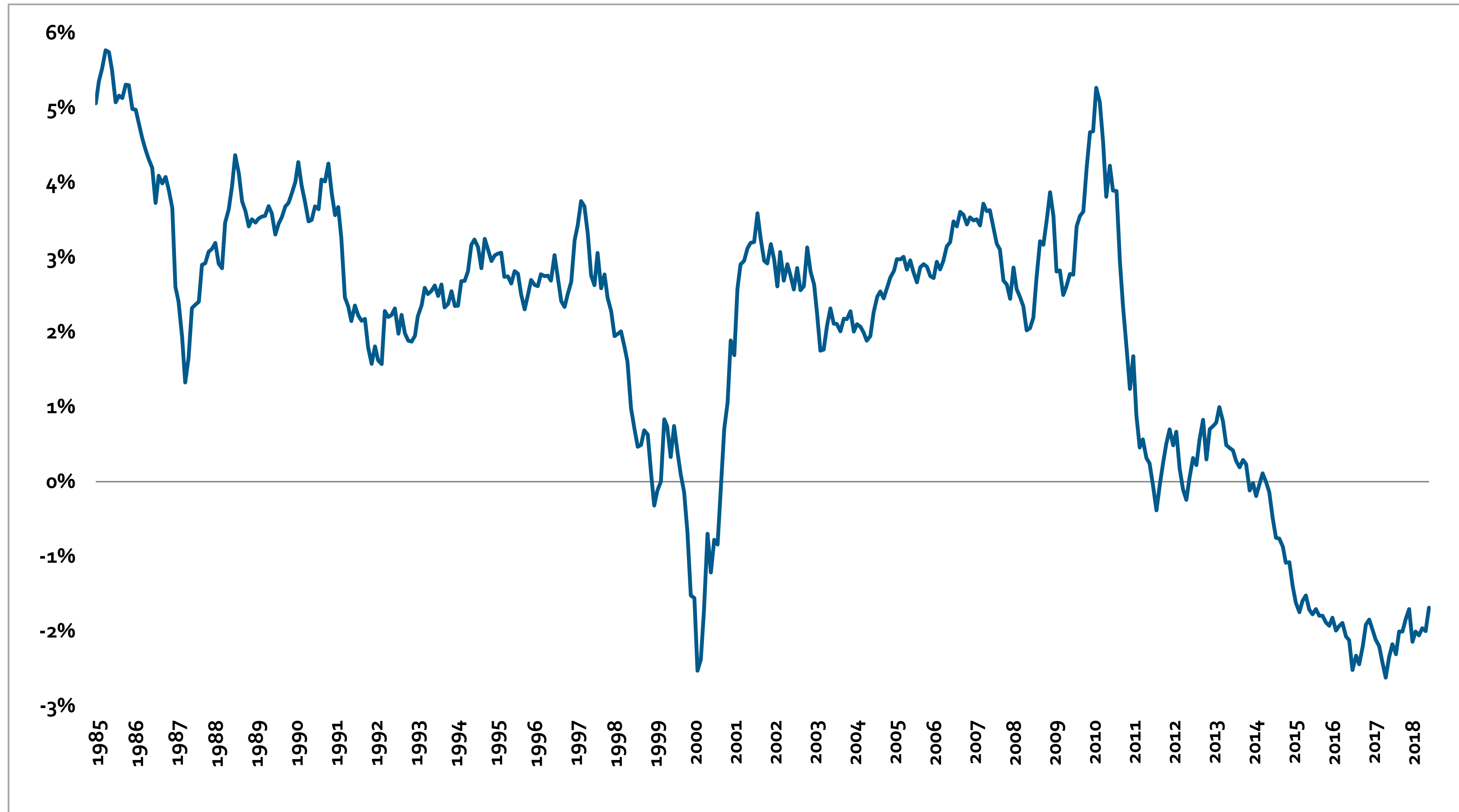
Morgan Stanley

Global Investment Committee Slides

Value Underperformance Nears TMT Bubble Years' Low

MSCI World Value Index vs. MSCI World Growth Index*

Quarterly Data As of June 30, 2018



Source: FactSet, Morgan Stanley Wealth Management GIC. *Relative total return, 10-year compound annual growth rate.

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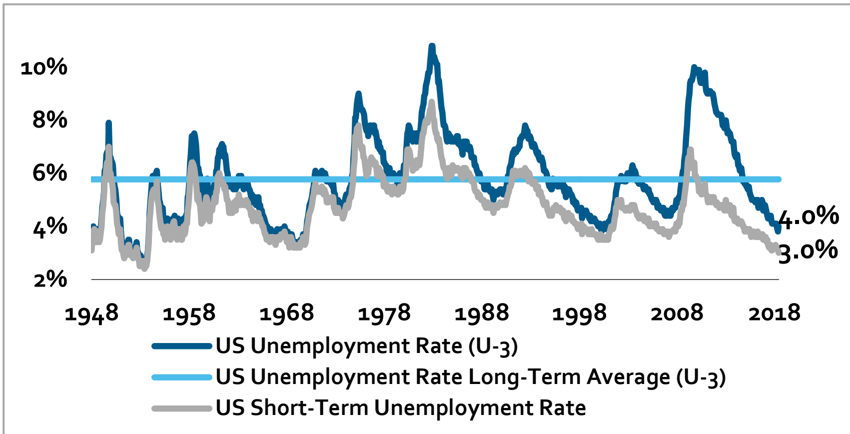
With an Improved Labor Market, Wages Are Now Rising

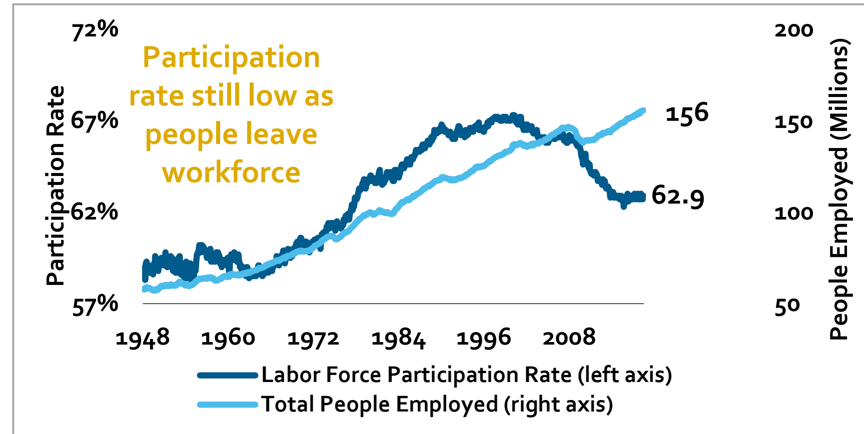
US Unemployment Rate

As of June 30, 2018



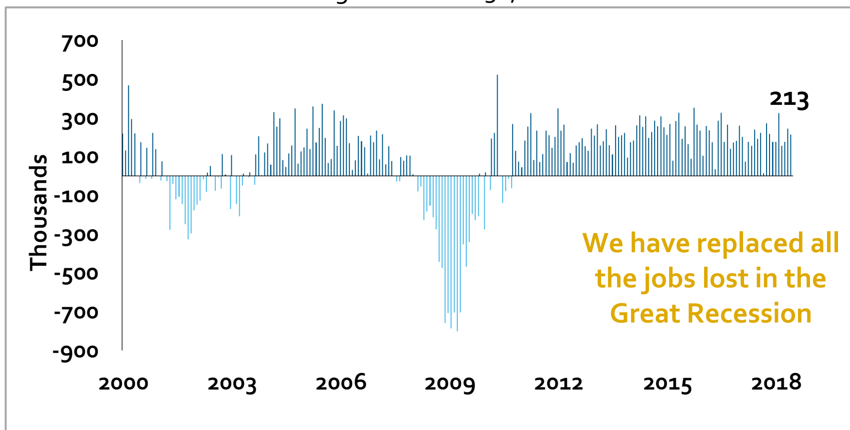
Labor Force Participation Rate and Total Employment

Monthly Data As of June 30, 2018



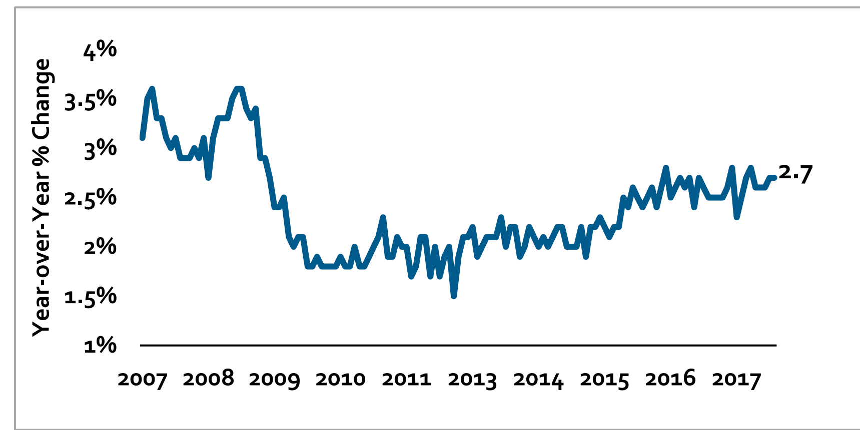
Total Nonfarm Payrolls

Month-over-Month Net Change As of June 30, 2018



US Average Hourly Earnings

Monthly Data As of June 30, 2018



Source: Haver Analytics, Bloomberg, Bureau of Labor Statistics, Morgan Stanley Wealth Management GIC

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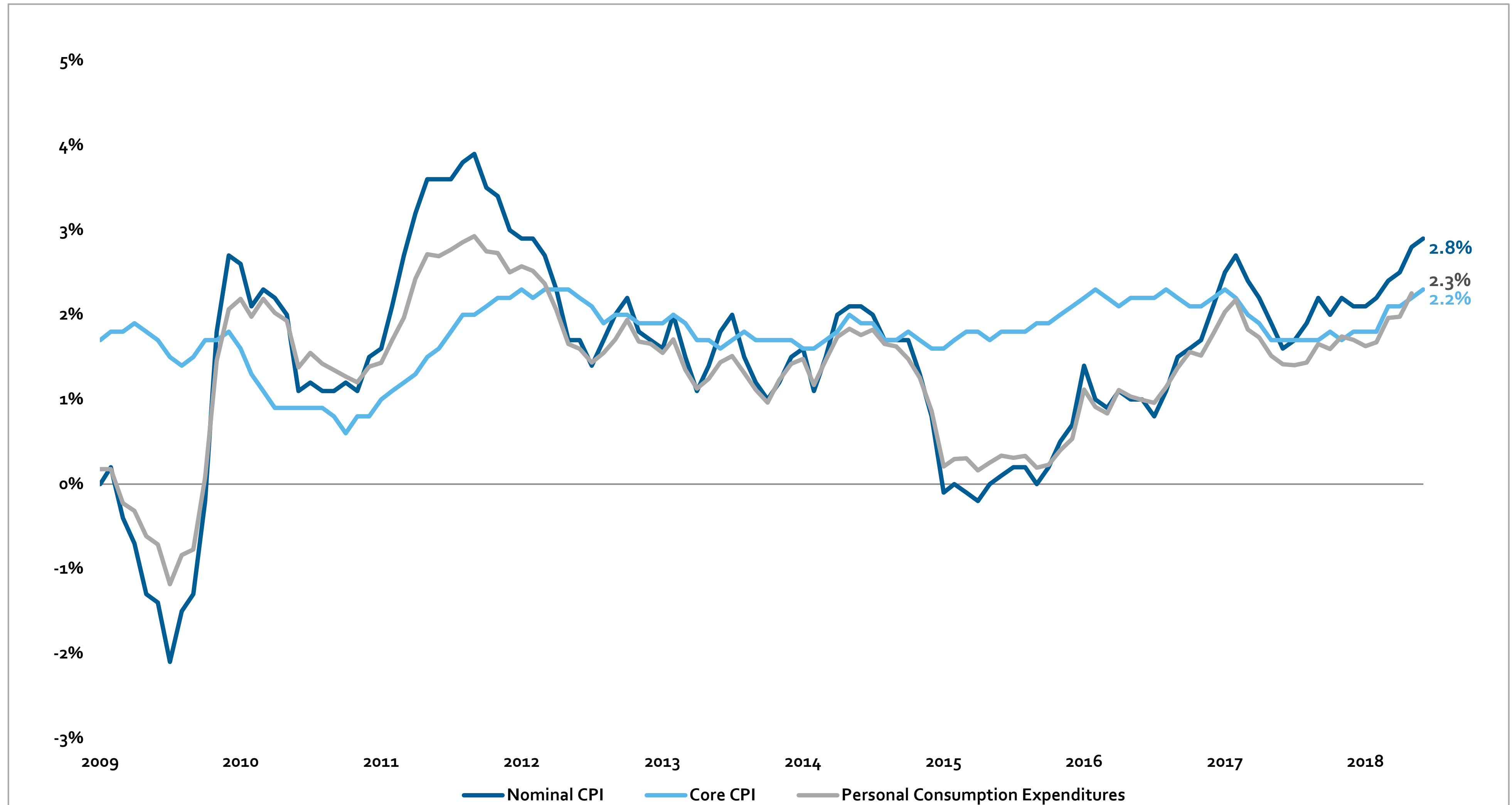
US Prices

Nominal CPI, Core CPI, Personal Consumption Expenditures (Y/Y)

As of June 30, 2018



Source: Haver Analytics, Morgan Stanley Wealth Management GIC

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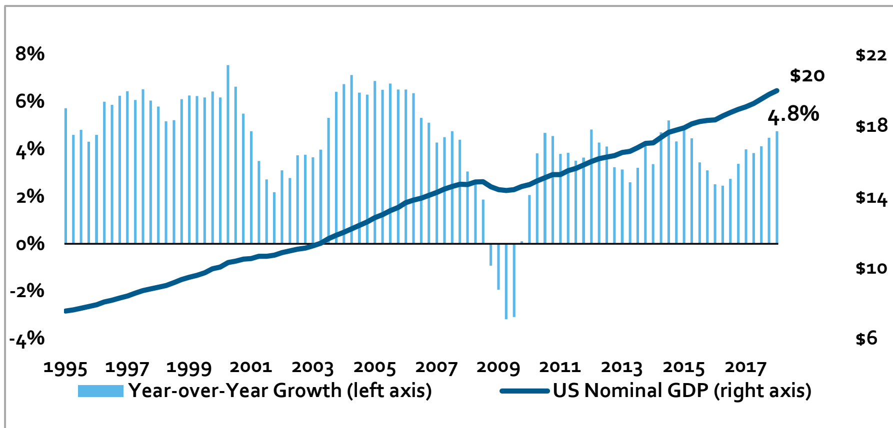
US Economy Slowly Improving

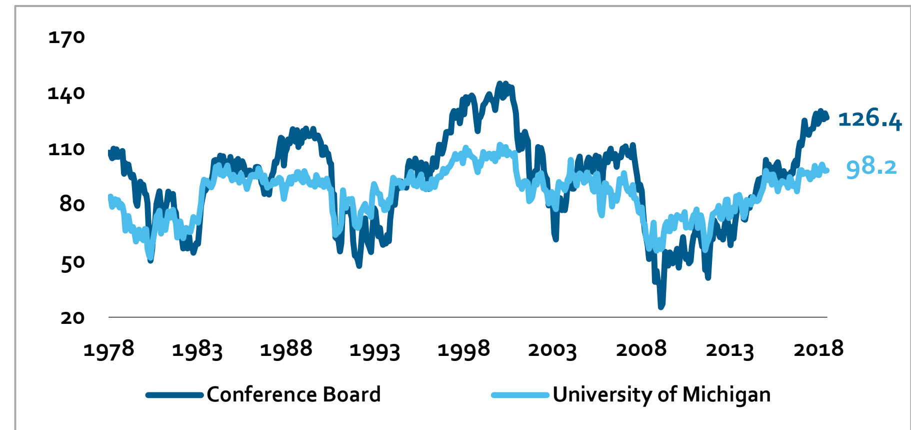
US Nominal GDP[1]

Trillions of US Dollars as of 1Q 2018



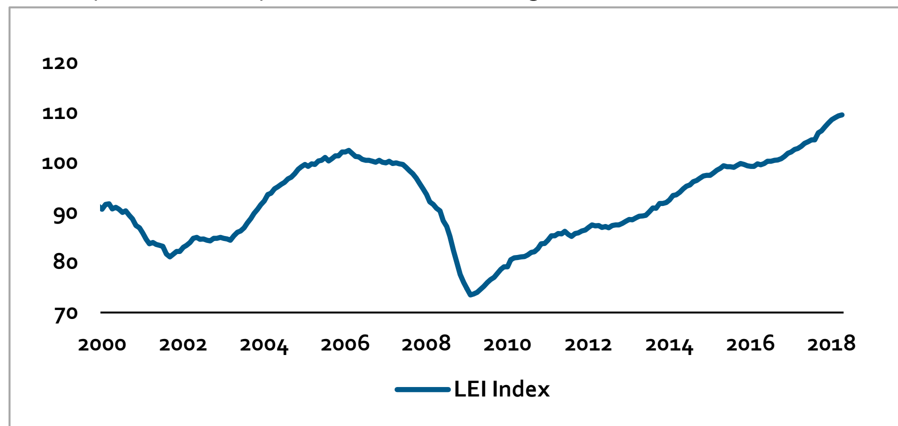
Consumer Confidence

Monthly as of June 29, 2018



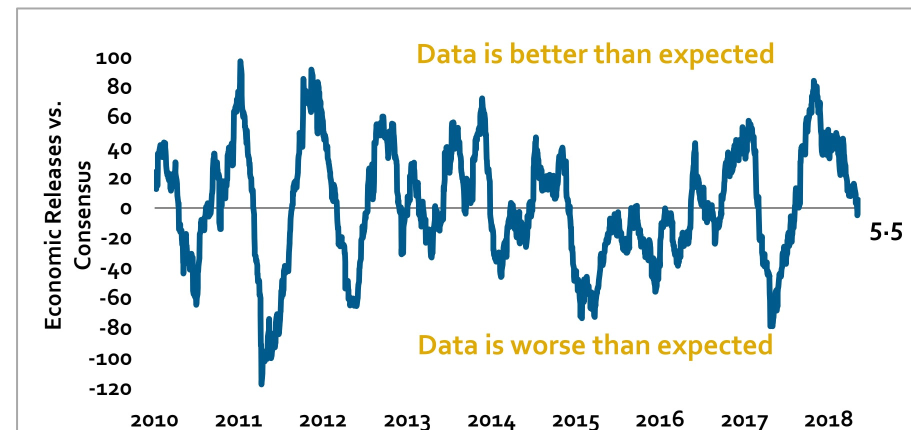
Conference Board Leading Economic Indicator Index

Monthly data as of May 31, 2018 (one-month lag)



Citi US Economic Surprise Index

Daily Data as of July 2, 2018



Source: Bloomberg, Citi, FactSet, University of Michigan, Conference Board. (1) Nominal GDP does not account for the effects of inflation.

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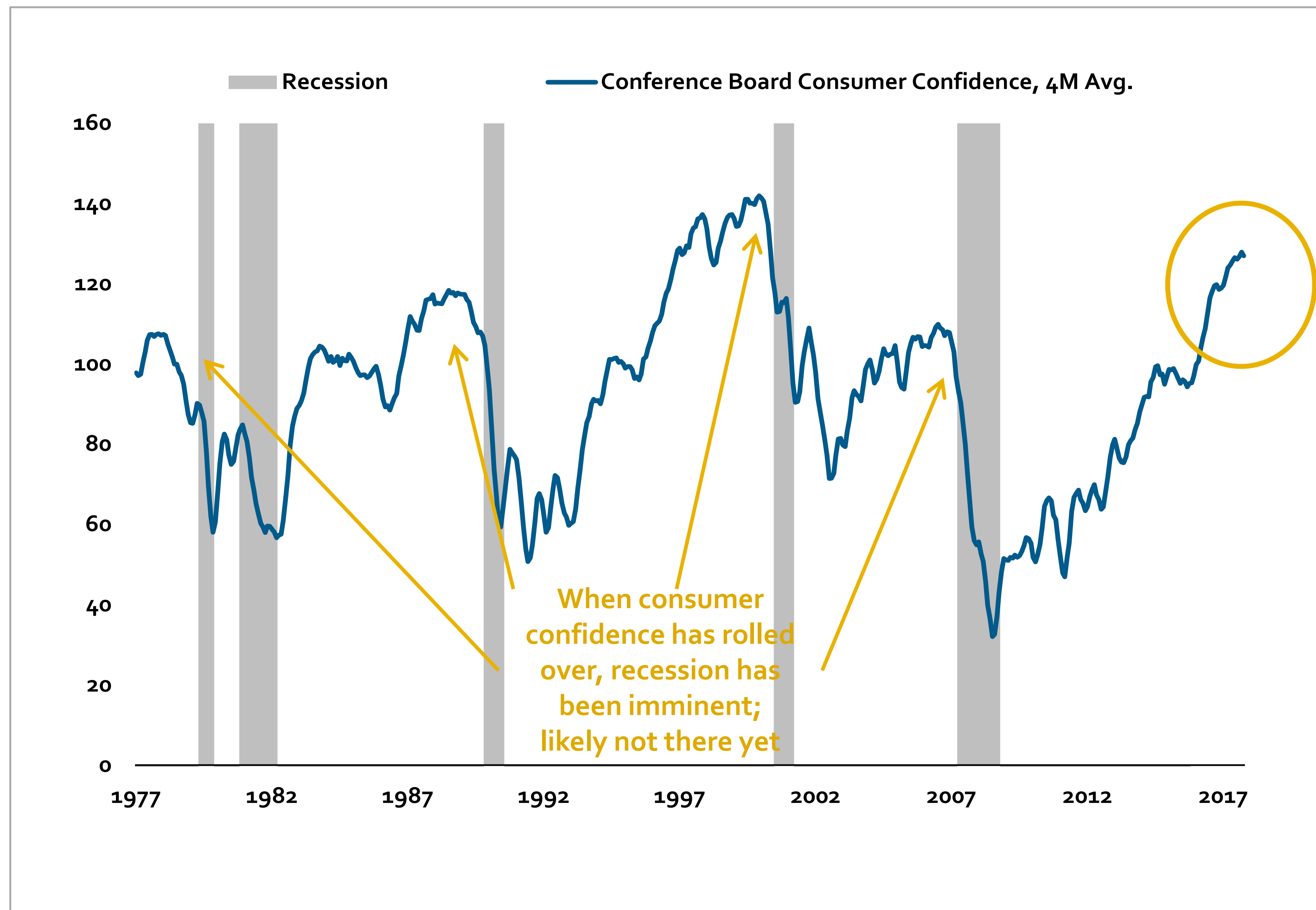
Consumer Confidence Elevated, at Prior-Cycle Highs

Conference Board Consumer Confidence

Monthly Data as of June 30, 2018



Source: Bloomberg, Morgan Stanley Wealth Management GIC

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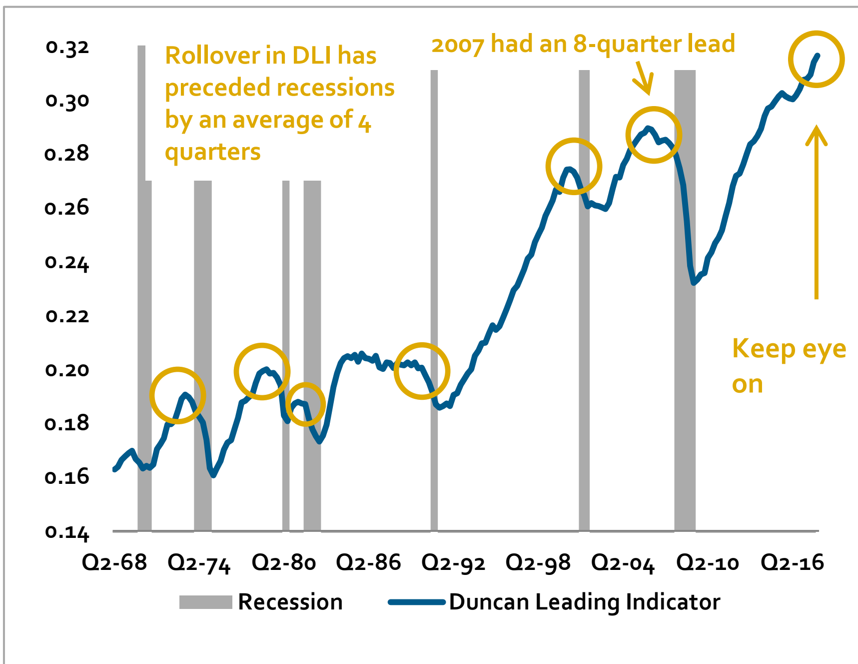
Risk of Recession in 2018 Remains Muted

Duncan Leading Indicator (DLI)

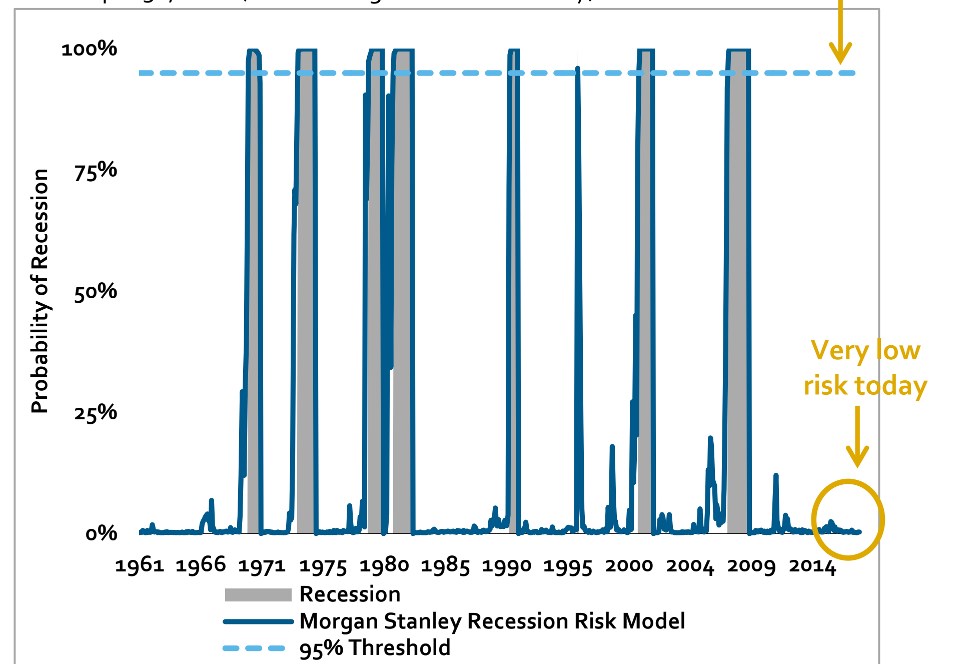
As of 1Q 2018



DLI represents the relationship between spending and investment relative to demand; if spending and investment grow faster than demand, a rollover in the DLI should precede a recession

Morgan Stanley Recession Risk Model

As of April 30, 2018 (2-month lag in data availability)



Morgan Stanley Recession Risk Model (MSRISK) provides a timely and definitive warning of a downturn in the US business cycle—has predicted 7/7 recessions with NO false positives

Source: Haver Analytics, Morgan Stanley Wealth Management GIC, Morgan Stanley & Co, Bloomberg. For more information about the risks to performance please refer to the Risk Considerations section at the end of this material.

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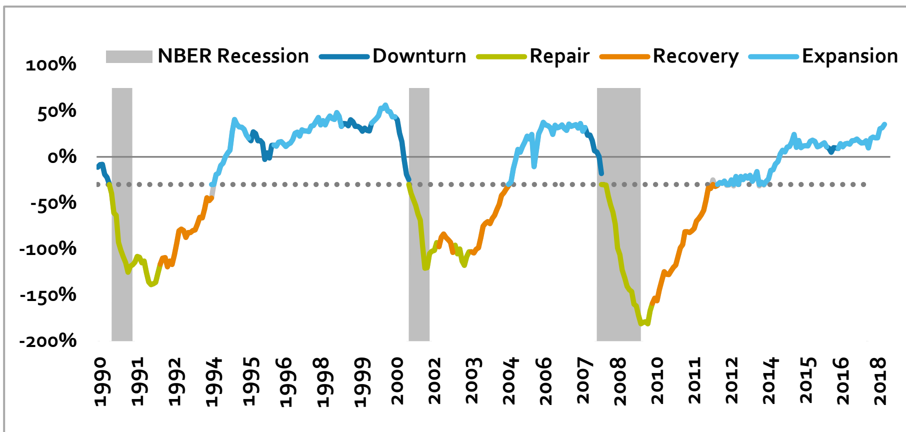
Morgan Stanley & Co. Cycle Models

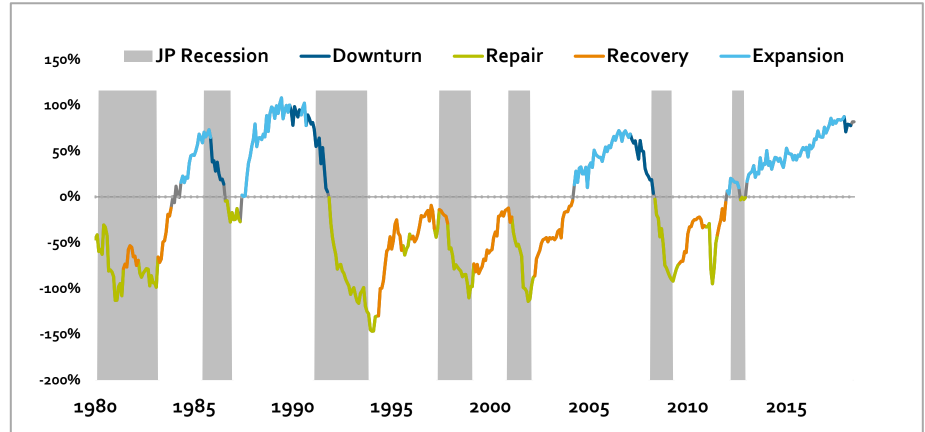
Morgan Stanley Cycle Indicator Index - US

As of June 29, 2018



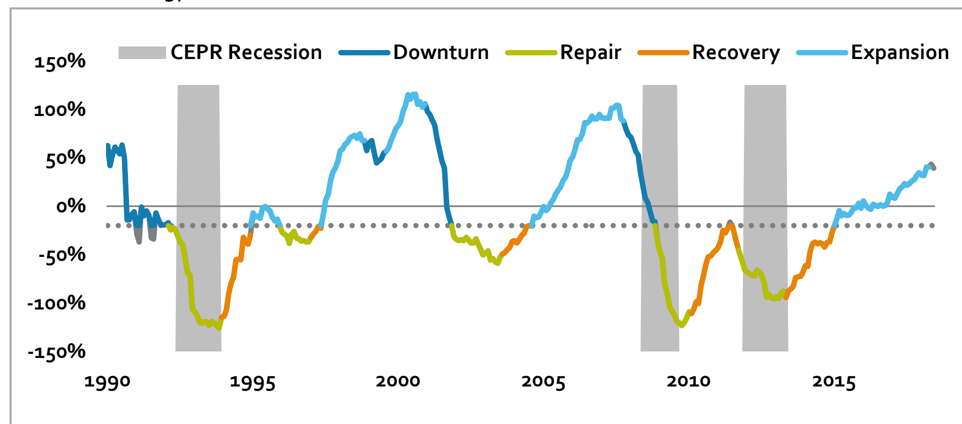
Morgan Stanley Cycle Indicator Index – Japan

As of June 29, 2018



Morgan Stanley Cycle Indicator Index - Euro Area

As of June 29, 2018



Source: Morgan Stanley & Co. Research, NBER, Bloomberg, Haver Analytics, FactSet. The Morgan Stanley Cycle Indicator Indices measure the deviation from historical norms for macro factors including employment, credit conditions, corporate behavior and the yield curve. The repair phase occurs due to the lag time between when these factors are beginning to improve and when they turn positive.

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S&P 500 Current and Historical Valuation

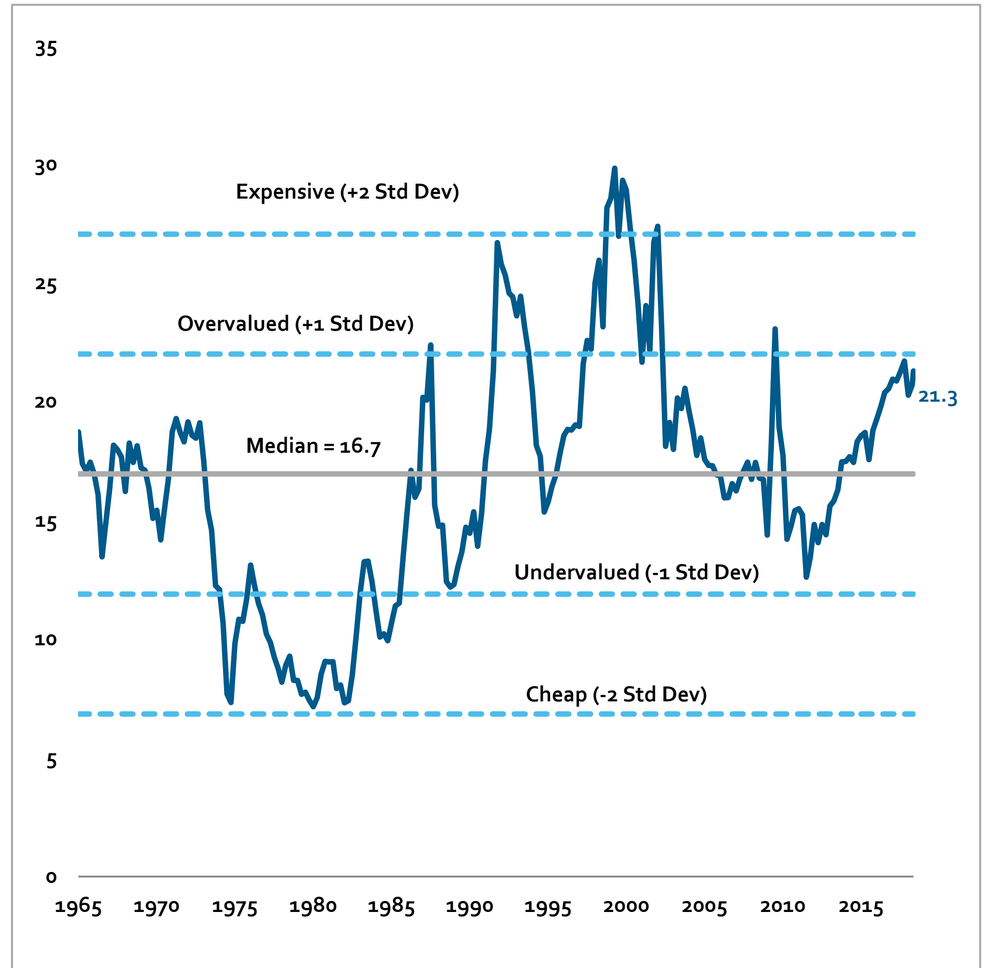
S&P 500 Current and Historical Valuation

As of July 13, 2018

	Tech Bubble	Financial Crisis	Jul 13, 2018	20-Year Average	Current Relative to Average
Trailing P/E	28.9	12.1	21.3	19.4	1.10
Forward P/E	26.6	11.2	16.6	15.9	1.04
Trailing Normalized P/E	48.7	11.9	29.5	26.3	1.12
Shiller P/E	43.2	14.1	31.8	26.9	1.18
P/B	5.0	1.6	3.4	2.9	1.16
EV/EBITDA	16.5	9.0	13.6	10.6	1.29
Trailing PEG	NA	1.0	1.4	1.4	1.00
Forward PEG	NA	1.0	1.3	1.3	0.97
P/OCF	19.4	6.5	13.7	11.6	1.19
P/FCF	41.6	12.1	22.3	21.8	1.02
EV/Sales	3.0	1.4	2.7	1.9	1.41
S&P 500 in WTI Terms	55.7	16.4	39.4	31.8	1.24
S&P 500 in Gold Terms	5.4	0.8	2.3	2.3	0.98
Equity Risk Premium (bps)	-225	588	603.7	289	2.09

S&P 500 Trailing Price/Earnings Ratio with Historical Median

As of July 13, 2018



Source: Bloomberg, FactSet, Morgan Stanley Wealth Management GIC. Tech Bubble data is 3/31/2000, Financial Crisis data is 2/28/2009. Trailing and Forward price-earnings to growth (PEG) ratio uses 10-year average. The Shiller P/E ratio, also known as the cyclically adjusted P/E ratio, uses a 10-year average of inflation-adjusted earnings to value the stock market. Equity risk premium is the excess return that an individual stock or the overall stock market provides over a risk-free rate. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time. Standard deviation (volatility) is a measure of the dispersion of a set of data from its mean.

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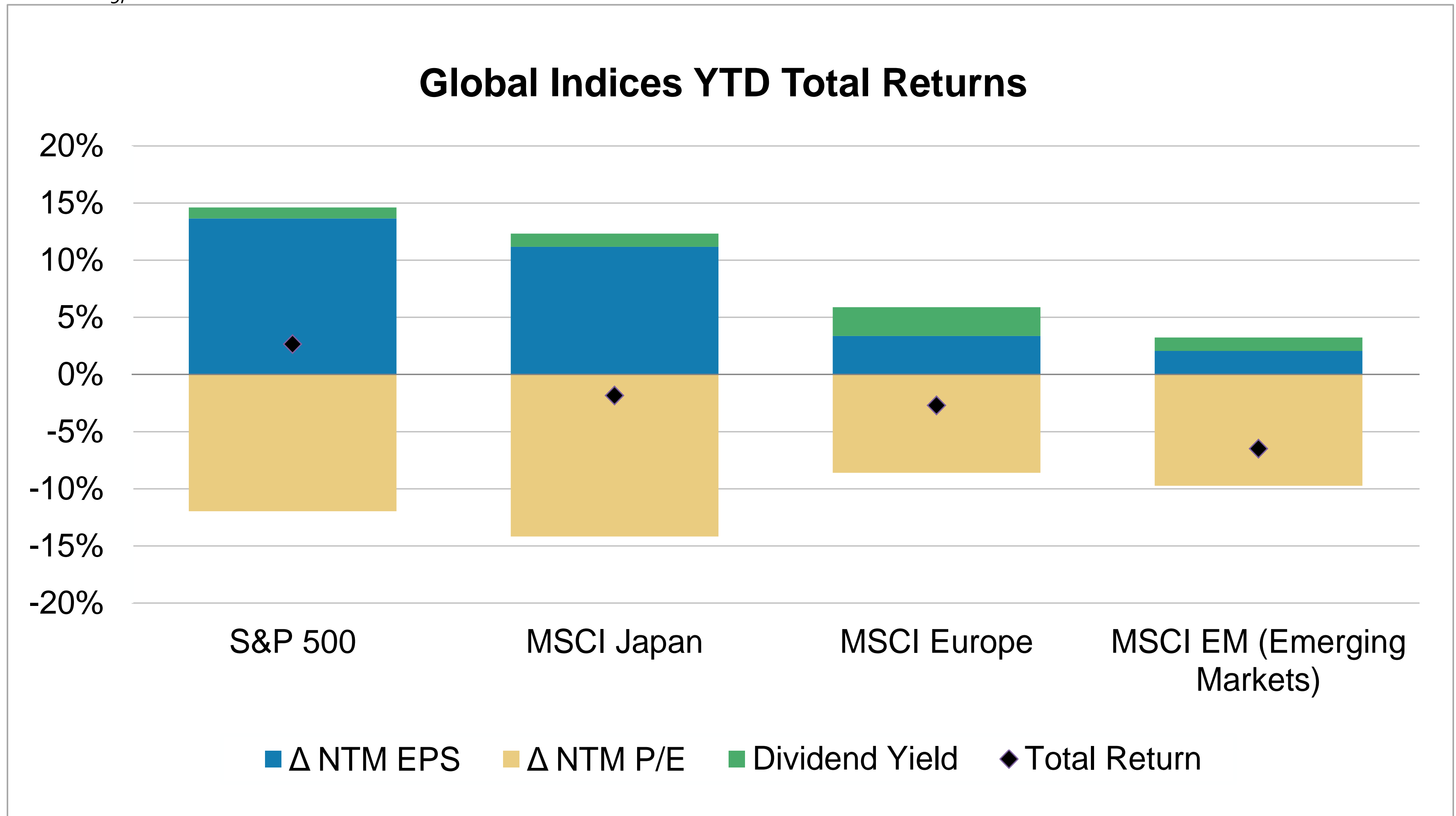
De-Rating of Equities Has Been Similar Across Regions; Spread in Performance Has Been Driven by EPS Growth

As of June 29, 2018



Source: FactSet, Bloomberg, Morgan Stanley & Co. Research

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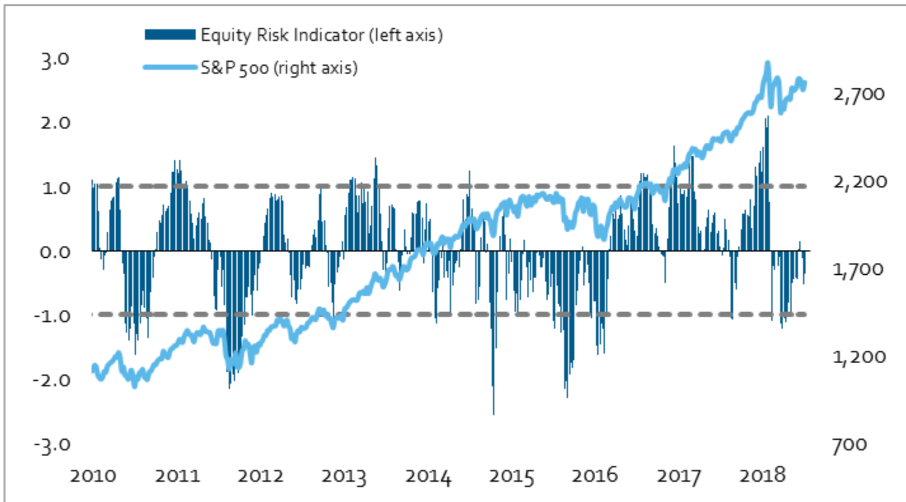
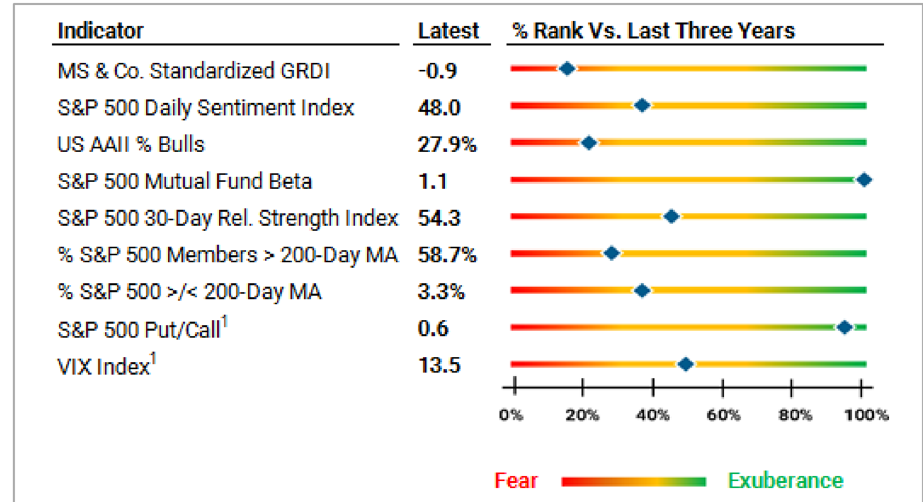
US Equity Market Indicators

Morgan Stanley Equity Risk Indicator

As of July 6, 2018





Indicator	Latest	% Rank Vs. Last Three Years
MS & Co. Standardized GRDI	-0.9	
S&P 500 Daily Sentiment Index	48.0	
US AAII % Bulls	27.9%	
S&P 500 Mutual Fund Beta	1.1	
S&P 500 30-Day Rel. Strength Index	54.3	
% S&P 500 Members > 200-Day MA	58.7%	
% S&P 500 >/< 200-Day MA	3.3%	
S&P 500 Put/Call[1]	0.6	
VIX Index[1]	13.5	

- The US Equity Risk Indicator came in at -0.4 last week
  - Sentiment polls and market breadth inputs were mixed

Source: Bloomberg, FactSet, dailysentimentindex.com, Morgan Stanley & Co., Morgan Stanley Wealth Management GIC. This page features Morgan Stanley & Co.'s proprietary US Equity Risk Indicator, which is a gauge of US equity market sentiment/positioning. It also features a table of some of the key sentiment, positioning, breadth and volatility measures that we watch on a regular basis. Each factor is ranked against its three-year history to provide some historical context. Equity Risk Indicator is a standardized measure of investor sentiment and positioning and earnings revision factors, compiled using a statistical Z-score methodology. A Z-Score is a statistical measurement of a score's relationship to the mean in a group of scores. A Z-score of 0 means the score is the same as the mean. A Z-score can also be positive or negative, indicating whether it is above or below the mean and by how many standard deviations. Standard deviation (volatility) is a measure of the dispersion of a set of data from its mean. (1) % rank inverted. Global Risk Demand Index (GRDI): Proprietary gauge of global risk asset sentiment. Daily Sentiment Index: Poll that tracks trader sentiment of US stocks. AAII % Bulls: Individual investor sentiment poll of US equities. Mutual Fund Beta: Measure of mutual fund volatility vs. S&P 500 volatility. Relative Strength Index: Measures momentum; >70=overbought; <30=oversold

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Bottom Line: Our Recommendations

As of January 10, 2018

- The global economic recovery began almost 2 years ago. The synchronous nature of the recovery is the broadest since the initial recovery in 2009 from the Great Recession, but the rate of change is close to peaking. We are also witnessing the strongest revenue and earnings growth in 5 years led by rising incremental margins—i.e., very high quality.
- We continue to recommend equities over fixed income given our constructive view on global economic and earnings growth, supportive financial conditions, the potential for global fiscal stimulus and cheap relative valuations.
- Individual and institutional investor sentiment and positioning for US equities is getting much more optimistic and full. We may have even entered the Euphoria stage we expected—the more speculative and lower quality part of the rally.
- We prefer a barbell of positioning within equity portfolios—consider deep cyclical stocks, Financials and reasonably priced growth stocks. We expect high valuation and ultra-defensive/low-volatility strategies to underperform as global growth and pro-cyclical company earnings surprise to the upside. We favor dividend *growth* over dividend yield.
- We think Japan still offers an attractive opportunity for both stock picking and beta plays levered to global recovery. We forecast a strengthening/flat yen and therefore removed our currency hedges for Japanese equity positions.
- Many of the structural imbalances in emerging markets (EM) have improved. Concerns about EM from anti-trade "rhetoric" were overblown. Europe is tied to EM via its exports and banking system and has strong long-term valuation support as fears of political uncertainty and banking stress peaked last year. Organic earnings growth in Europe should outpace the US over the next several years. We do not recommend hedging currency risk for European equity investments.
- Within fixed income, we recommend US-only positioning with no exposure to high yield and some TIPS as inflation expectations recover further with a stable/weaker dollar, rising oil prices and tighter labor. We remain underweight longer maturities and other interest rate-sensitive assets like REITs where there are also some signs of credit risk.
- We believe oil prices could surprise on the upside this year. We maintain exposure via energy stocks and MLPs.
- Interest rates are likely to rise as inflation and growth expectations rise, but then fall again in the second half, leaving high-quality fixed income investments with low, but positive returns for 2018. There may be a better time to add to duration later in the first half of 2018, in our view.

Source: Morgan Stanley Wealth Management GIC

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Bottom Line: Our Recommendations

As of July 11, 2018

- The global economic recovery began over 2 years ago. The synchronous nature of the recovery has become less synchronous and the rate of change is close to peaking. We are also witnessing the strongest year-over-year growth in earnings, but this is tax-cut driven in the US, which is lower quality and less sustainable, in our view.
- We still recommend equities over fixed income given our constructive view on global economic growth and rising earnings, the potential for more global fiscal stimulus and cheap valuation relative to rates and credit.
- Investor sentiment and positioning for global equities reached the Euphoric stage in January we had been anticipating. Given the rise in short-term interest rates and volatility, we do not expect a return to this level of optimism this year.
- We no longer have a preference for the cyclical sectors over defensive sectors in the US given the peak rate of change in earnings growth, top in 10-year rates and rapidly flattening curve. Of the Defensives, we favor Utilities, Staples and Telcos.
- Many of the structural imbalances in emerging markets (EM) have improved. Concerns about EM from anti-trade "rhetoric" are getting priced. Italian politics combined with Trump's less-friendly rhetoric may be the catalyst for Germany and France to finally come together for Europe. *Organic* earnings growth in Europe should get a boost from recent euro weakness. We do not recommend hedging currency risk for European equity investments at the moment.
- Within fixed income, we recommend US-only positioning with no exposure to high yield and some TIPS as inflation expectations recover further with a stable/weaker dollar, rising oil prices and tighter labor
- We still believe oil prices will hold their gains in 2H18/2019. We maintain exposure via energy stocks and MLPs.
- We think the most vulnerable markets to the ongoing rolling bear market are US Tech, small caps, Consumer Discretionary and potentially Japan if trade concerns escalate. As is typical with rolling bear markets, they have usually ended when the highest-quality areas finally get hit. In the event this happens, we expect the Fed to back off of its tightening campaign and the trade rhetoric to soften, setting us up for a potentially strong year-end finish for global equities.

Source: Morgan Stanley Wealth Management GIC

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Rolling Bear Market in Process and May Enter Final Stage Soon

As of July 11, 2018

- **Global reflation has been the primary narrative** driving asset markets since 2016. That took a turn this year as interest rates moved sharply higher on concerns about inflation and peaking growth and tightening financial conditions (our call for 2018).
- **Financial conditions reached an all-time low in January. Since then, financial conditions have tightened meaningfully.** The effect of such tightening is manifesting itself in the weakest asset classes first—cryptocurrencies, LIBOR-OIS spreads, funding markets, low volatility strategies, emerging markets, Italian bonds, European banks and numerous others.
- **US equity valuations still have strong support at 16x consensus NTM EPS, especially with the recent decline in 10-year Treasuries.** International equity markets much cheaper than the US, especially Europe and Japan. **Energy has exhibited market leadership since April. Our call for Defensive Rotation started to work in June and we think it continues. We like Utilities, Staples, and Telcos in the US.**
- **Higher volatility likely to continue this year as we experience a rolling bear market**. It will be just as important to miss the land mines as it is to find the winners. Tech, small caps and Consumer Discretionary look vulnerable here as the next and last shoe to drop. Once these higher-quality leaders are hit, we think the Fed will pause and equity markets will finish the year on a high note.
- **We still expect the S&P 500 to reach new cycle highs later this year** but not until the S&P has a catch-up move to other global markets. Our call for decelerating growth, falling operating margins and restrictive monetary policy is likely to get priced in July/August.
- **We continue to believe 2018 will mark the beginning of a wide trading range that could last several years.** While the price damage may not be extreme at the index level, it may feel and look a lot like a bear market. We think this rolling bear market has already begun with peak valuations in December followed by peak sentiment in January. **Sell the Rips and Buy the Dips.**
- **10-Year Treasury yields may have topped for the cycle at 3.12% and we expect lower levels this year (2.75%)**. This follows a low in credit spreads in January—we are underweight; avoid high-credit-risk equities. We remain constructive on MLPs and Energy stocks**.**
- **Europe and EM have discounted a lot of the trade concerns while the US and Japan have not, making the S&P and TOPIX most vulnerable to the next stage of the rolling bear market.**

Source: Morgan Stanley & Co. Research. Equity risk premium is the excess return that an individual stock or the overall stock market provides over a risk-free rate. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time.

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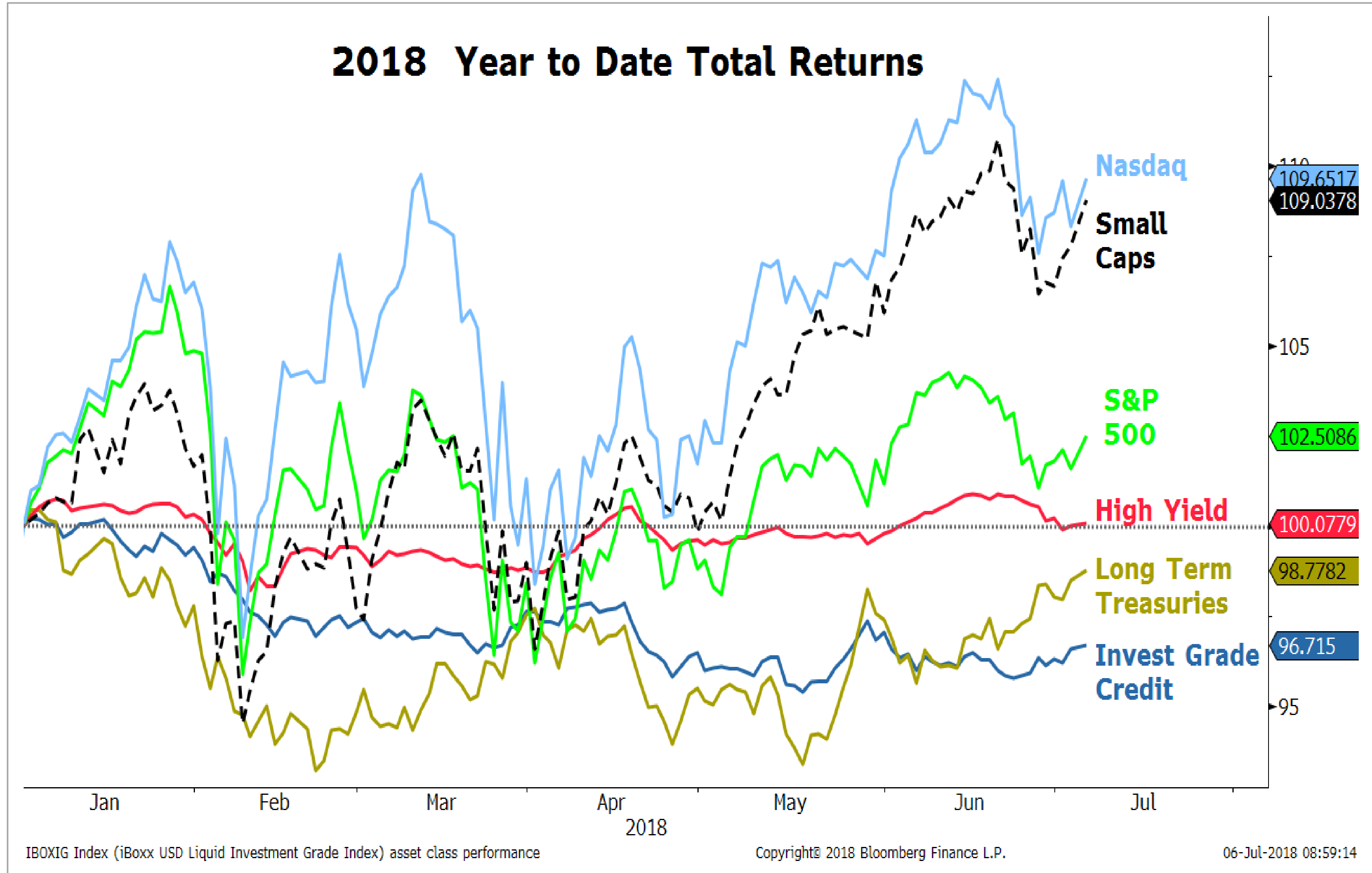
Asset Class Performance Could Present Risk in Tech & Small Caps

As of July 6, 2018



Source: Bloomberg, Morgan Stanley & Co. Research

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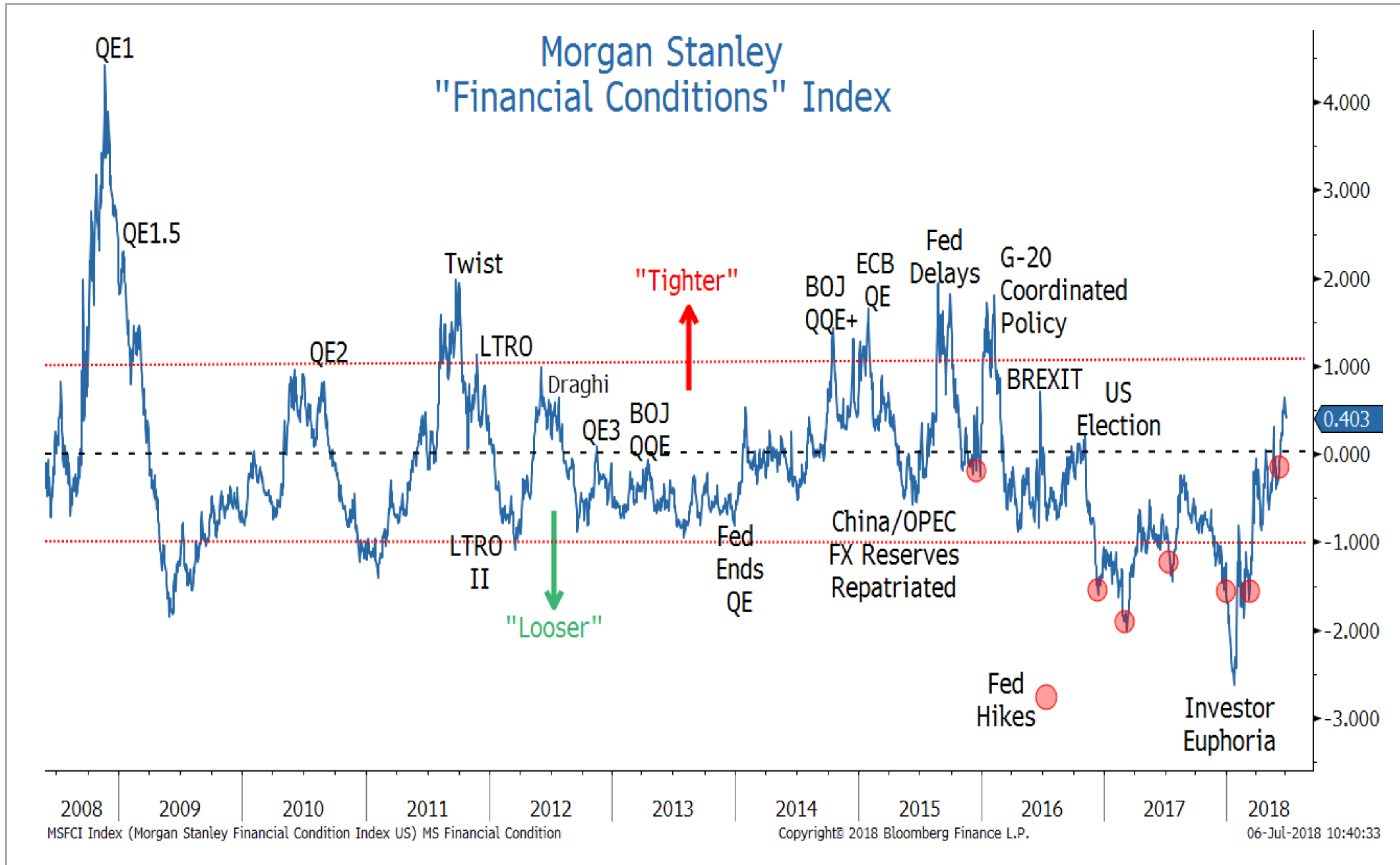
Rolling Bear Market Driven by Financial Conditions Is Playing Out

Morgan Stanley Financial Conditions Index
As of July 6, 2018



Source: Bloomberg, Morgan Stanley & Co. Research

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The Weakest Links Have Been Hit First and the Hardest

As of July 6, 2018

Bitcoin - 70%

LIBOR-OIS + 100%

VIX + 462%

European Banks - 20%

Emerging Market Equities - 19%

Italian Bonds -13.7%

Consumer Staples - 17.6%

Homebuilders -26.8%

Airlines -23%

Emerging Market Debt -10.5%

Source: Bloomberg, Morgan Stanley & Co. Research

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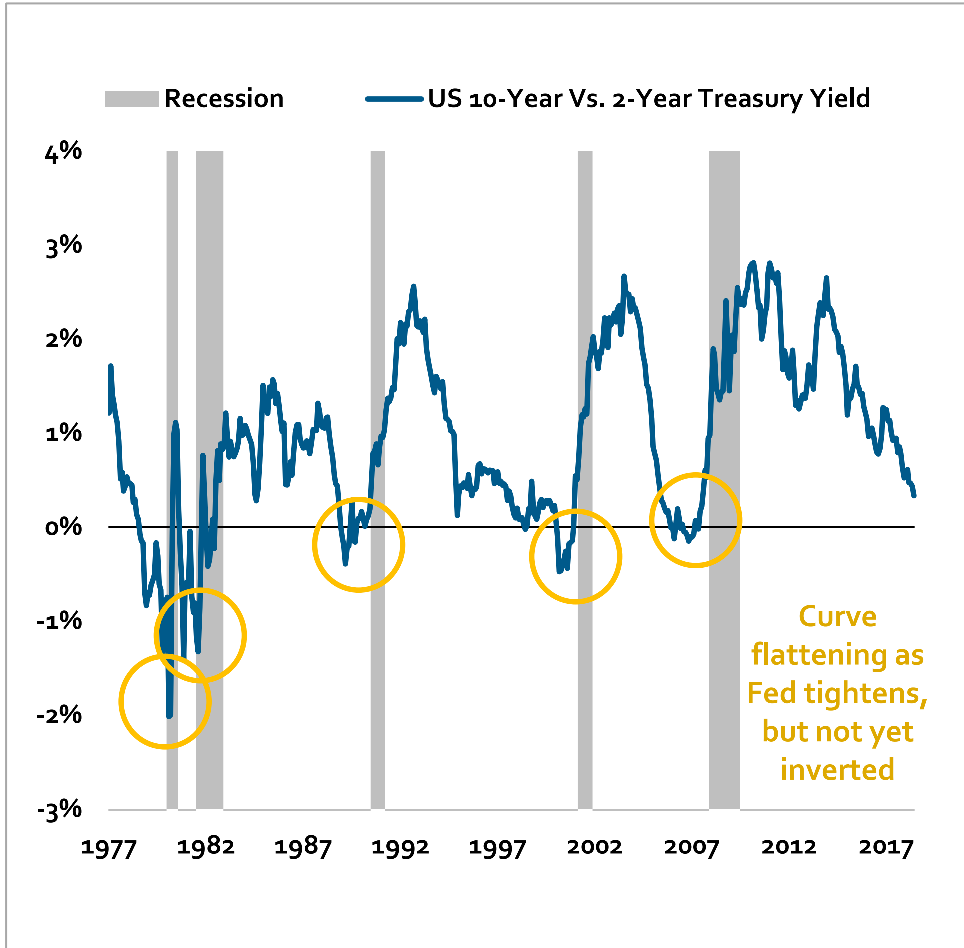
Yield Curve Has Not Inverted, but That Can Change Quickly

US Yield Curve Spread

Monthly Data as of June 29, 2018



Barclays US High Yield Option-Adjusted Spread

Monthly Data as of June 29, 2018

Source: Bloomberg, FactSet, Morgan Stanley Wealth Management GIC. Option-adjusted spread (OAS) is a measurement of the spread of a fixed income security rate and the risk-free rate of return, which is adjusted to take into account an embedded option.

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Global Investment Manager Analysis (GIMA) Focus List, Approved List and Tactical Opportunities List; Watch Policy. GIMA uses two methods to evaluate investment products in applicable advisory programs: **Focus** (and investment products meeting this standard are described as being on the Focus List) and **Approved** (and investment products meeting this standard are described as being on the Approved List). In general, Focus entails a more thorough evaluation of an investment product than Approved. Sometimes an investment product may be evaluated using the Focus List process but then placed on the Approved List instead of the Focus List. Investment products may move from the Focus List to the Approved List, or vice versa. GIMA may also determine that an investment product no longer meets the criteria under either process and will no longer be recommended in investment advisory programs (in which case the investment product is given a "Not Approved" status). GIMA has a '**Watch**" policy and may describe a Focus List or Approved List investment product as being on "Watch" if GIMA identifies specific areas that (a) merit further evaluation by GIMA and (b) may, but are not certain to, result in the investment product becoming "Not Approved." The Watch period depends on the length of time needed for GIMA to conduct its evaluation and for the investment manager or fund to address any concerns. Certain investment products on either the Focus List or Approved List may also be recommended for the **Tactical Opportunities List** based in part on tactical opportunities existing at a given time. The investment products on the Tactical Opportunities List change over time. For more information on the Focus List, Approved List, Tactical Opportunities List and Watch processes, please see the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management. Your Financial Advisor or Private Wealth Advisor can also provide upon request a copy of a publication entitled "Manager Selection Process."

The **Global Investment Committee** is a group of seasoned investment professionals who meet regularly to discuss the global economy and markets. The committee determines the investment outlook that guides our advice to clients. They continually monitor developing economic and market conditions, review tactical outlooks and recommend model portfolio weightings, as well as produce a suite of strategy, analysis, commentary, portfolio positioning suggestions and other reports and broadcasts.

The GIC Asset Allocation Models are not available to be directly implemented as part of an investment advisory service and should not be regarded as a recommendation of any Morgan Stanley investment advisory service. The GIC Asset Allocation Models do not represent actual trading or any type of account or any type of investment strategies and none of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, advisory fees, fund expenses) associated with actual trading or accounts are reflected in the GIC Asset Allocation Models which, when compounded over a period of years, would decrease returns.

Adverse Active Alpha (AAA) is a patented screening and scoring process designed to help identify high-quality equity and fixed income managers with characteristics that may lead to future outperformance relative to index and peers. While highly ranked managers performed well as a group in our Adverse Active Alpha model back tests, not all of the managers will outperform. Please note that this data may be derived from back-testing, which has the benefit of hindsight. In addition, highly ranked managers can have differing risk profiles that might not be suitable for all investors. Our view is that Adverse Active Alpha is a good starting point and should be used in conjunction with other information. Morgan Stanley Wealth Management's qualitative and quantitative investment manager due diligence process are equally important factors for investors when considering managers for use through an investment advisory program. Factors including, but not limited to, manager turnover and changes to investment process can partially or fully negate a positive Adverse Active Alpha ranking. Additionally, highly ranked managers can have differing risk profiles that might not be

suitable for all investors. For more information on AAA, please see the Adverse Active Alpha Ranking Model and Selecting Managers with Adverse Active Alpha whitepapers. The whitepaper are available from your Financial Advisor or Private Wealth Advisor. ADVERSE ACTIVE ALPHA is a registered service mark of Morgan Stanley and/or its affiliates. U.S. Pat. No. 8,756,098 applies to the Adverse Active Alpha system and/or methodology.

The Global Investment Manager Analysis (GIMA) Services Only Apply to Certain Investment Advisory Programs GIMA evaluates certain investment products for the purposes of some – but not all – of Morgan Stanley Smith Barney LLC's investment advisory programs (as described in more detail in the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management). If you do not invest through one of these investment advisory programs, Morgan Stanley Wealth Management is not obligated to provide you notice of any GIMA Status changes even though it may give notice to clients in other programs.

Strategy May Be Available as a Separately Managed Account or Mutual Fund Strategies are sometimes available in Morgan Stanley Wealth Management investment advisory programs both in the form of a separately managed account ("SMA") and a mutual fund. These may have different expenses and investment minimums. Your Financial Advisor or Private Wealth Advisor can provide more information on whether any particular strategy is available in more than one form in a particular investment advisory program. In most Morgan Stanley Wealth Management investment advisory accounts, fees are deducted quarterly and have a compounding effect on performance. For example, on an advisory account with a 3% annual fee, if the gross annual performance is 6.00%, the compounding effect of the fees will result in a net performance of approximately 3.93% after one year, 1 after three years, and 21.23% after five years. **Conflicts of Interest:** GIMA's goal is to provide professional, objective evaluations in support of the Morgan Stanley Wealth Management investment advisory programs. We have policies and procedures to help us meet this goal. However, our business is subject to various conflicts of interest. For example, ideas and suggestions for which investment products should be evaluated by GIMA come from a variety of sources, including our Morgan Stanley Wealth Management Financial Advisors and their direct or indirect managers, and other business persons within Morgan Stanley Wealth Management or its affiliates. Such persons may have an ongoing business relationship with certain investment managers or mutual fund companies whereby they, Morgan Stanley Wealth Management or its affiliates receive compensation from, or otherwise related to, those investment managers or mutual funds. For example, a Financial Advisor may suggest that GIMA evaluates an investment manager or fund in which a portion of his or her clients' assets are already invested. While such a recommendation is permissible, GIMA is responsible for the opinions expressed by GIMA. See the conflicts of interest section in the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management for a discussion of other types of conflicts that may be relevant to GIMA's evaluation of managers and funds. In addition, Morgan Stanley Wealth Management, MS & Co., managers and their affiliates provide a variety of services (including research, brokerage, asset management, trading, lending and investment banking services) for each other and for various clients, including issuers of securities that may be recommended for purchase or sale by clients or are otherwise held in client accounts, and managers in various advisory programs. Morgan Stanley Wealth Management, managers, MS & Co., and their affiliates receive compensation and fees in connection with these services. Morgan Stanley Wealth Management believes that the nature and range of clients to which such services are rendered is such that it would be inadvisable to exclude categorically all of these companies from an account .

Consider Your Own Investment Needs: The model portfolios and strategies discussed in the material are formulated based on general client characteristics including risk tolerance. This material is not intended to be a client-specific suitability analysis or recommendation, or offer to participate in any investment. Therefore, clients should not use this profile as the sole basis for investment decisions. They should consider all relevant information, including their existing portfolio, investment objectives, risk tolerance, liquidity needs and investment time horizon . Such a suitability determination may lead to asset allocation results that are materially different from the asset allocation shown in this profile. Talk to your Financial Advisor about what would be a suitable asset allocation for you, whether CGCM is a suitable program for you.

No obligation to notify – Morgan Stanley Wealth Management has no obligation to notify you when the model portfolios, strategies, or any other information, in this material changes.

Please consider the investment objectives, risks, fees, and charges and expenses of mutual funds, ETFs, closed end funds, unit investment trusts, and variable insurance products carefully before investing. The prospectus contains this and other information about each fund. To obtain a prospectus, contact your Financial Advisor or Private Wealth Advisor or visit the Morgan Stanley website at www.morganstanley.com**. Please read it carefully before investing.**

An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment at $1.00 per share, it is possible to lose money by investing in the fund.

The type of mutual funds and ETFs discussed in this presentation utilizes nontraditional or complex investment strategies and /or derivatives. Examples of these types of funds include those that utilize one or more of the below noted investment strategies or categories or which seek exposure to the following markets: (1) commodities (e.g., agricultural, energy and metals), currency, precious metals; (2) managed futures; (3) leveraged, inverse or inverse leveraged; (4) bear market, hedging, long-short equity, market neutral; (5) real estate; (6) volatility (seeking exposure to the CBOE VIX Index). Investors should keep in mind that while mutual funds and ETFs may, at times, utilize nontraditional investment options and strategies, they should not be equated with unregistered privately offered

alternative investments. Because of regulatory limitations, mutual funds and ETFs that seek alternative-like investment exposure must utilize a more limited investment universe. As a result, investment returns and portfolio characteristics of alternative mutual funds and ETFs may vary from traditional hedge funds pursuing similar investment objectives. Moreover, traditional hedge funds have limited liquidity with long "lock-up" periods allowing them to pursue investment strategies without having to factor in the need to meet client redemptions and ETFs trade on an exchange. On the other hand, mutual funds typically must meet daily client redemptions. This differing liquidity profile can have a material impact on the investment returns generated by a mutual or ETF pursuing an alternative investing strategy compared with a traditional hedge fund pursuing the same strategy.

Nontraditional investment options and strategies are often employed by a portfolio manager to further a fund's investment objective and to help offset market risks. However, these features may be complex, making it more difficult to understand the fund's essential characteristics and risks, and how it will perform in different market environments and over various periods of time. They may also expose the fund to increased volatility and unanticipated risks particularly when used in complex combinations and/or accompanied by the use of borrowing or "leverage."

KEY ASSET CLASS CONSIDERATIONS AND OTHER RISKS

Investing in the markets entails the risk of market volatility. The value of all types of investments, including stocks, mutual funds, exchange-traded funds ("ETFs"), closed-end funds, and unit investment trusts, may increase or decrease over varying time periods. To the extent the investments depicted herein represent **international securities**, you should be aware that there may be additional risks associated with international investing, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes, and differences in financial and accounting standards. These risks may be magnified in **emerging markets and frontier markets**. **Small- and mid-capitalization companies** may lack the financial resources, product diversification and competitive strengths of larger companies. In addition, the securities of small- and mid-capitalization companies may not trade as readily as, and be subject to higher volatility than, those of larger, more established companies. The value of **fixed income securities** will fluctuate and, upon a sale, may be worth more or less than their original cost or maturity value. Bonds are subject to interest rate risk, call risk, reinvestment risk, liquidity risk, and credit risk of the issuer. **High yield bonds** are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issues. In the case of **municipal bonds**, income is generally exempt from federal income taxes. Some income may be subject to state and local taxes and to the federal alternative minimum tax. Capital gains, if any, are subject to tax. **Treasury Inflation Protection Securities' (TIPS)** coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to offer a low return. Because the return of TIPS is linked to inflation, TIPS may significantly underperform versus conventional U.S. Treasuries in times of low inflation. There is no guarantee that investors will receive par if TIPS are sold prior to maturity. The returns on a portfolio consisting primarily of **environmental, social, and governance-aware investments ("ESG")** may be lower or higher than a portfolio that is more diversified or where decisions are based solely on investment considerations. Because ESG criteria exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria. The companies identified and investment examples are for illustrative purposes only and should not be deemed a recommendation to purchase, hold or sell any securities or investment products. They are intended to demonstrate the approaches taken by managers who focus on ESG criteria in their investment strategy. There can be no guarantee that a client's account will be managed as described herein. **Options** and margin trading involve substantial risk and are not suitable for all investors. Besides the general investment risk of holding securities that may decline in value and the possible loss of principal invested, **closed-end funds** may have additional risks related to declining market prices relative to net asset values (NAVs), active manager underperformance and potential leverage. Closed-end funds, unlike open-end funds, are not continuously offered. There is a one-time public offering and once issued, shares of closed-end funds are sold in the open market through a stock exchange. NAV is total assets less total liabilities divided by the number of shares outstanding. At the time an investor purchases shares of a closed-end fund, shares may have a market price that is above or below NAV. Portfolios that invest a large percentage of assets in only one industry **sector** (or in only a few sectors) are more vulnerable to price fluctuation than those that diversify among a broad range of sectors.

Alternative investments often are speculative and include a high degree of risk. Investors could lose all or a substantial amount of their investment. Alternative investments are suitable only for eligible, long-term investors who are willing to forgo liquidity and put capital at risk for an indefinite period of time. They may be highly illiquid and can engage in leverage and other speculative practices that may increase the volatility and risk of loss. Alternative Investments typically have higher fees than traditional investments. Investors should carefully review and consider potential risks before investing. Certain of these risks may include but are not limited to: Loss of all or a substantial portion of the investment due to leveraging, short-selling, or other speculative practices; Lack of liquidity in that there may be no secondary market for a fund; Volatility of returns; Restrictions on transferring interests in a fund; Potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized; Absence of information regarding valuations and pricing; Complex tax structures and delays in tax reporting; Less regulation and higher fees than mutual funds; and Risks associated with the operations, personnel, and processes of the manager. As a diversified global financial services firm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other activities. In the ordinary course of its business, Morgan Stanley Wealth Management therefore engages in activities where Morgan Stanley Wealth Management's interests may conflict with the interests of its clients, including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conflicts of interest will be resolved in favor of its clients or any such fund. All expressions of opinion are subject to change without

notice and are not intended to be a forecast of future events or results. Further, opinions regarding Alternative Investments expressed herein may differ from the opinions expressed by Morgan Stanley Wealth Management and/or other businesses/affiliates of Morgan Stanley Wealth Management. This is not a "research report" as defined by NASD Conduct Rule 2711 and was not prepared by the Research Departments of Morgan Stanley Smith Barney LLC or Morgan Stanley & Co. LLC or its affiliates. Certain information contained herein may constitute forward-looking statements. Due to various risks and uncertainties, actual events, results or the performance of a fund may differ materially from those reflected or contemplated in such forward-looking statements. Clients should carefully consider the investment objectives, risks, charges, and expenses of a fund before investing. While the HFRI indices are frequently used, they have limitations (some of which are typical of other widely used indices). These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and the index may omit funds, the inclusion of which might significantly affect the performance shown. The HFRI indices are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Composite index results are shown for illustrative purposes and do not represent the performance of a specific investment. Individual funds have specific tax risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice. Interests in alternative investment products are offered pursuant to the terms of the applicable offering memorandum, are distributed by Morgan Stanley Smith Barney LLC and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley or any of its affiliates, (3) are not guaranteed by Morgan Stanley and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Smith Barney LLC is a registered broker-dealer, not a bank. 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As a diversified global financial services firm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other activities. In the ordinary course of its business, Morgan Stanley Wealth Management therefore engages in activities where Morgan Stanley Wealth Management's interests may conflict with the interests of its clients, including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conflicts of interest will be resolved in favor of its clients or any such fund. Alternative investments involve complex tax structures, tax inefficient investing, and delays in distributing important tax information. Individual funds have specific risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice.

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

It should be noted that the majority of hedge fund indexes are comprised of hedge fund manager returns. This is in contrast to traditional indexes, which are comprised of individual securities in the various market segments they represent and offer complete transparency as to membership and construction methodology. As such, some believe that hedge fund index returns have certain biases that are not present in traditional indexes. Some of these biases inflate index performance, while others may skew performance negatively. However, many studies indicate that overall hedge fund index performance has been biased to the upside. Some studies suggest performance has been inflated by up to 260 basis points or more annually depending on the types of biases included and the time period studied. Although there are numerous potential biases that could affect hedge fund returns, we identify some of the more common ones throughout this paper.

Self-selection bias results when certain manager returns are not included in the index returns and may result in performance being skewed up or down. Because hedge funds are private placements, hedge fund managers are able to decide which fund returns they want to report and are able to opt out of reporting to the various databases. Certain hedge fund managers may choose only to report

returns for funds with strong returns and opt out of reporting returns for weak performers. Other hedge funds that close may decide to stop reporting in order to retain secrecy, which may cause a downward bias in returns.

Survivorship bias results when certain constituents are removed from an index. This often results from the closure of funds due to poor performance, "blow ups," or other such events. As such, this bias typically results in performance being skewed higher. As noted, hedge fund index performance biases can result in positive or negative skew. However, it would appear that the skew is more often positive. While it is difficult to quantify the effects precisely, investors should be aware that idiosyncratic factors may be giving hedge fund index returns an artificial "lift" or upwards bias.

Hedge Funds of Funds and many funds of funds are private investment vehicles restricted to certain qualified private and institutional investors. They are often speculative and include a high degree of risk. Investors can lose all or a substantial amount of their investment. They may be highly illiquid, can engage in leverage and other speculative practices that may increase volatility and the risk of loss, and may be subject to large investment minimums and initial lockups. They involve complex tax structures, tax-inefficient investing and delays in distributing important tax information. Categorically, hedge funds and funds of funds have higher fees and expenses than traditional investments, and such fees and expenses can lower the returns achieved by investors. Funds of funds have an additional layer of fees over and above hedge fund fees that will offset returns. An investment in an **exchange-traded fund** involves risks similar to those of investing in a broadly based portfolio of equity securities traded on an exchange in the relevant securities market, such as market fluctuations caused by such factors as economic and political developments, changes in interest rates and perceived trends in stock and bond prices. An investment in a **target date portfolio** is subject to the risks attendant to the underlying funds in which it invests, in these portfolios the funds are the Consulting Group Capital Market funds. A target date portfolio is geared to investors who will retire and/or require income at an approximate year. The portfolio is managed to meet the investor's goals by the pre-established year or "target date." A target date portfolio will transition its invested assets from a more aggressive portfolio to a more conservative portfolio as the target date draws closer. An investment in the target date portfolio is not guaranteed at any time, including, before or after the target date is reached. **Managed futures** investments are speculative, involve a high degree of risk, use significant leverage, are generally illiquid, have substantial charges, subject investors to conflicts of interest, and are suitable only for the risk capital portion of an investor's portfolio. Managed futures investments do not replace equities or bonds but rather may act as a complement in a well diversified portfolio. Managed Futures are complex and not appropriate for all investors. **Rebalancing** does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy. **Asset allocation and diversification** do not assure a profit or protect against loss in declining financial markets. Past performance is no guarantee of future results. Actual results may vary.

Tax laws are complex and subject to change. Morgan Stanley Smith Barney LLC ("Morgan Stanley"), its affiliates and Morgan Stanley Financial Advisors and Private Wealth Advisors do not provide tax or legal advice and are not "fiduciaries" (under ERISA, the Internal Revenue Code or otherwise) with respect to the services or activities described herein except as otherwise provided in writing by Morgan Stanley and/or as described at www.morganstanley.com/disclosures/dol. Individuals are encouraged to consult their tax and legal advisors (a) before establishing a retirement plan or account, and (b) regarding any potential tax, ERISA and related consequences of any investments made under such plan or account.

Insurance products are offered in conjunction with Morgan Stanley Smith Barney LLC's licensed insurance agency affiliates.

Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustration purposes only and do not show the performance of any specific investment. Reference to an index does not imply that the portfolio will achieve return, volatility or other results similar to the index. The composition of an index may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility, or tracking error target, all of which are subject to change over time.

This material is not a financial plan and does not create an investment advisory relationship between you and your Morgan Stanley Financial Advisor. We are not your fiduciary either under the Employee Retirement Income Security Act of 1974 (ERISA) or the Internal Revenue Code of 1986, and any information in this report is not intended to form the primary basis for any investment decision by you, or an investment advice or recommendation for either ERISA or Internal Revenue Code purposes. Morgan Stanley Private Wealth Management will only prepare a financial plan at your specific request using Private Wealth Management approved financial planning signature.

We may act in the capacity of a broker or that of an advisor. As your broker, we are not your fiduciary and our interests may not always be identical to yours. Please consult with your Private Wealth Advisor to discuss our obligations to disclose to you any conflicts we may from time to time have and our duty to act in your best interest. We may be paid both by you and by others who compensate us based on what you buy. Our compensation, including that of your Private Wealth Advisor, may vary by product and over time.

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For index, indicator and survey definitions referenced in this report please visit the following: http://www.morganstanleyfa.com/public/projectfiles/id.pdf

GLOBAL INVESTMENT COMMITTEE (GIC) ASSET ALLOCATION MODELS: The Asset Allocation Models are created by Morgan Stanley Wealth Management's GIC.

HYPOTHETICAL MODEL PERFORMANCE (GROSS): Hypothetical model performance results do not reflect the investment or performance of an actual portfolio following a GIC Strategy, but simply reflect actual historical performance of selected indices on a real-time basis over the specified period of time representing the GIC's strategic and tactical allocations as of the date of this report. The past performance shown here is simulated performance based on benchmark indices, not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results achieved by a particular asset allocation or trading strategy. Hypothetical performance results do not represent actual trading and are generally designed with the benefit of hindsight. Actual performance results of accounts vary due to, for example, market factors (such as liquidity) and client-specific factors (such as investment vehicle selection, timing of contributions and withdrawals, restrictions and rebalancing schedules). Clients would not necessarily have obtained the performance results shown here if they had invested in accordance with any GIC Asset Allocation Model for the periods indicated. Despite the limitations of hypothetical performance, these hypothetical performance results allow clients and Financial Advisors to obtain a sense of the risk/return trade-off of different asset allocation constructs. The hypothetical performance results in this report are calculated using the returns of benchmark indices for the asset classes, and not the returns of securities, fund or other investment products. Models may contain allocations to Hedge Funds, Private Equity and Private Real Estate. The benchmark indices for these asset classes are not issued on a daily basis. When calculating model performance on a day for which no benchmark index data is issued, we have assumed straight line growth between the index levels issued before and after that date.

FEES REDUCE THE PERFORMANCE OF ACTUAL ACCOUNTS: None of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, fees) associated with actual trading or accounts are reflected in the GIC Asset Allocation Models. The GIC Asset Allocation Models and any model performance included in this presentation are intended as educational materials. Were a client to use these models in connection with investing, any investment decisions made would be subject to transaction and other costs which, when compounded over a period of years, would decrease returns. Information regarding Morgan Stanley's standard advisory fees is available in the Form ADV Part 2, which is available at www.morganstanley.com/adv. The following hypothetical illustrates the compound effect fees have on investment returns: For example, if a portfolio's annual rate of return is 15% for 5 years and the account pays 50 basis points in fees per annum, the gross cumulative five-year return would be 101.1% and the five-year return net of fees would be 96.8%. Fees and/or expenses would apply to clients who invest in investments in an account based on these asset allocations, and would reduce clients' returns. The impact of fees and/or expenses can be material.

Variable annuities are long-term investments designed for retirement purposes and may be subject to market fluctuations, investment risk, and possible loss of principal. All guarantees, including optional benefits, are based on the financial strength and claims-paying ability of the issuing insurance company and do not apply to the underlying investment options. Optional riders may not be able to be purchased in combination and are available at an additional cost. Some optional riders must be elected at time of purchase. Optional riders may be subject to specific limitations, restrictions, holding periods, costs, and expenses as specified by the insurance company in the annuity contract. If you are investing in a **variable annuity** through a tax-advantaged retirement plan such as an IRA, you will get no additional tax advantage from the variable annuity. Under these circumstances, you should only consider buying a variable annuity because of its other features, such as lifetime income payments and death benefits protection. Taxable distributions (and certain deemed distributions) are subject to ordinary income tax and, if taken prior to age 59½, may be subject to a 10% federal income tax penalty. Early withdrawals will reduce the death benefit and cash surrender value.

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment. **Ultrashort-term fixed income** asset class is comprised of fixed income securities with high quality, very short maturities. They are therefore subject to the risks associated with debt securities such as credit and interest rate risk.

Master Limited Partnerships (MLPs) are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk. Individual MLPs are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk. The potential tax benefits from investing in MLPs depend on their being treated as partnerships for federal

income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund's value. MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is reflected in the daily NAV, and, as a result, the MLP fund's after-tax performance could differ significantly from the underlying assets even if the pre-tax performance is closely tracked.

Investing in commodities entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention. **Physical precious metals** are non-regulated products. Precious metals are speculative investments, which may experience short-term and long term price volatility. The value of precious metals investments may fluctuate and may appreciate or decline, depending on market conditions. Unlike bonds and stocks, precious metals do not make interest or dividend payments. Therefore, precious metals may not be suitable for investors who require current income. Precious metals are commodities that should be safely stored, which may impose additional costs on the investor.

REITs investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions. Risks of **private real estate** include: illiquidity; a long-term investment horizon with a limited or nonexistent secondary market; lack of transparency; volatility (risk of loss); and leverage. Principal is returned on a monthly basis over the life of a **mortgage-backed security.** Principal prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. **Asset-backed securities** generally decrease in value as a result of interest rate increases, but may benefit less than other fixed-income securities from declining interest rates, principally because of prepayments.

Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision. **Credit ratings** are subject to change. **Duration**, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. The majority of $25 and $1000 par **preferred securities** are "callable" meaning that the issuer may retire the securities at specific prices and dates prior to maturity. Interest/dividend payments on certain preferred issues may be deferred by the issuer for periods of up to 5 to 10 years, depending on the particular issue. The investor would still have income tax liability even though payments would not have been received. Price quoted is per $25 or $1,000 share, unless otherwise specified. Current yield is calculated by multiplying the coupon by par value divided by the market price. The initial interest rate on a **floating-rate security** may be lower than that of a fixed-rate security of the same maturity because investors expect to receive additional income due to future increases in the floating security's underlying reference rate. The reference rate could be an index or an interest rate. However, there can be no assurance that the reference rate will increase. Some floating-rate securities may be subject to call risk. The market value of **convertible bonds** and the underlying common stock(s) will fluctuate and after purchase may be worth more or less than original cost. If sold prior to maturity, investors may receive more or less than their original purchase price or maturity value, depending on market conditions. Callable bonds may be redeemed by the issuer prior to maturity. Additional call features may exist that could affect yield. Some $25 or $1000 **par preferred securities** are QDI (Qualified Dividend Income) eligible. Information on QDI eligibility is obtained from third party sources. The dividend income on QDI eligible preferreds qualifies for a reduced tax rate. Many traditional 'dividend paying' perpetual preferred securities (traditional preferreds with no maturity date) are QDI eligible. In order to qualify for the preferential tax treatment all qualifying preferred securities must be held by investors for a minimum period – 91 days during a 180 day window period, beginning 90 days before the ex-dividend date.

Companies paying **dividends** can reduce or cut payouts at any time.

Nondiversification: For a portfolio that holds a concentrated or limited number of securities, a decline in the value of these investments would cause the portfolio's overall value to decline to a greater degree than a less concentrated portfolio. The **indices selected by Morgan Stanley Wealth Management** to measure performance are representative of broad asset classes. Morgan Stanley Wealth Management retains the right to change representative indices at any time. Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies.

Growth investing does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations. **Value investing** does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected.

Any type of **continuous or periodic investment plan** does not assure a profit and does not protect against loss in declining markets. Since such a plan involves continuous investment in securities regardless of fluctuating price levels of such securities, the investor should consider his financial ability to continue his purchases through periods of low price levels.

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