.K. Gilts. Peripheral Eurozone sovereigns performed well. The underperformers were Canadian and Australian bonds (whose currencies weakened on escalating trade fears).

**Emerging markets:** As trade tensions rose in March, EM currencies were mixed and little changed against the dollar overall. Yet, several markets had solid returns, including Mexico, where sentiment improved on North American Free Trade Agreement negotiations, despite global-trade jitters. Further, relatively stable yields attracted demand. Consequently, local-currency-denominated EM bonds returned

### Fixed income index total returns

	MTD	QTD	YTD	1 year	3 year	5 year
<b>U.S. Taxable Inv Grade Fixed Income</b>	0.6%	-1.5%	-1.5%	1.2%	1.2%	1.8%
<b>U.S. Short Term Taxable</b>	0.2%	-0.2%	-0.2%	0.2%	0.7%	0.8%
<b>U.S. Intermediate Term Taxable</b>	0.5%	-1.2%	-1.2%	0.6%	1.0%	1.5%
<b>U.S. Long Term Taxable</b>	1.6%	-3.6%	-3.6%	5.0%	2.1%	3.8%
<b>U.S. Treasury Bills</b>	0.1%	0.3%	0.3%	1.0%	0.5%	0.3%
<b>U.S. Municipal Bonds</b>	0.4%	-1.1%	-1.1%	2.7%	2.3%	2.7%
<b>High Yield Taxable Fixed Income</b>	-0.6%	-0.9%	-0.9%	3.8%	5.2%	5.0%
<b>DM Ex.-U.S. Fixed Income (Unhedged)</b>	1.9%	4.5%	4.5%	12.6%	5.1%	1.4%
<b>DM Ex.-U.S. Fixed Income (Hedged)</b>	1.4%	1.5%	1.5%	3.9%	2.8%	4.1%
<b>EM Fixed Income (U.S. dollar)</b>	0.4%	-1.8%	-1.8%	3.3%	5.5%	3.9%
<b>EM Fixed Income (Local currency)<sup>1</sup></b>	0.9%	4.7%	4.7%	12.3%	5.8%	-0.6%

Inv Grade indicates Investment Grade; DM indicates Developed Market; EM indicates Emerging Market.

**Past performance is no guarantee of future results.**

Returns over one year are annualized.

<sup>1</sup> Returns are converted to dollars for U.S. investors.

Sources: Bloomberg Barclays, J.P. Morgan, March 31, 2018.

See end of report for important definitions and disclosures.

0.9% to the dollar-based investor. Turkey underperformed, as Moody's rating agency downgraded its sovereign bonds from Ba1 to Ba2. U.S.-dollar-denominated (USD) sovereigns' 0.4% return was lower, as declines in (underlying) Treasury yields were offset by modest credit-spread widening. USD sovereign returns were more dispersed; Mexico contributed positively, along with near-default sovereigns such as Venezuela and Lebanon. Turkey and Russia underperformed.

### Wells Fargo Investment Institute perspective

We recommend that investors favor shorter maturities while remaining broadly and globally diversified. We favor raising average credit quality for municipals and corporates.

Aside from potential currency-appreciation gains, we see little prospect of strong DM-debt returns in 2018. Yields remain below Treasury yields and are likely to drift higher in 2018. We do expect some currency appreciation in 2018—at least from the euro—but given greater foreign-exchange uncertainty, this does not significantly outweigh the limited prospects from income and changes in capital values. We have an unfavorable view of DM debt, since the higher foreign-exchange risk is insufficiently compensated by income or capital gain prospects (the strategic index is unhedged in terms of currency exposure). We are neutral on USD-denominated EM debt (with valuations neither cheap nor excessively expensive, and positive and negative factors relatively balanced). Positive factors include an attractive (overall) EM debt yield of approximately 6%, good fiscal fundamentals, and a fairly benign global macro backdrop. Negative factors include the potential for increases in underlying U.S. Treasury yields and risks to sovereign credit ratings from domestic and international politics and trade.

**For more information, please request our most recent *Investment Strategy* report or our *Monthly Fixed Income Guidance* report.**

# Fixed Income

## Wells Fargo Investment Institute forecasts

**Interest rates:** We expect the Fed to continue increasing rates slowly and deliberately. We also continue to expect that short-term rates will remain below long-term rates, suggesting that more gas remains in the economic tank.

### Global fixed income

	2018 year-end targets	2017	2016
10-year U.S. Treasury yield	2.75%-3.25%	2.4%	2.44%
30-year U.S. Treasury yield	3.25%-3.75%	2.7%	3.07%
Fed funds rate	2.00%-2.25%	1.5%	0.75%

Wells Fargo Investment Institute forecasts. Forecasts are based on certain assumptions and views of market and economic conditions, which are subject to change. See end of report for important definitions and disclosures. Sources: FactSet, Bloomberg, International Monetary Fund, and Wells Fargo Investment Institute; as of April 16, 2018.

## Rolling 12-month forecasts

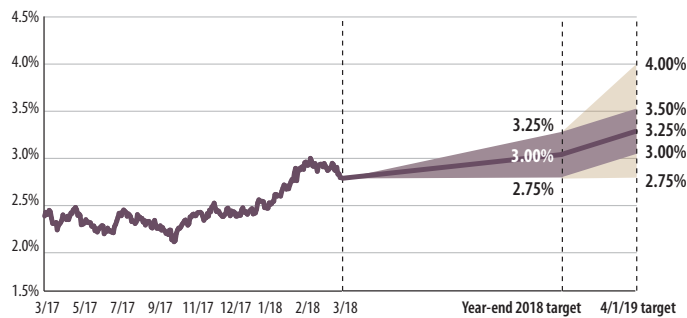
### Conviction path definitions

**Lower conviction (upper range)** The upper range of the lower conviction path may occur if economic conditions exceed expectations. Stronger domestic growth as a result of tax reform and the new government budget drives confidence higher, leading to greater household spending and business investment. Improving global growth may exceed expectations, increasing trade and investment.

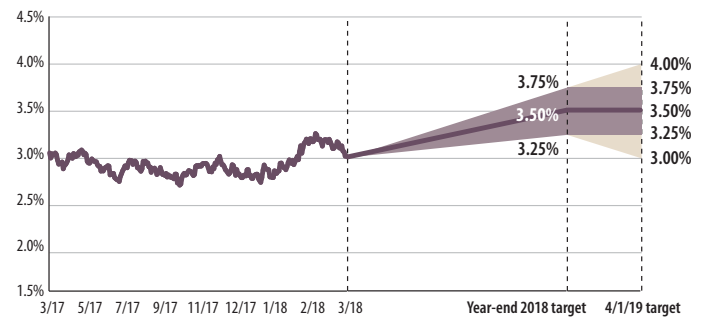
**High conviction range** The high conviction middle path factors in our base-case economic forecasts through 2018 and into 2019. Domestic growth continues to be strong, supported by tax reform and fiscal stimulus, and inflation increases moderately. Higher growth and a slight pickup in inflation is also expected in developed and emerging markets.

**Lower conviction (lower range)** The lower range of the lower conviction path may occur if events detrimental to the global economy occur. Examples include actions that negatively affect trade (increased tariffs and associated responses, withdrawal from the North American Free Trade Agreement, or NAFTA), higher-than-expected inflation, or more aggressive central bank policy. Global growth may be negatively affected by eurozone political uncertainty or unexpected military action in North Korea or the Middle East.

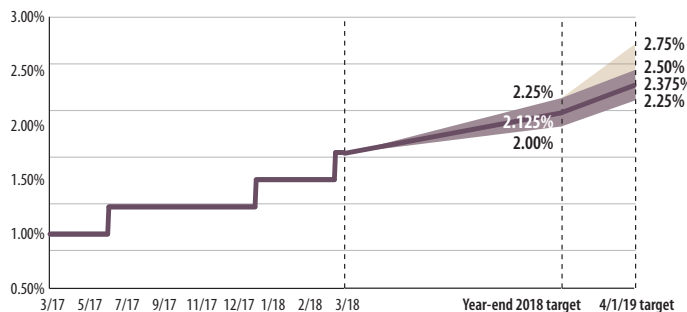
### 10-year Treasury yield



### 30-year Treasury yield



### Fed funds rate



*Past performance is no guarantee of future results.*

# Fixed Income

## Sector strategy: domestic investment-grade securities

### Sector guidance

Sector	Guidance				
	Most unfavorable	Neutral	Neutral	Neutral	Most favorable
Duration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U.S. Government	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treasury Securities	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agencies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inflation-Linked Fixed Income	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Corporate Securities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Preferred Securities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Securitized	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Residential MBS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commercial MBS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asset Backed Securities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U.S. Municipal Bonds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Taxable Municipal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
State and Local General Obligation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Essential Service Revenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pre-Refunded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Source: Wells Fargo Investment Institute, March 31, 2018.  
 See end of report for important definitions and disclosures.

**Duration (Unfavorable):** Duration positioning is critical for fixed-income investors. (Duration measures a bond’s price sensitivity to interest-rate changes.) Bonds with shorter duration tend to be less sensitive to changes in interest rates (assuming a parallel shift in the yield curve). Bond-market volatility has risen recently, but remains low by historical standards. In an environment of shrinking monetary accommodation and increased fiscal spending, we believe that higher interest-rate volatility may provide opportunities to adjust duration to capitalize upon any dislocation. We currently recommend that investors reduce duration relative to their individually selected benchmarks.

**U.S. Government (Unfavorable):** Uncertainties surrounding fiscal stimulus, funding of recent tax cuts, and the Fed’s balance-sheet reduction introduce the potential for increased sector volatility. We recommend that investors hold government-security allocations for diversification, liquidity, and situations in which investors chose to de-risk portfolios. Government securities may offer a hedge for unexpected international events or an economic slowdown and generally benefit from risk-off market events.

### Total sector returns

Sector	1 month	Year-to-date	12 months
U.S. Government	0.9%	-1.1%	0.4%
Credit	0.3%	-2.1%	2.6%
Securitized	0.6%	-1.2%	0.8%
U.S. Municipal Bonds	0.4%	-1.1%	2.7%

Source: FactSet, March 31, 2018.

**Past performance is no guarantee of future results.**

**Investment-Grade (IG) Credit (Favorable):** High-quality IG credit can allow portfolios to generate excess yield through spread premium (also known as “carry”) that is meant to compensate investors for perceived issuer credit risk. We believe that IG corporate debt offers investors better carry and liquidity per unit of risk than can be found in many other fixed-income credit offerings, such as high yield or securitized investments. While the sector appears to be fully valued, we believe that a bias toward higher quality in the current market will continue to offer valuable excess yield.

**Investment-Grade Securitized (Neutral):** Yield is an important component of an investor’s sector selection, and the securitized sector offers investors income opportunities that cannot be found in other highly-rated, fixed-income securities. This sector can provide diversification to a fixed-income portfolio and generally has less correlation to other sectors.

**U.S. Municipal Bonds (Favorable):** Despite their March gain, municipals have been challenged by rising yields year to date (YTD). New issuance has fallen by approximately one-third YTD from 2017 levels (which has been supportive). This resulted from record supply late last year, stemming from tax reform. Additionally, the new tax law eliminates municipalities’ ability to advance refund debt (existing bonds retain their tax-exempt status). Tax season often fuels market weakness, but we believe that municipals will strengthen in coming quarters as reduced supply and a large June reinvestment offer support. We view any weakness as a buying opportunity. Reduced supply could result in outperformance as municipals become even more scarce—while the tax law’s cap on state and local tax deductions increases demand. Fed rate hikes should exert upward pressure on rates that would run counter to the effects of reduced supply.

For more information, please request our most recent *Monthly Fixed Income Guidance* report.

# Equities

## Market summary

After a strong start to the year, equity markets lost ground in February and March as investor concerns over the potential for a trade war, wage-growth acceleration, higher inflation, and a higher-than-expected number of 2018 Fed rate hikes took their toll. The S&P 500 Index set an all-time record high on January 26, but has fallen by more than 7% since that date. U.S. large caps declined last month, along with international DM and EM equities. U.S. mid- and small-cap equity markets advanced, along with frontier markets. Trade-war rhetoric benefited small-cap stocks, and mid caps to a lesser extent, as these firms generate more of their business domestically than many large-cap companies do. On a YTD basis, all U.S. equity classes declined (along with DM equities), while emerging and frontier market equities gained.

### Market observations

**U.S. equities:** March was a challenging month for U.S. equity markets as tariff and regulation headlines sparked volatility.

The S&P 500 Index fell by 2.5%; most sectors were in the red. Cyclical sectors were among the worst monthly performers (Consumer Discretionary, Industrials, and Information Technology all saw significant declines as investors rotated into other equity sectors). Financials (-4.3%), and Materials (-4.2%) were the worst performers. Real Estate led with a 3.8% gain.

Mid caps (+0.1%) fared better than large caps. Energy led sector performance (+5.0%) after rebounding from a difficult February. The worst performers were Telecom Services (-3.6%), and Materials (-3.1%).

Small caps (+1.3%) were the best-performing major equity class in March. Real Estate led performance (+5.5%), while Telecom Services had the lowest sector return (-2.4%).

On a YTD basis, Growth significantly outperformed Value; yet the reverse was true last month.

**International equities:** Dollar-denominated EM and DM equities declined last month, but by less than U.S. large caps. They also fell short of monthly mid- and small-cap equity performance. Dollar-dominated frontier-market (FM) equities outperformed all U.S. classes except small caps.

Most major DM equity markets declined. Italy was the only country that gained (+0.3% in U.S.-dollar terms) as investors withstood the political instability following the election. Australian equities declined by -5.6% in U.S.-dollar terms. Like U.S. equity markets, Australian stock markets faced tariff concerns and uncertainty over regulation of global technology companies.

YTD, EM equities increased 1.5% in U.S.-dollar terms (0.8% in local currency-terms), but the region saw a significant March decline. South Korea was the best EM-equity performer (+2.6% in U.S.-dollar terms) as it withstood negative tariff headlines effectively. Turkey declined -7.3% in U.S.-dollar terms as lira pressure and the global-equity retreat weighed on sentiment.

### Wells Fargo Investment Institute perspective

We believe that U.S. tax reform and fiscal stimulus will lead to faster economic growth, better corporate earnings, and higher U.S. equity prices in 2018. We expect U.S. GDP growth of 2.9% in 2018. For the S&P 500 Index, the combined benefits of tax reform should modestly impact earnings per share (EPS)

### Equity index total returns

	MTD	QTD	YTD	1 year	3 year	5 year
<b>U.S. Large Cap Equities</b>	-2.5%	-0.8%	-0.8%	14.0%	10.8%	13.3%
<b>U.S. Large Cap (Growth)</b>	-2.7%	1.4%	1.4%	21.3%	12.9%	15.5%
<b>U.S. Large Cap (Value)</b>	-1.8%	-2.8%	-2.8%	6.9%	7.9%	10.8%
<b>U.S. Mid Cap Equities</b>	0.1%	-0.5%	-0.5%	12.2%	8.0%	12.1%
<b>U.S. Mid Cap (Growth)</b>	-0.2%	2.2%	2.2%	19.7%	9.2%	13.3%
<b>U.S. Mid Cap (Value)</b>	0.2%	-2.5%	-2.5%	6.5%	7.2%	11.1%
<b>U.S. Small Cap Equities</b>	1.3%	-0.1%	-0.1%	11.8%	8.4%	11.5%
<b>U.S. Small Cap (Growth)</b>	1.3%	2.3%	2.3%	18.6%	8.8%	12.9%
<b>U.S. Small Cap (Value)</b>	1.2%	-2.6%	-2.6%	5.1%	7.9%	10.0%
<b>DM Equities Ex-U.S. (USD)</b>	-1.7%	-1.4%	-1.4%	15.3%	6.0%	7.0%
<b>DM Equities Ex-U.S. (Local)<sup>1</sup></b>	-2.1%	-4.2%	-4.2%	5.8%	3.8%	8.9%
<b>EM Equities (USD)</b>	-1.8%	1.5%	1.5%	25.4%	9.2%	5.4%
<b>EM Equities (Local)<sup>1</sup></b>	-1.8%	0.8%	0.8%	22.4%	9.4%	8.6%
<b>FM Equities (USD)</b>	0.9%	5.2%	5.2%	27.6%	8.3%	9.1%
<b>FM Equities (Local)<sup>1</sup></b>	0.8%	4.6%	4.6%	26.5%	10.4%	12.3%

DM indicates Developed Market; EM indicates Emerging Market; FM indicates Frontier Market; USD indicates U.S. dollar.

**Past performance is no guarantee of future results.**

Returns over one year are annualized.

<sup>1</sup> Returns are in local currencies as experienced by local investors. U.S. investors would experience gains or losses on currency conversion.

Sources: Standard & Poor's, Russell Indexes, MSCI Inc., March 31, 2018.

See end of report for important definitions and disclosures.

before interest and taxes, but materially increase after-tax margins and income. Our 2018 earnings estimate is \$152. Our year-end 2018 S&P 500 Index target range is 2800-2900. For the Russell Midcap Index, our year-end 2018 target range is 2200-2300, and our 2018 earnings estimate is \$110. Our year-end 2018 target range for the Russell 2000 Index (small caps) is 1650-1750.

We look for improved earnings to help fuel DM equity gains over the balance of the year. Our 2018 earnings target for the MSCI EAFE Index is \$130. Our year-end 2018 target range for the MSCI EAFE Index is 2050-2150, while for the MSCI Emerging Markets Index, it is 1160-1240. Our 2018 earnings target for the MSCI Emerging Markets Index is \$88 per share. We expect positive earnings revisions and steady economic data to support many international equity markets. The biggest risks should come from higher global interest rates, any unexpected change in central-banks policies, and any material Chinese economic setback.

Despite the recent equity-market volatility, we expect healthy global equity performance in 2018. We recommend remaining invested at strategic target levels. We view pullbacks as an opportunity to put sidelined funds to work.

**For more information, please request our most recent Investment Strategy report.**



# Equities

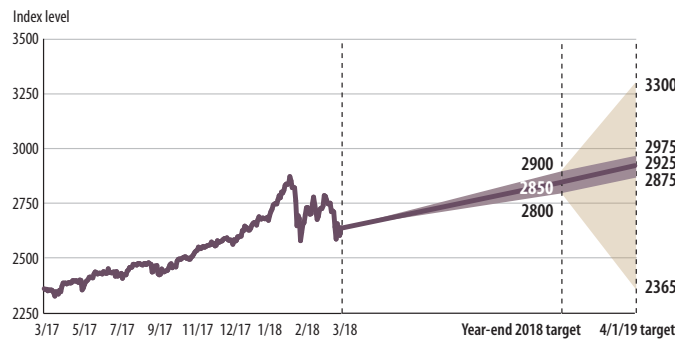
## Wells Fargo Investment Institute forecasts

**U.S. stocks:** Recent market volatility offers an opportunity to put sidelined funds to work in the equity market. We see positives in terms of faster economic growth and the new U.S. tax code. For the S&P 500 Index, we forecast \$152 in earnings (including tax-reform benefits) in 2018. This represents a 16.1% increase over 2017 EPS. Our year-end 2018 S&P 500 Index target range remains 2800-2900. For the Russell Midcap Index, our year-end 2018 target range stands at 2200-2300. We foresee mid-cap earnings of \$110 this year. Our year-end 2018 target range for the Russell 2000 Index (small caps) is 1650-1750.

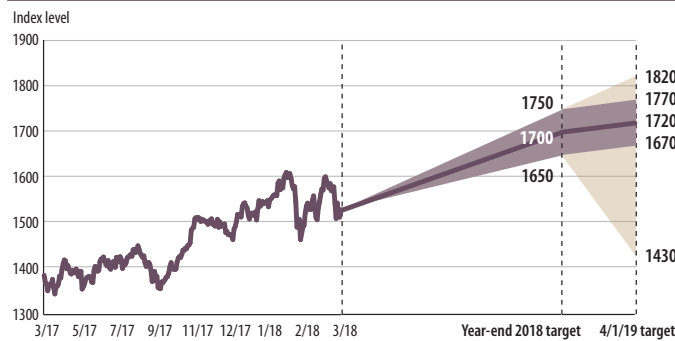
**Foreign stocks:** International stocks stalled in the first quarter as trade-issue concerns appeared to pressure valuations. For the MSCI EAFE Index, our 2018 earnings target is \$130 and our year-end 2018 target range is 2050-2150. We are assuming a price/earnings multiple of 16.2 for our year-end target price. For the MSCI Emerging Markets Index, our year-end 2018 target range is 1160-1240 and our 2018 earnings target is \$88 per share. The biggest risks are from the aforementioned trade

## Rolling 12-month forecasts

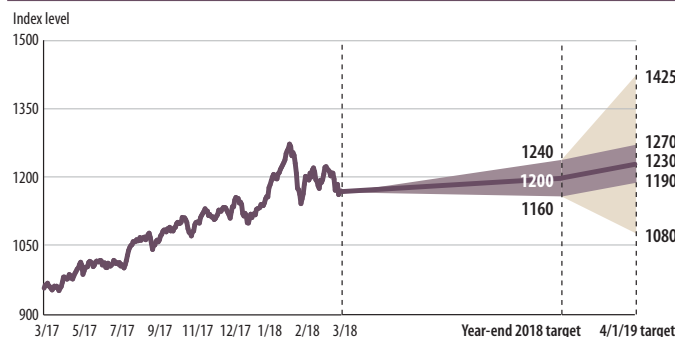
### S&P 500 Index



### Russell 2000 Index



### MSCI Emerging Markets Index



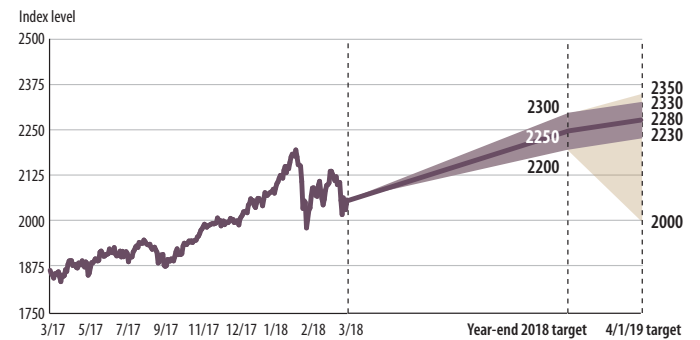
## Global equities

	2018 year-end targets	2017	2016
<b>S&amp;P 500 Index</b>	2800-2900	2674	2239
<b>S&amp;P 500 operating earnings per share</b>	\$152	\$131	\$117
<b>Russell Midcap® Index</b>	2200-2300	2078	1784
<b>Russell 2000 Index</b>	1650-1750	1536	1357
<b>MSCI EAFE Index</b>	2050-2150	2051	1684
<b>MSCI Emerging Markets (EM) Index</b>	1160-1240	1158	862

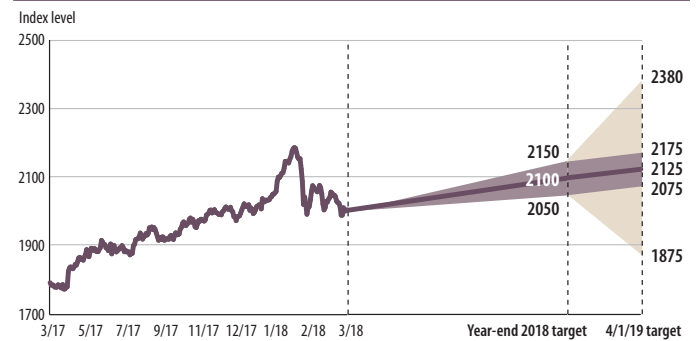
Wells Fargo Investment Institute forecasts. Forecasts are based on certain assumptions and views of market and economic conditions, which are subject to change. See end of report for important definitions and disclosures. Sources: FactSet, Bloomberg, International Monetary Fund, and Wells Fargo Investment Institute; as of April 16, 2018.

issues along with higher global interest rates, any unexpected change in central-banks policies, and any material setback to China's economy.

### Russell Midcap Index



### MSCI EAFE Index



*Past performance is no guarantee of future results.*

## Equities

### Domestic equity sector strategy

#### Sector guidance

Sector	S&P 500 Index weight*	Rec. weight	Guidance				
			Most unfavorable	Neutral	Most favorable		
Consumer Discretionary	12.7%	14.9%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Consumer Staples	7.7%	5.5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	5.7%	4.0%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financials	14.7%	16.4%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Health Care	13.7%	17.2%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Industrials	10.2%	11.6%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Information Technology	24.9%	21.8%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Materials	2.9%	3.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Real Estate	2.8%	3.1%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telecom Services	1.9%	2.5%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilities	2.9%	0.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>					

Sources: Bloomberg, Wells Fargo Investment Institute, March 31, 2018.

\*Sector weightings may not add to 100% due to rounding.

**Consumer Discretionary (Favorable):** Consumer Discretionary has been the best-performing sector since the March 2009 lows, yet it declined by 2.3% in March. We expect tax reform, strong consumer confidence, rising home and stock values, and a strengthening labor market to fuel consumer spending this year.

**Consumer Staples (Most unfavorable):** This sector is seeing headwinds from international markets and has underperformed the S&P 500 Index over the past 12 months. Unit-volume growth has been sluggish, and pricing power remains minimal. Rising interest rates are another likely valuation headwind.

**Energy (Unfavorable):** Our analysis suggests that Energy-sector valuations remain historically high. This sector was the third-best monthly performer. The problem is global oil supply versus demand. We expect lower oil prices by year-end. Lower energy prices likely would lead to lower Energy-sector equity prices.

**Financials (Favorable):** Stronger economic growth and loan demand over the next 12 months should help Financials. Financials had one of the highest effective tax rates for U.S. sectors, and should benefit from the new tax code. The time frame for this tactical positioning is somewhat longer than most, at 12 to 18 months.

**Health Care (Favorable):** We believe that relative valuations and demographic trends remain attractive in this sector. While potential drug-price controls have been a concern, we do not believe this pricing issue has a high probability of significantly impacting pharmaceutical and biotechnology firms. Political uncertainty is a headwind, as repeal of the health-care mandate (effective in 2019) could prompt Congress to revisit Affordable Care Act repeal.

**Industrials (Favorable):** Our favorable Industrials position reflects our expectation for better global economic growth in this portion of the cycle. Lower federal taxes should benefit domestically focused small- and mid-cap Industrials with high effective tax rates. The tax law's full equipment capital expensing feature should create stronger demand for Industrials-sector products. Hurdle rates for new spending projects should

#### Total returns: S&P 500 Index groups

Sector	1 month	Year-to-date	12 months
Consumer Discretionary	-2.3%	3.1%	16.9%
Consumer Staples	-0.9%	-7.1%	-0.9%
Energy	1.7%	-5.9%	-0.2%
Financials	-4.3%	-1.0%	18.0%
Health Care	-3.1%	-1.2%	11.3%
Industrials	-2.7%	-1.6%	14.0%
Information Technology	-3.9%	3.5%	27.7%
Materials	-4.2%	-5.5%	10.5%
Real Estate	3.8%	-5.0%	1.7%
Telecom Services	-1.0%	-7.5%	-4.9%
Utilities	3.8%	-3.3%	1.9%
<b>S&amp;P 500 Index</b>	<b>-2.5%</b>	<b>-0.8%</b>	<b>14.0%</b>

Source: FactSet, March 31, 2018.

**Past performance is no guarantee of future results.**

be lower. This sector historically has performed well late in the cycle. A trade war would be negative for Industrials.

**Information Technology (Neutral):** Information Technology (IT) underperformed last month as investors worried about social-media privacy issues and slower earnings growth this year versus last year. Better global growth should continue to benefit IT. An increase in capital spending could boost revenue and operating leverage, supporting earnings. Valuations are not far above the historical median after the recent pullback. IT remains the most heavily weighted sector in the S&P 500 Index.

**Materials (Neutral):** This sector has underperformed the S&P 500 Index in the 1-, 6-, and 12-month periods. We expect weaker commodity prices in 2018, despite modestly improving global growth. We remain neutral for now.

**Real Estate (Neutral):** Real Estate outperformed the S&P 500 Index in March. Year to date, it has been negatively affected by higher bond-market yields. We are comfortable with a neutral recommendation from a sector (not asset class) standpoint today.

**Telecom Services (Unfavorable):** Telecom Services offers the highest yield within the 11 S&P 500 Index sectors, and it outperformed the S&P 500 Index last month. Pricing and competition are tough, but potential regulatory relief may become a benefit.

**Utilities (Most unfavorable):** An above-average dividend yield, along with this sector's non-cyclical characteristics, helped Utilities tie for the top sector-performance spot last month, but Utilities have underperformed over the past 12 months. Further interest-rate increases are a potential headwind this year.

**Growth versus Value (Neutral):** The Trump administration's policies are likely to play into this relative performance once we gain more clarity on which policies might be enacted (beyond tax reform). Looking ahead, when most cycles reach their final stages, Growth usually outperforms Value. For now, we remain neutral.

# Equities

## International equity market strategy

### Developed Market Ex.-U.S. Equities

**Europe region (Neutral).** We maintain our neutral rating on European equities. Our conviction on the region has moderated over the past month as economic indicators have softened. Strong market fundamentals have balanced with weaker economic indicators, supporting our current view.

**Economic:** Economic data has surprised European forecasters with less frequency over the past month and has disappointed observers in some cases. Expectations may have been set too high after a strong fourth quarter. We believe that the latest weak data is not a harbinger of a broader economic slowdown, but we would grow concerned if data continued to surprise to the downside.

**Market valuations:** Valuations were broadly higher following a sharp sell-off in European equity markets in March. While prices have fallen, earnings growth remains positive.

**Market internals:** Fund flows into the European region slowed last month, while risk sentiment indicators eased. Our market internals work is mostly neutral, with a slight bias toward an unfavorable view as our technical indicators remain largely bearish on U.K. equities.

**Pacific region (Favorable).** Our favorable Pacific-region rating remains unchanged. Near-term economic trends and market internals are positively biased, while valuations have become more favorable over the past month.

**Economic:** Measures of long-term economic trends reflect positive activity in Australia, Singapore, and Hong Kong. Nevertheless, this trend recently has eased as measures of Japanese industrial production and consumer credit utilization have slowed.

**Market valuations:** The March stock-market pullback, coupled with rising earnings growth, has made the region's equities more attractive. While economic indicators have come off their recent highs, positive earnings-growth momentum nevertheless appears intact.

**Market internals:** Internals reflect balanced market conditions after weakening sharply in the fourth quarter. Fund flows reflect bullish market conditions, while sentiment has been negative following a bout of market volatility. Longer-term technical work supports upward price momentum in Pacific-region stocks (in Japan and Hong Kong, particularly) relative to the broad stock-market benchmark.

### Emerging Market Equities

**Emerging Asia (Neutral).** Emerging Asia equity markets appear to be trending back toward favorable conditions, yet we maintain our neutral regional rating. Improvements in regional economic and earnings fundamentals remain intact, while measures of valuation and technicals are improving.

**Economic:** Long-term economic trends have strengthened across the region, notably in China. A mix of positive and negative economic surprises, coupled with a more neutral bias in China's long-term growth momentum, suggests that economic-growth momentum, while positive, may be leveling off.

**Market valuations:** Equity markets in Emerging Asia are more reasonably priced following March's sell-off, coupled with rising corporate earnings. We expect an ongoing regional earnings recovery to support more favorable valuations, but we view the region as fairly valued. Elevated prices in the technology-sensitive regional index make the region's markets susceptible to higher levels of volatility.

**Market internals:** Recent fund-flow data reflects neutral positioning for market internals. Moving-average, volume, and sentiment readings are balanced as well. Our risk sentiment and breadth work have weighed on internals; yet market technicals support our current regional rating.

**Emerging Europe, Middle East and Africa (EMEA) region (Neutral).** Improvement in the EMEA region's economic, earnings, and market environment continue to underpin our neutral rating. We expect that ongoing geopolitical concerns and commodity-price volatility may challenge investment sentiment in the region. Nevertheless, we believe that these negative expectations are balanced against a firming fundamental environment.

**Economic:** Strengthening growth trends and higher incidences of positive data-release surprises continue to characterize the generally improving regional economic environment. We believe that this trend will persist in the coming year.

**Market valuations:** Valuations are slightly more favorable in the region after March's equity-market correction. Earnings growth accelerated in 2017 and has remained positive in 2018.

**Market Internals:** Market-internal indicators are negatively biased, as neutral readings on moving average, breadth, and volume are weighed against weaker output from our sentiment work. Technicals reflect an unfavorable rating when measured against the broader emerging-market benchmark over a longer time period.

**Latin America region (Neutral).** Our neutral guidance for Latin America largely reflects improving economic and earnings fundamentals; yet we maintain a cautious near-term outlook on the region's markets. We expect heightened levels of equity-market volatility in the region, given ongoing political uncertainties, coupled with stretched valuations.

**Economic:** Measures of growth have shown that Brazil's economy posted its first year-end gain since 2013. Long-term measures of economic activity in Mexico are positively biased, despite pressures from trade-policy uncertainties and a weaker peso.

**Market valuations:** Valuations for Latin American equities have improved after March's sell-off. Relative to the other international regions, however, valuations in Latin American equities are not cheap. Much of this valuation differential can be attributed to Brazilian markets. Although they have been robust, they remain susceptible to speculative flows.

**Market internals:** Market internals are balanced with a positive bias. Long-term technicals suggest Latin American equities may continue to face headwinds in the coming months.

### International equity guidance by regions

Region	Benchmark weight*	Regional guidance			
		Most unfavorable	Neutral	Most favorable	
<b>Developed Market Ex.-U.S. Equities</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Europe</b>	61%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Pacific</b>	39%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Emerging Market Equities</b>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EM Asia</b>	74%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>EM Europe, Middle East and Africa</b>	13%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Latin America</b>	13%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

\*Benchmarks are MSCI EAFE for DM and MSCI Emerging Markets for EM. Source: Wells Fargo Investment Institute, March 31, 2018. We provide additional context for this regional tactical positioning in our *International Strategy* reports.

## Real Assets

### Market summary

Within real assets, master limited partnerships (MLPs) had the worst first-quarter performance (down by more than 10%), public real estate declined by approximately 4%, while commodities fell by less than 1%. Interest rates, tariffs, equity-market volatility, and regulatory rulings are some of the headlines that impacted performance.

#### REITs and MLPs

##### Market observations

**Real estate investment trusts:** Domestic real estate investment trusts (REITs) gained nearly 4% in March as interest rates retreated from their February peak. In spite of the impressive one-month return, domestic REITs are down nearly 7% YTD. Domestic REITs were hurt YTD as bond yields spiked and equity markets fell. International REITs weathered the storm much better, declining by less than 1% in the first quarter. Public real estate fundamentals and valuations generally remain attractive as economic growth is expected to accelerate (demand) and supply remains in check in many sectors, while REITs now trade at a steep discount to their underlying real-estate holdings. The main risk to our positive REIT outlook is that interest rates could rise too far, too fast.

**Master limited partnerships:** An unfavorable regulatory ruling in March was the latest in a string of negative developments for MLPs since oil prices started their descent in 2014. These developments included the oil-price collapse (since 2014), a wave of exploration and production company bankruptcies (the main customers of MLPs), higher interest rates, cuts in capital expenditures, distribution cuts, tariffs (which could raise input costs), and now regulatory issues. As a result of the past four years of poor performance, MLPs are now relatively cheap versus most other assets. Yet, cheapness alone is not enough of a reason to turn favorable on an asset group, and we remain neutral on MLPs today. We would need some positive fundamental or technical trigger to make us more optimistic toward MLPs than we are currently.

##### Wells Fargo Investment Institute perspective

REITs and MLPs typically provide income opportunities for investors, but the main drivers for these two sectors differ. For REITs, we believe that the global fundamentals remain generally supportive, and we hold a favorable view for public real estate (which encompasses both domestic and international REITs). For MLPs, investors' search for yield potential and relative valuation serve as positives. We are neutral on MLPs and recommend that investors consider high-quality, midstream MLPs that are large and liquid.

##### Real assets index total returns, REITs and MLPs

	MTD	QTD	YTD	1 year	3 year	5 year
Public Real Estate	2.5%	-4.3%	-4.3%	4.2%	2.4%	5.0%
Domestic REITs	3.7%	-6.7%	-6.7%	-1.1%	2.9%	6.7%
International REITs	1.1%	-0.5%	-0.5%	14.6%	4.6%	4.4%
Master Limited Partnerships	-6.9%	-11.1%	-11.1%	-20.1%	-11.2%	-5.8%

##### Past performance is no guarantee of future results.

Returns over one year are annualized.

Sources: Public Real Estate: FTSE EPRA/NAREIT Developed Index. Domestic REITs: FTSE NAREIT All Equity REITs Index. International REITs: FTSE EPRA/NAREIT Developed ex-U.S. Index. MLPs: Alerian MLP Index, March 31, 2018. See end of report for important definitions and disclosures.

### Commodities

#### Market observations

Commodity performance continued to diverge in March, with gains in energy commodities offsetting losses in the agricultural and industrial metals sectors. We expect the broad commodity indices to stabilize, but we anticipate that performance divergence among individual commodities will widen. This would be typical for this stage in a commodity bear super-cycle.

**Metals:** Precious-metal prices finished March slightly higher than the level where they started last month. Prices were supported by a weaker U.S. dollar, higher inflation expectations, and perceived safe-haven demand as concerns over a trade war grew. In the longer term, precious metals could face pressure as the Fed continues raising interest rates. Monetary-policy divergence is likely to increase, putting additional pressure on gold and other precious metals. Base-metals prices continued to slide last month, despite dollar weakness as investors showed concern over the impact of a potential trade war on industrial-metal demand. Along with excessive base-metal supplies, these concerns should limit the upside potential in prices.

**Energy:** Crude-oil prices (both West Texas Intermediate, or WTI, and Brent) and natural-gas prices rose in March. Crude-oil prices gained traction due to speculation that the U.S. will re-impose sanctions on Iran—thus (potentially) decreasing global oil supplies. Yet, global supplies remain high, and U.S. production has reached record levels. Global demand for oil has improved, but oversupply may remain a major issue preventing sustained price increases. Natural-gas prices have fallen from highs set in January as demand began to slow and temperatures increased.

**Agriculture:** Grains prices were supported in the second half of March by the U.S. Department of Agriculture reporting smaller-than-expected planted acreage estimates for corn and soybeans. Despite this report, most agricultural commodities still finished the month lower due to oversupply. Foreign demand has been strong, but investors have shown concern over the impact of a potential trade war on commodities such as soybeans. In the near term, unfavorable weather conditions could support grains prices.

##### Wells Fargo Investment Institute perspective

We believe that most commodities could suffer headwinds from general oversupply going forward. A healthy global economy, increased inflation expectations, and geopolitical concerns could support some commodities, but a more stable dollar and higher interest rates could prevent commodity prices from rallying. Overall, commodities appear to be in a range-bound period and could underperform this year. We hold an unfavorable view for this asset class.

##### Real assets index total returns, commodities

	MTD	QTD	YTD	1 year	3 year	5 year
Commodities (BCOM)	-0.6%	-0.4%	-0.4%	3.7%	-3.2%	-8.3%

##### Past performance is no guarantee of future results.

Returns over one year are annualized.

Source: Bloomberg, March 31, 2018.

See end of report for important definitions and disclosures.

For more information, please request our most recent *Investment Strategy* report.

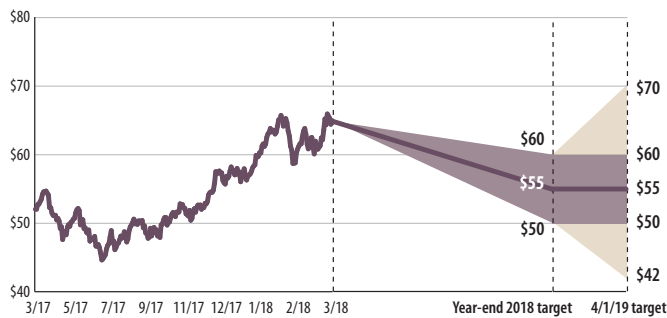
# Real Assets

## Wells Fargo Investment Institute forecasts

**Commodities:** We anticipate that WTI crude-oil prices will end 2018 between \$50 and \$60 a barrel. We expect global supply to balance better against global demand as prices settle in this range. Gold-price volatility could increase as interest rate, dollar, and geopolitical uncertainties persist. Investor sentiment could weaken, and monetary policy divergence supports the dollar. We expect gold prices to end 2018 between \$1,250 and \$1,350 per troy ounce.

### Rolling 12-month forecasts

#### West Texas Intermediate crude oil

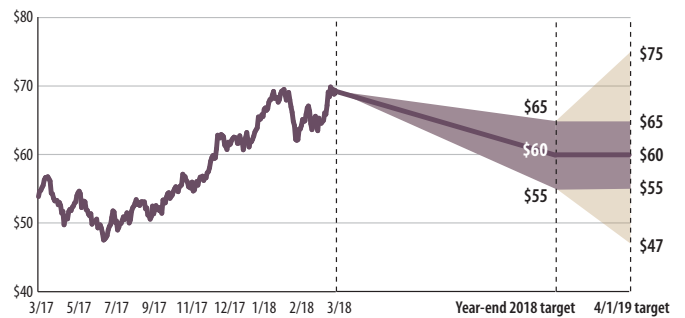


#### Global real assets

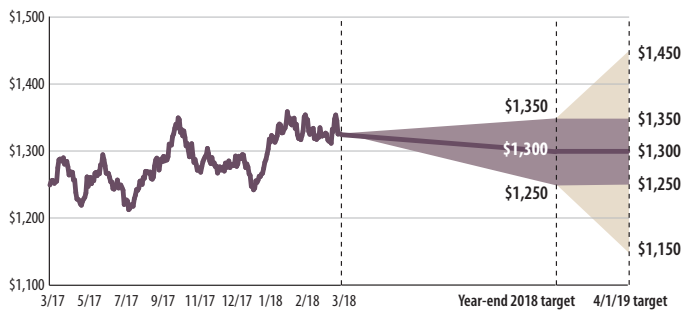
	2018 year-end targets	2017	2016
West Texas Intermediate crude oil price (\$ per barrel)	\$50-\$60	\$60	\$54
Brent crude oil price (\$ per barrel)	\$55-\$65	\$67	\$57
Gold price (\$ per troy ounce)	\$1,250-\$1,350	\$1,309	\$1,152

Wells Fargo Investment Institute forecasts. Forecasts are based on certain assumptions and views of market and economic conditions, which are subject to change. See end of report for important definitions and disclosures. Sources: FactSet, Bloomberg, International Monetary Fund, and Wells Fargo Investment Institute; as of April 16, 2018.

#### Brent crude oil



#### Gold



*Past performance is no guarantee of future results.*

## Alternative Investments\*

### Market summary

Early estimates from Hedge Fund Research, Inc. (HFR) indicate negative March returns, but outperformance against global equity markets. In consecutive months, the Equity Hedge strategy provided downside protection while maintaining conviction in long positions. IT stocks fell; yet net sector exposure reductions (overall) were attributed to adding to short positions (more than to exiting long positions). Following a difficult February, when long equity positioning hurt returns, Systematic Macro managers held up fairly well as short USD and long energy positioning drove returns. Overall, Event Driven and Relative Value strategies remained resilient as credit markets experienced less stress than equities.

**Relative Value:** Structured Credit and less directional Long/Short Credit strategies outperformed bond markets—with market hedges and alpha short positions providing downside protection as rates and volatility rose. Loans outperformed high-yield credit and were insulated from broader volatility, benefiting Structured Credit.

**Macro:** Systematic Macro strategies' losses from long equity exposure were offset by short USD and long Energy positioning. The Fed kept interest-rate projections unchanged, leading to a weakening USD, while oil prices rose with Middle East geopolitical tensions and U.S. inventories rising more than anticipated.

**Event Driven:** Credit-oriented Event Driven strategies were resilient as credit markets held up relatively well. Merger Arbitrage strategies faced headwinds as a number of large, later-stage deals faced more regulatory pushback, leading to widening spreads.

**Equity Hedge:** Long and short alpha from Equity Hedge managers was apparent in March. Sentiment remained relatively high, compared to recent years as IT and Industrials exposure are the larger allocations.

### Market observations

Recent financial-market turmoil reversed previously strong hedge fund performance. Though the March sell-off was less severe than in February, the takeaways are similar. Hedge funds navigated the environment better than in other post-crisis sell-offs characterized by swift risk-off/risk-on environments. Although net exposure decreased as volatility rose, March levels remained elevated from historical standards. Overall, hedge funds provided downside protection, and outperformed global equities, fixed income, and commodities YTD (broadly speaking).

### Wells Fargo Investment Institute perspective

**Relative Value:** The shorting of corporate credit that many Relative Value managers used to reduce risk benefited portfolios in March. Asset-backed securities and leveraged loans were largely immune to the recent equity volatility, and there is a growing level of dispersion in the corporate-credit space. This bodes well for Relative Value in general, and long/short credit specifically.

**Macro:** After a difficult February, the environment was mixed in March. Weaker equity and base-metal trends were offset by resumption of long-term Energy market trends. Managers increased long Energy exposure, shifted to long bond positioning, and reduced exposures to short USD.

### Alternative investments index total returns

	MTD	QTD	YTD	1 year	3 year	5 year
<b>Global Hedge Funds</b>	-0.2%	0.3%	0.3%	6.3%	3.6%	4.3%
<b>Relative Value</b>	0.0%	0.8%	0.8%	3.7%	3.8%	4.2%
Arbitrage	0.1%	2.2%	2.2%	3.2%	3.9%	3.0%
Long/Short Credit	0.0%	1.1%	1.1%	5.6%	5.2%	4.3%
<b>Struct Credit/Asset-Backed</b>	0.5%	2.3%	2.3%	7.3%	5.3%	6.4%
<b>Macro</b>	-0.2%	-1.0%	-1.0%	1.3%	-0.8%	0.9%
Systematic	0.1%	-2.3%	-2.3%	1.0%	-2.9%	0.8%
Discretionary	-1.2%	-0.6%	-0.6%	-1.0%	-0.6%	-0.5%
<b>Event Driven</b>	-0.5%	0.2%	0.2%	5.2%	4.1%	4.7%
Activist	2.1%	-1.0%	-1.0%	2.7%	4.0%	6.4%
Distressed Credit	-0.3%	0.5%	0.5%	4.1%	3.9%	4.0%
Merger Arbitrage	-0.5%	0.7%	0.7%	4.1%	3.3%	3.5%
<b>Equity Hedge</b>	-0.3%	0.7%	0.7%	9.8%	5.3%	5.7%
Directional Equity	0.4%	2.0%	2.0%	8.7%	4.1%	5.9%
Equity Market Neutral	0.3%	0.7%	0.7%	4.4%	3.5%	3.9%

### Past performance is no guarantee of future results.

Returns over one year are annualized.

Source: Hedge Fund Research, Inc., March 31, 2018.

See end of report for important definitions and disclosures.

**Event Driven:** Credit markets held up well in March, and deal activity remained healthy. Merger announcements have remained elevated, along with recent widening in merger arbitrage spreads, which can provide Event Driven managers with trading opportunities until the stressed and distressed cycles begin to accelerate.

**Equity Hedge:** Despite a recent increase in equity correlations, we maintain a “most favorable” view on Equity Hedge. We view the rise in correlations as temporary, and anticipate a robust environment for stock selection, driven by rising rates and inflation, along with the Fed’s balance-sheet reduction.

**Private Equity:** While we remain neutral on Private Equity, we have a high level of conviction in certain niche strategies and geographies in which valuations are more attractive and capital-market funding is tighter. Smaller market buyout funds have the potential to generate strong returns through a less competitive marketplace and the generally higher growth potential of smaller firms.

**Private Debt:** We remain constructive on private debt funds, due to their historical ability to capitalize on illiquidity to deliver expected cash yields and total returns at a premium to those available in public or broadly syndicated debt markets. Additionally, several private debt strategies benefited from rising rates, due to their issuance of floating-rate debt.

**Private Real Estate:** We remain neutral on Private Real Estate. Despite the recent reduction in core commercial property values, we believe that many core markets are fully priced and expectations for returns should be based on income generation, rather than capital appreciation. We see more capital appreciation potential in certain opportunistic and value-added strategies.

**For more information, please request our most recent *Global Alternatives Outlook* or our *Investment Strategy* report.**

\*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Please see end of report for important definitions and disclosures.

# Alternative Investments\*

## Strategic outlook

### Alternative investments strategies outlook\*

Hedge fund strategies	HFRI YTD performance (through 3/31/18)	Guidance			
		Most unfavorable	Neutral	Most favorable	
Relative Value	0.8%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Arbitrage	2.2%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Long/Short Credit	1.1%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Structured Credit/Asset-Backed	2.3%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Macro	-1.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Systematic	-2.3%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discretionary	-0.6%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Event Driven	0.2%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Activist	-1.0%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distressed Credit	0.5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Merger Arbitrage	0.7%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equity Hedge	0.7%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Directional	2.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Equity Market Neutral	0.7%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Source: Wells Fargo Investment Institute, March 31, 2018.

### Notes on performance numbers

HFR maintains two sets of indices to report hedge fund performance. This report generally uses the HFRI series, which covers a select subset of the manager universe.

*Relative Value* strategy performance is represented by the HFRI Relative Value Arbitrage Index. Arbitrage strategy performance is represented by the HFRI Relative Value: Fixed Income—Sovereign Index. Long/short credit strategy performance is represented by the HFRI Relative Value: Fixed Income—Corporate Index. Structured Credit/Asset Backed strategy performance is represented by the HFRI Relative Value: Fixed Income—Asset Backed Index.

*Macro* strategy performance is represented by the HFRI Macro/CTA Index. Systematic strategy performance is represented by the HFRI Macro: Systematic Diversified CTA Index. Discretionary strategy performance is represented by the HFRI Macro: Discretionary Thematic Index.

*Event Driven* strategy performance is represented by the HFRI Event Driven Index. Activist strategy performance is represented by the HFRI Event Driven: Activist Index. Distressed Credit strategy performance is represented by the HFRI Event Driven: Distressed Restructuring Index. Merger Arbitrage strategy performance is represented by the HFRI Event Driven: Merger Arbitrage Index.

*Equity Hedge* strategy performance is represented by the HFRI Equity Hedge Index. Directional Equity strategy performance is represented by the HFRX Equity Hedge: Multi-Strategy Index. Equity-Market Neutral strategy performance is represented by the HFRI Equity Hedge: Equity Market Neutral Index.

#### Highest-conviction strategies

Relative Value – Long/Short Credit  
 Relative Value – Structured Credit  
 Macro – Discretionary  
 Event Driven – Distressed  
 Equity Hedge – Directional/Low Net  
 Private Debt

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## Currency Hedging Guidance

### The U.S. dollar versus developed-market currencies

#### Market observations and outlook

After a weak start to the year, the U.S. Dollar Index (DXY) traded narrowly around the 90.00 level throughout March, closing just 0.7% lower. Traders are unsure of the long-run implications of trade and tariff initiatives and are unclear on the direction of the next move. The euro gained 1.1% against the dollar in March. The yen remained subject to upward pressure from trade and “currency war” speculation, as well as from the risk-averse response to equity volatility. Yet having rallied strongly in February, it rose only 0.4% in March. The pound continued to push higher, gaining almost 2% on Brexit news and Bank of England rate-increase expectations. Our year-end forecast for the dollar versus the euro is 1.24 to 1.32 dollars per euro, and the expected range for the yen versus the dollar is 102 to 112 yen per dollar. The year-end range for DXY implied by our forecasts is (broadly) 85–91, so we expect a little more dollar weakness this year. We expect these trends to continue into 2019, anticipating a euro range of 1.26–1.34 and a yen range of 101.50–111.50 at a one-year horizon. Around those ranges, as the charts indicate, we see a greater likelihood of euro strength. Yet, while upside pressure on the yen may continue, we believe that gains below 100 versus the dollar will be increasingly harder to achieve as policymakers resist yen appreciation.

#### Year-end 2018 currency targets

	March 31, 2018	Year-end 2018 forecasts	Expected return versus U.S. dollar
Dollars per euro	\$1.23	\$1.24–\$1.32	3.9%
Yen per dollar	¥106	¥102–¥112	-0.7%

Source: Wells Fargo Investment Institute, March 31, 2018.

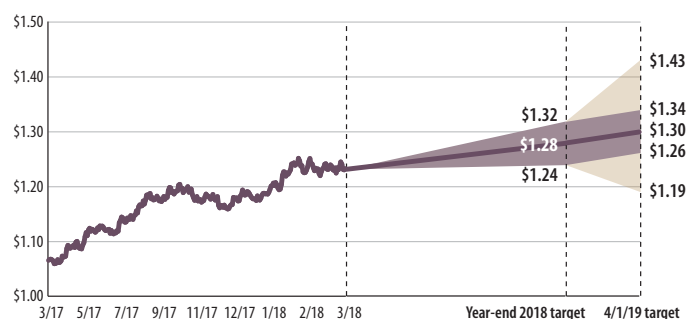
### The U.S. dollar versus emerging-market currencies

#### Market observations and outlook

In aggregate (whether considering bond-market-weighted or equity-market-weighted baskets) EM currencies were little changed versus the dollar in March. Individual performance was mixed, with the Mexican peso gaining most on hopes of a NAFTA compromise, while the Turkish lira fell by almost 4% as the sovereign credit was downgraded. If the relatively benign macroeconomic environment for EMs persists in 2018, then we anticipate continued moderate currency appreciation, as investment flows that have favored EMs in recent years should

### Rolling 12-month forecasts

#### Dollar/Euro exchange rate



be set to continue. However, EM currencies will remain subject to economic and political risks in 2018, including challenges presented by U.S. trade policy.

### Currency hedging

Based on our views on the direction of the dollar, we provide our currency-hedging guidance in the matrix below. For DM fixed income, we do not recommend hedging any portion of DM bond holdings, since our outlook for DM currencies in 2018 is for further appreciation against the dollar. While we acknowledge that wide swings are possible in currencies this year, our strategic benchmark is unhedged (that is, taking the exposure to DM currencies), so we would require greater conviction that the dollar would appreciate strongly before suggesting hedging some of this currency risk.

For EM fixed income, the strategic benchmark consists exclusively of dollar-denominated sovereign EM bonds—so our neutral stance on this asset class and our relatively neutral view on the dollar versus EM local currencies suggest that hedging is unnecessary.

#### Hedging matrix

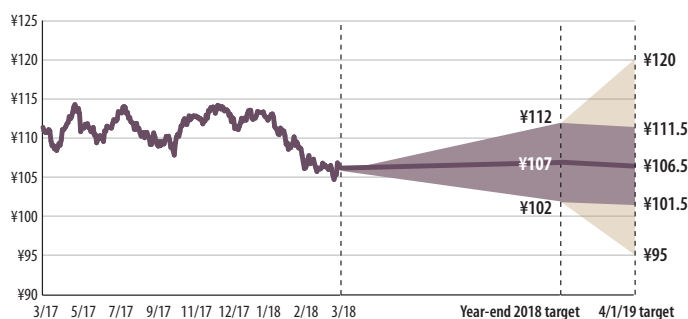
Asset class	Strategic benchmark	Currency advice
Developed Market Ex-U.S. Fixed Income	Local currency	No hedge
Developed Market Ex-U.S. Equities	Local currency	No hedge
Emerging Market Fixed Income	U.S. dollar	No hedge
Emerging Market Equities	Local currency	No hedge

Source: Wells Fargo Investment Institute, March 31, 2018.

The table above provides guidance for investors who want and are able to hedge against currency losses, or to take advantage of the dollar’s move in either direction. Please note that implementation may vary according to the hedging instruments available to investors.

We do not favor hedging currency risk for equities at this time. The hurdle to hedging currency risk is higher for equities than for bonds because, in equity markets, currency movements have had a smaller influence on total return than for fixed income. Further, the cost and complexity of currency hedging for equities may be greater. It is important to consider that many actively managed mutual funds already may incorporate an element of currency hedging. In addition, the cost of hedging against losses from EM currencies is far higher than for those of DMs, and the availability of efficient hedging instruments is limited.

#### Yen/Dollar exchange rate



Past performance is no guarantee of future results.



## Investment Themes and Actions for 2018

Theme	Trends	Strategic (long-term investments)	Tactical (short-term opportunities)
<b>Balancing risk and reward</b>	<p>Investing involves seeking compensation for taking calculated risks.</p> <p>Today, there are asset classes for which risks may outweigh potential rewards.</p> <p>Many asset classes appear fully-priced to overpriced, and prices could keep moving higher.</p>	<p>In this environment, we believe that investors should maintain a diversified portfolio based on their investment objectives, time horizon, and risk tolerance.</p> <p>We recommend rebalancing portfolios regularly to account for shifts in sentiment and asset values.</p>	<p>We believe that investors should utilize tactical asset allocation and active management in certain asset classes. Investors should remain flexible and seek to capitalize on asset mispricing.</p> <p>We recommend employing active management in international equities and hedge funds (for qualified investors) to seek to enhance return potential and mitigate downside risk.</p> <p>We currently favor Public Real Estate. Meanwhile, high-yield corporate and high-yield municipal bonds appear overvalued.</p>
<b>Investing late in a bull market</b>	<p>The current equity bull market (as measured by the S&amp;P 500 Index) turned nine years old on March 9, 2018.</p> <p>To date, this is the second longest bull market on record, with the third highest return.</p> <p>We believe that this upcycle is closer to the end than the beginning, but we are not calling for it to be over in 2018.</p>	<p>We believe that investors should maintain equity exposure, since the final years of a bull market have tended to be strong.</p> <p>We also believe that it is important to invest globally, because international markets are likely earlier in their economic cycles than the U.S. is.</p> <p>We recommend bonds for income and to counterbalance volatility.</p> <p>Diversifying portfolios and regularly rebalancing back to strategic targets can help to prepare a portfolio for a correction.</p>	<p>We recommend a mix of active and passive strategies appropriate for current market trends and investor situations. We believe that investors should hold appropriate levels of cash alternatives.</p> <p>At this point in the cycle, we have a favorable outlook for cyclical sectors such as Consumer Discretionary, Financials, and Industrials (as opposed to defensive sectors).</p> <p>Due to lower relative yields, we hold an unfavorable outlook for Developed Market ex-U.S. Fixed Income.</p>
<b>Tomorrow's technology</b>	<p>A dazzling array of technological advancements continues to amaze us. These include machine learning, robotics, and automation. Yet, technology advancements come with tradeoffs, such as cyberattacks or data breaches. Consumer convenience may be offset by disruptions to industries and to productivity.</p>	<p>We have seen mounting investor interest (indicated by rising market caps) in the Information Technology sector, and we expect this trend to continue.</p> <p>Investment opportunities may exist in companies and sectors outside of technology that can effectively deal with cyberattacks or use technology to help improve productivity growth.</p>	<p>We currently maintain a neutral position in Information Technology. Improving global growth rates should continue to benefit this sector.</p>
<b>The new approach to retirement</b>	<p>Traditionally, retirement generally meant leaving behind a 9-to-5 job and spending time with family, volunteering, or traveling. But that may be changing.</p> <p>As Baby Boomers approach retirement, many wonder if they can afford it. For some, a job may be necessary; for others, working part-time helps them to stay engaged, and postpone dipping into savings.</p> <p>We believe that today's retirees should plan for a long retirement, as many could risk outliving their savings.</p>	<p>We believe that developing the habit of saving for retirement in the early years may make achieving a retirement savings goal more attainable.</p> <p>We suggest a strategic asset allocation that includes fixed income, equities, real assets, and alternative investments, based on long-term objectives.</p> <p>Younger workers should take advantage of time and start saving for retirement today.</p>	<p>We believe that equities are vital for most retirement accounts. Investors may want to consider owning a mix of dividend-paying value-tilted stocks for potential income, along with growth stocks for capital appreciation and to offset inflation.</p> <p>Workers nearing retirement age may be able to take advantage of annual "catch up" contributions in defined contribution plans. The IRS allows workers age 50 and older to make additional tax-deferred contributions.</p>

## Tactical Guidance

### Recommended tactical guidance

Wells Fargo Investment Institute moved to five tiers of investment guidance from the previous set of three guidance levels.

The strategic (neutral) asset allocations are based on long-term strategies. However, capital markets tend to move in cycles, and there may be short-term opportunities to enhance the risk/return relationship within a portfolio by temporarily adjusting the strategic allocations. The tactical asset allocation adjustments are designed to provide guidance on shorter-term (6-18 months) weightings in the portfolio. The minimum position of any asset class is zero, meaning that no short selling is permitted. The maximum position of all asset classes together is 100%, meaning that no leverage is permitted. The actual extent of the recommended tactical adjustments is a judgment call. It should be enough to make a difference without crowding out other assets or creating a vacuum. Also, all the tactical recommendations have to be considered together. It would not be mathematically possible to underallocate two asset groups while maintaining over-allocations in the other two. Adjustments must be made to bring all the broad asset classes into a proper relationship. These are guidelines to be used prudently for investors with temperaments that agree with a more aggressive, tactical investment style.

### Additional asset class guidance

Consider long/short equity strategies: These strategies provide diversification in an equity portfolio by utilizing both long and short exposures to the asset class. While they provide diversification, investors should expect higher tracking error to traditional benchmarks from these strategies. Prudent use through controlled allocations is recommended.

Most unfavorable	Unfavorable	Neutral	Favorable	Most favorable
<b>Cash and fixed income</b>				
U.S. Long Term Taxable Fixed Income	U.S. Taxable Investment Grade Fixed Income High Yield Taxable Fixed Income Developed Market Ex.-U.S. Fixed Income	Cash Alternatives U.S. Intermediate Term Taxable Fixed Income Emerging Market Fixed Income	U.S. Short Term Taxable Fixed Income	
<b>Equities</b>				
	Emerging Market Equities	Developed Market Ex.-U.S. Equities	U.S. Large Cap Equities U.S. Mid Cap Equities U.S. Small Cap Equities	
<b>Real assets</b>				
	Commodities	Private Real Estate	Public Real Estate	
<b>Alternative investments*</b>				
		Hedge Funds–Macro Hedge Funds–Event Driven Private Equity	Hedge Funds–Relative Value	Hedge Funds–Equity Hedge

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# Tactical Guidance

## Tactical guidance summary

	Asset class	Guidance					Rationale and further detail
		Most unfavorable	Neutral	Most favorable			
FIXED INCOME	U.S. Taxable Investment Grade Fixed Income	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	We believe that investors' taxable total-return expectations should be tempered, given the recent volatility increase. We see better risk/return opportunities in other asset classes.
	U.S. Short Term Taxable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Short-term rates have risen as the Fed has tightened policy, increasing the attractiveness of this class. Investing in short-term securities offers lower risk, which can help mitigate the impact of unexpected rate increases. The Fed's measured pace of rate increases has created attractive roll-down opportunities on the short end of the curve.
	U.S. Intermediate Term Taxable	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	We expect the Fed to maintain a measured rate-hike pace in 2018. We believe that investors should maintain some exposure to intermediate fixed-income maturities—to capitalize upon the term premiums.
	U.S. Long Term Taxable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Uncertainty around the scope of further rate increases, the potential for higher inflation, and ambiguity around fiscal trade policy and infrastructure spending present this class with a wide range of potential outcomes. Our "most unfavorable" weighting reflects our increasing concern over rising yield risks for long-term taxable securities going forward.
	High Yield Taxable Fixed Income	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Valuations, on a spread basis (yield difference between a Treasury bond and a corporate bond), are expensive. We believe this class is faced with an asymmetric risk profile. We recommend raising average credit quality. We believe that better risk-adjusted return opportunities present themselves within other sectors and classes.
	Developed Market Ex-U.S. Fixed Income	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sovereign yields (outside the U.S.) should remain low relative to Treasury yields and should rise only gradually. Our view on the dollar in 2018 is moderately negative, so we do not recommend currency hedging DM bond holdings. See page 16 of this report for additional information.
	Emerging Market Fixed Income	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	We expect higher yields and a benign macro environment to support EM debt. We prefer a 100% dollar-denominated strategy as potentially higher returns in local-currency debt come with higher currency risk in the event of adverse shocks.
EQUITIES	U.S. Large Cap Equities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Equity-market volatility is unlikely to end soon. Investors are concerned about a potential trade war, wage pressure, inflation, and Fed policy moves. Any headlines on these concerns will be closely watched by investors. Tax reform is the main boost to our 2018 earnings forecast. Given the new tax rules, we see S&P 500 Index earnings growth of 16.1% versus 2017.
	U.S. Mid Cap Equities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A solid economic backdrop bodes well for top-line sales growth. We look for mid caps to perform largely in line with large caps in 2018. We expect higher volatility relative to large caps.
	U.S. Small Cap Equities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	We expect tax reform to provide considerable benefits to smaller companies (which tend to face higher tax rates than larger firms). Smaller companies generally have been operating at lower profit margins, so tax cuts can lead to higher percentage earnings increases, fueling price gains. Yet, valuations are not cheap.
	Developed Market Ex-U.S. Equities	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Our fundamental DM equity outlook is positive. In Japan, earnings are growing nicely; equity prices are following. In the eurozone, economic growth recently reached a 10-year high, but the euro has appreciated to levels that may start to concern investors. The U.K. economy is seeing some softness as Brexit-related uncertainty is starting to rattle investors.
	Emerging Market Equities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Investors have become concerned about a slowdown in EM earnings momentum, largely for Information Technology. Concerns about trade issues also may start to weigh on valuations. Emerging Asian markets look more favorable than Latin American markets.
REAL ASSETS	Commodities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	At this point in the bear market super-cycle, most commodities face excess supply. We believe that commodity prices will have a difficult time maintaining rallies and are likely to enter a long-term consolidation period while supply and demand balance.
	Public Real Estate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Domestic and international REITs exhibit positive fundamentals (stemming from improved economic growth expectations, moderate supply, and attractive valuations). Higher interest rates remain the main potential headwind to public real estate.
	Private Real Estate*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Opportunistic real-estate strategies remain attractive relative to domestic core real estate, for which total return is more dependent on income than on potential price appreciation today.
ALTERNATIVE INVESTMENTS*	Hedge Funds—Relative Value*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Corporate credit markets were largely unfazed by the volatility spike in February and March. We continue to see growing dispersion between headline indices and individual loans, which we believe will benefit Long/Short Credit strategies.
	Hedge Funds—Macro*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Despite recent challenges for Systematic Macro strategies, we are seeing signs of multiple trends emerging within fixed income and currencies that should benefit Macro funds.
	Hedge Funds—Event Driven*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	While corporate default levels remain muted, we are seeing an increase in stress on several sectors. Several large deals have been announced in recent months, providing attractive trading opportunities for Merger Arbitrage managers.
	Hedge Funds—Equity Hedge*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Equity correlations and volatility spiked in recent months, but Equity Hedge overall has provided positive returns and dampened volatility while identifying idiosyncratic alpha-generation opportunities independent of broader equity directionality. We expect correlations to decline again, benefiting stock selection.
	Private Equity*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	We are constructive on small- and mid-cap buyouts and specialty strategies that are nimble and have a larger investable universe.

\*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Please see end of report for important definitions and disclosures.

# Capital Market Assumptions

## Fixed income, equities, real assets and alternative investments

Annual update; as of July 2017

Capital market and asset class assumptions are estimates of how asset classes may respond during various market environments. For example, **downside risk** is based on our assumptions about average returns and the variability of returns. It represents the minimum return that would be statistically likely in 95% of annual returns. In other words, in 19 out of 20 years, performance would likely be better than this figure and in the twentieth year it would likely be worse. There is no guarantee that any particular 20-year period would follow this pattern. **Hypothetical returns** represent our estimate of likely average returns over the next several market cycles. They do not represent the returns that an investor should expect in any particular year. **Geometric return** is the compounded annual growth rate of an investment (asset class or portfolio) over a specified period of time longer than one year. **Standard deviation** is a measure of volatility. It reflects the degree of variability surrounding the outcome of an investment decision; the higher the standard deviation, the greater the risk. **Yield** on a bond assumes constant maturity. **Dividend yield** on an equity or real-asset investment represents the projected dividend as a percentage of the purchase price. The assumptions are not designed to predict actual performance, and there are no assurances that any estimates used will be achieved. The information given has been provided as a guide to help with investment planning and does not represent the maximum loss a portfolio could experience.

### Capital market assumptions

Asset class	Hypothetical arithmetic return	Hypothetical geometric return	Hypothetical standard deviation or risk	Yield or dividend yield	Downside risk	
Inflation	2.5%	2.5%				
Cash Alternatives	2.5%	2.5%	1.0%	2.5%	0.8%	
FIXED INCOME	U.S. Short Term Taxable Fixed Income	2.6%	2.6%	1.8%	2.6%	-0.2%
	U.S. Intermediate Term Taxable Fixed Income	3.2%	3.1%	4.5%	3.1%	-4.0%
	U.S. Long Term Taxable Fixed Income	3.8%	3.2%	10.5%	3.2%	-12.6%
	Short Term Tax Exempt Fixed Income	2.1%	2.1%	1.8%	2.1%	-0.8%
	Intermediate Term Tax Exempt Fixed Income	2.6%	2.5%	4.5%	2.5%	-4.7%
	Long Term Tax Exempt Fixed Income	3.0%	2.6%	9.0%	2.6%	-11.1%
	Developed Market ex.-U.S. Fixed Income	3.2%	2.8%	9.0%	2.8%	-10.9%
	High Yield Taxable Fixed Income	6.8%	6.1%	12.0%	6.1%	-11.7%
	High Yield Tax Exempt Fixed Income	5.4%	4.8%	12.0%	4.8%	-13.1%
	Emerging Market Fixed Income	6.8%	6.2%	12.0%	6.2%	-11.7%
	Inflation-Linked Fixed Income	3.3%	3.1%	6.0%	3.1%	-6.3%
	Preferred Stock	5.1%	4.5%	12.0%	4.5%	-13.4%
EQUITIES	U.S. Large Cap Equities	8.9%	7.7%	16.5%	2.3%	-15.9%
	U.S. Mid Cap Equities	9.8%	8.3%	18.3%	1.8%	-17.5%
	U.S. Small Cap Equities	10.3%	8.5%	20.0%	1.3%	-19.2%
	Developed Market ex.-U.S. Equities	8.9%	7.5%	17.5%	3.0%	-17.4%
	Developed Market ex.-U.S. Small Cap Equities	9.8%	8.0%	20.0%	2.0%	-19.8%
	Emerging Market Equities	11.5%	9.0%	24.0%	2.3%	-23.2%
	Frontier Market Equities	11.1%	8.2%	26.0%	3.5%	-26.0%
REAL ASSETS	Public Real Estate	8.7%	7.2%	18.0%	4.3%	-18.2%
	Private Real Estate*	8.7%	7.7%	15.0%	6.0%	-14.1%
	Infrastructure	8.7%	7.5%	16.0%	4.0%	-15.5%
	Master Limited Partnerships	8.9%	7.6%	17.0%	6.0%	-16.6%
	Timberland	7.5%	6.8%	12.3%	5.0%	-11.4%
	Commodities	5.5%	4.4%	15.0%	0.0%	-17.3%
ALTERNATIVE INVESTMENTS*	Hedge Funds—Relative Value	5.3%	5.1%	5.8%	0.0%	-3.9%
	Hedge Funds—Macro	5.1%	4.9%	6.3%	0.0%	-4.9%
	Hedge Funds—Event Driven	5.6%	5.4%	7.0%	0.0%	-5.5%
	Hedge Funds—Equity Hedge	5.8%	5.5%	8.8%	0.0%	-7.9%
	Private Equity	13.0%	10.9%	22.0%	0.0%	-19.3%
	Private Debt	9.3%	8.1%	16.0%	6.8%	-14.9%

\*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Please see end of report for important definitions and disclosures.

# Strategic Allocation

Client Goals	INCOME			GROWTH & INCOME			GROWTH		
Risk Tolerance	Conservative	Moderate	Aggressive	Conservative	Moderate	Aggressive	Conservative	Moderate	Aggressive

## Efficient frontier

An efficient frontier represents the theoretical set of diversified portfolios that attempt to maximize return given a specific level of risk.

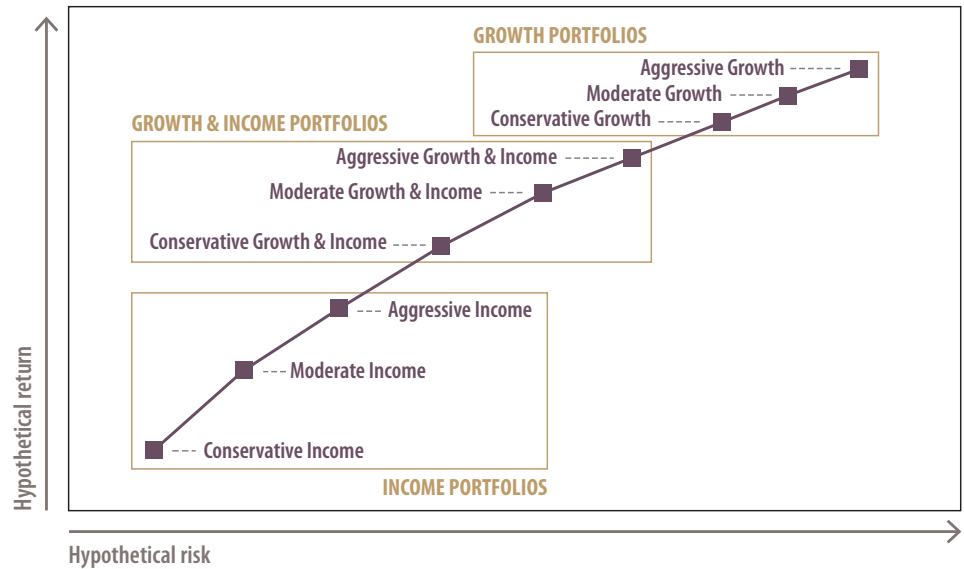


Chart is conceptual and is not meant to reflect any actual returns or represent any specific asset classifications.

Source: Wells Fargo Investment Institute, July 2017

## Investment objectives definitions

### Income

Income portfolios emphasize current income with minimal consideration for capital appreciation and usually have less exposure to more volatile growth assets but can still experience losses.

**Conservative Income** investors generally assume lower risk, but may still experience losses or have lower expected income returns.

**Moderate Income** investors are willing to accept a modest level of risk that may result in increased losses in exchange for the potential to receive modest income returns.

**Aggressive Income** investors seek a higher level of returns and are willing to accept a higher level of risk that may result in greater losses.

### Growth & Income

Growth & Income portfolios emphasize a blend of current income and capital appreciation and usually have some exposure to more volatile growth assets.

**Conservative Growth & Income** investors generally assume a lower amount of risk, but may still experience losses or have lower expected returns.

**Moderate Growth & Income** investors are willing to accept a modest level of risk that may result in increased losses in exchange for the potential to receive modest returns.

**Aggressive Growth & Income** investors seek a higher level of returns and are willing to accept a higher level of risk that may result in greater losses.

### Growth

Growth portfolios emphasize capital appreciation with minimal consideration for current income and usually have significant exposure to more volatile growth assets.

**Conservative Growth** investors generally assume a lower amount of risk, but may still experience increased losses or have lower expected growth returns.

**Moderate Growth** investors are willing to accept a modest level of risk that may result in significant losses in exchange for the potential to receive higher returns.

**Aggressive Growth** investors seek a higher level of returns and are willing to accept a higher level of risk that may result in more significant losses.

## Strategic and Tactical Asset Allocation

Three asset groups: fixed income, equities, real assets

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	87.0%	84.0%	-3.0%	72.0%	67.0%	-5.0%	64.0%	59.0%	-5.0%
	U.S. Taxable Investment Grade Fixed Income	73.0%	75.0%	2.0%	56.0%	56.0%	0.0%	43.0%	43.0%	0.0%
	U.S. Short Term Taxable	28.0%	31.0%	3.0%	19.0%	23.0%	4.0%	8.0%	13.0%	5.0%
	U.S. Intermediate Term Taxable	40.0%	42.0%	2.0%	30.0%	30.0%	0.0%	25.0%	25.0%	0.0%
	U.S. Long Term Taxable	5.0%	2.0%	-3.0%	7.0%	3.0%	-4.0%	10.0%	5.0%	-5.0%
	High Yield Taxable Fixed Income	5.0%	3.0%	-2.0%	6.0%	4.0%	-2.0%	8.0%	6.0%	-2.0%
	Developed Market Ex-U.S. Fixed Income	6.0%	3.0%	-3.0%	5.0%	2.0%	-3.0%	5.0%	2.0%	-3.0%
	Emerging Market Fixed Income	3.0%	3.0%	0.0%	5.0%	5.0%	0.0%	8.0%	8.0%	0.0%
	TOTAL EQUITIES	6.0%	9.0%	3.0%	20.0%	23.0%	3.0%	28.0%	31.0%	3.0%
	U.S. Large Cap Equities	2.0%	5.0%	3.0%	12.0%	15.0%	3.0%	15.0%	18.0%	3.0%
	U.S. Mid Cap Equities	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%
	U.S. Small Cap Equities	0.0%	0.0%	0.0%	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%
	Developed Market Ex-U.S. Equities	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%
	Emerging Market Equities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL REAL ASSETS	4.0%	4.0%	0.0%	5.0%	7.0%	2.0%	5.0%	7.0%	2.0%
	Public Real Estate	4.0%	4.0%	0.0%	5.0%	7.0%	2.0%	5.0%	7.0%	2.0%
	Commodities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>GROWTH &amp; INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	51.0%	47.0%	-4.0%	41.0%	35.0%	-6.0%	33.0%	26.0%	-7.0%
	U.S. Taxable Investment Grade Fixed Income	37.0%	38.0%	1.0%	27.0%	27.0%	0.0%	17.0%	17.0%	0.0%
	U.S. Short Term Taxable	7.0%	12.0%	5.0%	4.0%	8.0%	4.0%	2.0%	4.0%	2.0%
	U.S. Intermediate Term Taxable	20.0%	20.0%	0.0%	16.0%	16.0%	0.0%	11.0%	11.0%	0.0%
	U.S. Long Term Taxable	10.0%	6.0%	-4.0%	7.0%	3.0%	-4.0%	4.0%	2.0%	-2.0%
	High Yield Taxable Fixed Income	6.0%	4.0%	-2.0%	6.0%	3.0%	-3.0%	7.0%	3.0%	-4.0%
	Developed Market Ex-U.S. Fixed Income	3.0%	0.0%	-3.0%	3.0%	0.0%	-3.0%	3.0%	0.0%	-3.0%
	Emerging Market Fixed Income	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%
	TOTAL EQUITIES	39.0%	42.0%	3.0%	49.0%	53.0%	4.0%	57.0%	61.0%	4.0%
	U.S. Large Cap Equities	17.0%	20.0%	3.0%	21.0%	25.0%	4.0%	25.0%	29.0%	4.0%
	U.S. Mid Cap Equities	7.0%	7.0%	0.0%	9.0%	9.0%	0.0%	11.0%	11.0%	0.0%
	U.S. Small Cap Equities	6.0%	6.0%	0.0%	8.0%	8.0%	0.0%	8.0%	8.0%	0.0%
	Developed Market Ex-U.S. Equities	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%	7.0%	7.0%	0.0%
	Emerging Market Equities	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%
	TOTAL REAL ASSETS	7.0%	8.0%	1.0%	7.0%	9.0%	2.0%	7.0%	10.0%	3.0%
	Public Real Estate	5.0%	8.0%	3.0%	5.0%	9.0%	4.0%	5.0%	10.0%	5.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%

Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was March 29, 2018.

See next page for Growth data and Portfolio allocations across the efficient frontier, strategic and tactical.

# Strategic and Tactical Asset Allocation

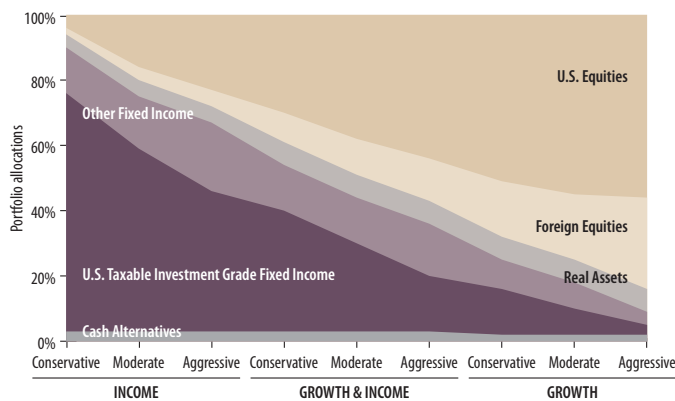
## Three asset groups: fixed income, equities, real assets (continued)

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>GROWTH</b>	CASH ALTERNATIVES	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%
	TOTAL FIXED INCOME	23.0%	19.0%	-4.0%	16.0%	11.0%	-5.0%	7.0%	5.0%	-2.0%
	U.S. Taxable Investment Grade Fixed Income	14.0%	14.0%	0.0%	8.0%	8.0%	0.0%	3.0%	3.0%	0.0%
	U.S. Short Term Taxable	4.0%	6.0%	2.0%	2.0%	5.0%	3.0%	0.0%	3.0%	3.0%
	U.S. Intermediate Term Taxable	6.0%	6.0%	0.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Long Term Taxable	4.0%	2.0%	-2.0%	3.0%	0.0%	-3.0%	3.0%	0.0%	-3.0%
	High Yield Taxable Fixed Income	4.0%	2.0%	-2.0%	3.0%	0.0%	-3.0%	2.0%	0.0%	-2.0%
	Developed Market Ex-U.S. Fixed Income	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	0.0%	0.0%	0.0%
	Emerging Market Fixed Income	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	2.0%	2.0%	0.0%
	TOTAL EQUITIES	68.0%	70.0%	2.0%	75.0%	77.0%	2.0%	84.0%	86.0%	2.0%
	U.S. Large Cap Equities	29.0%	31.0%	2.0%	29.0%	31.0%	2.0%	27.0%	29.0%	2.0%
	U.S. Mid Cap Equities	12.0%	12.0%	0.0%	13.0%	13.0%	0.0%	15.0%	15.0%	0.0%
	U.S. Small Cap Equities	10.0%	10.0%	0.0%	13.0%	13.0%	0.0%	14.0%	14.0%	0.0%
	Developed Market Ex-U.S. Equities	9.0%	9.0%	0.0%	10.0%	10.0%	0.0%	14.0%	14.0%	0.0%
	Emerging Market Equities	8.0%	8.0%	0.0%	10.0%	10.0%	0.0%	14.0%	14.0%	0.0%
	TOTAL REAL ASSETS	7.0%	9.0%	2.0%	7.0%	10.0%	3.0%	7.0%	7.0%	0.0%
	Public Real Estate	5.0%	9.0%	4.0%	5.0%	10.0%	5.0%	5.0%	7.0%	2.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%

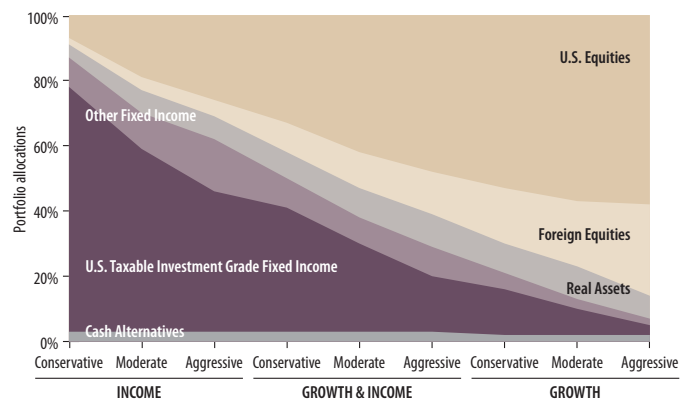
Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was March 29, 2018.

These allocations span the set of investments available to investors, utilizing broad diversification to help manage portfolio risk. Special issues such as liquidity, cash flow, and taxability would be taken into consideration in the choice of investment vehicles for each asset class. Depending on their tax bracket and on market conditions, investors may elect taxable or municipal bonds to implement their fixed-income allocation.

Portfolio allocations across the efficient frontier—strategic



Portfolio allocations across the efficient frontier—tactical



## Strategic and Tactical Asset Allocation

Four asset groups: fixed income, equities, real assets, alternative investments  
(without Private Capital)

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	77.0%	74.0%	-3.0%	64.0%	59.0%	-5.0%	56.0%	51.0%	-5.0%
	U.S. Taxable Investment Grade Fixed Income	61.0%	64.0%	3.0%	46.0%	47.0%	1.0%	35.0%	35.0%	0.0%
	U.S. Short Term Taxable	21.0%	24.0%	3.0%	14.0%	18.0%	4.0%	4.0%	9.0%	5.0%
	U.S. Intermediate Term Taxable	35.0%	38.0%	3.0%	25.0%	26.0%	1.0%	21.0%	21.0%	0.0%
	U.S. Long Term Taxable	5.0%	2.0%	-3.0%	7.0%	3.0%	-4.0%	10.0%	5.0%	-5.0%
	High Yield Taxable Fixed Income	5.0%	3.0%	-2.0%	7.0%	5.0%	-2.0%	8.0%	6.0%	-2.0%
	Developed Market Ex-U.S. Fixed Income	8.0%	4.0%	-4.0%	6.0%	2.0%	-4.0%	5.0%	2.0%	-3.0%
	Emerging Market Fixed Income	3.0%	3.0%	0.0%	5.0%	5.0%	0.0%	8.0%	8.0%	0.0%
	TOTAL EQUITIES	6.0%	6.0%	0.0%	16.0%	16.0%	0.0%	24.0%	24.0%	0.0%
	U.S. Large Cap Equities	2.0%	2.0%	0.0%	10.0%	10.0%	0.0%	11.0%	11.0%	0.0%
	U.S. Mid Cap Equities	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	6.0%	6.0%	0.0%
	U.S. Small Cap Equities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%	0.0%
	Developed Market Ex-U.S. Equities	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%	4.0%	4.0%	0.0%
	Emerging Market Equities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL REAL ASSETS	2.0%	2.0%	0.0%	5.0%	7.0%	2.0%	5.0%	7.0%	2.0%
	Public Real Estate	2.0%	2.0%	0.0%	5.0%	7.0%	2.0%	5.0%	7.0%	2.0%
	Commodities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL ALTERNATIVE INVESTMENTS*	12.0%	15.0%	3.0%	12.0%	15.0%	3.0%	12.0%	15.0%	3.0%
	Hedge Fund—Relative Value	6.0%	9.0%	3.0%	4.0%	7.0%	3.0%	4.0%	7.0%	3.0%
Hedge Fund—Macro	3.0%	3.0%	0.0%	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	
Hedge Fund—Event Driven	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	
Hedge Fund—Equity Hedge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
<b>GROWTH AND INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	41.0%	37.0%	-4.0%	31.0%	25.5%	-5.5%	23.0%	17.0%	-6.0%
	U.S. Taxable Investment Grade Fixed Income	29.0%	30.0%	1.0%	17.0%	17.5%	0.5%	9.0%	9.0%	0.0%
	U.S. Short Term Taxable	4.0%	9.0%	5.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%
	U.S. Intermediate Term Taxable	16.0%	16.0%	0.0%	11.0%	11.5%	0.5%	4.0%	4.0%	0.0%
	U.S. Long Term Taxable	9.0%	5.0%	-4.0%	6.0%	3.0%	-3.0%	5.0%	2.0%	-3.0%
	High Yield Taxable Fixed Income	5.0%	3.0%	-2.0%	6.0%	3.0%	-3.0%	6.0%	2.0%	-4.0%
	Developed Market Ex-U.S. Fixed Income	3.0%	0.0%	-3.0%	3.0%	0.0%	-3.0%	2.0%	0.0%	-2.0%
	Emerging Market Fixed Income	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%
	TOTAL EQUITIES	35.0%	35.0%	0.0%	44.0%	44.0%	0.0%	52.0%	51.5%	-0.5%
	U.S. Large Cap Equities	13.0%	13.0%	0.0%	20.0%	20.0%	0.0%	22.0%	22.0%	0.0%
	U.S. Mid Cap Equities	7.0%	7.0%	0.0%	8.0%	8.0%	0.0%	9.0%	9.0%	0.0%
	U.S. Small Cap Equities	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%	8.0%	7.5%	-0.5%
	Developed Market Ex-U.S. Equities	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	7.0%	7.0%	0.0%
	Emerging Market Equities	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%
	TOTAL REAL ASSETS	7.0%	8.0%	1.0%	7.0%	9.0%	2.0%	7.0%	10.0%	3.0%
	Public Real Estate	5.0%	8.0%	3.0%	5.0%	9.0%	4.0%	5.0%	10.0%	5.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%
	TOTAL ALTERNATIVE INVESTMENTS*	14.0%	17.0%	3.0%	15.0%	18.5%	3.5%	15.0%	18.5%	3.5%
	Hedge Fund—Relative Value	3.0%	3.5%	0.5%	3.0%	3.5%	0.5%	3.0%	3.5%	0.5%
Hedge Fund—Macro	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%	
Hedge Fund—Event Driven	3.0%	3.0%	0.0%	4.0%	4.0%	0.0%	4.0%	4.0%	0.0%	
Hedge Fund—Equity Hedge	2.0%	4.5%	2.5%	2.0%	5.0%	3.0%	2.0%	5.0%	3.0%	

Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was March 29, 2018.

See next page for Growth data and Portfolio allocations across the efficient frontier, strategic and tactical.

\*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Please see end of report for important definitions and disclosures.



## Strategic and Tactical Asset Allocation

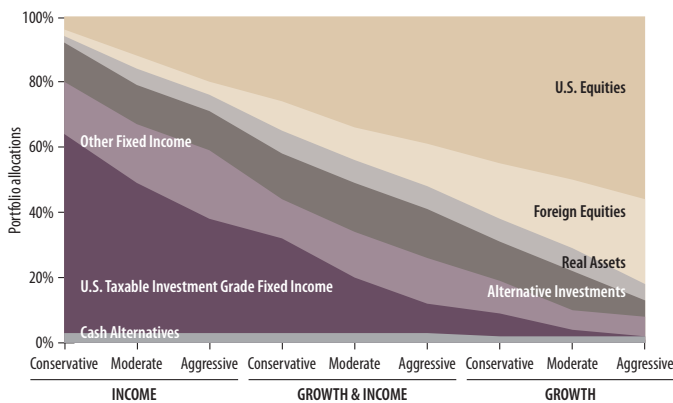
Four asset groups: fixed income, equities, real assets, alternative investments  
(without Private Capital) (continued)

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>GROWTH</b>	CASH ALTERNATIVES	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%
	TOTAL FIXED INCOME	17.0%	12.0%	-5.0%	8.0%	5.0%	-3.0%	6.0%	3.0%	-3.0%
	U.S. Taxable Investment Grade Fixed Income	7.0%	7.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Short Term Taxable	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Intermediate Term Taxable	4.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Long Term Taxable	3.0%	3.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
	High Yield Taxable Fixed Income	5.0%	0.0%	-5.0%	3.0%	0.0%	-3.0%	3.0%	0.0%	-3.0%
	Developed Market Ex-U.S. Fixed Income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Emerging Market Fixed Income	5.0%	5.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL EQUITIES	62.0%	62.0%	0.0%	71.0%	71.0%	0.0%	82.0%	82.0%	0.0%
	U.S. Large Cap Equities	24.0%	24.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	0.0%
	U.S. Mid Cap Equities	11.0%	11.0%	0.0%	13.0%	13.0%	0.0%	16.0%	16.0%	0.0%
	U.S. Small Cap Equities	10.0%	10.0%	0.0%	12.0%	12.0%	0.0%	15.0%	15.0%	0.0%
	Developed Market Ex-U.S. Equities	9.0%	9.0%	0.0%	11.0%	11.0%	0.0%	13.0%	13.0%	0.0%
	Emerging Market Equities	8.0%	8.0%	0.0%	10.0%	10.0%	0.0%	13.0%	13.0%	0.0%
	TOTAL REAL ASSETS	7.0%	9.0%	2.0%	7.0%	7.0%	0.0%	5.0%	7.0%	2.0%
	Public Real Estate	5.0%	9.0%	4.0%	5.0%	7.0%	2.0%	5.0%	7.0%	2.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	0.0%	0.0%	0.0%
	TOTAL ALTERNATIVE INVESTMENTS*	12.0%	15.0%	3.0%	12.0%	15.0%	3.0%	5.0%	6.0%	1.0%
	Hedge Fund—Relative Value	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Hedge Fund—Macro	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%	3.0%	3.0%	0.0%	
Hedge Fund—Event Driven	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	
Hedge Fund—Equity Hedge	2.0%	5.0%	3.0%	2.0%	5.0%	3.0%	2.0%	3.0%	1.0%	

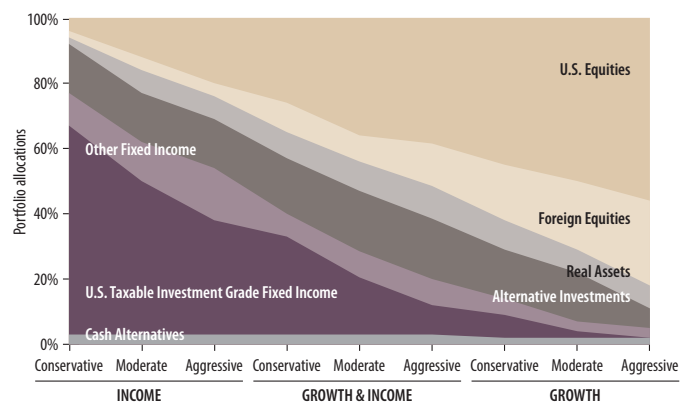
Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was January 3, 2018.

These allocations span the set of investments available to investors, utilizing broad diversification to help manage portfolio risk. Special issues such as liquidity, cash flow, and taxability would be taken into consideration in the choice of investment vehicles for each asset class. Depending on their tax bracket and on market conditions, investors may elect taxable or municipal bonds to implement their fixed income allocation. The tactical asset allocation overweights and underweights are designed to provide guidance on shorter-term (6–18 months) weightings in the portfolio.

Portfolio allocations across the efficient frontier—strategic



Portfolio allocations across the efficient frontier—tactical



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## Strategic and Tactical Asset Allocation

Four asset groups: fixed income, equities, real assets, alternative investments

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	75.0%	71.0%	-4.0%	60.0%	54.0%	-6.0%	51.0%	44.0%	-7.0%
	U.S. Taxable Investment Grade Fixed Income	58.0%	60.0%	2.0%	42.0%	42.0%	0.0%	30.0%	30.0%	0.0%
	U.S. Short Term Taxable	20.0%	23.0%	3.0%	12.0%	16.0%	4.0%	2.0%	7.0%	5.0%
	U.S. Intermediate Term Taxable	33.0%	35.0%	2.0%	23.0%	23.0%	0.0%	19.0%	19.0%	0.0%
	U.S. Long Term Taxable	5.0%	2.0%	-3.0%	7.0%	3.0%	-4.0%	9.0%	4.0%	-5.0%
	High Yield Taxable Fixed Income	6.0%	4.0%	-2.0%	7.0%	5.0%	-2.0%	8.0%	6.0%	-2.0%
	Developed Market Ex-U.S. Fixed Income	8.0%	4.0%	-4.0%	6.0%	2.0%	-4.0%	5.0%	0.0%	-5.0%
	Emerging Market Fixed Income	3.0%	3.0%	0.0%	5.0%	5.0%	0.0%	8.0%	8.0%	0.0%
	TOTAL EQUITIES	6.0%	6.0%	0.0%	18.0%	18.0%	0.0%	25.0%	25.0%	0.0%
	U.S. Large Cap Equities	2.0%	2.0%	0.0%	10.0%	10.0%	0.0%	11.0%	11.0%	0.0%
	U.S. Mid Cap Equities	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%	6.0%	6.0%	0.0%
	U.S. Small Cap Equities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%
	Developed Market Ex-U.S. Equities	2.0%	2.0%	0.0%	4.0%	4.0%	0.0%	4.0%	4.0%	0.0%
	Emerging Market Equities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL REAL ASSETS	5.0%	5.0%	0.0%	6.0%	8.0%	2.0%	8.0%	10.0%	2.0%
	Public Real Estate	2.0%	2.0%	0.0%	2.0%	4.0%	2.0%	3.0%	5.0%	2.0%
	Private Real Estate*	3.0%	3.0%	0.0%	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%
	Commodities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TOTAL ALTERNATIVE INVESTMENTS*	11.0%	15.0%	4.0%	13.0%	17.0%	4.0%	13.0%	18.0%	5.0%
	Hedge Funds—Relative Value	5.0%	9.0%	4.0%	5.0%	9.0%	4.0%	5.0%	10.0%	5.0%
Hedge Funds—Macro	3.0%	3.0%	0.0%	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	
Hedge Funds—Event Driven	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	
Hedge Funds—Equity Hedge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Private Equity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
<b>GROWTH AND INCOME</b>	CASH ALTERNATIVES	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%
	TOTAL FIXED INCOME	39.0%	33.0%	-6.0%	29.0%	21.5%	-7.5%	21.0%	13.0%	-8.0%
	U.S. Taxable Investment Grade Fixed Income	25.0%	26.0%	1.0%	15.0%	15.5%	0.5%	7.0%	7.0%	0.0%
	U.S. Short Term Taxable	4.0%	9.0%	5.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%
	U.S. Intermediate Term Taxable	14.0%	14.0%	0.0%	10.0%	10.5%	0.5%	2.0%	2.0%	0.0%
	U.S. Long Term Taxable	7.0%	3.0%	-4.0%	5.0%	2.0%	-3.0%	5.0%	2.0%	-3.0%
	High Yield Taxable Fixed Income	6.0%	2.0%	-4.0%	6.0%	0.0%	-6.0%	6.0%	0.0%	-6.0%
	Developed Market Ex-U.S. Fixed Income	3.0%	0.0%	-3.0%	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%
	Emerging Market Fixed Income	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%
	TOTAL EQUITIES	32.0%	32.0%	0.0%	40.0%	40.0%	0.0%	48.0%	47.5%	-0.5%
	U.S. Large Cap Equities	14.0%	14.0%	0.0%	18.0%	18.0%	0.0%	22.0%	22.0%	0.0%
	U.S. Mid Cap Equities	6.0%	6.0%	0.0%	7.0%	7.0%	0.0%	8.0%	8.0%	0.0%
	U.S. Small Cap Equities	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%	6.0%	5.5%	-0.5%
	Developed Market Ex-U.S. Equities	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%	7.0%	7.0%	0.0%
	Emerging Market Equities	3.0%	3.0%	0.0%	4.0%	4.0%	0.0%	5.0%	5.0%	0.0%
	TOTAL REAL ASSETS	10.0%	11.0%	1.0%	11.0%	13.0%	2.0%	11.0%	14.0%	3.0%
	Public Real Estate	3.0%	6.0%	3.0%	3.0%	7.0%	4.0%	3.0%	8.0%	5.0%
	Private Real Estate*	5.0%	5.0%	0.0%	6.0%	6.0%	0.0%	6.0%	6.0%	0.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%
	TOTAL ALTERNATIVE INVESTMENTS*	16.0%	21.0%	5.0%	17.0%	22.5%	5.5%	17.0%	22.5%	5.5%
	Hedge Funds—Relative Value	4.0%	6.5%	2.5%	3.0%	5.5%	2.5%	2.0%	4.5%	2.5%
Hedge Funds—Macro	4.0%	4.0%	0.0%	3.0%	3.0%	0.0%	3.0%	3.0%	0.0%	
Hedge Funds—Event Driven	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	
Hedge Funds—Equity Hedge	0.0%	2.5%	2.5%	2.0%	5.0%	3.0%	2.0%	5.0%	3.0%	
Private Equity	6.0%	6.0%	0.0%	7.0%	7.0%	0.0%	8.0%	8.0%	0.0%	

Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was March 29, 2018.

See next page for Growth data and Portfolio allocations across the efficient frontier, strategic and tactical.

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# Strategic and Tactical Asset Allocation

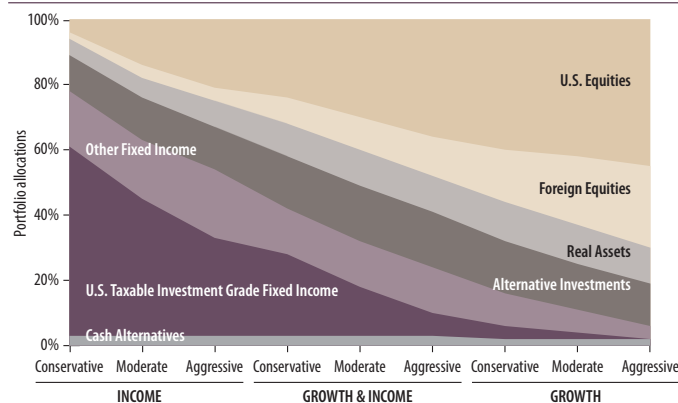
## Four asset groups: fixed income, equities, real assets, alternative investments (continued)

	CONSERVATIVE			MODERATE			AGGRESSIVE			
	Strategic	Tactical	Difference	Strategic	Tactical	Difference	Strategic	Tactical	Difference	
<b>GROWTH</b>	CASH ALTERNATIVES	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%
	TOTAL FIXED INCOME	14.0%	9.0%	-5.0%	9.0%	5.0%	-4.0%	4.0%	2.0%	-2.0%
	U.S. Taxable Investment Grade Fixed Income	4.0%	4.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Short Term Taxable	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%
	U.S. Intermediate Term Taxable	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	U.S. Long Term Taxable	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	0.0%	0.0%	0.0%
	High Yield Taxable Fixed Income	5.0%	0.0%	-5.0%	4.0%	0.0%	-4.0%	2.0%	0.0%	-2.0%
	Developed Market Ex-U.S. Fixed Income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Emerging Market Fixed Income	5.0%	5.0%	0.0%	3.0%	3.0%	0.0%	2.0%	2.0%	0.0%
	TOTAL EQUITIES	56.0%	56.0%	0.0%	63.0%	63.0%	0.0%	70.0%	70.0%	0.0%
	U.S. Large Cap Equities	24.0%	24.0%	0.0%	24.0%	24.0%	0.0%	24.0%	24.0%	0.0%
	U.S. Mid Cap Equities	9.0%	9.0%	0.0%	10.0%	10.0%	0.0%	12.0%	12.0%	0.0%
	U.S. Small Cap Equities	7.0%	7.0%	0.0%	8.0%	8.0%	0.0%	9.0%	9.0%	0.0%
	Developed Market Ex-U.S. Equities	9.0%	9.0%	0.0%	11.0%	11.0%	0.0%	12.0%	12.0%	0.0%
	Emerging Market Equities	7.0%	7.0%	0.0%	10.0%	10.0%	0.0%	13.0%	13.0%	0.0%
	TOTAL REAL ASSETS	12.0%	14.0%	2.0%	12.0%	13.0%	1.0%	11.0%	12.0%	1.0%
	Public Real Estate	3.0%	7.0%	4.0%	3.0%	6.0%	3.0%	3.0%	4.0%	1.0%
	Private Real Estate*	7.0%	7.0%	0.0%	7.0%	7.0%	0.0%	8.0%	8.0%	0.0%
	Commodities	2.0%	0.0%	-2.0%	2.0%	0.0%	-2.0%	0.0%	0.0%	0.0%
	TOTAL ALTERNATIVE INVESTMENTS*	16.0%	19.0%	3.0%	14.0%	17.0%	3.0%	13.0%	14.0%	1.0%
Hedge Funds—Relative Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Hedge Funds—Macro	3.0%	3.0%	0.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	
Hedge Funds—Event Driven	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Hedge Funds—Equity Hedge	2.0%	5.0%	3.0%	2.0%	5.0%	3.0%	2.0%	3.0%	1.0%	
Private Equity	9.0%	9.0%	0.0%	10.0%	10.0%	0.0%	11.0%	11.0%	0.0%	

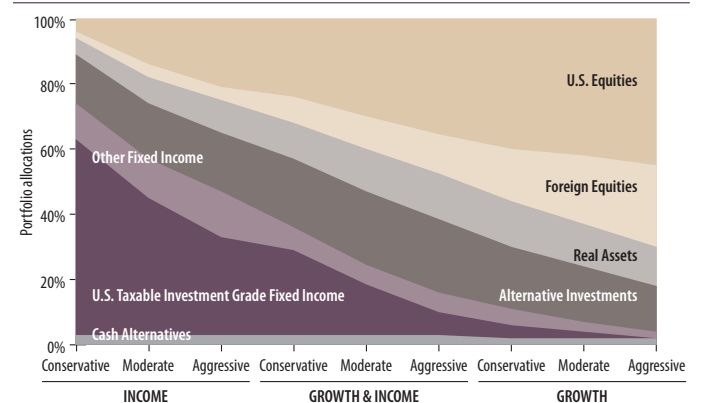
Strategic allocations are updated annually; last update was July 18, 2017. Tactical allocations are updated periodically; last update was March 29, 2018.

These allocations span the set of investments available to investors, utilizing broad diversification to help manage portfolio risk. Special issues such as liquidity, cash flow, and taxability would be taken into consideration in the choice of investment vehicles for each asset class. Depending on their tax bracket and on market conditions, investors may elect taxable or municipal bonds to implement their fixed income allocation. The tactical asset allocation overweights and underweights are designed to provide guidance on shorter-term (6-18 months) weightings in the portfolio.

Portfolio allocations across the efficient frontier—strategic



Portfolio allocations across the efficient frontier—tactical



\*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Please see end of report for important definitions and disclosures.

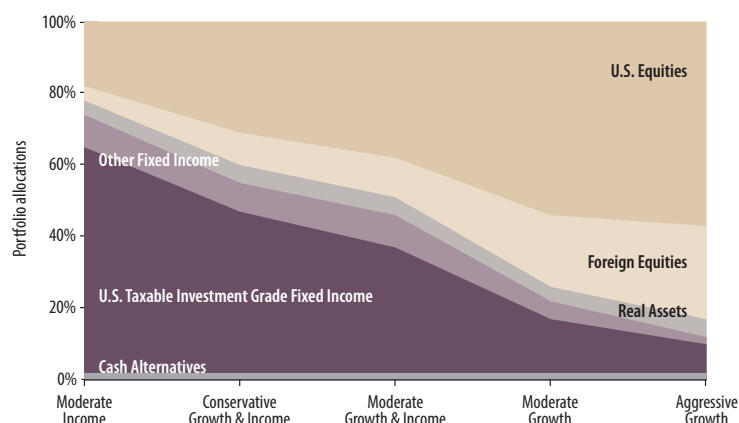
## Cyclical Asset Allocation

### Three asset groups: fixed income, equities, real assets

Quarterly update; as of April 2018

Our cyclical asset allocation process is based on a rolling three-year outlook—which means that the Global Investment Strategy Committee evaluates how the portfolios are expected to perform over the next 36 months based on asset valuations as well as economic and market outlooks. The cyclical approach is driven by fundamental valuations, which can lead to entering and exiting positions as opportunities arise. Over time, this approach may help avoid chasing unsustainable market swings driven by fear and greed near the end of cyclical declines or advances.

Portfolio allocations across the efficient frontier



### Cyclical asset allocation mixes

		Moderate Income	Conservative Growth & Income	Moderate Growth & Income	Moderate Growth	Aggressive Growth
FIXED INCOME	Cash Alternatives	2%	2%	2%	2%	2%
	Total Fixed Income	72%	53%	44%	20%	10%
	U.S. Short Term Taxable Fixed Income	27%	15%	12%	10%	8%
	U.S. Intermediate Term Taxable Fixed Income	30%	20%	16%	3%	
	U.S. Long Term Taxable Fixed Income	6%	10%	7%	2%	
	High Yield Taxable Fixed Income	3%	3%	4%	2%	
	Developed Market Ex-U.S. Fixed Income					
Emerging Market Fixed Income	6%	5%	5%	3%	2%	
EQUITIES	Total Equities	22%	40%	49%	74%	83%
	U.S. Large Cap Equities	14%	19%	23%	30%	30%
	U.S. Mid Cap Equities	2%	7%	9%	13%	15%
	U.S. Small Cap Equities	2%	5%	6%	11%	12%
	Developed Market Ex-U.S. Equities	4%	5%	6%	10%	14%
	Emerging Market Equities		4%	5%	10%	12%
REAL ASSETS	Total Real Assets	4%	5%	5%	4%	5%
	Public Real Estate	4%	5%	5%	4%	5%
	Commodities					
Total Portfolio		100%	100%	100%	100%	100%

For more information, please request our most recent *Cyclical Asset Allocation Quarterly Report*.

## Disclosures

Forecasts are based on certain assumptions and on views of market and economic conditions which are subject to change.

Wells Fargo and its affiliates are not legal or tax advisors. Be sure to consult your own legal or tax advisor before taking any action that may involve tax consequences. Tax laws or regulations are subject to change at any time and can have a substantial impact on your individual situation.

### Risk considerations

Past performance does not indicate future results. The value or income associated with a security or an investment may fluctuate. There is always the potential for loss as well as gain. Investments discussed in this report may be unsuitable for some investors depending on their specific investment objectives and financial position.

**Asset allocation and diversification** are investment methods used to manage risk. They do not assure or guarantee better performance and cannot eliminate the risk of investment losses. Your individual allocation may be different than the strategic long-term allocation above due to your unique individual circumstances, but is targeted to be in the allocation ranges detailed. The asset allocation reflected above may fluctuate based on asset values, portfolio decisions, and account needs.

**Equity sector risks:** Concentration in certain sectors may present more risks to a portfolio than if it were broadly diversified over numerous sectors of the economy. Risks associated with the *Consumer Discretionary sector* include, among others, apparel price deflation due to low-cost entries, high inventory levels and pressure from e-commerce players; reduction in traditional advertising dollars; increasing household debt levels that could limit consumer appetite for discretionary purchases. *Consumer Staples industries* can be significantly affected by competitive pricing particularly with respect to the growth of low-cost emerging market production, government regulation, the performance of overall economy, interest rates, and consumer confidence. The *Energy sector* may be adversely affected by changes in worldwide energy prices, exploration, production spending, government regulation, and changes in exchange rates, depletion of natural resources and risks that arise from extreme weather conditions. Investing in *Financial Services companies* will subject a portfolio to adverse economic or regulatory occurrences affecting the sector. Some of the risks associated with investment in the *Health Care sector* include competition on branded products, sales erosion due to cheaper alternatives, research & development risk, government regulations and government approval of products anticipated to enter the market. Risks associated with investing in the *Industrial sector* include the possibility of a worsening in the global economy, acquisition integration risk, operational issues, failure to introduce to market new and innovative products, further weakening in the oil market, potential price wars due to any excesses industry capacity, and a sustained rise in the dollar relative to other currencies. *Materials industries* can be significantly affected by the volatility of commodity prices, the exchange rate between foreign currency and the dollar, export/import concerns, worldwide competition, procurement and manufacturing and cost containment issues. *Technology and Internet-related stocks*, especially of smaller, less-seasoned companies, tend to be more volatile than the overall market. Some of the risks associated with the *Telecom Services sector* include pressures to develop, upgrade and successfully launch and market new and innovative product; unpredictable customer demand and inability to compete against competitors. *Utilities* are sensitive to changes in interest rates and the securities within the sector can be volatile and may underperform in a slow economy.

**Alternative investments**, such as hedge funds, private capital funds, and private real estate funds, carry specific investor qualifications and involve the risk of investment loss, including the loss of the entire amount invested. While investors may potentially benefit from the ability of alternative investments to potentially improve the risk-reward profiles of their portfolios, the investments themselves can carry significant risks. Government regulation and monitoring of these types of investments may be minimal or nonexistent. There may be no secondary market for alternative investment interests and transferability may be limited or even prohibited.

The use of alternative investment strategies, such as Equity Hedge, Event Driven, Macro and Relative Value, are speculative and involve a high degree of risk. These strategies may expose investors to risks such as short selling, leverage risk, counterparty risk, liquidity risk, volatility risk, the use of derivatives and other significant risks. Distressed credit strategies invest in, and might sell short, the securities of companies where the security's price has been, or is expected to be, affected by a distressed situation. This may involve reorganizations, bankruptcies, distressed sales, and other corporate restructurings. Investing in distressed companies is speculative and involves a high degree of risk. Because of their distressed situation, these securities may be illiquid, have low trading volumes, and be subject to substantial interest rate and credit risks. Structured credit strategies aim to generate returns via positions in the credit sensitive area of the fixed income markets. The strategy generally involves the purchase of

corporate bonds with hedging of interest rate exposure. The use of alternative investment strategies may require a manager's skill in assessing corporate events, the anticipation of future movements in securities prices, interest rates, or other economic factors. No assurance can be given that a manager's view of the economy will be correct which may result in lower investment returns or higher return volatility.

Privately offered **real estate** funds are speculative and involve a high degree of risk. Investments in real estate and real estate investments trusts have special risks, including the possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions. There can be no assurance a secondary market will exist and there may be restrictions on transferring interests.

Investing in **commodities** is not suitable for all investors. Exposure to the commodities markets may subject an investment to greater share price volatility than an investment in traditional equity or debt securities. Investments in commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity. Products that invest in commodities may employ more complex strategies which may expose investors to additional risks.

Investments in **fixed-income securities** are subject to market, interest rate, credit/default, liquidity, inflation and other risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and principal. **High yield** fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities. **Municipal bonds** offer interest payments exempt from federal taxes, and potentially state and local income taxes. Municipal bonds are subject to credit risk and potentially the Alternative Minimum Tax (AMT). Municipal securities are also subject to legislative and regulatory risk which is the risk that a change in the tax code could affect the value of taxable or tax-exempt interest income.

**Ba1-Ba2 rating:** Judged to have speculative elements; subject to substantial credit risk.

**Mortgage-related and asset-backed securities** are subject to the risks associated with investment in debt securities. In addition, they are subject to prepayment and call risks. Changes in prepayments may significantly affect yield, average life and expected maturity. If called prior to maturity, similar yielding investments may not be available for the Fund to purchase. These risks may be heightened for longer maturity and duration securities.

**Currency hedging** is a technique used to seek to reduce the risk arising from the change in price of one currency against another. The use of hedging to manage currency exchange rate movements may not be successful and could produce disproportionate gains or losses in a portfolio and may increase volatility and costs.

**Equity** securities are subject to market risk which means their value may fluctuate in response to general economic and market conditions and the perception of individual issuers. Investments in equity securities are generally more volatile than other types of securities.

There is no guarantee that **dividend-paying stocks** will return more than the overall stock market. Dividends are not guaranteed and are subject to change or elimination. There are no guarantees that **growth or value stocks** will increase in value or that their intrinsic values will eventually be recognized by the overall market. The return and principal value of stocks fluctuate with changes in market conditions. The growth and value type of investing tends to shift in and out of favor.

Investing in **foreign securities** presents certain risks that may not be present in domestic securities. For example, investments in foreign, emerging and frontier markets present special risks, including currency fluctuation, the potential for diplomatic and potential instability, regulatory and liquidity risks, foreign taxation and differences in auditing and other financial standards.

Investing in **gold, silver** or other precious metals involves special risk considerations such as severe price fluctuations and adverse economic and regulatory developments affecting the sector or industry.

**Master Limited Partnerships (MLPs)** involves certain risks which differ from an investment in the securities of a corporation. MLPs may be sensitive to price changes in oil, natural gas, etc., regulatory risk, and rising interest rates. A change in the current tax law regarding MLPs could result in the MLP being treated as a corporation for federal income tax purposes which would reduce the amount of cash flows distributed by the MLP. Other risks include the volatility associated with the use of leverage; volatility of the commodities markets; market risks; supply and demand; natural and man-made catastrophes; competition; liquidity; market price discount from Net Asset Value and other material risks.

## Disclosures (continued)

There are special risks associated with investing in **preferred securities**. Preferred securities are subject to interest rate and credit risks and are generally subordinated to bonds or other debt instruments in an issuer's capital structure, subjecting them to a greater risk of non-payment than more senior securities. In addition, the issue may be callable which may negatively impact the return of the security. Preferred dividends are not guaranteed and are subject to deferral or elimination.

**Private debt** has speculative characteristics that include potential default, limited liquidity and the infrequent availability of independent credit ratings for private companies.

Investing in **real estate** involves special risks, including the possible illiquidity of the underlying property, credit risk, interest rate fluctuations and the impact of varied economic conditions.

The prices of **small and mid size company stocks** are generally more volatile than large company stocks. They often involve higher risks because smaller companies may lack the management expertise, financial resources, product diversification and competitive strengths to endure adverse economic conditions.

**Sovereign debt** are bonds issued by a national government in a foreign currency and are used to finance a country's growth. In addition to the risks associated with investing in international and emerging markets, sovereign debt involves the risk that the issuing entity may not be able or willing to repay principal and/or interest when due in accordance with the terms of the debt agreement.

**Technology and internet-related stocks**, especially of smaller, less-seasoned companies, tend to be more volatile than the overall market.

**Treasury Inflation-Protected Securities (TIPS)** are subject to interest rate risk, especially when real interest rates rise. This may cause the underlying value of the bond to fluctuate more than other fixed income securities. TIPS have special tax consequences, generating phantom income on the "inflation compensation" component of the principal. A holder of TIPS may be required to report this income annually although no income related to "inflation compensation" is received until maturity.

**There is no assurance that any of the target prices or other forward-looking statements mentioned will be attained.**

### Economic index definitions

An index is unmanaged and not available for direct investment.

**Inflation** is the change in the **Consumer Price Index (CPI)**. The CPI measures the price of a fixed basket of goods and services purchased by an average consumer.

**Core inflation** is the change in the **core Consumer Price Index (CPI)**. The core CPI measures the price of a fixed basket of goods and services—excluding the volatile food and energy components—purchased by an average consumer.

**Conference Board's Leading Economic Index (LEI)** is a composite average of ten leading indicators in the US. It is one of the key elements in the Conference Board's analytic system, which is designed to signal peaks and troughs in the business cycle.

**Consumer Confidence Index** measures consumer confidence, which is defined as the degree of optimism on the state of the economy that consumers are expressing through their activities of savings and spending.

**Markit Manufacturing Purchasing Managers Index (PMI)** tracks manufacturing and service sector activity in the Eurozone. An Index value over 50 indicates expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

The **Producer Price Index (PPI)** program measures the average change over time in the selling prices received by domestic producers for their output.

The **Institute of Supply Management (ISM) Purchasing Manager's Index** gauges internal demand for raw materials/goods that go into end-production. An Index value over 50 indicates expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

The **US Dollar Index (USD, DXY)** is an index (or measure) of the value of the United States dollar relative to a basket of foreign currencies, often referred to as a basket of U.S. trade partners' currencies.

The **Institute of Supply Management (ISM) Non-manufacturing Index (ISM Services Survey)** measures the rate and direction of change in activity in the nonmanufacturing industries. An index with a score over 50 indicates that the industry is expanding, and a score below 50 shows a contraction. The values for the index can be between 0 and 100.

### Asset class index definitions

#### Fixed income representative indices

**U.S. Taxable Investment Grade Fixed Income. Bloomberg Barclays US Aggregate Bond Index** is a broad-based measure of the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market.

**Short Term Taxable Fixed Income. Bloomberg Barclays US Aggregate 1-3 Year Bond Index** is the one to three year component of the Barclays US Aggregate Index, which represents fixed-income securities that are SEC-registered, taxable, dollar-denominated, and investment-grade.

**Intermediate Term Taxable Fixed Income. Bloomberg Barclays US Aggregate 5-7 Year Bond Index** is composed of the Bloomberg Barclays US Government/Credit Index and the Bloomberg Barclays US Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 5-7 years.

**Long Term Taxable Fixed Income. Bloomberg Barclays US Aggregate 10+ Year Bond Index** is composed of the Bloomberg Barclays US Government/Credit Index and the Bloomberg Barclays US Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 10 years or more.

**Cash Alternatives/Treasury Bills. Bloomberg Barclays US Treasury Bills (1-3M) Index** is representative of money markets.

**U.S. Treasury. Bloomberg Barclays US Treasury Index** includes public obligations of the U.S. Treasury with a remaining maturity of one year or more.

**U.S. Municipal Bond. Bloomberg Barclays US Municipal Index** is considered representative of the broad market for investment grade, tax-exempt bonds with a maturity of at least one year.

**U.S. TIPS. Bloomberg Barclays US TIPS Index** represents Inflation-Protection securities issued by the U.S. Treasury.

**U.S. Government. Bloomberg Barclays US Government Bond Index** includes U.S.-dollar-denominated, fixed-rate, nominal U.S. Treasury securities and U.S. agency debentures.

**Credit. Bloomberg Barclays US Credit Index** includes investment-grade, U.S.-dollar-denominated, fixed-rate, taxable corporate- and government-related bonds.

**Securitized. Bloomberg Barclays US Mortgage Backed Securities (MBS) Index** includes agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

**High Yield Taxable Fixed Income. Bloomberg Barclays US Corporate High-Yield Index** covers the universe of fixed-rate, non-investment-grade debt.

**Developed Market Ex-U.S. Fixed Income (Unhedged). J.P. Morgan GBI Global ex-US Index (Unhedged)** in USD is an unmanaged index market representative of the total return performance in U.S. dollars on an unhedged basis of major non-U.S. bond markets.

**Developed Market Ex-U.S. Fixed Income (Hedged). J.P. Morgan Non-U.S. Global Government Bond Index (Hedged)** is an unmanaged market index representative of the total return performance, on a hedged basis, of major non-U.S. bond markets. It is calculated in U.S. dollars.

**The J.P. Morgan Emerging Market Currency Index (EMCI)** is a weighted index of 10 emerging market foreign-exchange rates. The weights are fixed at 11.1111% for the Brazilian real, the Mexican peso, the Chilean peso, the Chinese yuan, the Indian rupee and the Singapore dollar, and at 8.33335% for the Turkish lira, the Russian ruble, the Hungarian forint and the South African rand.

**The MSCI Emerging Markets Currency Index** is a weighted index of emerging market foreign-exchange rates. The weights are set to be equal to the relevant country weighting within the MSCI Emerging Markets Equity Index.

**Emerging Market Fixed Income (U.S. dollar). J.P. Morgan Emerging Markets Bond Index (EMBI Global)** currently covers more than 60 emerging market countries. Included in the EMBI Global are U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

**Emerging Market Fixed Income (Local Currency). J.P. Morgan Government Bond Index-Emerging Markets Global (USD Unhedged)** is a comprehensive global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds.

#### Equity representative indices

**U.S. Large Cap Equities. S&P 500 Index** is a capitalization-weighted index calculated on a total return basis with dividends reinvested. The index includes 500 widely held U.S. market industrial, utility, transportation and financial companies.

**U.S. Large Cap Equities Growth. Russell 1000 Growth Index** measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

## Disclosures *(continued)*

*U.S. Large Cap Equities Value. Russell 1000 Value Index* measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.

*U.S. Mid Cap Equities. Russell Midcap Index* measures the performance of the mid-cap segment of the U.S. equity universe.

*U.S. Mid Cap Equities Growth. Russell Midcap Growth Index* measures the performance of the mid-cap growth segment of the U.S. equity universe. It includes those Russell Midcap Index companies with higher price-to-book ratios and higher forecasted growth values.

*U.S. Mid Cap Equities Value. Russell Midcap Value Index* measures the performance of the mid-cap value segment of the U.S. equity universe. It includes those Russell Midcap Index companies with lower price-to-book ratios and lower forecasted growth values.

*U.S. Small Cap Equities. Russell 2000 Index* measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

*U.S. Small Cap Equities Growth. Russell 2000 Growth Index* measures the performance of the small-cap growth segment of the U.S. equity universe. It includes those Russell 2000 companies with higher price-to-value ratios and higher forecasted growth values.

*U.S. Small Cap Equities Value. Russell 2000 Value Index* measures the performance of the small-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

*Developed Market Ex-U.S. Equities (U.S. dollar)/(Local). MSCI EAFE Index* is a free float-adjusted market capitalization index that is designed to measure the equity market performance of 21 developed markets, excluding the U.S. and Canada.

*Emerging Market Equities (U.S. dollar)/(Local). MSCI Emerging Markets Index* is a free float-adjusted market capitalization index that is designed to measure equity market performance of 23 emerging markets.

*Frontier Market Equities (U.S. dollar)/(Local). MSCI Frontier Markets Index* is a free float-adjusted market capitalization index that is designed to measure equity market performance of 24 frontier (least developed) markets.

### **Real assets representative indices**

*Pubic Real Estate. FTSE EPRA/NAREIT Developed Index* is designed to track the performance of listed real-estate companies and REITs in developed countries worldwide.

*Domestic REITs. FTSE NAREIT US All Equity REITs Index* is designed to track the performance of REITs representing equity interests in (as opposed to mortgages on) properties. It represents all tax-qualified REITs with more than 50% of total assets in qualifying real estate assets, other than mortgages secured by real property that also meet minimum size and liquidity criteria.

*International REITs. FTSE EPRA/NAREIT Developed ex US Index* is designed to track the performance of listed real estate companies in developed countries worldwide other than the United States.

*MLPs. Alerian MLP Index* is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for this emerging asset class. The index, which is calculated using a float-adjusted, capitalization-weighted methodology, is disseminated real-time on a price-return basis and on a total-return basis.

*Commodities (BCOM). Bloomberg Commodity Index* is a broadly diversified index comprised of 22 exchange-traded futures on physical commodities and represents 20 commodities weighted to account for economic significance and market liquidity.

### **Alternative investments representative indices**

*Global Hedge Funds. HFRI Fund Weighted Composite Index.* A global, equal-weighted index of over 2,000 single-manager funds that report to HFRI Database. Constituent funds report monthly net-of-all-fees performance in U.S. Dollars and have a minimum of \$50 Million under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

*Relative Value. HFRI Relative Value (Total) Index.* Strategy is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which

the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

*Arbitrage. HFRI RV: Fixed Income Sovereign Index.* Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a sovereign fixed income instrument. Strategies employ an investment process designed to isolate attractive opportunities between a variety of fixed income instruments, typically realizing an attractive spread between multiple sovereign bonds or between a corporate and risk free government bond. Fixed Income Sovereign typically employ multiple investment processes including both quantitative and fundamental discretionary approaches and relative to other Relative Value Arbitrage sub-strategies, these have the most significant top-down macro influences, relative to the more idiosyncratic fundamental approaches employed.

*Long/Short Credit. HFRI RV: Fixed Income—Corporate Index.* Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a corporate fixed-income instrument. Strategies are designed to isolate attractive opportunities between a variety of fixed income instruments, typically realizing an attractive spread between multiple corporate bonds or between a corporate and risk free government bond. They typically involve arbitrage positions with little or no net credit market exposure, but are predicated on specific, anticipated idiosyncratic developments.

*Structured Credit/Asset Backed. HFRI RV: Fixed Income—Asset Backed Index.* Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a fixed-income instrument backed by physical collateral or other financial obligations (loans, credit cards) other than those of a specific corporation. Strategies are designed to isolate attractive opportunities between a variety of fixed income instruments specifically securitized by collateral commitments, which frequently include loans, pools and portfolios of loans, receivables, real estate, machinery or other tangible financial commitments. Investment thesis may be predicated on an attractive spread given the nature and quality of the collateral, the liquidity characteristics of the underlying instruments and on issuance and trends in collateralized fixed-income instruments, broadly speaking. In many cases, investment managers hedge, limit, or offset interest-rate exposure in the interest of isolating the risk of the position to strictly the disparity between the yield of the instrument and that of the lower-risk instruments.

*Macro. HFRI Macro (Total) Index.* Encompass a broad range of strategies predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard-currency, and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top-down and bottom-up theses, quantitative and fundamental approaches and long- and short-term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments rather than on realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

*Systematic Macro. HFRI Macro: Systematic Diversified Index.* Diversified strategies employing mathematical, algorithmic and technical models, with little or no influence of individuals over the portfolio positioning. Strategies are designed to identify opportunities in markets exhibiting trending or momentum characteristics across individual instruments or asset classes. Strategies typically employ quantitative processes which focus on statistically robust or technical patterns in the return series of the asset, and they typically focus on highly liquid instruments and maintain shorter holding periods than either discretionary or mean-reverting strategies. Although some strategies seek to employ counter-trend models, strategies benefit most from an environment characterized by persistent, discernible trending behavior. Typically have no greater than 35% of portfolio in either dedicated currency or commodity exposures over a given market cycle.

*Discretionary Macro. HFRI Macro: Discretionary Thematic Index.* Strategies primarily rely on the evaluation of market data, relationships and influences, as interpreted by individuals who make decisions on portfolio positions; strategies employ an investment process most heavily influenced by top-down analysis of macroeconomic variables. Investment Managers may trade actively in developed and emerging markets, focusing on both absolute and relative levels on equity markets, interest rates/fixed income markets, currency and commodity markets; they frequently employ spread trades to isolate a differential between instrument identified by the Investment Manager as being inconsistent with

## Disclosures (continued)

expected value. Portfolio positions typically are predicated on the evolution of investment themes the Manager expects to develop over a relevant time frame, which in many cases contain contrarian or volatility-focused components.

**Event Driven. HFRI Event Driven (Total) Index.** Maintains positions in companies currently or prospectively involved in corporate transactions of a wide variety including mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated and frequently involve additional derivative securities. Exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company-specific developments. Investment theses are typically predicated on fundamental (as opposed to quantitative) characteristics, with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

**Activist. HFRI ED: Activist Index.** Strategies may obtain or attempt to obtain representation on the company's board of directors in an effort to impact the firm's policies or strategic direction and in some cases may advocate activities such as division or asset sales, partial or complete corporate divestiture, dividends or share buybacks, and changes in management. Strategies employ an investment process primarily focused on opportunities in equity and equity-related instruments of companies that are currently or prospectively engaged in a corporate transaction, security issuance/repurchase, asset sales, division spin-off or other catalyst-oriented situation. These involve both announced transactions and situations in which no formal announcement is expected to occur. Activist strategies would expect to have greater than 50% of the portfolio in activist positions, as described.

**Distressed Credit. HFRI ED: Distressed/Restructuring Index.** Strategies focus on corporate fixed-income instruments, primarily corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceedings or financial-market perception of near-term proceedings. Managers are typically actively involved with the management of these companies; they are frequently involved on creditors' committees in negotiating the exchange of securities for alternative obligations, either swaps of debt, equity or hybrid securities. Managers employ fundamental credit processes focused on valuation and asset coverage of securities of distressed firms; in most cases portfolio exposures are concentrated in instruments that are publicly traded, in some cases actively and in others under reduced liquidity but in general for which a reasonable public market exists. Strategies employ primarily debt (greater than 60%) but also may maintain related equity exposure.

**Merger Arbitrage. HFRI ED: Merger Arbitrage Index.** Strategies primarily focus on opportunities in equity and equity-related instruments of companies that are currently engaged in a corporate transaction. Merger Arbitrage involves primarily announced transactions, typically with limited or no exposure to situations in which no formal announcement is expected to occur. Opportunities are frequently presented in cross-border, collared, and international transactions that incorporate multiple geographic regulatory institutions, typically with minimal exposure to corporate credits. Strategies typically have over 75% of positions in announced transactions over a given market cycle.

**Equity Hedge. HFRI Equity Hedge (Total) Index.** Equity Hedge: Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.

**Directional Equity. HFRX EH: Multi-Strategy Index.** Managers maintain positions both long and short in primarily equity and equity-derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage, holding period, concentrations of market capitalizations, and valuation ranges of typical portfolios. Managers typically do not maintain more than 50% exposure to any one Equity Hedge sub-strategy

**Equity Market Neutral. HFRI EH: Equity Market Neutral Index.** Strategies employ sophisticated quantitative techniques to analyze price data to ascertain information about future price movement and relationships between securities. These can include both Factor-based and Statistical Arbitrage/Trading strategies. Factor-based investment strategies include strategies predicated on the

systematic analysis of common relationships between securities. In many cases, portfolios are constructed to be neutral to one or multiple variables, such as broader equity markets in dollar or beta terms, and leverage is frequently employed to enhance the return profile of the positions identified. Statistical Arbitrage/Trading strategies consist of strategies predicated on exploiting pricing anomalies which may occur as a function of expected mean reversion inherent in security prices; high-frequency techniques may be employed; trading strategies may also be based on technical analysis or designed opportunistically to exploit new information that the investment manager believes has not been fully, completely, or accurately discounted into current security prices. Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

**Note:** While the HFRI Indices are frequently used, they have limitations (some of which are typical of other widely used indices). These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and, therefore, the index may omit funds, the inclusion of which might significantly affect the performance shown). The HFRI Indices are based on information hedge fund managers decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Returns of the underlying hedge funds are net of fees and are denominated in USD.

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