# Chart Book Chief Investment Office July 2018



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2<sup>nd</sup> quarter of 2018 in review

### **MACRO**

- U.S. 2<sup>nd</sup> Quarter economic growth above expectations: After 1<sup>st</sup> quarter gross domestic product (GDP) growth of 2.0% SAAR\*, there has been an acceleration. BofAML Global Research U.S. Economics is tracking 2<sup>nd</sup> quarter growth of 4.0% SAAR. Standout confidence has underpinned growth in consumption and capital expenditures. The Federal Reserve (Fed) continued normalizing its balance sheet while raising its policy rate by 25 basis points (bps) to 1.75-2.00%. The Fed's preferred measure to track inflation (core PCE price index) recently hit the Fed's 2.0% target.
- In Europe, economic growth has surprised to the downside. Profit momentum is
  deteriorating relative to other regions. Structural reforms may be tougher given the
  election of a populist coalition in Italy, leading to a potential erosion of business
  and investor confidence. The ECB\*\* remains accommodative. While it aims to taper
  bond purchases completely by the end of 2018, policy direction remains fluid.
- China's economic growth seems to be slowing at the margin. A continued shift in growth away from exports towards services and domestic consumption, alongside a regulatory clampdown, may be complicated by trade tensions with the U.S.

### **FIXED INCOME**

- Fixed income returns were modestly lower in the 2<sup>nd</sup> quarter. The ML Global Broad Market Index lost 2.5%, following a Q1 gain of 1.2% and a 2017 gain of 7%.
- In the U.S. the 10-year U.S. Treasury yield settled at 2.86%, 12 bps higher than it began the quarter. U.S. government bonds on aggregate rose 0.1% for the quarter. U.S. Corporates fell 0.9%. U.S. Treasury Inflation-Protected Securities (TIPS) increased 0.8%. This resulted in the broad measure of U.S. bonds down 0.1% for the quarter, bringing its year-to-date total to -1.6%.
- High Yield bonds rose 1.0% in the 2<sup>nd</sup> quarter, after declining 0.9% in Q1. The municipal bond market rose 0.9%.
- Emerging Market (EM) sovereign debt fell 4.2% in the 2<sup>nd</sup> quarter. This compares to European sovereigns, which fell 0.8%.

## **EQUITIES**

- Global equities ended mostly lower in Q2, with Emerging Markets (EMs) being the major laggard- The MSCI Emerging Markets Index declined 8.0% during the quarter, bring its year-to-date total to -6.7%.
- In the U.S., the S&P 500 rose 3.4% during the 2<sup>nd</sup> quarter, appreciating 2.6% year-to-date. Energy (13.5%) led all sectors in the second quarter of the year, while Industrials and Financials took a beating, both declining by 3.2%. Large caps lagged small caps by more than 4% in the 2<sup>nd</sup> quarter, with the Russell 2000 rising by 7.8%. More broadly, growth outperformed value within the Russell 3000 (5.9% vs. 1.7%) during the quarter.
- Developed Markets (DMs) outpaced EMs during the quarter, with a return of 1.7% versus -8.0%. Within DMs, the North American region led, rising 3.5%. In EMs, EMEA (-0.3%) outperformed. In the Middle East, Qatar was a standout, advancing 3.5%. LatAm trailed in the space, down -17.8%, with Brazil slumping -26.4% during the quarter.

### **ALTERNATIVE INVESTMENTS\*\*\***

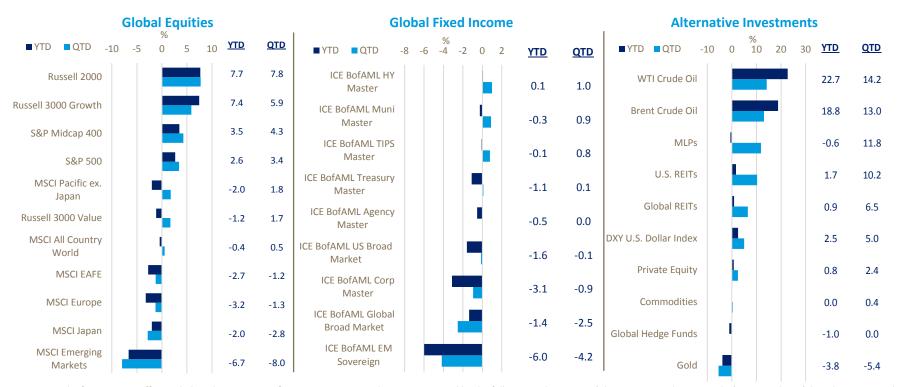
- Commodities were higher- The Bloomberg Commodity Index increased 0.4% during the quarter. After having endured a volatile 2017, energy surged in Q2, buttressed by strength in WTI Crude (14.2%). Agriculture lagged substantially (-9.1%), however Livestock added 5.0% after suffering in the prior quarter. Copper, often used as a measure of industrial activity, declined 2.7% in the quarter, furthering its year-to-date decline (-11.0%). Gold fell 5.4% in Q2.
- The DXY dollar index surged 5.0% this quarter, due to the euro declining 5.2%. The Japanese yen fell 4.0%. EM currency performance was substantially weaker relative to the dollar. The Indonesian Rupiah was the top performer declining 3.5%.
- The LPX50 Private Equity Index rose 2.4% during the quarter, while the HFRX Global Hedge Fund index was flat. U.S. Master Limited Partnerships (MLPs) surged 11.8%, and Global Real Estate Investment Trusts (REITs) followed, increasing 6.5% in the quarter.



\* Seasonally Adjusted Annual Rate; \*\* European Central Bank; \*\*\*Many products that pursue Alternative Investment strategies, specifically Private Equity and Hedge Funds, are available only to pre-qualified clients. Source: Chief Investment Office as of June 29, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.

**OVERVIEW** 

# Major Index Total Returns



Source: Chief Investment Office and Bloomberg. Data as of June 30, 2018. Asset classes represented by the following indices: MLPs (Alerian MLP Total Return Index), Commodities (Bloomberg Commodity Total Return Index), Gold (Gold Spot Price), U.S. REITs (FTSE NAREIT U.S. REITs Total Return), Global REITs (FTSE NAREIT Global REITs Total Return), Private Equity (LPX 50 TR USD Index), and Global Hedge Funds (HFRX Global Hedge Fund Index). Brent Crude Oil is a classification of sweet light crude oil and is a major benchmark price for oil purchases worldwide. WTI crude oil reflects the Bloomberg West Texas Intermediate Crushing Crude Oil Spot Price. The price is derived by adding spot market spreads to the NYMEX contract. Units are in U.S. dollars per barrel and is traded intraday. It is not possible to invest directly in an index. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



# Midyear 2018 Outlook: The Next Great Odyssey, Part 2

We see 2018 as a year of continued transition; however, the developing growth and inflation dynamics below should extend well into the next cycle.

The progression from the prolonged period of secular stagnation and extraordinarily low interest rates to rising economic growth, enhanced by secular forces, and rising interest rates may generate episodes of concern, which could eventually set the stage for a new upcycle.

Our outlook of expected dynamics to drive the new upcycle can be seen through a 5 by 5 prism

# **Expected growth sources**

# New demographic & inflation dynamics expected to allow...

Capital investment via repatriation

Millennial housing cycle

Emerging market middle-class consumers

Second wave of an innovation cycle

Global infrastructure redevelopment

Central banks to normalize large balance sheets

Tapering of central bank bond-buying programs

A nudge higher in interest rates

Trillions of dollars to fade to positive rate structure

Debt servicing costs to remain at acceptable levels, as growth hovers at or above trend levels

Source: GWIM Investment Strategy Committee (GWIM ISC) as of December, 2017.



**CIO THEMES** 

✓ Secular stagnation to fiscal reflation and synchronized economic expansion

✓ Equities remain attractive vs. Fixed

✓ Continue with high quality in Fixed

Income. Short term yields have become

✓ Still favorable on Emerging Markets as

valuations have improved significantly

Income on relative basis

continues

more attractive

### **TACTICAL SHIFTS**

### June 2018:

 Lowering our International Developed Markets exposure to neutral as we become more cautious given rising political risks and weaker growth. The balance will shift to U.S. equities.

### March 2018:

 Lowering our Small Cap exposure slightly in order to fund an increase in Large Caps given the valuation adjustment that has occurred in the U.S. Large Cap stocks.

### January 2018:

 Moderated our view of U.S. municipals to neutral as muni-to-Treasury ratios are less compelling versus last year

### **FIXED INCOME**

- We continue to believe fixed income remains a good hedge on higher-risk assets such as equities by balancing expectations for higher rates with periods of flight-to-quality given market headwinds risks; the recent European volatility was a good example.
- We continue to prefer credit over Treasurys, with an emphasis on investment grade corporates, particularly banks and municipals.
- Volatility, compressed yields and risk premiums around the world present unfavorable risk/reward conditions on non U.S. fixed income.
- Allocations to high yield should be with an active manager favoring higherquality securities, in our opinion.
- U.S. Investment Grade Tax-Exempt should offer good relative value for taxsensitive investors, particularly those in high-tax states.
- We believe active management can help improve risk-adjusted returns in a rising-rate environment.

### **EQUITIES**

- We maintain our positive view on U.S. equities on the basis of anticipated acceleration in GDP growth and rising corporate profits along with gradually rising inflation and interest rates.
- We prefer higher quality balance sheets favoring large caps based on better nominal U.S. economic growth — over small caps but think that small caps may potentially benefit from the tax plan boosting already firming economic conditions.
  - U.S. and emerging markets offer better growth and profit fundamentals than Europe. We favor emerging Asia over other regions for its faster growth rates, stronger fundamentals and higher exposure to consumer-driven sectors.

# **ALTERNATIVE INVESTMENTS\***

- Within hedge funds, we maintain our moderately positive view on long/short equity, equity market neutral strategies and merger arbitrage.
- We recommend investors plan a disciplined multi-year commitment private equity strategy that builds portfolio diversity among different managers, styles, geographies and, importantly, vintages.
- We place emphasis on direct real estate investments in well-located properties in strong regions of the country that exhibit attractive rent roll and cash flow characteristics, and have the potential to bridge into the next cycle, providing a long-term hedge against inflation.
- Over the long term, we expect tangible assets to benefit portfolios through increasing portfolio diversification, protecting against the corrosive effects of inflation, producing growing streams of investment cash flow and providing favorable social impact opportunities.

\*Many products that pursue Alternative Investment strategies, specifically Private Equity and Hedge Funds, are available only to prequalified clients. Asset Allocation and diversification do not ensure a profit or protect against loss in a declining market. Source: GWIM Investment Strategy Committee (ISC) as of June 2018. Please refer to appendix for asset class proxies and index definitions.





ALTERNATIVE INVESTMENTS NOTE: Given the differences in liquidity characteristics between AI and traditional investments, the AI portfolio positioning and CIO asset class views have been neutral rated versus our strategic allocations. These types of investments, in our opinion, should not be viewed at the asset class level on a tactical basis, rather the tactical positioning should be expressed at the sub asset level. We will continue to provide strategy level guidance for qualified AI investors and believe allocations to AI can introduce differentiated returns which can complement existing traditional holdings by enhancing returns, reducing risk, and capitalizing on opportunities not available in traditional investments.

**CORE PORTFOLIO FUNDAMENTALS** 

**Emerging Markets** 

Generate attractive cash flows across asset classes

U.S. H.Y. Tax Exempt

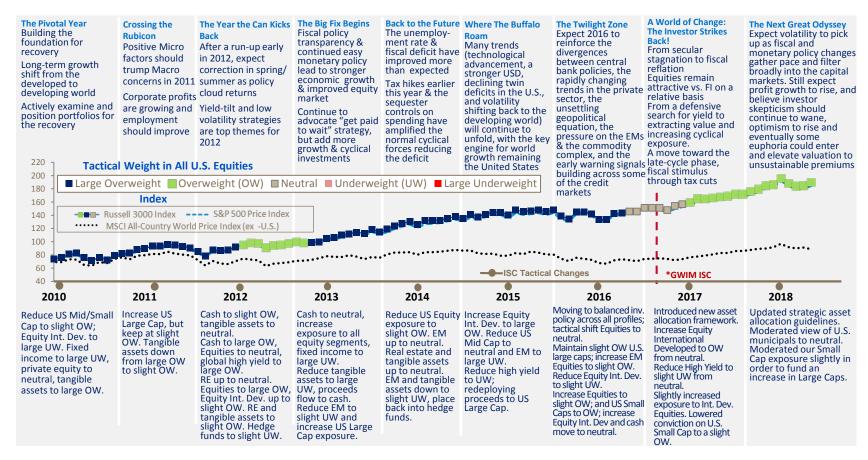
International Fixed Income

- Active rebalancing during periods of outsized weakness and strength
- Focus on risk-adjusted returns and goal alignment



When assessing your portfolio in light of our current guidance, consider the tactical positioning around asset allocation in reference to your own individual risk tolerance, time horizon, objectives and liquidity needs. Certain investments may not be appropriate, given your specific circumstances and investment plan. Certain security types, like hedged strategies and private equity investments, are subject to eligibility and suitability criteria. Your financial advisor can help you customize your portfolio in light of your specific circumstances. \*Many products that pursue Alternative Investment strategies, specifically Private Equity and Hedge Funds, are available to pre-

# Investment Strategy Committee (ISC) process





# **Capital Market Outlook Timeline**

Lower oil prices, a weaker dollar and falling long-term interest rates have caused investors to worry that the better economic growth driving earnings and stock prices higher is about to end.

While the U.S. is well into the midcycle stage of its expansion, other countries are just beginning theirs. This mixed picture suggests that the U.S. will give the early warning signs for the global expansion's demise. As a result. financial markets are likely to focus on U.S. inflation and Federal Reserve policy in 2018.

The S&P 500 ended Q3 on a new all-time high, and as we move into the fourth quarter (seasonally the strongest of the year), fundamentals for the broad market remain supportive. On a sector basis, we expect industryspecific cost and revenue drivers, thematic trends and expectations around fiscal and regulatory policy to drive returns as we move toward year-end.

10/2017

We expect 2018 to be another year of good global growth as both the real and price components of nominal gross domestic product (GDP) accelerate. This implies that revenue and profit growth should remain robust with an extra kicker in the U.S. from much lower corporate tax rates.

12/2017

The recent market correction is an adjustment to a new macro environment of stronger growth, higher inflation, higher interest rates and rising volatility. We maintain our positive view on equities.

02/2018

Economic growth should increase throughout 2018 as capital expenditures rise, which helps productivity and should keep inflation from getting to levels that worry the Federal Reserve. Consumer spending remains healthy and we expect the bull market to grind higher in the end.

04/2018

S&P 500



fundamentals in the new pro-growth political environment are overwhelming risks associated with the sharp political divisions that threaten tax reform. infrastructure spending, repatriation and further regulatory

historical highs and are likely to decline only slowly, in our view, as the labor market tightens. Low energy prices, modest wage pressures and low real interest rates have kept margins higher for longer. Corporate tax cuts would provide an additional boost. As a result, we see profits continuing to advance in 2018.

### 09/2017

With summer in the rear-view mirror, we outline the road ahead. bracketed by the most salient items related to politics, policies and macro/markets. Following a near-term bout of volatility and an odds-on correction/consolidation in equities, the rally in global equities is expected to grind higher.

### 11/2017

After a decade of "secular stagnation." signs that growth is resuming a more historically normal pattern are broadening out, helping to explain the barrage of upside surprises in U.S. economic statistics and equity prices.

### 01/2018

We maintain our equity overweight versus fixed income view to start 2018 based on our bullish view on world growth, the global profits cycle and currently attractive financial conditions.

### 03/2018

The transition to more pro-growth fiscal and regulatory policy, a secular trend change in interest rates and market leadership from the technology sector are key trends we see continuing over the intermediate to longer term.

## 05/2018

The CapEx cycle is currently experiencing a resurgence as a result of stronger global growth, rising commodity prices, lower economic policy uncertainty, declining slack in capacity utilization and stimulative fiscal policy in the U.S. These factors have combined to provide a large boost to corporate confidence, which should keep business spending on equipment growing at a decent clip heading into 2019.



relief.

How did our major trend calls and tactical asset class adjustments perform?

	Major Trend Calls (2016 - 2018)	<b>Duration of call</b>	Effect
	Global Equities over Fixed Income <sup>1</sup>	Jan '16 – Present	<b>~</b>
	Overweight International Developed Equities <sup>2</sup>	Mar '17 – Jun '18	
Familia	Value over Growth <sup>3</sup>	Nov '16 – Mar '18	×
Equities	Cyclicals over Defensives <sup>4</sup>	Oct '16 – Present	<b>✓</b>
	Technology to outperform <sup>5</sup>	Jan '16 – Present	<b>V</b>
	Favor Financials in a post election environment <sup>6</sup>	Nov '16 – Present	
	Slightly short duration <sup>7</sup>	Dec '16 – Present	=
Fixed Income	Credit over Treasuries <sup>8</sup>	Jan '16 – Present	<b>~</b>
	Underweight High Yield <sup>9</sup>	Mar '17 – Present	×
Alternatives	Moderately positive Equity Long/Short strategies <sup>10</sup>	Mar '17 – Present	<b>✓</b>

Note: "\square" represents positive portfolio effect, "=" represents neutral portfolio effect, "x" represents negative portfolio effect.

Source: Chief Investment Office. Data as of May 31, 2018. Alternatives data as of May 31, 2018.

Index sources: 1) MSCI AC World Index vs. Bloomberg Barclays Global Aggregate Index. 2) MSCI World ex US Index vs. MSCI ACWI. 3) Russell 1000 Value Index vs. Russell 1000 Growth Index. 4) MSCI USA Cyclicals Index vs. MSCI USA Defensives Index. 5) S&P 500 Technology Index vs. S&P 500 Index. 6) S&P 500 Financials Index vs. S&P 500 Index. 7) ML U.S. Broad Market Index vs. ML U.S. Broad Market Index vs. ML U.S. High Yield Master. 10) HFRI Equity Hedge Index vs. HFRI Fund Weighted Composite Index. Investors cannot invest directly in indices. Reference to indices, or other measures of relative market performance over a specified period of time (each, an "index") are provided for illustrative purposes only, do not represent a benchmark or proxy for the return or volatility of any particular product, portfolio, security holding, or Al. Indices are unmanaged.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



# Macro Strategy – Global Themes & Trends



Macro economic outlook from the Chief Investment Office

### **UNITED STATES**

- U.S. growth picked up to about 3 percent this past spring which we expect to continue in 2018 despite some temporary winter weather disruptions. Stronger capital spending accounts for most of the rise in growth.
- U.S. consumers have tailwinds from decent wage growth, rising home prices, still-low interest rates and very positive labor market dynamics.
- We expect housing and business investment spending to be cyclical tailwinds for the overall economy, extending the cycle.
- Pro-business policies are helping: Tax cuts, tax reform, repatriation and regulatory relief should boost nominal growth.

### **GLOBAL**

- The synchronized global growth upturn that began in 2016 is transitioning with the U.S. still accelerating, Europe slowing, and the rest of the world steady.
- Purchasing Managers' Indexes show the global expansion is picking up. Capital spending plans are rising with global growth.
- Corporate profits are rising around the world as global growth improves.
- We expect real global GDP growth around 4% for 2018 and 2019.

### **EMPLOYMENT, INFLATION & INTEREST RATES**

- Job growth remains steady and the current trend is sufficient to keep the unemployment rate at 4%, or lower, for the next year.
- Wage growth is moderate and suggests inflation is well anchored or picking up.
- We expect the Fed to continue to gradually remove monetary accommodation through rate hikes and balance sheet tapering.

### **WATCH LIST**

- ✓ U.S. Inflation
- ✓ U.S. Fiscal Policy
- ✓ Earnings
- ✓ China and Trade Policies
- ✓ Central Bank Meetings
- ✓ Brexit negotiations
- ✓ U.S. Trade Policy

### **DOLLAR & COMMODITIES**

- Rising U.S. rates, concerns over slower growth, and a
  potential delay to the end of quantitative easing in
  Europe should continue to support the dollar in the
  near term. On balance, we expect a steady or mildly
  depreciating dollar over the coming year.
- We expect WTI oil prices to remain strong in the \$60 to \$80 range.

### **PROFITS**

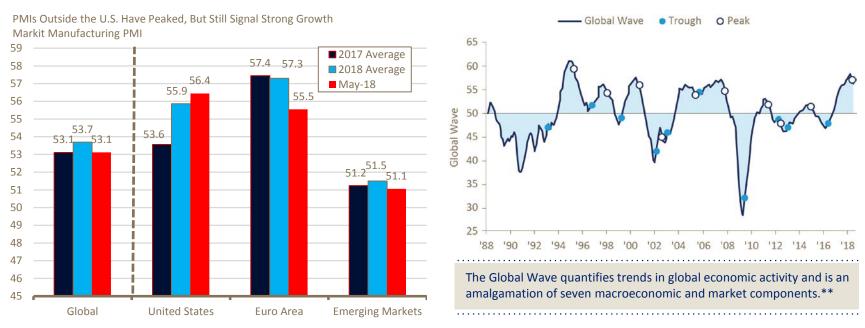
• We expect corporate profits to rise by double-digit percentages throughout the year, driven by revenue increases from healthy consumer and business spending.



A moderation in economic growth (from robust levels) has been taking place outside the U.S.

# Despite moderation, Purchasing Managers Indexes (PMIs) still signal economic growth.

The Global Wave peaking does not necessarily mean a significant slowdown is imminent. It may be a pause in a longer-term uptrend.



Source: (Left) Markit; Haver Analytics. Data as of June 24, 2018. (Right): BofA Merrill Lynch Global Quantitative Strategy, MSCI, IBES, Bloomberg, OECD, IMF. Right chart data as of June 2018. \*\*Components of Global Wave: Global Industrial Confidence (Output), Global Consumer Confidence (Demand), Global Capacity Utilization (Investment), Global Unemployment Labor (Market), Global Producer Prices (Prices), Global Credit Spreads (Bond Market) and Global Earnings Revision Ratio (Equity Market). Past performance is no guarantee of future results. There can be no assurance that the forecasts will be achieved. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment performance. Please refer to appendix for asset class disclosures and index definitions.



The CIO tracks various metrics (below), which currently indicate that the U.S. economy remains on an expansionary course. This underlines our expectations for strong growth in the near term. There are, however, several data points in extended territory that we are watching for any shift towards a recessionary trend.

# **Business Cycle Insights Framework**



Indicates expansionary



Indicates expansionary, but in extended territory



Indicates recessionary

June 2018

	Current readings of Business Cycle Indicators							
Inflation	Labor Market	Yield Curve	U.S. Consumer	Business Conditions	Housing Market	Credit Conditions	Equity Market	
Price inflation, wage inflation	Jobs created, UE claims, avg. weekly hours, wage inflation	Yield curve (10yr-Fed Funds)	Consumer confidence	ISM manufacturing, capacity utilization, small bus. optimism	starts, new building	Corporate debt spread, bank lending	Profit margins, equity valuation (P/E)	
		<b>1</b>	1	1				

December 2007

> March 2001

	Historical Business Cycle Indicators at the Beginning of Recession							
Inflation	Labor Market	Yield Curve	U.S. Consumer	Business Conditions	Housing Market	Credit Conditions	Equity Market	
1	<b>₽</b>	4	1	4	4	1	1	
4	4	4	4	4	<b>û</b>	4	<b>₽</b>	

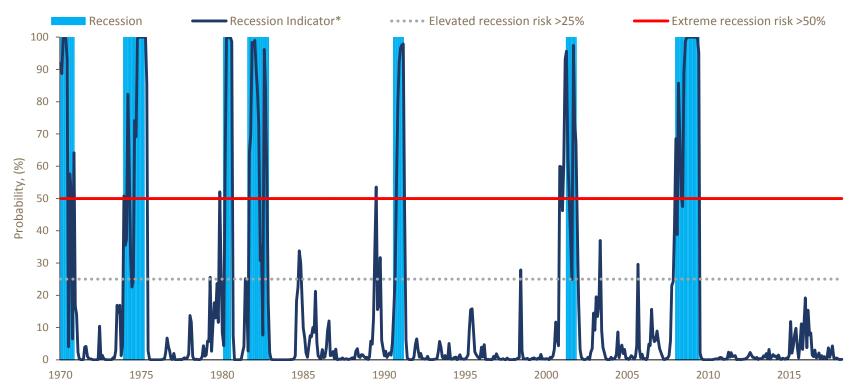
Indicator is in extended territory if majority of data tracked in that category is outside the bounds of what we consider to be moderate levels. Sources: Bloomberg; Haver Analytics; Federal Reserve Bank of St. Louis; Chief Investment Office. Data as of June 2018.

Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class proxies and index definitions.



# CIO U.S. Recession Indicator

In addition to the dashboard of business cycle indicators we track, changes in economic gauges tracked by the CIO U.S. Recession Indicator suggest in aggregate that the risk of recession in the U.S. is currently low.



Source: U.S. Trust, Bank of America Private Wealth Management, Bloomberg, National Bureau of Economic Research. \*Logistic regression of six macroeconomic variables (initial claims, housing starts, industrial production, domestic vehicle sales, 10yr-3m yield curve, commercial bank loans and leases) against recessionary and non-recessionary periods since January 1970. Data as of May 2018.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



Under the current administration, business and consumer confidence have surged, providing a positive outlook for consumer spending and capital expenditures.

# Small Businesses Feel Now is Good Time to Expand.



# For Chief Financial Officers, rising confidence suggests the benefits of the tax plan have changed the investment calculus.

Duke/CFO Outlook: Business Leaders are Planning for Higher Capital Spending Expected Growth in Capital Spending over the Next 12 Months (%)



Consumer confidence is close to its highest level since 2000, as measured by the Conference Board.



# Monetary Policy Passing the Baton to Fiscal Policy

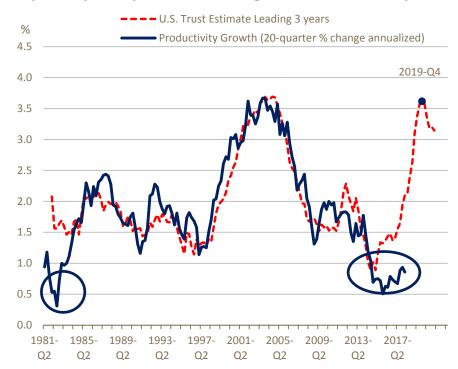
Firms are responding to pro-growth fiscal policies with more capital spending. A robust capital expenditure cycle should contribute to stronger productivity growth.

# U.S. capital spending should remain resilient on pro-business tax and regulatory policies.

Manufacturers' Shipments of Nondefense Capital Goods ex Aircraft Year-over-year % Change



We expect recent passage of tax reform to prompt businesses to expand capital expenditures, leading to an acceleration in productivity.



Source: (Left) Census Bureau; Haver Analytics. As of June 24, 2018. (Right) Bureau of Labor Statistics; Chief Investment Office. Data as of June 7, 2018. \*Stagflation: economic environment characterized by slower to stagnating growth and higher inflation. \*\*Secular Stagnation: Time period during which economic growth on a broad basis was slower than historical growth rates. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.



# Continued Tightening in the Labor Market

A tight labor market should support faster wage growth.

# The labor market continues to tighten, while wage growth remains moderate.



(Left) Data represent the percent of respondents who feel jobs are easy to get minus those that feel jobs are hard to get. Sources: The Conference Board/ Haver Analytics. As of June 24, 2018. (Right) Federal Reserve Bank of Atlanta / Haver Analytics. As of June 24, 2018. Shaded are recessions.

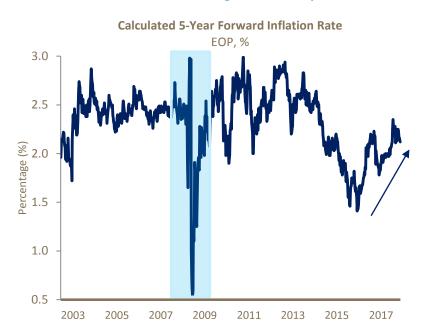
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# U.S. Inflation Expectations and Rates

A strong labor market and the recent pickup in growth have pushed inflation expectations higher, contributing to an increase in interest rates.

### Market data indicate rising inflation expectations...



## ... which have helped to push U.S. 10-year Treasury yields higher.



Source: (Left) Federal Reserve. Data as of June 24, 2018. (Right) Bloomberg. Data as June 22, 2018. Past performance is no guarantee of future results. There can be no assurance that the forecasts will be achieved. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment performance. Performance results are short term and may not provide an adequate basis for evaluating performance potential over varying market conditions or economic cycles. Please refer to appendix for asset class disclosures and index definitions.



# Market Dynamics & Investment Trends



# The CIO "Bulls Eye"



A succinct and objective perspective on new developments during the quarter and key ongoing macro drivers.

# **Recent Developments**

In updated 2018 forecasts, the IMF\* and IIF\*\* see the global economy growing at the fastest pace since 2011 and 2010 respectively.

Initial effects of the Trump administration's tax plan and fiscal stimulus appear.

Trump signs into law bipartisan legislation rolling back some regulatory elements of Dodd-Frank.

The European Union and Mexico reach an agreement in principle to modernize the EU-Mexico Global Agreement.

German Chancellor Merkel & French President Macron agree in principle to European integration steps, including setting up a Eurozone budget.

The U.S. Commerce department amends an original 7-year ban on a leading Chinese telecom company on the purchase of U.S. technology.

OPEC met on June 22, producing an agreement to boost crude oil production in response to rising prices raising worries by importers.

President Trump met with Kim Jong-Un, leader of North Korea on June 12. They sign an agreement establishing relations, among other items.

A strengthening U.S. dollar leads to financial volatility in Emerging Markets, highlighted by Argentina, Turkey, and Indonesia.

President Trump pulls the U.S. out of the Joint Comprehensive Plan of Action, also known as the Iran nuclear agreement.

In Italy, a populist coalition government, consisting of the 5-Star and League parties, is sworn in. Spain also sees political change.

Tit-for-tat tariff announcements are made between the U.S. and the European Union, Mexico, Canada, and China.

An agreement to modernize NAFTA\*\*\* before the Mexican presidential election and U.S. midterm elections proves elusive.

# **Positive Factors**

Global economic fundamentals drive earnings growth

Consumption and investment (CapEx) drive U.S. economic growth

Monetary policy worldwide remains accommodative

Stable growth in China helps underpin growth in Emerging Markets

# On Watch

Geopolitical and trade tensions (China, Europe, NAFTA\*\*\*)

Effects of QERO\*\*\*\* & higher U.S. Treasury supply on dollar liquidity

Dynamic between Italy and Brussels, as well as EU budget negotiations

China's deleveraging campaign and economic transition

Source: Chief Investment Office. Data as of June 22, 2017. \*International Monetary Fund; \*\*International Institute of Finance; \*\*\* North American Free Trade Agreement; \*\*\*\*Quantitative Easing Roll Off or the gradual reduction of the balance sheet of the Federal Reserve

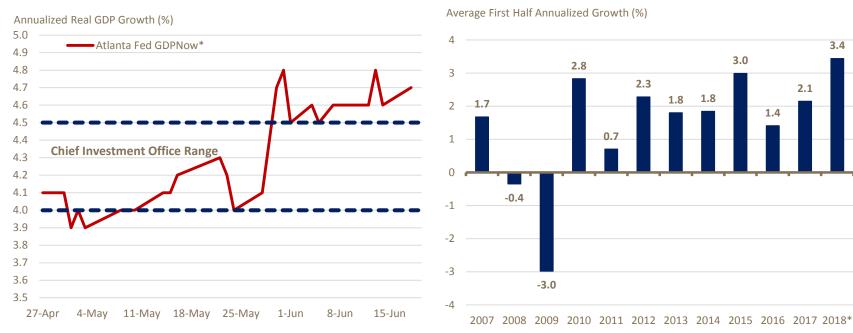


# Fiscal Stimulus Starts to Impact the U.S. Economy

Consumer spending and a boost in industrial activity, via a budding capital expenditure cycle, should propel economic growth.

After a sluggish first quarter (a familiar refrain), second quarter real GDP growth is above the Chief Investment Office Forecast.

Reflecting permeating fiscal stimulus, real GDP growth in the first half of 2018 is expected to be the strongest in more than a decade.



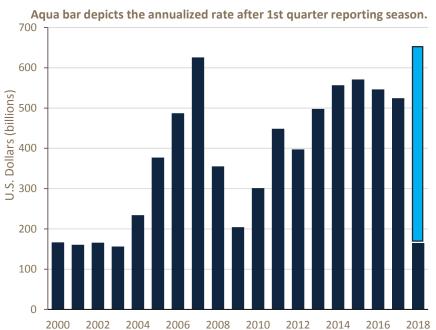
Source: (Left) Federal Reserve Bank of Atlanta. Data as of June 24 2018. \*Federal Reserve Bank of Atlanta: "The GDPNow model forecasts GDP growth by aggregating 13 subcomponents that make up GDP with the chain-weighting methodology used by the U.S. Bureau of Economic Analysis. The dates are all in 2018 and represent how the Atlanta Fed GDPNow forecast for 2nd Quarter real GDP growth has changed over that timeframe" (Right) Bureau of Economic Analysis; Federal Reserve Bank of Atlanta. Right chart data as of June 7, 2018. Numerical data labels represent an arithmetic average of annualized Q1 and Q2 Real GDP Growth, with Q2 2018 being the Federal Reserve Bank of Atlanta's most recent forecast. Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class proxies and index definitions.



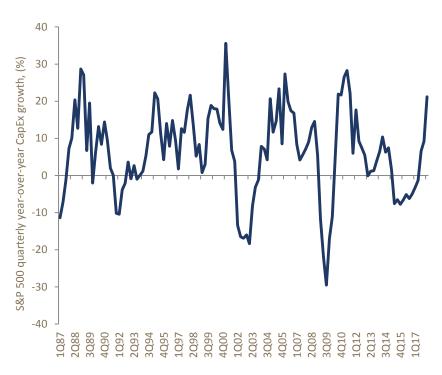
# How are Companies Spending the Fiscal Windfall?

Record buyback trends, 20%+ growth in capital expenditure (CapEx), highlight how companies are using the windfall. We expect companies to also use extra funds on debt reduction.

After the first quarter reporting season for the S&P 500, share buybacks are on pace to set a record.



CapEx surged in the first quarter, a trend we expect to continue.



Source: (Left) Bloomberg, Chief Investment Office. Data as of March 31, 2018. (Right) BofAML US Equity & Quant Strategy, FactSet. Data as of March 31, 2018 Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.

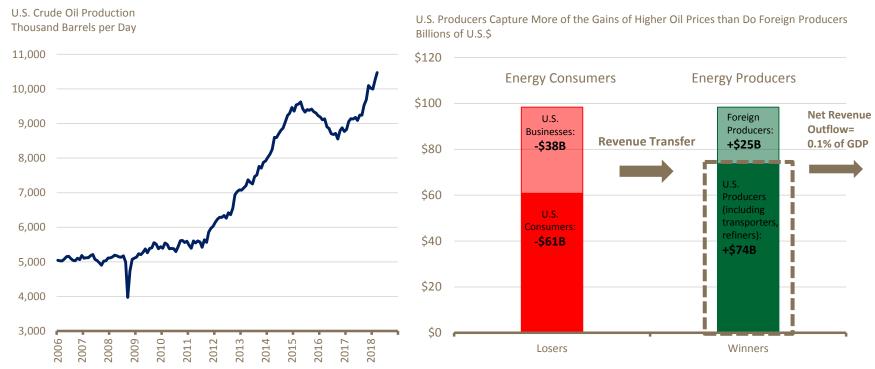


# Higher Oil Prices Not What They Used to Be

Higher oil prices still hurt consumers, but higher revenues also accrue to U.S. producers, who have ramped up production over the past decade. Higher oil prices appear to have become less of a headwind to U.S. economic growth than before.

# The U.S. is now a major producer of crude oil...

### ... leaving the economy less vulnerable to higher energy prices.

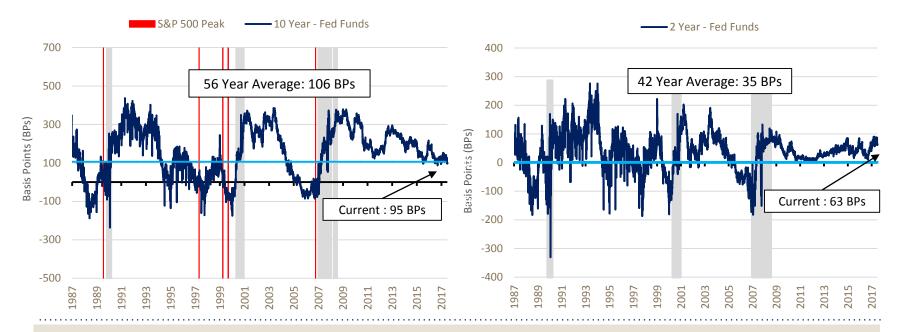


Source: (Left) Energy Information Administration, data as of June 7 2018. (Right) Cornerstone Macro estimated impacts of a 40% increase in WTI Oil Prices. Data as of May 2018. **Past performance is no guarantee of future results.** The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved.



# Lack of Yield Curve Inversion Suggests Continued U.S. Economic Growth

Recessions and Market Peaks come with substantial lags after the inversion takes place.



Regardless of whether an investor looks at the 10 Year – Fed Funds curve, the 2 Year - Fed Funds curve, or the 2 – 10 Year curve, the results are largely consistent. Markets tend to peak about a year after inversion occurs, and there remains ample time prior to a recession. This time period, from when the yield curve inverts to the market peak date, prior to a recession, has yielded a strong positive return, historically.

Source: Bloomberg, Chief Investment Office. Data as of June 29, 2018. Please refer to appendix for asset class proxies and index definitions.

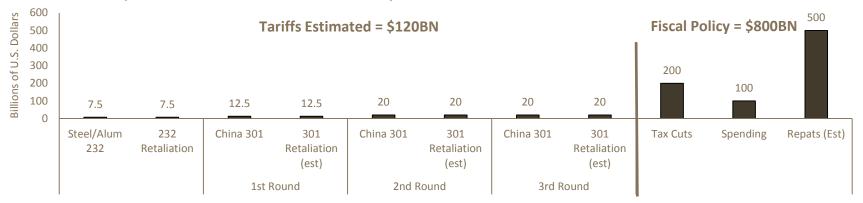
Note: Yield curve data point must have a minimum of five consecutive business days of inversion to be considered. Market Return calculated on a price return basis, from yield curve inversion date to market peak date. Shaded region indicates recession.



# Trump's Trade Policy in Context

Recent tariff announcements have still been relatively small. Moving forward, cooler heads should prevail, given the stakes are high and there's too much to lose from a trade war, in our view.

Fiscal initiatives from the Trump administration are significantly larger than the size of recent tariff announcements, which should sustain positive momentum in the U.S. economy.



Our perspective is that the economic implications of a trade war would be a lose-lose for the U.S., China, and the global economy. We expect bumpy negotiations to eventually yield an agreement. On watch is how national security concerns of both countries shape these negotiations.

Meanwhile, NAFTA negotiations are slated to continue in July, despite recent tariff announcements between the U.S., Canada, and Mexico. This reflects the strategic and economic importance of this relationship to the U.S., an element certain members of Congress have recently expressed.





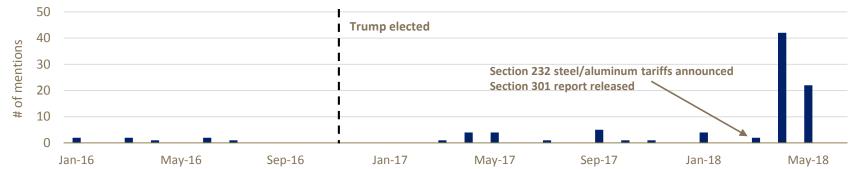
Source: BofAML Global Research, Strategas, MRB Partners. Top: Data as of June, 20, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.

**MARKET DYNAMICS & INVESTMENT TRENDS** 

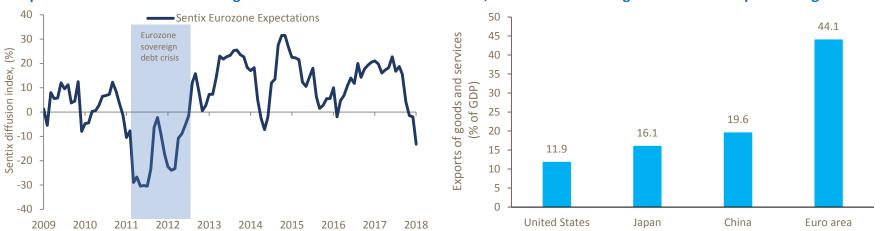
# On Watch: The Impact of Trade Skirmishes

Tariff announcements, while unlikely to directly impact economic growth significantly, are fostering business uncertainty, which if prolonged may impact future business plans and investment.

# Mentions of "tariffs," "NAFTA," "policy uncertainty," and "China" in the Federal Reserve's Beige Book survey have risen significantly.



# Expectations of future economic growth in the Eurozone have declined, which makes sense given the bloc's exposure to global trade.





2010 2011 2012 2013 2014

# Why Did Italy Choose Populism?

Rising inequality was a driver behind the recent election of the 5-Star and League coalition, which has raised uncertainty as to the direction of Italian fiscal policy. While the Euro still remains popular, the election has made the road to enact structural reforms more bumpy, in our view.

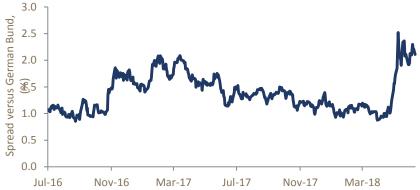
Italian political uncertainty has reflected in a widening credit Rising inequality played a part in the choice made by the Italian public.

0.31

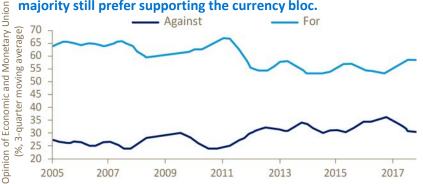
2004

2005 2006





While we've seen a slow decline in those favoring the Eurozone, a majority still prefer supporting the currency bloc.





# The start of another crisis in Europe?

2009

Not necessarily, in our view. The Eurozone is in much better shape fundamentally. Economic growth has boosted earnings growth, margins and return on equity ratios. Meanwhile, Italy comprises less than 5% of aggregate European indices.

However, the continued advance of populism signals to us that structural reforms are still needed, a more complicated prospect given the result of Italy's election. Furthermore, investors may assign aggregate European indices a higher risk premium, given these shortcomings. Rising uncertainty may, if prolonged, lead to an economic slowdown. This underlines our recent shift to neutral from overweight for European equities.



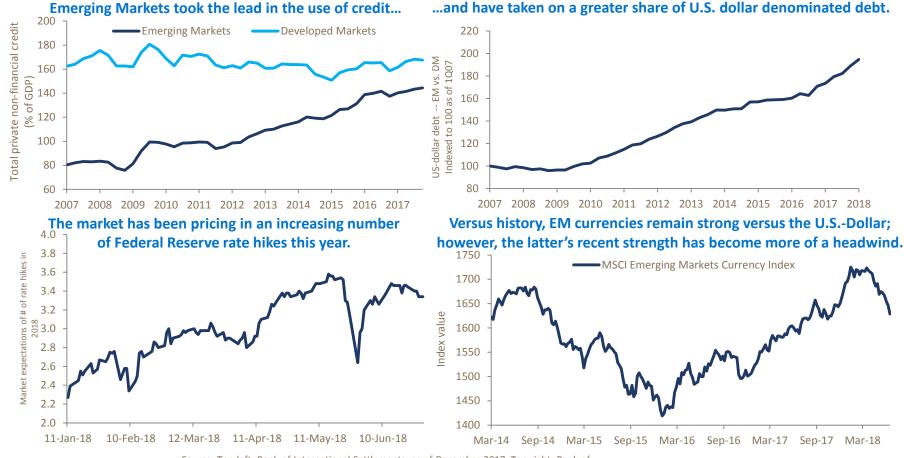
Source: Top left: Bloomberg, Chief Investment Office; as of July 2, 2018. Top right: OECD, Chief Investment Office; as of December 2014. Bottom left: Eurobarometer; as of March, 2018.

\* A Gini coefficient measures the dispersion of wealth within the observed region, country, or unit. The range of the measure is 0 (perfect equality) to 1 (perfect inequality).

Past performance is no guarantee of future results.

# On Watch: Rising U.S. Rates + U.S. Dollar and Emerging Markets

A strengthening U.S. dollar makes Emerging Market U.S.-dollar denominated debt loads harder to service.

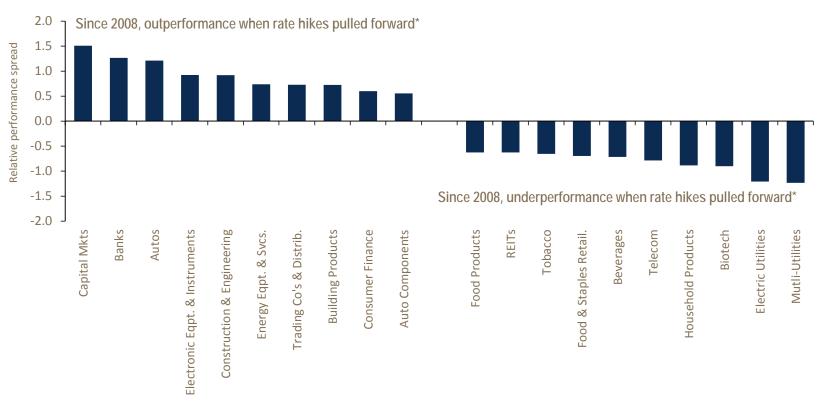




# What if Interest Rates Hikes are Expected Sooner in the U.S.?

Rising government deficits occurring during the later stage of the economic cycle, raise the likelihood of market expectations expecting a steeper policy interest rate trajectory.

# In a period of rising interest rates, we continue to expect financials to do well.



Source: BofAML US Equity & Quant Strategy. Data as of March 2018. \* Based on Top 10 Industries with most positive and most negative relative performance spreads and hit rates on dates when market implied probability of Fed hike was pushed forward vs. dates when Fed hike was pushed back, since 2008.

MARKET DYNAMICS & INVESTMENT TRENDS



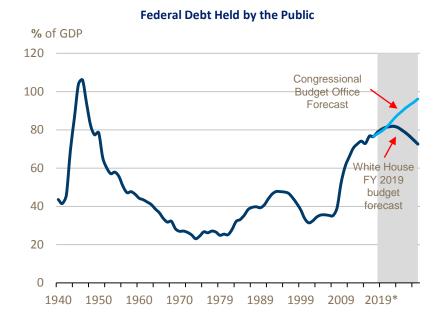
Higher deficits have historically improved equity returns. A caveat this time around is the timing. Deficits tend to be highest late recession and early recovery (not late cycle).

Rising government spending has had a simulating effect on the economy and financial markets. This time around its timing should be a caveat to this historical relationship.

### Subsequent S&P 500 Returns Based on Ranges of the Federal Deficit/Surplus % of GDP

(-) Deficit / (+) Surplus % of GDP	Positive 12M Return	Negative 12M Return	Positive %			
<-10	37	5	88			
-10 to -5	176	43	80			
-5 to 0	151	73	67			
0 to +5	95	47	67			
+5 to +10	39	17	70			
>+10	7	6	54			
Total	505	191	73			

However, over the longer term, productivity will be an important factor in dictating the future trajectory U.S. debt dynamics, in our view.



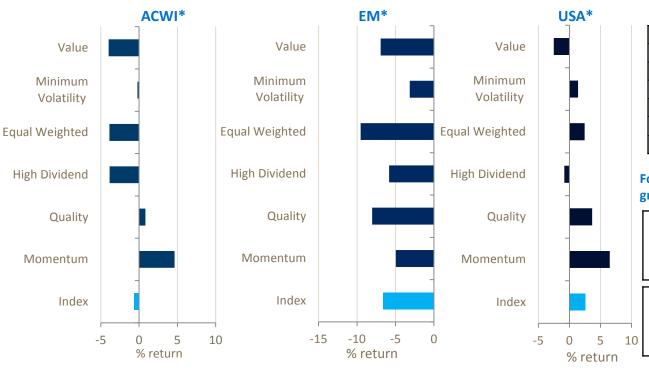
Source: (Left) BofAML US Equity & Quant Strategy, US Treasury, S&P. as of January 23, 2018 (Right) Office of Management and Budget; Congressional Budget Office. Data as of April 9, 2018. \*2018-2028 Forecast. Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class disclosures and index definitions.



# **Factor Barometer**

In the U.S., we have a more balanced view of growth versus value, preferring a more sector-focused strategy. In general, Momentum has been outperforming so far in 2018, though minimum volatility has been a standout in Emerging Markets, given rising volatility in that sphere.

# **Year-to-date factor performance within select MSCI indices**



Figures in %	<b>ACWI</b>	EM	USA
Index	-0.62	-6.62	2.57
Momentum	4.62	-4.95	6.49
Quality	0.82	-8.04	3.67
High Dividend	-3.86	-5.82	-0.82
<b>Equal Weighted</b>	-3.86	-9.54	2.45
Minimum Volatility	-0.22	-3.14	1.39
Value	-3.98	-6.93	-2.53

For the S&P 500, the year has been one of growth outperforming value.

		V	С	G
2	Large	0.26	0.60	0.85
Σ	Mid	0.89	0.95	0.92
	Small	1.57	1.54	1.47

		V	С	G
9	Large	-1.68	2.80	7.13
	Mid	-0.08	2.61	5.96
	Small	6.45	8.54	10.44

Source: Bloomberg. Chief Investment Office. Data as of June 25, 2018. \*MSCI Indices: All Country World Index; Emerging Markets; United States of America; Past performance is no guarantee of future results. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Please refer to appendix for asset class proxies and index definitions.



- 1. Historically after midterm election sell-offs, stocks were up one year later every single time since 1962 by an average of 36 percent. The S&P 500 has not declined in the 12 months following a midterm election year since 1946.
- 2. Slated for Sept. 28<sup>th</sup>, the S&P 500 Telecommunications sector is to be renamed to "Communication Services." Its coverage will be broadened to include select companies from the Consumer Discretionary and Technology sectors.
- 3. Communication Services would become the highest growth sector based on consensus long-term growth expectations and would be the most crowded by large-cap active funds, despite the current record underweight in the current Telecommunications sector.
- 4. On May 31<sup>st</sup> MSCI included the first of two allocations of China's large-cap A-shares to its Emerging Markets index. The second allocation is set for inclusion in August, completing an initial weight of 5%. This marks a step in opening China's capital account to global investors.
- 5. For the first time since recordkeeping began in 2000, there are more job openings in the U.S. than unemployed people.
- 6. Share buybacks for S&P 500 companies are on pace to set a record this year.
- 7. The U.S. became a net exporter of natural gas for the first time on record in 2017.
- 8. Millennials constitute 27% of the world population and their annual income is expected to reach \$32 trillion by 2030.
- 9. Industries that use steel inputs employ 80 times as many people in the U.S. as industries that produce steel.
- 10. A contender for capital, the U.S. 2-year Treasury yield is greater than the S&P 500 dividend yield.

Fact # 1) Strategas, Policy Outlook, March 27, 2018. Fact #2 and 3) BofAML Global Research, as of May 1, 2018. Fact #4) MSCI or Morgan Stanley Capital International, as of May 15, 2018. Fact #5) Associated Press, data as of June 5, 2018. Fact #6) Chief Investment Office, as of March 31 2018. Fact #7) EIA, data as of March 2018. Fact #8) Transforming World Atlas report dated May 9, 2017. Fact #9) Lydia Cox and Kadee Russ, Harvard University and University of California-Davis, as of February 26, 2018. Fact #10) Chief Investment Office, as of June 19, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



# Global Equities Summary & Charts



# CIO Portfolio Guidance – Equities

	Negative •	Slightly Negative	Neutral	Slightly Positive	Positive		
Global Equities	• .	this rotation income. The	on should connis is in expectising inflation	tinue through tation of highe	nigher nominal growth and rising interest rates. We believe out 2018. We are positive global equities versus fixed er nominal growth boosting corporate profits, along with rates. Valuations are rich but not unreasonable relative to		
U.S. Large Cap Growth	• .	Positive based on better nominal U.S. economic growth, driving corporate profits, and attractive relative valuations versus bonds, despite higher absolute valuations. We like large caps, such as multinational companies, which offer good earnings prospects and relative safeguards from					
U.S. Large Cap Value	• .	market volatility. We favor technology and healthcare as sectors that offer long-term secular opportunity for earnings growth. Within large cap value, financial stocks appear to be attractive, enjoying a cyclical increase in interest rates and rising prospects of deregulation. A rise in earnings estimates and recent correction has made valuations more attractive.					
U.S. Small Cap Growth	• .	•		•	m the tax plan boosting already firming economic ing on rising opportunities for investment and rising		
U.S. Small Cap Value		interest rates					
<b>International Developed</b>				ope given a we	eak growth backdrop and higher political risks. Japan's nt soft patch		
Emerging Markets		corporate   We favor e	profit growth emerging Asia	. Valuations ov , on stronger f	tinued cyclical momentum in global economy, fueling verall are moderate, particularly relative to global equities. Fundamentals, exposure to consumer-driven sectors, and see rising demand from emerging markets (EM) consumers.		

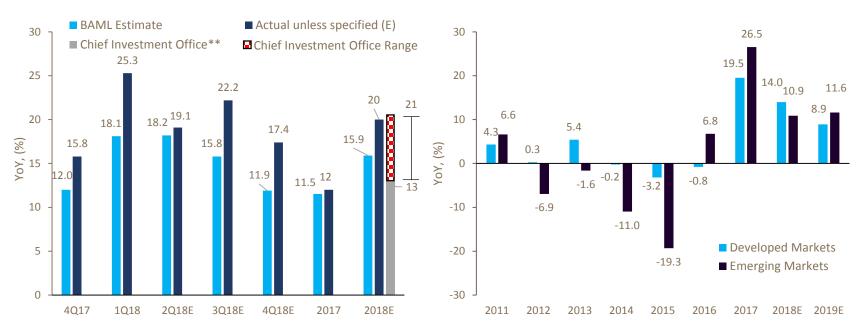
Source: GWIM Investment Strategy Committee (ISC) as of June 2018. Please refer to appendix for asset class proxies and index definitions.



Corporate earnings growth remains robust across the globe and the CIO expects it to be a more important driver for further upside. U.S. and Emerging Market equities are particularly appealing.

#### S&P 500 earnings momentum is expected to persist.

#### Profit growth is even more pronounced in Emerging Markets.



Note: Specified (E) is the consensus expectation, an average of analysts' forecasts surveyed by First Call.

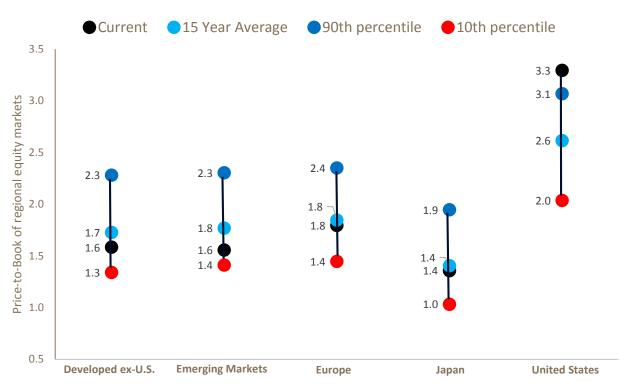
Source: (Both) BofA Merrill Lynch US Equity & US Quant Strategy. (Left) Source: BofAML Global Research; Chief Investment Office. \*\*The Chief Investment Office forecasts a S&P 500 2018 earnings per share (EPS) target range of \$148–\$158, which is depicted by the checkered box. E = Estimate. (Right) FactSet consensus estimates. Data as of June 20, 2018.

Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class proxies and index definitions.



International equity valuations are attractive on a historical basis. While still stretched, U.S. valuations have recently contracted, but remain buttressed by strong fundamentals.

#### Price-to-Book ratios of global markets (MSCI indices)



Source: Chief Investment Office, Bloomberg. Data as of June 26, 2018. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Please refer to appendix for asset class proxies and index definitions.



Over the long-term U.S. equities have exhibited an inconsistent correlation with interest rates.

Equities performed well over the long-term during a secular period of rising rates from the early 1950s to the late 1970s.



More recently, 2013 marked the best year for the S&P 500 since the bull market began in 2009; coincidently the same year that the 10-year Treasury yield also rose, by more than 1%.

Year	S&P 500 Total Return (%)	Change in 10 Year Treasury Yield (BPs)
2009	26	160
2010	15	-55
2011	2	-141
2012	16	-11
2013	32	126
2014	14	-87
2015	1	10
2016	12	18
2017	22	-5
YTD	3	47



(1954-1981)

Source: FRB, BofAML Indices, Bloomberg, Ibbotson, S&P,- BofAML US Equity & Quant Strategy. Data as of June 26, 2018.

Note: Treasury returns based on Ibbotson data before 1980; BofAML data from 1980.

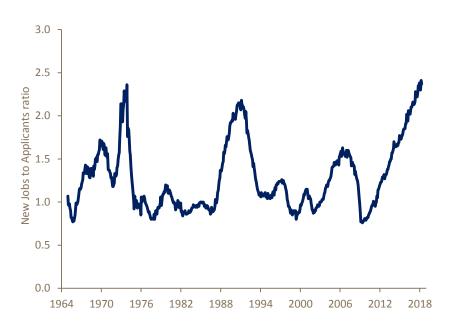
(1981-July, 2016)

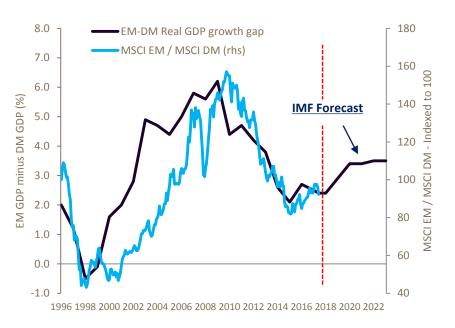
### Global Pickup Should Favor Select Int'l Markets

In Japan, rising wages would increase consumer purchasing power and may help defeat its population's "deflationary mindset." In coming years, Emerging Markets are expected to enjoy a growth premium over developed markets, which may bolster their equity markets.

A tight Japanese labor market should spur wage growth and consumption. Higher inflation may help uncoil equity valuations.

A renaissance in the growth gap favoring Emerging Markets may help their equities gain momentum relative to developed peers.





Note: MSCI DM represented by MSCI World Index Source: Chief Investment Office. MSCI, Bloomberg. (Left) Data as of April 30, 2018. (Right) Data as of May 31, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.

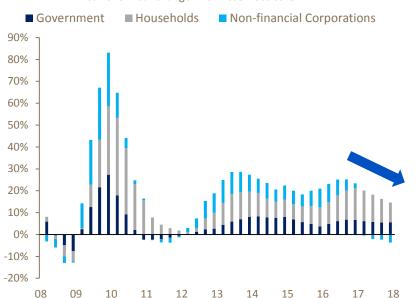


## ...But Watch China's Growth Trajectory

There are risks behind China's economic transformation, with potential implications for the broader global economy. However, a sharp slowdown is not our base case.

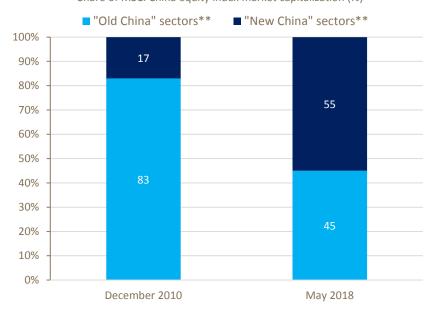
Officials have taken steps to restrain debt growth, a positive in our view. We are monitoring this trend and its implications.

Year-over-Year change in Chinese Debt-to-GDP



China's economy is undergoing a structural shift to consumption and services, in alignment with the state's strategic plans.

Share of MSCI China equity index market capitalization (%)



Source: Chief Investment Office. CEIC. MSCI. International Monetary Fund. Bank for International Settlements (Left) Data of December 31,2017. (Right) Data as of May 31, 2018.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



<sup>\*</sup>Secondary Industry refers to mining and quarrying, manufacturing, production and supply of electricity, water and gas, and construction. Tertiary industry refers to all economic activity not included in primary or secondary industry including real estate, finance, wholesale and retail, transportation and other services

<sup>\*\* &</sup>quot;New China" sectors: Technology, Health Care, Consumer. "Old China" sectors: Energy, Financials, Industrials, Materials, Telecommunications, Utilities.

## Fixed Income Summary & Charts

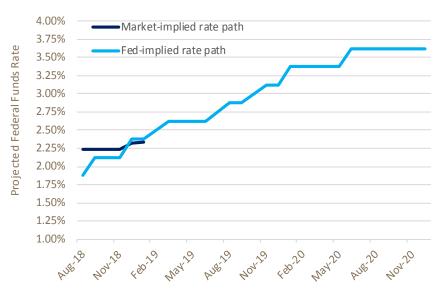


	Negative •	Slightly Negative Neutral Positive
Global Fixed Income	. •	Bonds provide portfolio diversification, income and stability, but low rates skew down-side risk.  Neutral to slightly short duration is warranted, balancing expectations of marginally higher rates over time and periods of flight to quality given political and geo-political headwinds.
U.S. Government	• • • • •	Yields have become somewhat more compelling, particularly versus sovereign peers. Overall, rate risk remains tilted toward the upside. Some allocation for liquidity and safety is advised. The Fed is expected to continue to raise short rates, and longer rates are likely to be impacted by fiscal stimulus, global yields, and international central bank activity.
U.S. Mortgages	. •	Mortgage Back Security (MBS) spreads expected to widen, if as expected, the Fed balance sheet unwind continues to accelerate. We maintain our negative view on the sector based on the outlook for rates, rising volatility, and higher supply in the short to medium term.
U.S. Corporates	•	While we expect that credit fundamentals will continue to improve over the next 12 months and that demand should remain relatively strong amid lower supply, investment grade spreads appear fairly valued. Within fixed income, credit is a preferred sector and our positioning remains biased towards U.S. banks and financials, especially on the short-end.
High Yield	. •	Valuations appear rich on a spread, yield, and ratio basis. Prefer actively-managed solutions that are higher in credit quality. Fundamentals have improved modestly, but leverage remains elevated. Within HY, an allocation to floating rate, secured bank loan strategies is advised.
U.S. Investment Grade Tax Exempt		Offers good relative value for tax-sensitive investors, particularly those in high-tax states. Lower new issue supply could provide a technical tailwind. Credit generally stable, although certain issuers face long-term challenges due to underfunded pensions. Valuations on short-end are rich relative to historical levels.
U.S. H.Y. Tax Exempt		Valuations appear rich on a spread, yield, and ratio basis. Prefer actively-managed solutions that are higher in credit quality.
International Fixed Income	• • • •	Compressed yields and risk premiums around the globe compared to the U.S., combined with potentially higher volatility in non-U.S. markets, present unfavorable risk/reward conditions for non-U.S. fixed income, justifying a negative position. Expensive vs. U.S. dollar alternatives.

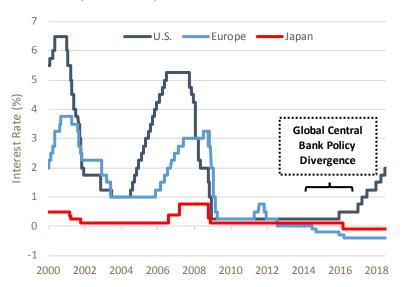


U.S. rates have moved higher since the beginning of the year due to strong economic data, higher growth expectations, and Federal Reserve activity.

Market expectations are in-line with the Fed-implied rate path. We still expect three to four hikes, consistent with the Fed's recent commentary.



Europe's and Japan's less aggressive initial response to the financial crisis means they are several years behind the Fed, in our view.



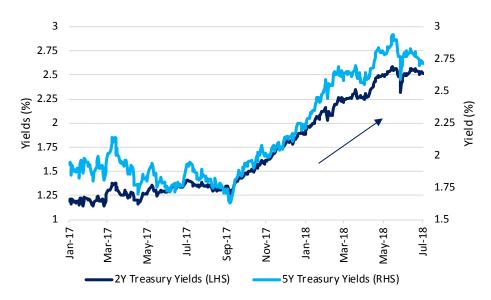
In our view, rates will continue to move gradually higher, but balanced over time with periods of flight to-quality. While inflation, growth, Treasury supply, and fiscal stimulus push rates higher- the anchor of low global rates continues to weigh them down. As long as both the European Central Bank and the Bank of Japan maintain accommodative policies and keep Euro and Yen longer-term rates under control, it is unlikely for 10-year U.S. rates to move significantly higher in an unbalanced fashion.

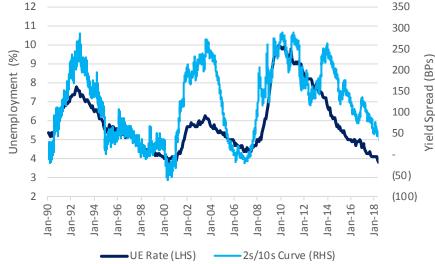
Source: Bloomberg, Chief Investment Office. (Left) Data as of June 29, 2018. (Right) Data as of June 29, 2018. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurances that the forecasts will be achieved. Past performance is no guarantee of future results.



### **Fixed Income Market Trends**

Breakout in 2-year yields led to a narrower spread between 2-year Treasury and 10-year Treasury yield, but this is not a large concern - financial conditions are very accommodative and leading indicators are positive.





Short and intermediate-dated Treasurys have broken out to multiyear highs. This breakout reflects the market's optimism about tax reform, the continuing economic expansion, and renewed faith that the Fed will likely be able to continue its rate hike campaign with multiple hikes this year. The 2s / 10s curve has continued to flatten along with the unemployment rate, much as we anticipated. This flattening has been exacerbated by the sharp move higher in 2-year Treasury yields. The Fed-Funds-to-10-year curve is a better leading indicator. It is currently still accommodative and nowhere near inverted, so the flattening 2s/10s curve is not a large concern at this point, in our view.

Source: Bloomberg, Chief Investment Office. Data as of June 29, 2018. Performance results are short term and may not provide an adequate basis for evaluating performance potential over varying market conditions or economic cycles.

Past performance is no guarantee of future results.



## Investment Grade & High Yield

Spreads are tight, but based on history they can stay at these tighter levels as long as economic strength continues.



Investment grade spreads have underperformed high yield spreads since February's volatility. Given that high yield has not sold off, there are mitigating factors including repatriation flows and higher short-term rates. Our economic outlook is intact. We are not overly concerned about the underperformance and see reasonable value at these levels.



The macro environment will likely remain supportive to credit risk appetite overall. Spreads are still at lower-end of long-term range, but can stay there for a multi-year period as long as the economy is strong. Elevated leverage metrics remain a concern when the credit cycle ultimately turns.

Source: Bloomberg, Chief Investment Office. Data as of June 29, 2018.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



# Alternative Investments Summary & Charts



We favor a strategic approach when allocating to Alternative Investments.

Alternative Investments*	We believe allocations to AI can introduce differentiated returns which can complement existing traditional holdings by enhancing returns, reducing risk, and capitalizing on opportunities not available in traditional investments.						
Hedge Funds	We believe the environment for active management, and hence hedge funds, will remain favorable through 2018 and we continue to recommend a diversified approach when investing in this heterogeneous asset class. We maintain our moderately positive view on equity long/short, equity market neutral strategies, and merger arbitrage.						
Private Equity	We view private equity strategies as long-term potential portfolio return enhancers with unique access to specialized deals unavailable to most investors. We recommend investors plan a disciplined multi-year commitment strategy that builds portfolio diversity among different managers, styles, geographies and, importantly, vintages. Currently, we see opportunities in special situations and private credit.						
Real Assets	General economic conditions remain good for commercial real estate. We place emphasis on direct investments in well-located properties in strong regions of the country that exhibit attractive rent roll and cash flow characteristics, and have the potential to bridge into the next cycle, providing a long-term hedge against inflation.						

**ALTERNATIVE INVESTMENTS NOTE:** Given the differences in liquidity characteristics between AI and traditional investments, the AI portfolio positioning and CIO asset class views have been neutral rated versus our strategic allocations. These types of investments, in our opinion, should not be viewed at the asset class level on a tactical basis, rather the tactical positioning should be expressed at the sub asset level. We will continue to provide strategy level guidance for qualified AI investors.

**Investment Strategy**: The pro-cyclical improvement has started to break down the elevated correlation amongst and within asset classes since early last year. We expect this adjustment to continue as economic volatility picks up and asset class volatility follows suit. In this environment, we believe alternative investments, namely hedge funds, should have a larger opportunity set to outperform industry benchmarks, which is a break from the most recent past of difficult performance.

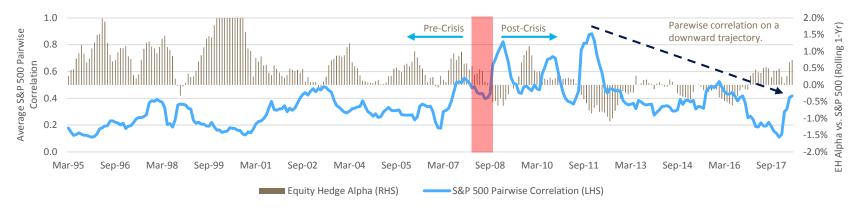
\*Many products that pursue Alternative Investment strategies, specifically Private Equity and Hedge Funds, are available only to pre-qualified clients.





Lower inter-stock correlations should continue to benefit active managers, particularly in the Equity Long/Short and Equity Market Neutral space.

Recently, according to HFRI's Composite Index\* hedge funds have delivered alpha as lower inter-stock correlations widen the opportunity set available to managers, particularly those in the equity space.



We expect contribution from both alpha and beta components of Equity Hedge strategies:

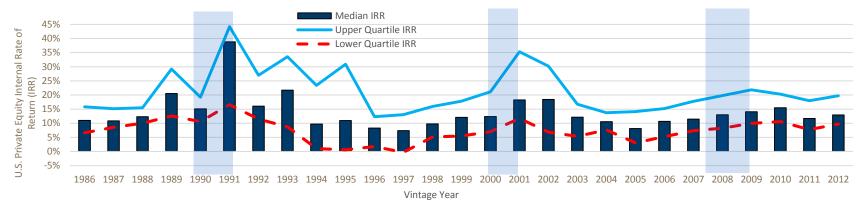
- ✓ Alpha: widening opportunity set resulting from lower correlations, wider dispersion, and higher volatility
- ✓ Beta: strong economic fundamentals (GDP, employment, profits) should help ELS managers

Source: Bloomberg, CIO. Data as of May 30, 2018. \* Hedge funds are represented by the HFRI Fund Weighted Composite Index. Equity Hedge Fund alpha is the HFRI Fund Weighted Composite index versus the S&P 500 index. Past performance is no guarantee of future results. Please refer to appendix for asset class, important risk disclosures and index definitions.



## We Are Constructive on Niche Areas of Private Equity

Private equity returns can vary widely by vintage. As such, we recommend a disciplined and structured approach when allocating to private equity strategies.



The niche PE strategies can complement traditional PE strategies and could benefit from normalized volatility

**Private Credit** 

**Special Situations** 

Institutions have retrenched from direct lending market, resulting in less competition for deals

Premium yield, often floating rate, relative to comparable risk assets (e.g., high yield, leveraged loans)

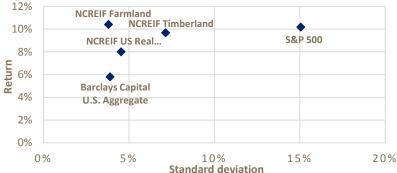
Disruptive tech leading to dislocations in certain industries

Source: (Top) Cambridge Associates. The data is as of 1Q17, chart denotes 2012 because these are vintage years (as noted at the bottom of the chart). Vintage years of performance are needed to be able to measure these tranches. Shaded are recessions.



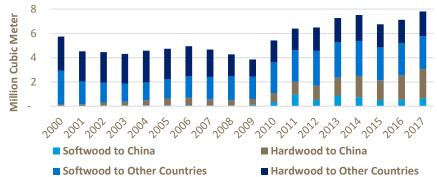
Consistent performance through market cycles of real tangible assets may be due to the potential benefits of illiquidity.

Direct investment in Farmland, Timberland, and Real Estate exhibit Historic U.S. lumber exports to China and other key markets. a favorable risk/return profile relative to stocks and bonds.

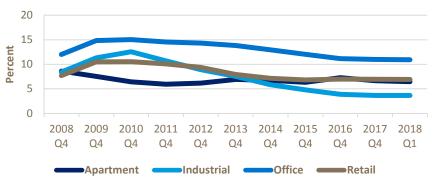


Farmland: A historical perspective of the two driving factors of value most sought and targeted by land investors for a 10 es





Vacancy rates trend downward to flat across commercial real estate sectors such as apartment, industrial, office, and retail.



Source: (Top Left) National Council of Real Estate Investment Fiduciaries, Annualized measures during period of 1991 - 2017. Data as of March 31, 2018. (Top Right) FAS USDA. Data as of December 31, 2017. (Bottom Left) U.S. Department of Agriculture. Data as of March 31, 2018. (Bottom Right) NCREIF Trends Report, U.S. Vacancy Rates. Data as of March 31, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.

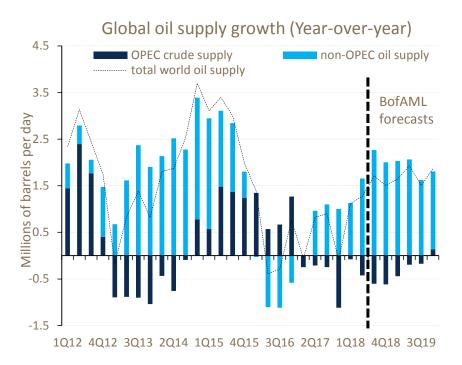
ALTERNATIVE INVESTMENTS SUMMARY & CHARTS



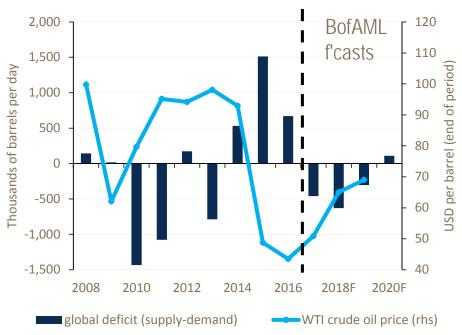
## Commodities: Energy

Non-OPEC supply is set to increase, though a deficit is expected for the oil market over the coming years.

#### Total world oil supply expected to come more from non-OPEC.



## The upward trend in Oil prices may be reflecting an increasing expectation of stronger demand versus supply.



Note: Organization of the Petroleum Exporting Countries (OPEC)

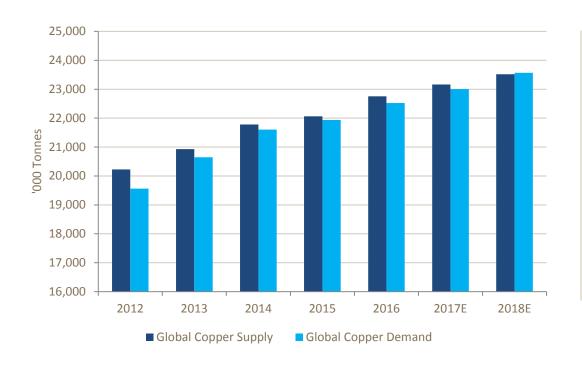
Source: CIO, BofA Merrill Lynch Global Research, Bloomberg. Data as of June 2018.

Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class proxies and index definitions.



### Commodities: Metals

The 4<sup>th</sup> quarter rally in copper has tailed off. While there is reason for near term caution, solid activity data may spur optimism.



- Copper has held up, given extremely high mine-supply disruptions year-to-date.
- China's physical market steady, despite slower consumption.
- While China's demand growth is slowing, it should hold up. We expect a small deficit for 2018, but acknowledge that prices have rallied well ahead of fundamentals through 2H17.

Source: SNL, Woodmac, CRU, Metal Bulletin, Reuters, Bloomberg, company reports, ICSG, BofA Merrill Lynch Global Research. Data as of June 25, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.



## **Portfolio Strategy**

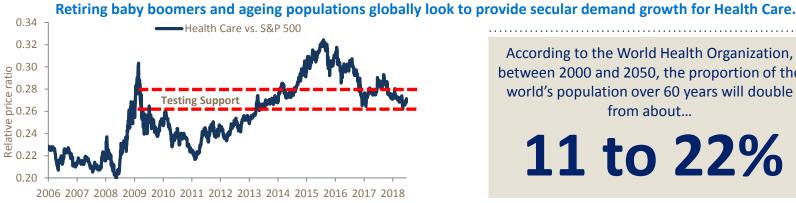


### **Equities**

As long-term trends begin to gain force within markets, we favor sectors leveraged to them.

The Technology and Financial sectors within the S&P 500 are poised to benefit from the advent of the "Digital Era" as well as pro-growth U.S. government initiatives, in our view.





According to the World Health Organization, between 2000 and 2050, the proportion of the world's population over 60 years will double from about...

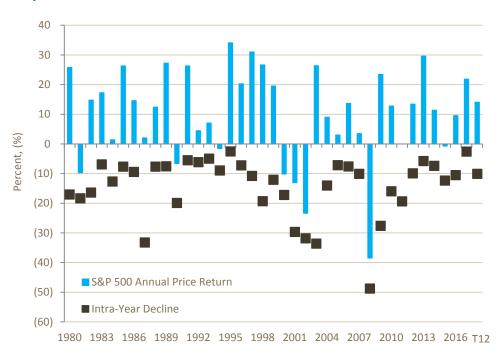
**11 to 22%** 



### **Equities**

The case for remaining invested in equities

## Intra-year declines are a poor indicator of future annual performance.



Excluding the 10 best days of performance per decade for the S&P 500 drastically cuts down returns.

Decade	<b>Price Return</b>	<b>Excluding Best 10D Per Decade</b>
1930	-42%	-79%
1940	35%	-14%
1950	257%	167%
1960	54%	14%
1970	17%	-20%
1980	227%	108%
1990	316%	186%
2000	-24%	-62%
2010	136%	61%
Since 1930	12,166%	59%

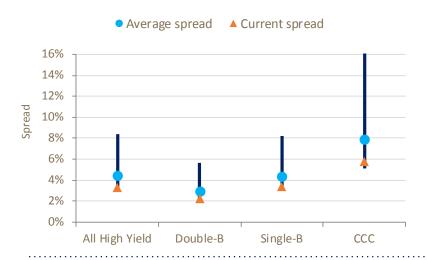
Source: Chief Investment Office and Bloomberg. (Left) Data as of June 22, 2017. T12 = Trailing 12 months. (Right) Data as of February 5, 2018. It is not possible to invest directly in an index. Past performance is no guarantee of future results.



### High yield returns likely to be well below historical averages

Low starting yields and tight spreads imply modest future returns. Higher leverage levels and more rate sensitivity than usual are also risks.

#### Spreads are tighter than 5-year averages across all ratings...



- High yield spreads remain tight across rating categories, but yields have moved slightly higher off of cycle lows.
- While we do not expect significant near-term widening that usually coincides with economic weakness, investors should expect "coupon-lite" (slightly less than coupon) total returns best case in a rising rate environment

#### ...implying modest high yield returns, both absolute and relative.



- Furthermore, starting spreads are a good predictor of excess returns over a longer holding period
- Current spread levels imply negligible excess returns over Treasurys, based on historical data

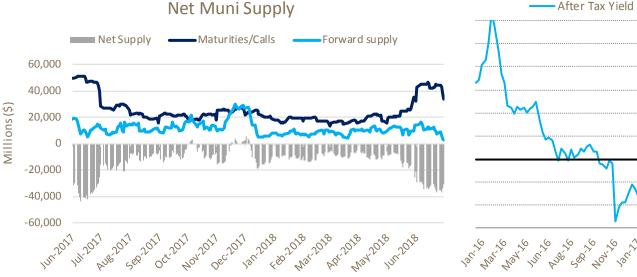
Source: Bloomberg Barclays Indices, Moody's, S&P Global Market Intelligence, U. S. Trust. (Left) Data as of June 19, 2018. (Right) Data as of March 27, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.

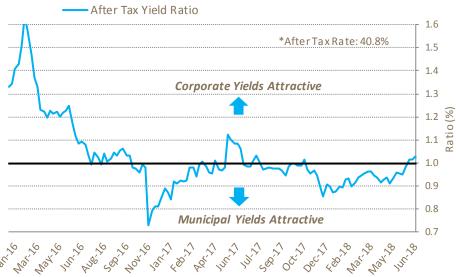


Be selective as opportunities remain in credit.

Municipals: solid demand and limited supply are supportive, but rising rates may weigh on absolute performance.

The comparison of after-tax corporate bond yield to the after-tax yield from municipal bonds suggests relative value about equal. We would note, corporate yields are more compelling in the short end, while after-tax muni yield in the longer end are relatively higher.





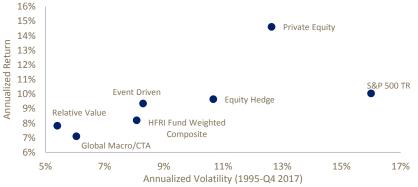
Source: Bloomberg, Chief Investment Office. Data as of June 29, 2018. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



### **Alternative Investments**

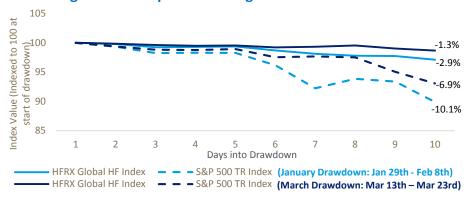
For qualified investors, Alternative Investments may provide diversification and may help lower volatility.

## Alternative Investments (AI) may complement portfolios by potentially lowering volatility and/or enhancing returns.

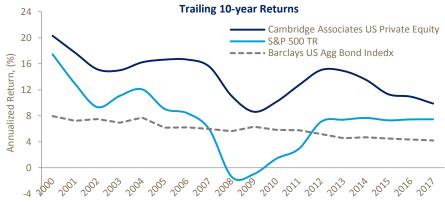


Source: (Left) Factset, Chief Investment Office. Hedge Fund Sub-Strategies represented by respective HFRI Hedge Fund indexes. Private Equity represented by Cambridge Associates Private Equity Index. Data as of December 30, 2017. (Top Right) Bloomberg. (Bottom Right) Factset, Chief Investment Office. Data as of December 31, 2016 (latest data available). • Diversification and asset allocation does not ensure a profit or protect against a loss in declining markets. · Results shown are based on indexes and are illustrative: they assume reinvestment of income, no transaction costs or taxes, and do not constitute a portfolio recommendation. They do not represent benchmarks or proxies for the return of any particular investable hedge fund product. Past performance is no guarantee of future results. The prerequisite for funds to be included in the components of the indices interjects a significant element of "survivor bias" into the reported levels of the indices, as generally only successful funds will continue to report results for the minimum time period required by the index. There can be no assurance that such funds will continue to be successful in the future. There is a "risk of ruin" in these strategies which has historically had a material effect on long-term performance but which is not reflected in performance volatility. From time to time, extremely low volatility alternative investments have incurred sudden and material losses. · Alternative Investments are not appropriate for all investors based on factors such as risk tolerance and liquidity preferences. Please refer to appendix for asset class, important risk disclosures and index definitions.

#### Hedge funds can protect during market drawdowns.



#### Long-term private equity returns have been competitive.

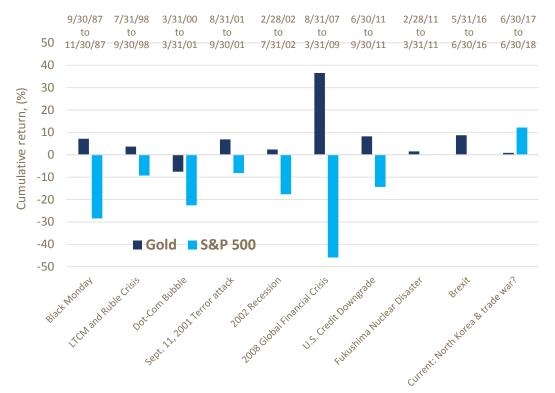




### Gold as a Potential Diversifier

Despite our base case for the economic and market outlook, we advise investors to remain well-diversified, increasing exposure to less correlated investments, such as gold.

Since the late 1980s, gold has outperformed the S&P 500 in most cases during periods when a low-probability negative shock occurred.



Source: Chief Investment Office, Bloomberg. Data as June 30, 2018.

Past performance is no guarantee of future results. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Please refer to appendix for asset class proxies and index definitions.

Gold's upward price momentum has recently waned in response to higher real interest rates and U.S. dollar. However, its general resilience may reflect political and geopolitical worries.



Gold's correlation, or performance relationship, with the S&P 500 and the 10-year U.S. Treasury Note over the past 30 years is...

-0.03 & 0.07

...respectively. A value near zero indicates little relationship. A value of +1.00 or -1.00 indicates a perfect performance relationship inline with or opposite the comparative security.

**PORTFOLIO STRATEGY** 



## Thematic Investing



## Thematic Investing - A Transforming World

These five investment themes help to provide a broad multi-industry context that will allow us to better understand the breadth of the changes occurring in the global economy driven in large part by the rebalancing of growth from the developed to the developing world.





- ROBOTICS
- CYBER SECURITY
- **BIG DATA**
- CLOUD COMPUTING

Technological change is one of the few constants in a rapidly evolving global economy; Investors stand to benefit from exposure to companies that are at the cutting edge of the development, design and marketing of these new technologies, and those that can harness them in their operations and production decisions to reduce operational costs and offer improved customer service.



- GLOBAL OBESITY & **HEALTHCARE**
- **EMERGING MARKET** CONSUMER
- WOMENOMICS
- **DEMOGRAPHICS**

The demographic make-up of societies around the world is shifting. Populations are ageing, chronic illness is becoming more prevalent and consumer incomes and lifestyles in the emerging world are converging with those elsewhere. Growth in healthcare spending will be underpinned by the ageing global population, rising incomes, higher calorific intakes and more sedentary lifestyles in the emerging world. The emerging market consumer should be a key driver of global spending growth across a range of sectors.



- GLOBAL COMMERCIAL **REAL ESTATE**
- EQUITY SECTORS

The extended economic expansion, low but gradually rising inflation and a measured normalization of interest rates should continue to favor stocks over bonds. However, we also continue to like real assets such as commercial real estate, farmland and timberland. The combination of healthy demographics, greater transparency, a growing consumer base and increasing cross-border capital flows suggest the emerging markets will be an attractive area for investors to seek commercial real estate opportunities over the long term.



- AGRICULTURE
- CLIMATE CHANGE
- WATER
- OIL AND GAS

As the global rebalancing story evolves, the current and future growth engines for global growth will demand more natural resources. Rather than target specific countries, investors should seek to benefit from industries with the capabilities and technologies to meet future global demand for natural resources. Among the areas that stand to benefit are agricultural produce and yield-enhancement products, as well as water infrastructure and alternative energy.



- **GEOPOLITICS**
- INFRASTRUCTURE
- GOVERNMENT POLICY

Government policy developments will have an impact on country and sector returns. We continue to see structural reform as a key theme that should differentiate prospective performance between countries. For example, the massive outperformance of emerging markets in the 2000s, came at a time of significant external support, but country-specific factors will matter more over the coming years. Geopolitical stresses are on the rise around the world and this is being met with a build up of arms and equipment capability. We expect government defense spending to rise globally.

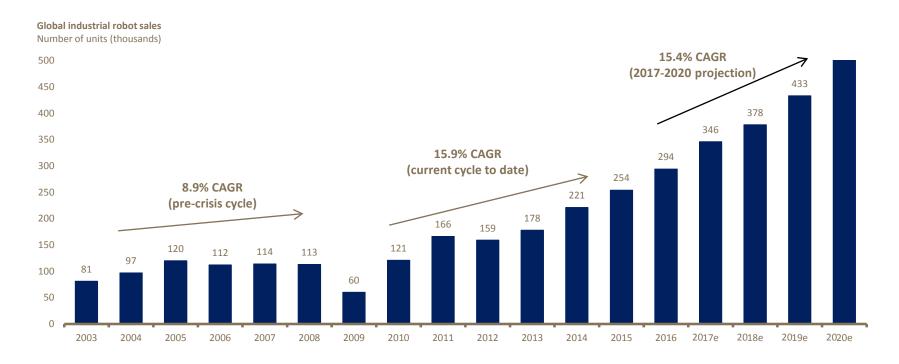
Source: Bank of America Merrill Lynch Global Research. Chief Investment Office Market Strategy Team as of December 2017. Please refer to appendix for asset class disclosures and index definitions.



## Robotics Sales Expected to Maintain Double-Digit Growth Rate for the Rest of the Decade



Worldwide sales of industrial robots have accelerated since the financial crisis and are expected to grow at over 15% for the remainder of the decade. Rising wages, the falling cost of automation and improving functionality are driving global adoption.





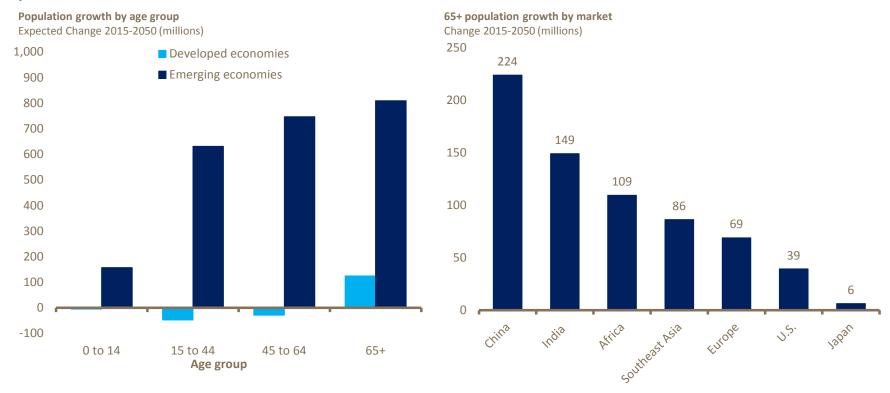
Source: International Federation of Robotics. Data as of 2017. International Federation of Robotics projections 2017-2020. E = Estimate; CAGR = Compound Annual Growth Rate is the constant rate per annum growth rate over a specified time period. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. **Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.** 

**THEMATIC INVESTING** 

## World Population Growth Led by Older-Age Cohorts, Particularly in Emerging Economies



Demographic change remains a long-term support for the healthcare sector. The shifting composition of societies around the world will direct more resources toward later life-cycle activity, including spending on health-related products and services.





Source: United Nations. Data as of 2017. Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class disclosures and index definitions.

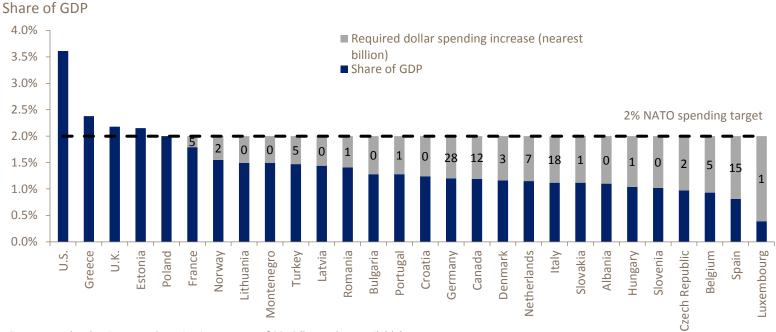
**THEMATIC INVESTING** 

## Only Five NATO Members Currently Meet the Official Defense Spending Target



Rising geopolitical tensions and a more isolationist U.S. administration are boosting global military spending. A move by all NATO members to meet the 2% of GDP target would translate into a further \$107 billion of global defense expenditure.

#### **NATO** military spending



Source: North Atlantic Treaty Organization. Data as of 2016 (latest data available).

The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.

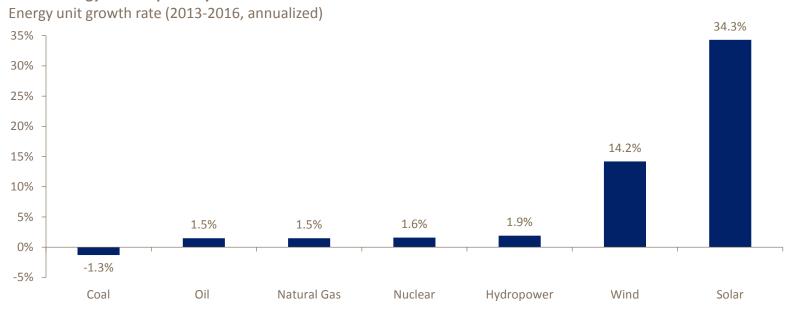


## Wind and Solar Power Growing More Quickly than Other Energy Sources



Renewable energy consumption growth has far outstripped that of fossil fuels over recent years. Despite the U.S. withdrawal from the Paris climate agreement, falling costs and local policies continue to support global adoption of wind and solar power.

#### Global energy consumption by source



Source: BP Statistical Review of World Energy. Data as of 2017.

The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Past performance is no guarantee of future results. Please refer to appendix for asset class disclosures and index definitions.



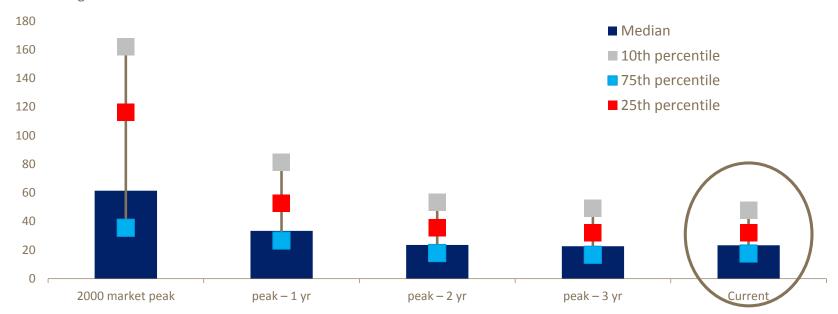
## Technology Sector Valuation Percentiles – Dot-Com Years vs. Today



We maintain our growth preference for the information technology sector. In both valuation and price terms, the gains of the current cycle have not been excessive compared to the broad market and remain well short of the boom years of the 1990s.

#### Valuation level – technology sector constituents





Source: Bloomberg. Data as of May 2018. Market peak was March 27, 2000. Past performance is no guarantee of future results. The economic and market forecasts presented are for informational purposes as of the date of this report. There can be no assurance that the forecasts will be achieved. Please refer to appendix for asset class disclosures and index definitions.



## **Appendix**



	Q3 2017	Q4 2017	Q1 2018	Q2 2018E	2016	2017	2018 E
Real global GDP (% y/y annualized)					3.2	3.8	3.5 – 4.0
Real U.S. GDP (% q/q annualized)	3.2	2.9	2	4.0 – 4.5	1.5	2.3	3.0 – 3.5
CPI inflation (% y/y)*	2.1	2.1	2.1	2.2	1.3	2.1	2-3
Core CPI inflation (% y/y)*	2	1.8	1.8	1.9	2.2	1.8	2-3
Unemployment rate, period average (%)	4.3	4.1	4.1	3.8	4.9	4.4	3.8
Fed funds rate, end period (%) **	1.12	1.37	1.62	1.87	0.62	1.37	1.87 – 2.38
10-year Treasury, end period (%)	2.33	2.41	2.74	2.86	2.45	2.41	2.87 – 3.38
S&P 500, end period	2519	2674	2641	2718	2239	2674	2800-3000
S&P operating earnings (\$/share)	33	36	38	40	119	132	148 – 158
U.S. dollar/euro, end period	1.18	1.2	1.23	1.17	1.05	1.2	1.10 - 1.20
Japanese yen/U.S. dollar, end period	113	113	106	111	117	113	105 – 115
Oil (\$/barrel), end period	52	60	65	74	54	60	60 – 80

Percent calendar-year average over calendar-year average annualized unless stated. E = Estimate.

Source: Global Wealth & Investment Management Investment Strategy Committee. Data as of June 29, 2018.



<sup>\*</sup>Latest 12-month average over previous 12-month average.

<sup>\*\*</sup>Fed funds rate, end period based on market indications.

<sup>\*\*\*</sup>Our 2018 S&P 500 end period forecast: 2830 is the equilibrium target with potential for 3000 post tax reform, which could underpin earnings in the high \$150s, or an increase of \$9 to \$10 above the upper end of our range. Past performance is no guarantee of future results. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment performance.

**APPENDIX** 

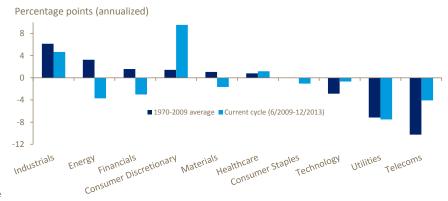
## **Business Cycle & Relative Stock Performance**

#### The Business Cycle—A Stylized View

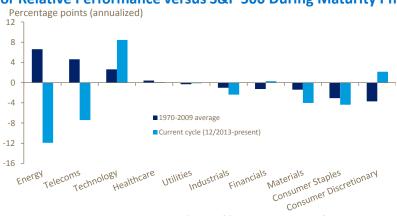


Average return is historical average annualized S&P 500 total return from 1970-2009. Recession average return to recession market trough.

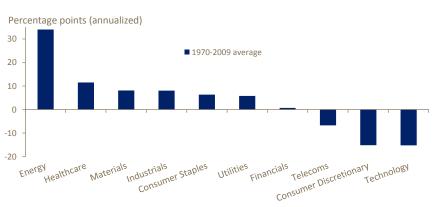
#### Sector Relative Performance versus S&P 500 During Recovery Phase



#### Sector Relative Performance versus S&P 500 During Maturity Phase...



#### ...and During Decline Phase



Source: (Top Left) U.S. Trust, Bank of America Private Wealth Management. Data as of 2018. (All other charts) Bloomberg. Data as of May 2018. Bottom left chart "present" is June 2018.

Past performance is no guarantee of future results.



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	Financials	Materials	RealEstate	Industrials	cons. Disct.	Technology	Energy	Health Care	cons. Staple	Telecom	Utilities	58P 500 Index		
S&P Weight	13.9%	2.6%	2.8%	9.6%	12.9%	26.1%	6.2%	14.1%	6.8%	2.0%	3.0%	100.0%	Weight	
Russell 2000 Weight	18.0%	4.3%	7.3%	14.9%	13.4%	14.9%	5.0%	15.6%	2.8%	0.7%	3.3%	100.0%	Wei	
Q2 2018	(2.9%)	1.7%	4.5%	(3.4%)	7.5%	7.3%	11.5%	2.7%	(2.5%)	(1.5%)	3.7%	3.4%		
YTD	(3.8%)	(3.9%)	(0.7%)	(4.9%)	10.8%	11.0%	4.9%	1.4%	(9.4%)	(8.9%)	0.2%	2.6%		
Since Market Peak (October 2007)	14.2%	69.7%	66.1%	103.3%	243.4%	232.0%	22.0%	181.6%	145.1%	40.7%	91.4%	118.7%	Return	
Since Market Low (March 2009)	523.4%	304.3%	516.0%	458.7%	694.8%	595.7%	123.4%	354.0%	243.7%	168.8%	234.9%	388.6%		
2018 EPS Growth**	29.1%	30.0%	(9.4%)	19.5%	14.9%	12.2%	92.3%	13.3%	6.4%	16.4%	5.7%	18.9%	EPS	
20 YR Average	25.6%	12.3%	NA*	8.0%	11.4%	10.1%	28.5%	9.6%	4.3%	4.7%	3.0%	7.2%	ij	
FWD P/E*** Ratio	12.8x	15.8x	39.0x	16.6x	21.2x	18.8x	19.0x	15.6x	17.7x	10.3x	16.9x	17.0x		
20 YR Average	20.3x	19.5x	NA*	17.9x	20.9x	20.1x	23.0x	18.6x	17.9x	17.6x	15.3x	17.7x	P/E	
TTM P/E Ratio	15.7x	20.1x	46.5x	18.9x	25.1x	22.6x	30.5x	20.1x	19.1x	12.7x	17.0x	20.6x		
20 YR Average	19.9x	20.7x	NA*	19.3x	22.5x	27.7x	23.7x	20.4x	19.4x	18.1x	15.4x	19.4x		
Dividend Yield	1.8%	2.0%	3.5%	2.1%	1.2%	1.2%	3.2%	1.7%	3.1%	5.7%	3.6%	1.9%	DIV***	
20 YR Average	2.2%	2.2%	NA*	2.0%	1.4%	0.9%	2.2%	1.6%	2.5%	4.1%	3.8%	1.9%		
Beta ‡ to S&P 500	1.26	1.05	0.49	1.16	1.15	0.87	1.00	1.18	0.73	0.97	0.05	1.00	β	
Correl. † To Tsy Yields	0.74	0.36	-0.58	0.42	0.22	-0.21	0.44	-0.07	-0.39	0.05	-0.56	0.19	ρ	

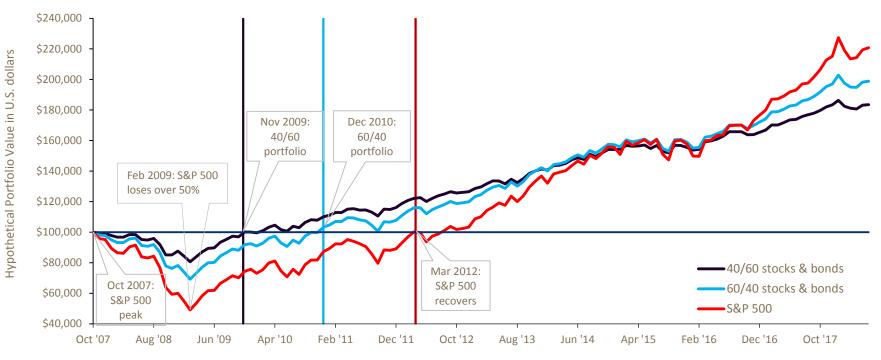
Analysis notes: Since market peak represents period 10/9/2007 - 6/29/2018. Since market low represents period 3/9/2009 - 6/29/2018. \*Real Estate became the 11th GICs Sector in 2016 and therefore data is limited. \*\*Consensus Earnings Estimates; TTM = trailing twelve months. \*\*\* Price-to-Earnings ratio: The price of a security or index over its respective earnings. \*\*\*\* Dividend Yield. † Correl. = Correlation: a measure of relationship in the performance between two investments. A value of +1.00 or -1.00 indicates a perfect relationship inline with or opposite the comparative security; Correlation to Treasury Yields are trailing 2-year monthly correlations between S&P 500 sector total returns and 10-year Treasury Yield movements. ‡ Beta (or  $\beta$ ): a measure of relationship in the performance between an investment versus a benchmark in terms of volatility. A measure greater (less) than 1.00 indicates greater (less) volatile than the benchmark. Calculations are based on 2-years of monthly total returns for the S&P 500 and its sub-indices.

Source: Bloomberg, FactSet. Data as of June 29, 2018. All calculations are cumulative total return, not annualized, including dividends for the stated period. Past performance is no guarantee of future results.



Less volatility per unit of growth

#### Hypothetical portfolio returns: equity versus equity and fixed income blends



Source: Chief Investment Office, Morningstar Direct. <u>Equity Index</u>: S&P 500 Total Return; <u>Fixed Income index</u>: BarCap Aggregate. Data as of June 30, 2018. **Results shown** are based on an index and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged. Direct investment cannot be made in an index. Diversification does not ensure a profit or protect against loss in declining markets. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



## Merrill Lynch U.S. Oriented Investor

#### Historical Asset Class Performance

Key market index returns, 2009 – 2018, highest to lowest

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
EM Equity	US SCG	Govt FI	EM Equity	US SCG	US LCV	US LCG	US SCV	EM Equity	US SCG
78.51%	29.08%	9.19%	18.23%	43.30%	13.45%	5.67%	31.74%	37.28%	9.70%
High Yield FI	US SCV	Corp FI	US SCV	US SCV	US LCG	Mtge FI	High Yield FI	US LCG	US LCG
56.28%	24.51%	7.51%	18.05%	34.52%	13.05%	1.46%	17.34%	30.21%	7.25%
US LCG	EM Equity	Mtge FI	US LCV	US LCG	Intl FI	Intl FI	US LCV	Intl Eq	US SCV
37.20%	18.88%	6.14%	17.50%	33.48%	9.07%	1.35%	17.34%	24.21%	5.44%
US SCG	US LCG	High Yield FI	Intl Eq	US LCV	ML Mod. Alloc.	Govt FI	US SCG	US SCG	Inflation
34.49%	16.71%	4.50%	16.41%	32.53%	7.95%	0.84%	11.32%	22.17%	1.84%
Intl Eq	US LCV	Intl FI	High Yield FI	Intl Eq	Corp FI	Inflation	EM Equity	US LCV	Intl FI
33.67%	15.51%	4.04%	15.44%	21.02%	7.51%	0.73%	11.19%	13.66%	1.48%
US SCV	High Yield FI	Inflation	US LCG	ML Mod. Alloc.	Mtge FI	ML Mod. Alloc.	ML Mod. Alloc.	ML Mod. Alloc.	Cash
20.59%	15.24%	2.96%	15.27%	17.05%	6.07%	0.18%	8.05%	13.35%	0.81%
ML Mod. Alloc.	ML Mod. Alloc.	US LCG	US SCG	High Yield FI	Govt FI	Cash	US LCG	US SCV	High Yield FI
20.37%	12.33%	2.64%	14.58%	7.38%	5.88%	0.05%	7.08%	7.84%	0.06%
Corp FI	Corp FI	ML Mod. Alloc.	ML Mod. Alloc.	Inflation	US SCG	Corp FI	Corp FI	High Yield FI	ML Mod. Alloc.
19.76%	9.52%	2.08%	11.79%	1.51%	5.60%	-0.63%	5.96%	7.48%	-0.43%
US LCV	Intl Eq	US LCV	Corp FI	Intl FI	US SCV	US SCG	Intl FI	Corp FI	Mtge FI
19.69%	8.95%	0.39%	10.37%	1.33%	4.22%	-1.38%	5.19%	6.48%	-0.90%
Mtge FI	Mtge FI	Cash	Intl FI	Cash	High Yield FI	Intl Eq	Intl Eq	Intl FI	Govt FI
5.76%	5.67%	0.10%	6.59%	0.07%	2.45%	-3.04%	2.75%	2.51%	-1.08%
Intl FI	Govt FI	US SCG	Mtge FI	Mtge FI	Inflation	US LCV	Inflation	Mtge FI	US LCV
4.67%	5.61%	-2.92%	2.59%	-1.39%	0.76%	-3.83%	2.07%	2.45%	-1.69%
Inflation	Intl FI	US SCV	Govt FI	Corp FI	Cash	High Yield FI	Mtge FI	Govt FI	Intl Eq
2.72%	3.28%	-5.50%	2.19%	-1.46%	0.03%	-4.55%	1.67%	2.42%	-2.77%
Cash	Inflation	Intl Eq	Inflation	EM Equity	EM Equity	US SCV	Govt FI	Inflation	Corp FI
0.21%	1.50%	-12.21%	1.74%	-2.60%	-2.19%	-7.47%	1.15%	2.24%	-3.12%
Govt FI	Cash	EM Equity	Cash	Govt FI	Intl Eq	EM Equity	Cash	Cash	EM Equity
-2.58%	0.13%	-18.42%	0.11%	-3.21%	-4.32%	-14.92%	0.33%	0.86%	-6.66%

Source: Morningstar Direct & CIA System. Income and dividends are included in all returns figures. Excludes alternative investments. Moderate Portfolio represents Strategic Asset Allocation for Tier 0 (Highest Liquidity) Moderate U.S. Investor. \*Data as of June 30, 2018. Results shown are based on an index and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged. Direct investment cannot be made in an index.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



### Historical Asset Class Volatility

Annualized Standard Deviations of Key Asset Classes 2009 – 2018, highest to lowest

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
US SCV	US SCV	EM Equity	EM Equity	EM Equity	US SCG	EM Equity	US SCG	US SCV	EM Equity
31.27%	23.61%	23.46%	18.83%	11.31%	15.45%	16.91%	18.40%	9.27%	15.34%
EM Equity	US SCG	US SCG	Intl Eq	Intl Eq	US SCV	US SCG	US SCV	EM Equity	US LCG
27.63%	23.09%	23.31%	15.68%	11.25%	14.81%	15.81%	17.05%	6.26%	12.30%
US LCV	Intl Eq	US SCV	US SCG	US SCG	EM Equity	Intl Eq	EM Equity	US SCG	US SCV
25.55%	21.48%	21.38%	13.30%	10.78%	13.01%	14.47%	17.02%	5.71%	10.95%
US SCG	EM Equity	Intl Eq	US SCV	US SCV	Intl Eq	US LCG	Intl Eq	US LCV	Intl Eq
25.32%	20.18%	18.56%	11.67%	10.44%	9.33%	13.45%	12.57%	5.20%	10.61%
Intl Eq	US LCG	US LCV	US LCG	US LCV	US LCG	US SCV	US LCV	US LCG	US SCG
24.74%	19.22%	16.54%	11.11%	9.12%	8.90%	12.40%	10.65%	4.38%	10.01%
US LCG	US LCV	US LCG	US LCV	US LCG	US LCV	US LCV	US LCG	Intl Eq	US LCV
17.47%	18.44%	15.30%	9.80%	7.71%	7.94%	12.38%	10.55%	3.72%	9.05%
ML Mod. Alloc.									
15.23%	10.71%	12.77%	6.90%	6.18%	6.26%	7.93%	7.74%	3.02%	8.90%
High Yield FI	Govt FI								
12.04%	6.60%	9.08%	3.58%	4.57%	4.32%	6.16%	5.76%	2.11%	3.06%
Corp FI	Govt FI	Corp FI	Intl FI	Mtge FI					
6.32%	3.99%	4.15%	3.18%	4.54%	2.92%	3.78%	4.72%	2.07%	2.44%
Govt FI	Corp FI	Govt FI	Govt FI	Corp FI					
4.72%	3.72%	3.24%	2.81%	2.99%	2.27%	3.69%	4.42%	1.71%	2.33%
Mtge FI	Intl FI	Intl FI	Intl FI	Intl FI	Mtge FI	Intl FI	Intl FI	Corp FI	High Yield FI
2.46%	2.76%	2.59%	1.60%	2.74%	2.19%	2.96%	3.19%	1.67%	2.12%
Intl FI	Mtge FI	Mtge FI	Inflation	Mtge FI	Intl FI	Mtge FI	Mtge FI	Mtge FI	Intl FI
2.20%	2.11%	1.63%	1.29%	2.66%	1.54%	1.43%	2.33%	1.28%	1.55%
Inflation	Inflation	Inflation	Mtge FI	Inflation	Inflation	Inflation	Inflation	Inflation	Inflation
0.95%	0.47%	1.25%	1.01%	0.94%	1.27%	1.16%	0.70%	0.72%	0.86%
Cash									
0.04%	0.02%	0.03%	0.02%	0.02%	0.01%	0.03%	0.05%	0.09%	0.08%

Source: Morningstar Direct & CIA System. Moderate Portfolio represents Strategic Asset Allocation for Tier 0 (Highest Liquidity) Moderate U.S. Investor. Standard deviation is a statistical measurement of the range of an asset class's total returns over the respective calendar years. In general, a higher standard deviation means greater volatility. \*Data as of June 30, 2018. Results shown are based on an index and are illustrative. Indexes are unmanaged. Direct investment cannot be made in an index. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



### Historical sector performance

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Utilities	Materials	Cons Staples	Technology	Energy	Energy	Telecom	Energy	Cons Staples	Technology	Cons Disc	Utilities	Financials	Cons Disc	Utilities	Cons Disc	Energy	Technology	Cons Disc
57.18%	3.48%	-4.26%	47.23%	31.54%	31.37%	36.80%	34.40%	-15.43%	61.72%	27.66%	19.91%	28.81%	43.08%	28.98%	10.11%	27.36%	38.83%	11.52%
Health Care	Cons Disc	Materials	Materials	Utilities	Utilities	Energy 24.21%	Materials	Health Care	Materials	Industrials	Cons Staples	Cons Disc	Health Care	Health Care	Health Care	Telecom	Materials	Technology
37.05%	2.78%	-5.45%	38.19%	24.28%	16.84%		22.53%	-22.81%	48.59%	26.73%	13.99%	23.92%	41.46%	25.34%	6.89%	23.48%	23.84%	10.87%
Financials	Industrials	Energy	Cons Disc	Telecom	Financials	Utilities	Utilities	Utilities	Cons Disc	Materials	Health Care	Telecom	Industrials	Technology	Cons Staples	Financials	Cons Disc	Energy
25.70%	-5.74%	-11.13%	37.41%	19.86%	6.48%	20.99%	19.38%	-28.98%	41.31%	22.20%	12.73%	18.31%	40.68%	20.12%	6.60%	22.80%	22.98%	6.81%
Cons Staples	Cons Staples	Financials	Industrials	Industrials	Health Care	Financials	Technology	Telecom	Industrials	Energy	Telecom	Health Care	Financials	Cons Staples	Technology	Industrials	Financials	Health Care
16.78%	-6.40%	-14.64%	32.19%	18.03%	6.46%	19.19%	16.31%	-30.49%	20.93%	20.46%	6.26%	17.89%	35.63%	15.98%	5.92%	18.86%	22.18%	1.83%
Energy	Financials	Health Care	Financials	Cons Disc	Materials	Cons Disc	Cons Staples	Cons Disc	Health Care	Telecom	Cons Disc	Industrials	Technology	Financials	Telecom	Materials	Health Care	Utilities
15.68%	-8.95%	-18.82%	31.03%	13.24%	4.42%	18.64%	14.18%	-33.49%	19.70%	18.97%	6.13%	15.35%	28.43%	15.20%	3.40%	16.69%	22.08%	0.32%
Industrials	Energy	Cons Disc	Utilities	Materials	Cons Staples	Materials	Industrials	Energy	Financials	Cons Staples	Energy	Materials	Cons Staples	Industrials	Financials	Utilities	Industrials 21.03%	Materials
5.88%	-10.39%	-23.82%	26.26%	13.20%	3.58%	18.63%	12.03%	-34.87%	17.22%	14.11%	4.72%	14.97%	26.14%	9.83%	-1.53%	16.28%		-3.08%
Materials	Health Care	Industrials	Energy	Financials	Industrials	Cons Staples	Telecom	Industrials	Cons Staples	Financials	Technology	Technology	Materials	Cons Disc	Industrials	Technology	Cons Staples	Financials
-15.72%	-11.95%	-26.34%	25.63%	10.89%	2.32%	14.36%	11.95%	-39.92%	14.89%	12.13%	2.41%	14.82%	25.60%	9.68%	-2.53%	13.85%	13.49%	-4.09%
Cons Disc	Telecom	Utilities	Health Care	Cons Staples	Technology	Industrials	Health Care	Technology	Energy	Technology	Industrials	Cons Staples	Energy	Materials	Utilities	Cons Disc	Utilities	Industrials
-20.00%	-12.25%	-29.99%	15.06%	8.16%	0.99%	13.29%	7.15%	-43.14%	13.82%	10.19%	-0.59%	10.76%	25.07%	6.91%	-4.84%	6.03%	12.11%	-4.69%
Telecom	Technology	Telecom	Cons Staples	Technology	Telecom	Technology	Cons Disc	Materials	Utilities	Utilities	Materials	Energy	Utilities	Telecom	Materials	Cons Staples	Energy	Telecom
-38.81%	-25.87%	-34.11%	11.57%	2.56%	-5.63%	8.42%	-13.21%	-45.66%	11.91%	5.46%	-9.75%	4.61%	13.21%	2.99%	-8.38%	5.38%	-1.01%	-8.35%
Technology	Utilities	Technology	Telecom	Health Care	Cons Disc	Health Care	Financials	Financials	Telecom	Health Care	Financials	Utilities	Telecom	Energy	Energy	Health Care	Telecom	Cons Staples
-40.90%	-30.44%	-37.41%	7.08%	1.68%	-6.36%	7.53%	-18.63%	-55.32%	8.93%	2.90%	-17.06%	1.29%	11.47%	-7.78%	-21.12%	-2.69%	-1.25%	-8.55%

Source: Bloomberg & Morningstar Direct. U.S. equities represented by the S&P 500 Index. Returns calculated are total returns. Data as of June 30, 2018.

Results shown are based on an index and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged.

Direct investment cannot be made in an index.

Past performance is no guarantee of future results. Please refer to appendix for asset class appendix and index definitions.



#### Historical Asset Class Performance

Key market index returns, 2009 – 2018, highest to lowest

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
EM Equity	EM Equity	Global Govt	Dev APAC ex-Jap	North America	North America	Japan	Global HY / EM	EM Equity	North America
78.51%	18.88%	5.81%	24.57%	29.57%	11.90%	9.57%	14.74%	37.28%	2.30%
Dev APAC ex-Jap	Dev APAC ex-Jap	Global Mtge	Dev Eur ex-UK	Dev Eur ex-UK	Global Govt	Global Mtge	North America	Dev Eur ex-UK	Inflation
72.81%	16.91%	5.61%	21.28%	27.65%	8.15%	1.34%	11.57%	26.82%	1.84%
Global HY / EM	Japan	Global Corp	Global HY / EM	Japan	Global Corp	Global Govt	EM Equity	Dev APAC ex-Jap	Cash
57.56%	15.44%	4.95%	20.21%	27.16%	7.71%	1.26%	11.19%	25.88%	0.81%
United Kingdom	North America	Inflation	EM Equity	United Kingdom 20.67%	Global Mtge	Inflation	Dev APAC ex-Jap	Japan	Global Govt
43.30%	15.30%	2.96%	18.23%		6.17%	0.73%	7.85%	23.99%	0.68%
Dev Eur ex-UK	Global HY / EM	Global HY / EM	United Kingdom	ML Mod. Alloc.	ML Mod. Alloc.	Cash	Global Corp	United Kingdom 22.30%	ML Mod. Alloc.
32.57%	14.28%	2.77%	15.26%	12.50%	2.74%	0.05%	6.08%		-0.30%
North America	United Kingdom	Cash	North America	Global HY / EM	Inflation	Global Corp	ML Mod. Alloc.	North America	Global Mtge
28.44%	8.75%	0.10%	14.77%	7.19%	0.76%	-0.24%	5.90%	20.89%	-0.52%
Global Corp	Global Corp	North America	ML Mod. Alloc.	Dev APAC ex-Jap	Cash	Dev Eur ex-UK	Global Govt	ML Mod. Alloc.	United Kingdom
16.30%	7.35%	-0.07%	12.31%	5.49%	0.03%	-0.65%	3.70%	14.38%	-1.05%
Global Mtge	Global Mtge	ML Mod. Alloc.	Global Corp	Inflation	Global HY / EM	North America	Japan	Global HY / EM	Global Corp
7.98%	5.93%	-1.79%	10.79%	1.51%	-0.44%	-0.90%	2.38%	10.49%	-1.77%
Japan	Global Govt	United Kingdom	Japan	Cash	Dev APAC ex-Jap	ML Mod. Alloc.	Global Mtge	Global Corp	Dev APAC ex-Jap
6.25%	3.79%	-2.57%	8.19%	0.07%	-0.47%	-2.22%	2.21%	5.77%	-2.02%
Inflation	Dev Eur ex-UK	Dev APAC ex-Jap	Global Mtge	Global Corp	EM Equity	Global HY / EM	Inflation 2.07%	Global Mtge	Japan
2.72%	1.57%	-12.79%	4.74%	0.02%	-2.19%	-2.49%		2.56%	-2.03%
Global Govt	Inflation	Japan	Global Govt	Global Mtge	Japan	United Kingdom	Cash	Global Govt	Global HY / EM
1.39%	1.50%	-14.33%	4.64%	-0.27%	-4.02%	-7.56%	0.33%	2.35%	-2.68%
Cash	Cash	Dev Eur ex-UK	Inflation	Global Govt	United Kingdom	Dev APAC ex-Jap	United Kingdom	Inflation	Dev Eur ex-UK
0.21%	0.13%	-15.26%	1.74%	-0.43%	-5.39%	-8.47%	-0.10%	2.24%	-4.07%
ML Mod. Alloc.**	ML Mod. Alloc.**	EM Equity	Cash	EM Equity	Dev Eur ex-UK	EM Equity	Dev Eur ex-UK	Cash	EM Equity
NA	NA	-18.42%	0.11%	-2.60%	-6.55%	-14.92%	-0.56%	0.86%	-6.66%

Source: Morningstar Direct, Bloomberg, and CIA System. Income and dividends are included in all returns figures. Moderate Portfolio represents Strategic Asset Allocation for Tier 0 (Highest Liquidity) Moderate Global Investor. \*Data as of June 30, 2018. \*\* ML Moderate Portfolio returns are not available for years prior to 2011 as the Global SAAs launched in April 2010. Results shown are based on an index and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged. Direct investment cannot be made in an index. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



# Merrill Lynch Globally Oriented Investor

### Historical Asset Class Volatility

Annualized Standard Deviations of Key Asset Classes 2009 – 2018, highest to lowest

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Dev Eur ex-UK	Dev Eur ex-UK	Dev Eur ex-UK	EM Equity	Dev APAC ex-Jap	Dev APAC ex-Jap	EM Equity	EM Equity	Dev APAC ex-Jap	EM Equity
28.92%	27.21%	24.28%	18.83%	15.76%	15.31%	16.91%	17.02%	6.80%	15.34%
EM Equity	Dev APAC ex-Jap	Dev APAC ex-Jap	Dev Eur ex-UK	Dev Eur ex-UK	EM Equity	United Kingdom	Dev APAC ex-Jap	United Kingdom	Dev Eur ex-UK
27.63%	24.83%	23.81%	18.72%	14.25%	13.01%	16.84%	16.77%	6.78%	13.75%
Dev APAC ex-Jap	United Kingdom	EM Equity	Dev APAC ex-Jap	Japan	Dev Eur ex-UK	Dev APAC ex-Jap	Dev Eur ex-UK	Dev Eur ex-UK	United Kingdom
24.99%	22.37%	23.46%	18.06%	13.47%	12.21%	16.23%	14.12%	6.72%	12.26%
United Kingdom 22.07%	EM Equity	United Kingdom	United Kingdom	EM Equity	United Kingdom	Japan	Japan	EM Equity	North America
	20.18%	19.36%	15.15%	11.31%	11.82%	15.36%	13.37%	6.26%	10.56%
North America	North America	North America	Japan	United Kingdom	Japan	Dev Eur ex-UK	United Kingdom	Japan	Dev APAC ex-Jap
21.28%	18.54%	15.71%	14.36%	11.08%	8.69%	14.26%	11.75%	5.05%	10.48%
Japan	Japan	ML Mod. Alloc.	North America	North America 3.47%	ML Mod. Alloc.				
21.09%	13.60%	14.07%	10.38%	8.09%	8.00%	12.99%	10.00%		8.54%
Global HY / EM	Global HY / EM	Japan	ML Mod. Alloc.	Japan					
11.68%	9.00%	13.95%	7.96%	6.97%	5.80%	8.40%	8.12%	2.96%	8.36%
Global Corp	Global Corp	Global HY / EM	Global HY / EM						
5.05%	3.29%	10.43%	6.02%	5.40%	5.29%	6.31%	6.45%	2.24%	3.20%
Global Govt	Global Govt	Global Corp	Global Govt	Global Mtge					
2.81%	2.82%	3.86%	2.53%	3.93%	2.23%	3.31%	3.97%	1.78%	2.16%
Global Mtge	Global Mtge	Global Govt	Global Govt	Global Govt	Global Mtge	Global Govt	Global Govt	Global Corp	Global Govt
2.53%	1.97%	2.74%	1.81%	2.83%	1.83%	3.13%	3.74%	1.64%	2.01%
Inflation	Inflation	Global Mtge	Inflation	Global Mtge	Global Govt	Global Mtge	Global Mtge	Global Mtge	Global Corp
0.95%	0.47%	1.59%	1.29%	2.51%	1.72%	1.52%	2.22%	1.23%	1.56%
Cash	Cash	Inflation	Global Mtge	Inflation	Inflation	Inflation	Inflation	Inflation	Inflation
0.04%	0.02%	1.25%	1.00%	0.94%	1.27%	1.16%	0.70%	0.72%	0.86%
ML Mod. Alloc.**	ML Mod. Alloc.**	Cash	Cash						
NA	NA	0.03%	0.02%	0.02%	0.01%	0.03%	0.05%	0.09%	0.08%

Source: Morningstar Direct. Moderate Portfolio represents Strategic Asset Allocation for Tier 0 (Highest Liquidity) Moderate Global Investor. Standard deviation is a statistical measurement of the range of an asset class's total returns over the respective years. In general, a higher standard deviation means greater volatility. \*Data as of June 30, 2018. \*\* ML Moderate Portfolio figures are not available for years prior to 2011 as the Global SAAs launched in April 2010. Results shown are based on an index and are illustrative. Indexes are unmanaged. Direct investment cannot be made in an index. Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions.



3 Month London Interbank Offered Rate (LIBOR): A 3-month average of the LIBOR, which is a variable rate based on the interest rates that the leading banks charge each other for short-term loans.

3 Month Treasury Bill (T-Bill): Treasury Bond maturing within 90 days.

Alpha: A measure of risk-adjusted performance relative to a comparative benchmark, aka residual return.

After Tax Yield Ratio: Compares the after-tax corporate bond yield to the after-tax yield from municipal bonds.

Beta: A measure of the sensitivity of the returns of the Asset to the comparative benchmark.

Consumer Price Index (CPI) Level: Base Year 1982-84: 100. The CPI represents changes in prices of all good and services purchased for consumption by urban households. User fees and sales and excise taxes paid by the consumer are also included. Income taxes and investment items are not included.

CPI Core Index Level: Base year 1982-84; it excludes food and energy items from the Consumer Price Index Level.

Current Account Deficit: Occurs when a country's total import of goods, services and transfers is greater than the total export; this situation makes a country a net debtor to the rest of the world.

Developed Market: A country that is most developed in terms of its economy and capital markets. The country must be high-income, but this also includes openness to foreign ownership, ease of capital movement, and efficiency of market institutions.

Emerging Market: A country that is progressing toward becoming advanced, as shown by some liquidity in local debt and equity markets and the existence of some form of market exchange and regulatory body.

GDP - Nominal: Gross Domestic Product (GDP) equals the total income of everyone in the economy or the total expenditure on the economy's good and services. GDP includes only the value of final goods and services. Nominal GDP measures the value of goods and services at current dollar prices.

GDP - Real: The chain-weighted GDP measure of goods and services at constant dollar prices. The base year changes continuously over time (e.g., 1995, process measures real growth from 1995 to 1996). The figures are then linked to a chain that can compare goods and services in any two years. Chain-weighted figures never let prices get too far out of date.

High Yield OAS: Option-adjusted spread (OAS) is the yield spread which has to be added to a benchmark yield curve to discount a security's payments to match its market price, using a dynamic pricing model that accounts for embedded options

HY Leverage Ratio: Net Debt divided by last 12 months earnings before interest taxes and amortization (EBITDA)

Investment Grade OAS: Option-adjusted spread (OAS) is the yield spread which has to be added to a benchmark yield curve to discount a security's payments to match its market price, using a dynamic pricing model that accounts for embedded options

Jobless Claims: Average weekly initial claims for unemployment insurance: measures the average number of new claims for unemployment compensation per week.

Standard Deviation: Annualized Standard Deviation is a statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution.

Spread: The difference between the bid and ask price or between the high and low price. For securities, it refers to the difference in yield on different securities.

U.S. Employees Non-Farm Private Payrolls: A statistic that represents the total number of paid U.S. workers except for farm workers, general government employees, employees of nonprofit organizations that provide assistance to individuals and private household employees. The Non-Farm Private Payroll represents about 80% of the workers who produce the U.S. Gross Domestic Product.



## **Asset Class Proxies**

Asset Class	Index	Description
Inflation	IA SBBI US Inflation	The Consumer Price Index for All Urban Consumers, or CPI-U, is used by IA SBBI to measure inflation, which is the rate of change of consumer goods prices. All inflation measures are constructed by the U.S. Department of Labor, Bureau of Labor Statistics, Washington.
Cash	IA SBBI US 30 Day TBill TR USD & BAML U.S. Treasury Bills 3 months	For the IA SBBI U.S. Treasury Bill Index, the CRSP U.S. Government Bond File is the source from 1926 to 1976. Each month a one-bill portfolio containing the shortest-term bill having not less than one month to maturity is constructed. (The bill's original term to maturity is not relevant). The ICE BofAML US 3-Month Treasury Bill Index is comprised of a single issue purchased at the beginning of the month and held for a full month. At the end of the month that issue is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding Treasury Bill that matures closest to, but not beyond, three months from the rebalancing date. To qualify for selection, an issue must have settled on or before the month-end rebalancing date.
US Large Cap Growth	Russell 1000 Growth Total Return	Russell 1000 Growth Total Return 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.
US Large Cap Value	Russell 1000 Value Total Return	Russell 1000 Value Total Return 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.
US Small Cap Growth	Russell 2000 Growth Total Return	Russell 2000 Growth Total Return measures the performance of the broad growth segment of the U.S. equity universe. It includes those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.
US Small Cap Value	Russell 2000 Value Total Return	Russell 2000 Value Total Return measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower expected growth values.
International Equity	MSCI Daily TR Net World Ex USA USD	The MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries – excluding the United States. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
Emerging Markets	MSCI Daily TR Net EM USD	The MSCI Emerging Markets (EM) Index captures large and mid cap representation across 23 Emerging Markets countries and targets coverage of approximately 85% of the free float adjusted market capitalization in each country.
North America	MSCI Daily TR Net North America	The MSCI North America Index is designed to measure the performance of the large and mid cap segments of the US and Canada markets. The index covers approximately 85% of the free float-adjusted market capitalization in the US and Canada.
Developed Europe ex-UK	MSCI Daily TR Net Europe Ex U.K. USD	The MSCI Europe ex UK Index captures large and mid cap representation across 14 Developed Markets (DM) countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization across European Developed Markets excluding the UK.
UK	MSCI Daily TR Net UK USD	The MSCI United Kingdom Index is designed to measure the performance of the large and mid cap segments of the UK market. The index covers approximately 85% of the free float-adjusted market capitalization in the UK.
Japan	MSCI Daily TR Net Japan USD	The MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market. The index covers approximately 85% of the free float-adjusted market capitalization in Japan.



# Asset Class Proxies (continued)

		The MSCI AC Asia ex Japan Index captures large and mid cap representation across 2 Developed Markets countries
Developed Asia Pacific ex-Japan	MSCI Daily TR Net Pacific Ex Japan USD	(Hong Kong and Singapore) and 8 Emerging Markets countries (China, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan and Thailand) in Asia. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
U.S. Government & Quasi Government	ICE BofAML AAA U.S. Treasury/Agency Maste	The ICE BofAML US Treasury & Agency Index tracks the performance of US dollar denominated US Treasury and non-subordinated US agency debt issued in the US domestic market. Qualifying securities must have an investment grade er rating (based on an average of Moody's, S&P and Fitch). In addition, qualifying securities must have at least one year remaining term to final maturity, at least 18 months to maturity at time of issuance, a fixed coupon schedule and a minimum amount outstanding of \$1 billion for sovereigns and \$250 million for agencies.
U.S. Mortgage Backed	ICE BofAML Mortgage Master	The ICE BofAML US Mortgage Backed Securities Index tracks the performance of US dollar denominated fixed rate and hybrid residential mortgage pass-through securities publicly issued by US agencies in the US domestic market. 30-year, 20-year, 15-year and interest-only fixed rate mortgage pools are included in the Index provided they have at least one year remaining term to final maturity and a minimum amount outstanding of at least \$5 billion per generic coupon and \$250 million per production year within each generic coupon.
U.S. Corp Master	ICE BofAML U.S. Corp Master	The ICE BofAML US Corporate Index tracks the performance of US dollar denominated investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of \$250 million.
USD High Yield	ICE BofAML High Yield Cash Pay	The ICE BofAML US Cash Pay High Yield Index tracks the performance of US dollar denominated below investment grade corporate debt, currently in a coupon paying period, that is publicly issued in the US domestic market.
International Fixed Income	ICE BofAML Global Broad Market TR ex USD (Hedged)	The ICE BofAML Global Broad Market Excluding US Dollar Index tracks the performance of investment grade debt publicly issued in the major domestic and eurobond markets, including sovereign, quasi-government, corporate, securitized and collateralized securities, excluding all securities denominated in US dollars.
Global Governments	ICE BofAML Global Govt Bond Index + ICE BofAML Global Large Cap Quasi-Govt Index (Hedged)	(i) The ICE BofAML Global Government Index tracks the performance of publicly issued investment grade sovereign debt denominated in the issuer's own domestic currency. (ii) The ICE BofAML Global Large Cap Quasi-Government Index tracks the performance of large capitalization investment grade quasi-government debt publicly issued in the major domestic and eurobond markets, including agency, foreign government, local government, supranational and government guaranteed securities. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).



## **Asset Class Proxies (continued)**

Global Corporates	ICE BofAML Global Broad Market Corp (Hedged)	The ICE BofAML Global Corporate Index tracks the performance of investment grade corporate debt publicly issued in the major domestic and eurobond markets. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date and a fixed coupon schedule.
Global Mortgages	ICE BofAML Global Broad Market Collateralized (Hedged)	The ICE BofAML Global Collateralized Index tracks the performance of investment grade securitized and collateralized debt, including mortgage backed, asset backed, commercial mortgage backed, covered bond, and US mortgage pass-through securities publicly issued in the major domestic and eurobond markets. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).
Global HY / EM	ICE BofAML Global HY Country External Corp & Govt + ICE BofAML Global High Yield (Unhedged)	(i) The ICE BofAML Global High Yield Country External Corporate & Government Index tracks the performance of USD and EUR denominated emerging market debt, including sovereign, quasi-government and corporate securities. (ii) The ICE BofAML Global High Yield Index tracks the performance of USD, CAD, GBP and EUR denominated below investment grade corporate debt publicly issued in the major domestic or eurobond markets.

ML Moderate Allocation **US SAA**  The hypothetical historical returns are based on the US-biased Tier 0 Strategic Asset Allocation and proxy indices as of March 2018. The calculations are performed in Morningstar using daily returns and monthly rebalancing. Results shown are based on indexes and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged. Direct investment cannot be made in an index. It is composed as follows: From 12/19/2017 through current quarter end: 12% Russell 1000 Growth | 19% Russell 1000 Value | 2% Russell 2000 Growth | 2% Russell 2000 Value | 14% MSCI World ex USA NR | 5% MSCI EM NR | 11% BofAML US MBS | 13% BofAML US Corporate | 14% BofAML US Trsy&Agcy | 2% BofAML Gbl Brd Mkt xUS HUSD | 4% BofAML US Cash Pay HY | 2% BofAML US 3M Trsy Bill. From 01/10/2017 through 12/18/2017: 12% Russell 1000 Growth | 19% Russell 1000 Value | 2% Russell 2000 Growth | 2% Russell 2000 Value | 13% MSCI World ex USA NR | 5% MSCI EM NR | 11% BofAML US MBS | 14% BofAML US Corporate | 14% BofAML US Trsy&Agcy | 2% BofAML Gbl Brd Mkt xUS HUSD | 4% BofAML US Cash Pay HY | 2% BofAML US 3M Trsy Bill. From 04/14/2009 through 01/09/2017: 23% Russell 1000 Growth | 23% Russell 1000 Value | 2% Russell 2000 Growth | 2% Russell 2000 Value | 8% MSCI EAFE NR | 2% MSCI EM NR | 9% BofAML US MBS | 13% BBgBarc US Govt | 9% BBgBarc US Credit | 2% BofAML Gbl Brd Mkt xUS Loc | 2% BofAML US Cash Pay HY | 5% IA SBBI US 30 Day Tbill. From 04/04/2007 through 04/13/2009: 23% Russell 1000 Growth | 23% Russell 1000 Value | 2% Russell 2000 Growth | 2% Russell 2000 Value | 10% MSCI EAFE NR | 9% BofAML US MBS | 13% BBgBarc US Govt | 9% BBgBarc US Credit | 2% BofAML Gbl Brd Mkt xUS Loc | 2% BofAML US Cash Pay HY | 5% IA SBBI US 30 Day Tbill.



## Asset Class Proxies (continued)

ML Moderate Allocation

Global SAA

The hypothetical historical returns are based on the Globally-biased Tier 0 Strategic Asset Allocation and proxy indices as of March 2018. The calculations are performed in Morningstar using daily returns and monthly rebalancing. Results shown are based on indexes and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged. Direct investment cannot be made in an index. It is composed as follows: From 12/19/2017 through current quarter end: 29% MSCI North America | 8% MSCI Europe Ex UK | 5% MSCI United Kingdom | 2% MSCI Japan | 3% MSCI Pacific Ex Japan | 5% MSCI EM NR | 23% BofAML Gbl Govt TR HUSD + BofAML Gbl LC Qsi-Govt TR | 9% BofAML Global Corporate TR HUSD | 10% BofAML Gbl Coll TR HUSD | 4% BofAML Gbl HY Conty ExCp&Gv TR + BofAML Gbl HY TR | 2% BofAML US 3M Trsy Bill. From 01/10/2017 through 12/18/2017: 30% MSCI North America | 7% MSCI Europe Ex UK | 5% MSCI United Kingdom | 2% MSCI Japan | 3% MSCI Pacific Ex Japan | 5% MSCI EM NR | 23% BofAML Gbl Govt TR HUSD + BofAML Gbl LC Qsi-Govt TR | 9% BofAML Global Corporate TR HUSD | 10% BofAML Gbl Coll TR HUSD | 4% BofAML Gbl HY Conty Excp&Gv TR + BofAML Gbl HY TR | 2% BofAML US 3M Trsy Bill. From 07/13/2010 through 01/09/2017: 28% MSCI North America | 11% MSCI Europe Ex UK | 5% MSCI United Kingdom | 5% MSCI Japan | 3% MSCI Pacific Ex Japan | 8% MSCI EM NR | 24% BofAML Gbl Govt TR HUSD + BofAML Gbl LC Qsi-Govt TR | 7% BofAML Global LC Corporate TR USD | 6% BofAML Gbl LC Coll TR USD | 1% BofAML Gbl HY Conty ExCp&Gv TR + BofAML Gbl HY TR | 2% BofAML US 3M Trsy Bill.



**AAII Investor Sentiment:** The sentiment survey measures the percentage of individual investors who are bullish, bearish, and neutral on the stock market short term; individuals are polled from the AAII Web site on a weekly basis.

Alerian MLP Index is a composite of the 50 most prominent energy master limited partnerships and is calculated by Standard & Poor's using a float-adjusted, market capitalization-weighted methodology. The total return index is calculated on an end-of-day basis and is disseminated daily through its ticker symbol, AMZX, on the New York Stock Exchange.

BAML Financial Stress Index: See BofA Merrill Lynch Global Financial Stress Index definition

**Bitcoin Investment Trust:** The Bitcoin Investment Trust is an open-ended grantor trust based in the U.S., sponsored by Grayscale Investments. It is invested exclusively in bitcoin and derives its value solely from the price of bitcoin. The Trust's objective is for the NAV per share to track bitcoin's market price.

**Bloomberg Agriculture Subindex**: The index is composed of futres contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar, and wheat. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

**Bloomberg Barclays US Aggregate Bond Index** is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type. Most U.S. traded investment grade bonds are represented.

Bloomberg Commodity Index is made up of 22 exchange-traded futures on physical commodities, which are weighted to account for economic significance and market liquidity.

Bloomberg Copper Subindex TR: Bloomberg Copper Subindex Total Return Index

Bloomberg Energy Subindex TR: The index is composed of futures contracts on crude oil, heating oil, unleaded gasoline, and natural gas. It reflects the return on fully collateralized futures positions and is quoted in USD.

**Bloomberg Industrial Metals Subindex Total Return:** The index is composed of longer-dated futures contracts on aluminum, copper, nickel, and zinc. It reflects the return on fully collateralized positions and is quoted in USD.

Bloomberg Livestock Subindex: The index is composed of futures contracts on live cattle and lean hogs. It reflects the return of underlying commodity futures price movements only. It is quoted in USD.

ICE BofA Merrill Lynch 5-7 Year US Corporate Index is a subset of The BofA Merrill Lynch US Corporate Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 7 years.

ICE BofA Merrill Lynch 5-7 Year US Municipal Securities Index is a subset of The BofA Merrill Lynch US Municipal Securities Index including all securities with a remaining term to final maturity between 5-7 years

ICE BofA Merrill Lynch 5-7 Year US Treasury Index is a subset of The BofA Merrill Lynch US Treasury Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 7 years.

ICE BofA Merrill Lynch All Maturity All Euro Government Index: The BofA Merrill Lynch All Maturity All Euro Government Index tracks the performance of EUR denominated sovereign debt publicly issued by Euro member countries in either the eurobond market or the issuer's own domestic market.

ICE BofA Merrill Lynch Global Broad Market Index: The BofA Merrill Lynch Global Broad Market Index tracks the performance of investment grade debt publicly issued in the major domestic and eurobond markets, including sovereign, quasi-government, corporate, securitized and collateralized securities.



ICE BofA Merrill Lynch Global Emerging Markets Sovereign Index tracks the performance of U.S. dollar-denominated debt of sovereign issuers domiciled in countries with a BB or lower foreign currency long-term sovereign debt rating

ICE BofA Merrill Lynch Global Financial Stress Index is a Bank of America Merrill Lynch calculated, cross market measure of risk, hedging demand and investor flows in the global financial system. Levels greater/less than 0 indicate more/less financial market stress than normal. Apart from the headline GFSI, there are three sub-indices, RISK, FLOW and SKEW.

ICE BofA Merrill Lynch Global Sovereign Broad Market Index tracks the performance of local currency-denominated debt of Investment Grade-rated sovereign issuers.

ICE BofA Merrill Lynch High Yield Master Index tracks the performance of below Investment Grade U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market. "Yankee" bonds (debt of foreign issuers issued in the U.S. domestic market) are included in the index provided the issuer is domiciled in a country having an Investment Grade foreign currency long-term debt rating (based on a composite of Moody's and S&P).

ICE BofA Merrill Lynch Municipal Masters Index tracks the performance of the Investment Grade U.S. tax-exempt bond market.

ICE BofA Merrill Lynch U.S. Broad Market Index tracks the performance of U.S. dollar-denominated Investment Grade government and corporate public debt issued in the U.S. domestic bond market, including collateralized products such as mortgage pass-through and asset-backed securities.

ICE BofA Merrill Lynch U.S. Corporate Master Index tracks the performance of U.S. dollar-denominated Investment Grade corporate public debt issued in the U.S. domestic bond market. Qualifying bonds must have at least one year remaining term to maturity, a fixed coupon schedule and a minimum amount outstanding of \$150 million. Bonds must be rated Investment Grade based on a composite of Moody's and S&P.

ICE BofA Merrill Lynch US Agency Index tracks the performance of U.S. dollar denominated U.S. agency senior debt issued in the U.S. domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).

ICE BofAML US Inflation-Linked Treasury Index tracks the performance of US dollar denominated inflationlinked sovereign debt publicly issued by the US government in its domestic market.

ICE BofAML US Treasury Index tracks the performance of U.S. dollar denominated sovereign debt publicly issued by the U.S. government in its domestic market.

ICE BofAML U.S. Corporate Master Index tracks the performance of U.S. dollar-denominated Investment Grade corporate public debt issued in the U.S. domestic bond market. Qualifying bonds must have at least one year remaining term to maturity, a fixed coupon schedule and a minimum amount outstanding of \$150 million. Bonds must be rated Investment Grade based on a composite of Moody's and S&P.

Brent Crude Oil is a classification of sweet light crude oil and is a major benchmark price for oil purchases worldwide.

Cambridge Associates Private Equity U.S. Total Return: Performance data is calculated quarterly by Cambridge Associates and published by Thomson Reuters Venture Economics' Private Equity Performance Database, which tracks the performance of thousands of U.S. and European venture capital and buyout funds formed since 1969. Sources are financial documents and schedules from Limited Partners investors and General Partners. All returns are calculated net to investors (net of fees and carried interest) by Thomson Venture Economics from the underlying financial cash flows using both cash on cash returns (distributions and capital calls) and the unrealized net asset value of funds as reported by private equity fund managers. The "U.S." category includes only U.S. funds.

Cleveland Fed Financial Stress Index: The CFSI is designed to track distress in the U.S. financial system on a continuous basis.

Conference Board U.S. Leading Credit Index: This index is consisted of six financial indicators: 2-years Swap Spread (real time), LIBOR 3 month less 3 month Treasury-Bill yield spread (real time), Debit balances at margin account at broker dealer (monthly), AAII Investors Sentiment Bullish (%) less Bearish (%) (weekly), Senior Loan Officers C&I loan survey – Bank tightening Credit to Large and Medium Firms (quarterly), and Security Repurchases (quarterly) from the Total Finance-Liabilities section of Federal Reserve's flow of fund report.



DJ Credit Suisse AllHedge Equity Market Neutral Index measures the aggregate performance of equity market neutral funds. Equity market neutral funds typically take both long and short positions in stocks while seeking to reduce exposure to the systemic risk of the market (i.e., a beta of zero is desired).

DJ Credit Suisse AllHedge Equity Market Neutral Index measures the aggregate performance of equity market neutral funds. Equity market neutral funds typically take both long and short positions in stocks while seeking to reduce exposure to the systemic risk of the market (i.e., a beta of zero is desired).

DJ Credit Suisse AllHedge Fixed Income Arbitrage Index measures the aggregate performance of fixed income arbitrage funds. Fixed income arbitrage funds typically attempt to generate profits by exploiting inefficiencies and price anomalies between related fixed income securities. Fixed income arbitrage funds seek to limit volatility by hedging out exposure to the market and interest rate risk.

DJ Credit Suisse AllHedge Global Macro Index measures the aggregate performance of global macro funds. Global macro funds typically focus on identifying extreme price valuations and leverage is often applied on the anticipated price movements in equity, currency, interest rate and commodity markets

DJ Credit Suisse AllHedge Index is an asset-weighted hedge fund index derived from the market leading Dow Jones Credit Suisse Hedge Fund Index. The Dow Jones Credit Suisse AllHedge Index provides a rules-based measure of an investable portfolio. Index performance data is published monthly and constituents are rebalanced semi-annually according to the sector weights of the Dow Jones Credit Suisse Hedge Fund Index.

DJ Credit Suisse AllHedge Long Short Equity Index measures the aggregate performance of long/short equity funds. Long/short equity funds typically invest in both long and short sides of equity markets, generally focusing on diversifying or hedging across particular sectors, regions or market capitalizations

DJ Credit Suisse AllHedge Managed Futures Index measures the aggregate performance of managed futures funds. Managed futures funds (often referred to as CTAs or Commodity Trading Advisors) typically focus on investing in listed bond, equity, commodity futures and currency markets globally.

DJ Credit Suisse AllHedge Managed Futures Index measures the aggregate performance of managed futures funds. Managed futures funds (often referred to as CTAs or Commodity Trading Advisors) typically focus on investing in listed bond, equity, commodity futures and currency markets globally.

DXY Index indicates the general international value of the U.S. dollar. The Index does this by averaging the exchange rates between the dollar and major world currencies.

FTSE NAREIT U.S. Real Estate Index is a performance index based on publicly traded real estate investment trusts (REITs) that span commercial real estate space across the U.S. economy. The index series provides investors with exposure to all investment and property sectors. A REIT is a company that owns and, in most cases, operates income-producing real estate such as apartments, shopping centers, offices, hotels and warehouses. Some REITs also engage in financing real estate. To qualify as a REIT, a company must distribute at least 90% of its taxable income to its shareholders annually. A company that qualifies as a REIT is permitted to deduct dividends paid to its shareholders from its corporate taxable income. As a result, most REITs remit at least 100% of their taxable income to their shareholders and therefore owe no corporate tax.

FTSE®EPRA®/NAREIT® Global Index is a free float, market capitalization-weighted real estate index designed to represent publicly traded equity REITs and listed property companies globally.

Global Economic Policy Uncertainty Index: This concept tracks the general state of the economy as it relates to businesses. It can include broad economy-wide conditions or specific economic conditions of a particular industry. The GEPU Index is a GDP-weighted average of national EPU indices for 18 countries: Australia, Brazil, Canada, Chile, China, France, Germany, India, Ireland, Italy, Japan, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States. Each national EPU index reflects the relative frequency of own-country newspaper articles that contain a trio of terms pertaining to the economy (E), policy (P) and uncertainty (U). In other words, each monthly national EPU index value is proportional to the share of own-country newspaper articles that discuss economic policy uncertainty in that month. For a detailed discussion of how we construct the country-level EPU indices, see Measuring Economic Policy Uncertainty.



**Gold** reflects the gold spot price and is quoted in U.S. dollars per Troy Ounce.

HFRI Equity Hedge (Total) Index: 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.

HFRI Event Driven Index - Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to 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. Event Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

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

HFRI Macro: Systematic Diversified Index - Systematic: Diversified strategies have investment processes typically as function of mathematical, algorithmic and technical models, with little or no influence of individuals over the portfolio positioning. Strategies which employ an investment process designed to identify opportunities in markets exhibiting trending or momentum characteristics across individual instruments or asset classes. Strategies typically employ quantitative process which focus on statistically robust or technical patterns in the return series of the asset, and 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, discernable trending behavior. Systematic: Diversified strategies typically would expect to have no greater than 35% of portfolio in either dedicated currency or commodity exposures over a given market cycle.

HFRI Relative Value Index - Investment Managers who maintain positions in which the investment thesis 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. The constituent funds of the HFRI Relative Value (Total) Index - Asset Weighted are weighted according to the AUM reported by each fund for prior month.

**HFRX Global Hedge Fund Index**: The HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage.

HFRX 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.

LPX 50 TR USD Index: The LPX50 is a global index that consists of the 50 largest liquid LPE companies covered by LPX Group.



MSCI ACWI ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 23 Emerging Markets (EM) countries. With 1,854 constituents, the index covers approximately 85% of the global equity opportunity set outside the US.

MSCI ACWI Index captures large and mid cap representation across 23 Developed Markets (DM) and 23 Emerging Markets (EM) countries. With 2,484 constituents, the index covers approximately 85% of the global investable equity opportunity set.

MSCI Austria Net Total Return USD Index: The MSCI Austria Index is designed to measure the performance of the large and mid cap segments of the Austrian market. With 5 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Austria.

MSCI Brazil Net Total Return USD Index: The MSCI Brazil Index is designed to measure the performance of the large and mid cap segments of the Brazilian market. With 57 constituents, the index covers about 85% of the Brazilian equity universe.

MSCI China Index: The MSCI China Index captures large and mid cap representation across China H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs). With 150 constituents, the index covers about 85% of this China equity universe.

MSCI EAFE (Europe, Australasia, and Far East) Index comprises 21 MSCI country indices, representing the Developed Markets outside of North America.

MSCI Emerging Asia Net Total Return USD Index: The MSCI Emerging Markets (EM) Asia Index captures large and mid cap representation across 9 Emerging Markets countries\*. With 567 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI Emerging Latin America Net Total Return USD Index: The MSCI EM Latin America Index is a free float-adjusted market capitalisation weighted index that is designed to measure the equity market performance of emerging markets in Latin America.

MSCI Emerging Markets Index captures large and mid cap representation across 23 Emerging Markets (EM) countries. With 832 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

MSCI Europe non-U.K. Index is a free float-adjusted market capitalization index designed to measure Developed Market equity performance in Europe. As of July 2009, the index consisted of 15 Developed Market country indexes: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.

MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market. With 319 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan.

MSCI Pacific ex Japan Index captures large and mid cap representation across 4 of 5 Developed Markets (DM) countries in the Pacific region (excluding Japan). With 150 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI Portugal Net Total Return USD Index: The MSCI Portugal Index is designed to measure the performance of the large and mid cap segments of the Portuguese market. With 3 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Portugal.

MSCI USA Defensive Sectors Index is based on MSCI USA Index, its parent index and captures large and mid-cap segments of the US market. The index is designed to reflect the performance of the opportunity set of global defensive companies across various GICS® sectors. All constituent securities from Consumer Staples, Energy, Healthcare, Telecommunication Services and Utilities are included in the Index.

MSCI USA Defensive Sectors Index is based on MSCI USA Index, its parent index and captures large and mid-cap segments of the US market. The index is designed to reflect the performance of the opportunity set of global defensive companies across various GICS® sectors. All constituent securities from Consumer Staples, Energy, Healthcare, Telecommunication Services and Utilities are included in the Index.



MSCI USA Index is designed to measure the performance of the large and mid cap segments of the US market. With 630 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the U.S.

MSCI USA Momentum Index is based on MSCI USA Index, its parent index, which captures large and mid cap stocks of the US market. It is designed to reflect the performance of an equity momentum strategy by emphasizing stocks with high price momentum, while maintaining reasonably high trading liquidity, investment capacity and moderate index turnover.

MSCI USA Quality Index is based on the MSCI USA Index, its parent index, which includes large and mid cap stocks in the US equity market. The index aims to capture the performance of quality growth stocks by identifying stocks with high quality scores based on three main fundamental variables: high return on equity, stable year-over-year earnings growth and low financial leverage.

MSCI USA Size Index: Based on MSCI USA Index, its parent index, which captures large and mid cap stocks of the US market. It aims to reflect the performance of a low size strategy with relatively high investment capacity.

MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries -- excluding the United States. With 1,022 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI World Value Index captures large and mid cap securities exhibiting overall value style characteristics across 23 Developed Markets (DM) countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

NASDAQ Composite Index: A broad-based capitalization-weighted index of stocks in all three NASDAQ tiers: Global Select, Global Market and Capital Market. The index was developed with a base level of 100 as of February 5, 1971.

**National Financial Conditions Index (NFCI)** provides a comprehensive weekly update on U.S. financial conditions in money markets, debt and equity markets and the traditional and "shadow" banking systems. Positive values of the NFCI indicate financial conditions that are tighter than on average, while negative values indicate financial conditions that are looser than on average.

NCREIF Farmland: The NCREIF Farmland Index is a quarterly time series composite return measure of investment performance of a large pool of individual farmland properties acquired in the private market for investment purposes only.

NCREIF Property Index: The objective of the NPI is to provide a historical measurement of property-level returns to increase the understanding of, and lend credibility to, real estate as an institutional investment asset class.

NCREIF Timberland: The NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only.

**NFIB U.S. Small-Business Optimism Index** is compiled from a survey that is conducted each month by the National Federation of Independent Business (NFIB) of its members. The index is a composite of 10 seasonally adjusted components based on the following questions: plans to increase employment, plans to make capital outlays, plans to increase inventories, expect economy to improve, expect real sales higher, current inventory, current job openings, expected credit conditions, now a good time to expand, and earnings trend.

Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange.

Philadelphia Federal Index: A regional federal-reserve-bank index measuring changes in business growth. The index is constructed from a survey of participants who voluntarily answer questions regarding the direction of change in their overall business activities. The survey is a measure of regional manufacturing growth. When the index is above 0 it indicates factory-sector growth, and when below 0 indicates contraction.

Russell 2000 Index® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

Russell 3000 Growth Index measures the performance of those Russell 3000 Index companies with higher price-to-book ratios and higher forecasted growth values.

Russell 3000 Index is composed of 3000 large U.S. companies, as determined by market capitalization.

Russell 3000 Value Index measures the performance of those Russell 3000 Index companies with lower price-to-book ratios and lower forecasted growth values.



## Index Definitions (continued)

S&P 400 Mid Cap Index is representative of 400 stocks in the mid-range sector of the domestic stock market, representing all major industries.

S&P 500 Buyback Index measures the performance of the top 100 stocks with the highest buyback ratio (cash paid for common shares buyback in the last four calendar quarters divided by the total market capitalization of common shares) in the S&P 500.

S&P 500 Cyclicals ex-financials is designed to reflect the performance of the opportunity set of U.S. cyclical companies across various GICS® sectors. All constituent securities from Consumer Discretionary, Industrials, Information Technology and Materials are included in the index.

S&P 500 Defensives is designed to reflect the performance of the opportunity set of U.S. cyclical companies across various GICS® sectors. All constituent securities from Consumer Staples, Energy, Healthcare, Telecommunication Services and Utilities are included in the index.

S&P 500 Dividend Aristocrats index is designed to measure the performance of S&P 500 index constituents that have followed a policy of consistently increasing dividends every year for at least 25 consecutive years.

S&P 500 Financials Index comprises of those companies included in the S&P 500 that are classified as members of the GICS® financials sector.

S&P 500 High Dividend Index serves as a benchmark for income seeking equity investors. The index is designed to measure the performance of 80 high yield companies within the S&P 500 and is equally weighted to best represent the performance of this group, regardless of constituent size.

S&P 500 Index, widely regarded as the best single gauge of the U.S. equities market, includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the index focuses on the large-cap segment of the market, with approximately 75% coverage of U.S. equities, it is also an ideal proxy for the total market.

S&P 500 Information Technology Index comprises those companies included in the S&P 500 that are classified as members of the GICS® information technology sector.

S&P 500 Low Volatility Index measures performance of the 100 least volatile stocks in the S&P 500. The index benchmarks low volatility or low variance strategies for the U.S. stock market. Constituents are weighted relative to the inverse of their corresponding volatility, with the least volatile stocks receiving the highest weights.

S&P 500 Total Return Index. Calculated intraday by S&P based on the price changes and reinvested dividends of the S&P 500 Index with a starting date of Jan 4, 1988.

Ten-Year Treasury relates the yield on a security to its time to maturity and is based on the closing market bid yields on actively traded Treasury securities in the over-the-counter market.

Tokyo Stock Exchange Tokyo Price Index (TOPIX) is a capitalization-weighted index of all companies listed on the First Section of the Tokyo Stock Exchange. The index is supplemented by the subindices of the 33 industry sectors.

TOPIX-Banks Index is a capitalization-weighted index of all the banks listed on the First Section of the Tokyo Stock Exchange and is one of the 33 industry sectors of the TOPIX Index (TPX).

U.S. 5vr Forward Breakeven; Yields are yield to maturity and pre-tax. The rates are comprised of Generic United States Breakeven forward rates; nominal forward 5 years minus US inflation-linked bonds forward 5 years.

University of Michigan Consumer Sentiment Index: Surveys of Consumers collects data on consumer attitudes and expectations summarized in the Consumer Sentiment, in order to determine the changes in consumers' willingness to buy and to predict their subsequent discretionary expenditures.

US Trade Weighted Real Broad Dollar: An effective exchange rate (also known as a trade-weighted exchange rate) is a weighted average of the individual exchange rates of a particular country with its main trading partners.

VIX Index: The Chicago Board Options Exchange Standard and Poor's Volatility Index, reflects a market estimate of future volatility, based on the weighted average of the implied volatilities for a wide range of strikes

WTI crude oil reflects the Bloomberg West Texas Intermediate Crushing Crude Oil Spot Price. The price is derived by adding spot market spreads to the NYMEX contract. Units are in U.S. dollars per barrel and is traded intraday.



### **Disclosures**

Reference to indices, or other measures of relative market performance over a specified period of time (each, an "index") are provided for illustrative purposes only, do not represent a benchmark or proxy for the return or volatility of any particular product, portfolio, security holding, or Al. Indices are unmanaged. The figures for the index reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. We strongly recommend that these factors be taken into consideration before an investment decision is made. Neither Merrill Lynch nor the index sponsor can verify the validity or accuracy of the self reported returns of the managers used to calculate the index returns. Merrill Lynch does not guarantee the accuracy of the index returns and does not recommend any investment or other decision based on the results presented. The indices referred in the presentation do not reflect the performance of any account or fund managed by Merrill Lynch or its affiliates, or of any other specific fund or account, and do not reflect the deduction of any management or performance fees or expenses. The hedge fund universe from which the components of the indices are selected is based on funds which have continued to report results for a minimum period of time. This prerequisite for fund selection interjects a significant element of "survivor bias" into the reported levels of the indices, as generally only successful funds will continue to report for the required period, so that the funds from which the statistical analysis or the performance of the indices to date is derived necessarily tend to have been successful. There can, however, be no assurance that such funds will continue to be successful in the future. Indices are unmanaged and results shown are not reduced by taxes or transaction costs such as fees. It is not possible to invest directly in an Index.

Alternative Investments are speculative and subject to a high degree of risk. Although risk management policies and procedures can be effective in reducing or mitigating the effects of certain risks, no risk management policy can completely eliminate the possibility of sudden and severe losses, illiquidity and the occurrence of other material adverse effects. Some or all alternative investment programs may not be suitable for certain investors. Many alternative investment products, specifically private equity and most hedge funds, require purchasers to be "qualified purchasers" within the meaning of the federal securities laws (generally, individuals who own at least \$5 million in "investments" and institutional investors who own at least \$25 million in "investments," as such term is defined in the federal securities laws). No assurance can be given that any alternative investment's investment objectives will be achieved. In addition to certain general risks, each product will be subject to its own specific risks, including strategy and market risk.

Alternative Investments such as derivatives, hedge funds, private equity funds, and funds of funds can result in higher return potential but also higher loss potential. Changes in economic conditions or other circumstances may adversely affect your investments. Before you invest in alternative investments, you should consider your overall financial situation, how much money you have to invest, your need for liquidity, and your tolerance for risk.

Investors should bear in mind that the global financial markets are subject to periods of extraordinary disruption and distress. During the financial crisis of 2008-2009, many private investment funds incurred significant or even total losses, suspended redemptions or otherwise severely restricted investor liquidity, including increasing the notice period required for redemptions, instituting gates on the percentage of fund interests that could be redeemed in any given period and creating side-pockets and special purpose vehicles to hold illiquid securities as they are liquidated. Other funds may take similar steps in the future to prevent forced liquidation of their portfolios into a distressed market. In addition, investment funds implementing alternative investment strategies are subject to the risk of ruin and may become illiquid under a variety of circumstances, irrespective of general market conditions.

There may be conflicts of interest relating to the alternative investment and its service providers, including Bank of America Corporation, and its affiliates, who are engaged in businesses and have clear interests other than that of managing, distributing and otherwise providing services to the alternative investment. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may purchase or sell such securities and instruments. These are considerations of which investors in the alternative investments should be aware. Additional information relating to these conflicts is set forth in the offering materials for the alternative investment.



## Disclosures (continued)

Nonfinancial assets, such as closely-held businesses, real estate, oil, gas and mineral properties, and timber, farm and ranch land, are complex in nature and involve risks including total loss of value. Special risk considerations include natural events (for example, earthquakes or fires), complex tax considerations, and lack of liquidity. Nonfinancial assets are not suitable for all investors. Always consult with your independent attorney, tax advisor, investment manager, and insurance agent for final recommendations and before changing or implementing any financial, tax, or estate planning

The investments discussed have varying degrees of risk. Some of the risks involved with equities include the possibility that the value of the stocks may fluctuate in response to events specific to the companies or markets, as well as economic, political or social events in the U.S. or abroad. Bonds are subject to interest rate, inflation and credit risks. Investments in high-yield bonds may be subject to greater market fluctuations and risk of loss of income and principal than securities in higher rated categories. Investments in foreign securities involve special risks, including foreign currency risk and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are magnified for investments made in emerging markets. Investments in a certain industry or sector may pose additional risk due to lack of diversification and sector concentration. Investments in real estate securities can be subject to fluctuations in the value of the underlying properties, the effect of economic conditions on real estate values, changes in interest rates, and risk related to renting properties, such as rental defaults. There are special risks associated with an investment in commodities, including market price fluctuations, regulatory changes, interest rate changes, credit risk, economic changes and the impact of adverse political or financial factors.

The opinions expressed herein are those of the Chief Investment Office as of the date of this material and are subject to change. It is provided as general market commentary only, and it does not consider the specific investment objectives, financial situation or particular needs of any one client. It should not be considered a recommendation or solicitation to purchase or sell any security. There is no guarantee that any future event discussed herein will come to pass. When reading this commentary, you should consider that investments in securities involve risk and you could lose some or all of the amounts you have invested. The information herein was obtained from various sources, which we believe to be reliable, but we do not guarantee its accuracy or completeness. The indexes referenced herein are unmanaged and are not available for direct investment; returns assume no management, transaction or other expenses and also assume reinvestment of dividends, interest and/or capital gains. Past performance does not guarantee or indicate future results.

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