

Global Investment Manager Analysis (GIMA)

Comprehensive Manager Selection



What is Global Investment Manager Analysis?

The Global Investment Manager Analysis (GIMA) team engages with a broad array of investment managers to identify high-quality strategies for your portfolio.

The Firm maintains an open architecture advisory platform, which includes a wide variety of investment products – including alternatives, separately managed accounts, mutual funds and exchange-traded funds – across most asset classes.

THE GLOBAL INVESTMENT MANAGER ANALYSIS TEAM CONSISTS OF:



The team comprises over 50 professionals dedicated to manager analysis, with an average industry experience of 17 years within traditional long-only and alternative investment products.



Within the traditional product group, ~30 investment analysts, specialized by asset class, review and monitor a broad universe of investment products that are offered through the firm's various investment advisory programs.



The alternatives team consists of ~25 investment and operational due diligence analysts who provide product-agnostic advice.

All information as of January 2019 and subject to change.

GIMA can leverage analysts focused on single-manager hedge funds from within the Morgan Stanley Investment Management group.

Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Please refer to important information, disclosures and qualifications at the end of this material.

What Does GIMA Offer?



The team, with **44 years** of delivering investment manager analysis, applies a common framework in its review of all investment products under consideration

INTELLECTUAL CAPITAL

We leverage the Firm's Global Investment Committee to integrate asset allocation and thought leadership into advisory programs. In addition, we utilize the resources of over 300 analysts within Morgan Stanley & Co.'s Global Research organization.

COVERAGE

The team covers over 1,900 investment products made available to advisory clients, including one of the most robust Alternatives platform on the street.

DEDICATION TO CLIENT SERVICE

We focus on client needs, including reporting and implementation.

ACCESS

Leveraging the resources and capabilities of Morgan Stanley, GIMA is able to provide Wealth Management clients with exceptional access to industry leaders that are otherwise available only to institutional clients.

LEADERSHIP

GIMA is a leader in manager analysis and among the first to market in many investment advisory platforms and products.

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An Industry Leader in Manager Analysis

44

YEAR HISTORY

\$1 Trillion+

INVESTMENT ADVISORY
ASSETS UNDER MANAGEMENT ⁽¹⁾

50+

ANALYSTS DEDICATED TO
MANAGER ANALYSIS

1,900+

STRATEGIES MONITORED / YEAR

450+

ONSITE VISITS / YEAR

200+

NEW PRODUCTS
LAUNCHED / YEAR

560+

SEPARATELY MANAGED ACCOUNTS

690+

MUTUAL FUNDS

270+

ALTERNATIVE STRATEGIES ⁽²⁾

390+

ETF STRATEGIES

All information as of September 2018 and subject to change.

1. Cerulli Associates. 4Q 2017 Summary, Managed Account Research. Cerulli Associates' data are based on data submitted by firms participating in Cerulli's survey. Morgan Stanley Wealth Management was ranked No. 1 in terms of assets under management out of the firms listed in the industry for the quarter with respect to Top Managed Account Program Sponsors Across All Industry Segments. This category includes separate account consultant programs, mutual fund advisory programs, ETF advisory programs, rep as portfolio manager programs, rep as advisor programs and unified managed account programs. Separate account consultant programs are programs in which asset managers manage investors' assets in discretionary separate accounts. Mutual fund advisory programs and ETF advisory programs are discretionary and nondiscretionary programs designed to systematically allocate investors' assets across a wide range of mutual funds or ETFs. Rep as portfolio manager programs are discretionary programs in which advice is an essential element; planning is undertaken or advice is treated as a separate service from brokerage. Rep as advisor programs are nondiscretionary programs where the advisor has not been given discretion by the client and must obtain approval each time a change is made to the account or its investments. Unified managed accounts are vehicle-neutral platforms that simplify the delivery of multiple investment vehicles, such as separate accounts, mutual funds, exchange-traded funds and individual securities through their integration within a single environment. Rankings are subject to change.
2. Includes Private Equity.

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Fundamental Areas of Analysis



PERSONNEL & FIRM

- Credentials & expertise of key professionals
- Ownership structure
- Compensation and/or incentives for key professionals
- Personnel turnover
- Depth of experience and history of success



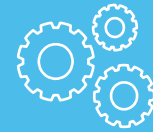
INVESTMENT PROCESS & IMPLEMENTATION

- Idea generation
- Portfolio construction methodology
- Sector and/or industry concentration or exposure
- Volatility guidelines and other constraints
- Style consistency



ANALYTICAL CAPABILITIES

- Depth of analysis
- Industry expertise
- Databases, technology and analytical tools
- Number of companies covered



BUSINESS OPERATIONS

- Assets under management
- Growth or stability of personnel
- Legal or regulatory issues
- Other business and management results and strategies

GIMA Manager Due Diligence Process



Quantitative Analysis

Identified strategies undergo comprehensive quantitative analyses, which typically includes:

- Peer and benchmark comparisons
- Risk-adjusted performance
- Realized and un-realized distributions to date
- Volatility/risk parameters
- Capture ratios
- Proprietary Adverse Active Alpha process applied to traditional equity and fixed income analysis

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GIMA Manager Due Diligence Process



Qualitative Analysis

Identified strategies go through intensive qualitative analyses, which typically includes:

- Review of comprehensive due diligence questionnaires and other pertinent documentation
- Multiple points of contact with firm leadership, portfolio managers, research analysts, and risk managers (private placement)
- Reviews of investment approach, relevant portfolios, organizational structure, risk management techniques, capacity constraints, investor servicing activities, etc.
- Relevant market experience and manager capabilities

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GIMA Manager Due Diligence Process



Operational Risk

Components of Operational Risk:

- Quality and reputation of management
- Infrastructure – Operations, Systems and People
- Compliance and controls
- Business continuity
- Quality of third party providers (Alternatives)

What can go wrong?

- Failure to supervise
- Improper valuation practices
- Lack of checks and balances
- Misappropriation of funds/hiding losses
- Inadequate risk/liquidity controls

Each manager goes through an Operational Risk Review⁽¹⁾ which generally includes the following elements:

- Manager and fund documentation review
- On-site due diligence meetings with key operations professionals (private placement, alt mutual funds receive an operational desk review)
- Where applicable, third-party background checks and conference calls with fund's administrator

1. Alternative investments are subject to additional operational due diligence review

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GIMA Manager Due Diligence Process



Approval of Funds is a Two-Stage Process

Upon completion of the investment and operational risk reviews, a proposed fund must be formally approved by an independent review committee.

- Traditional strategies are generally approved within GIMA's governance process:
 - Approved List strategies are approved by the investment officer
 - Focus List strategies are approved by the GIMA Investment Committee
- The Investment and Operational Due Diligence analysts present alternative investments fund of interest to independent review committee, which formally approves funds for investment by Morgan Stanley Wealth Management clients
- Independent committee voting members include senior professionals across functional groups within Morgan Stanley Wealth Management

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GIMA Manager Due Diligence Process



Due Diligence Team & Business Ongoing Risk Reviews

- Periodic due diligence meetings to discuss specific market events or specific manager issues
- Periodic interaction with managers to monitor fund positioning and changes
- Perform ongoing media monitoring and periodic background checks
- Platform-approved private fund of funds are subject to periodic “re-validation” by an independent review committee

Change of Status

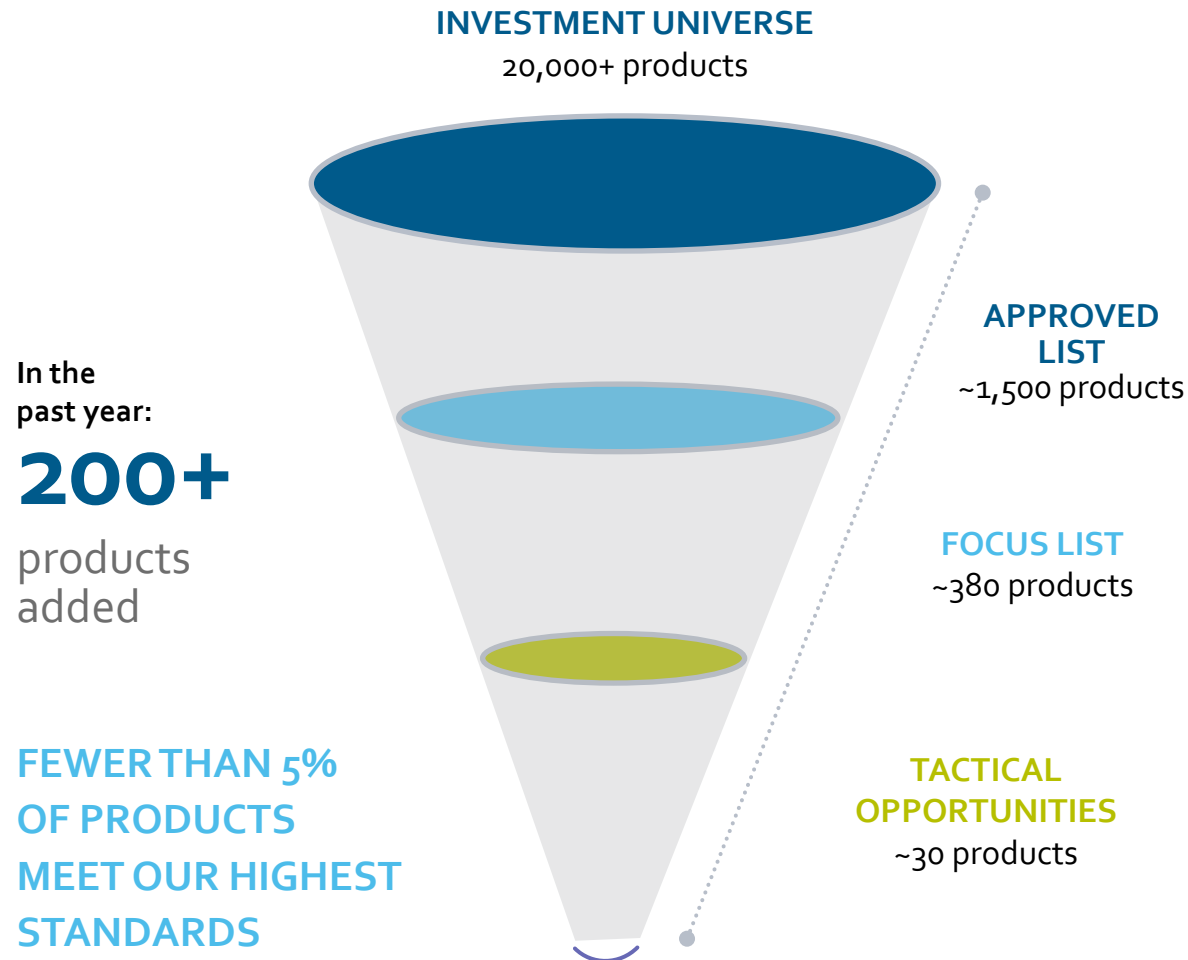
As part of the ongoing due diligence process, strategies are continuously evaluated and can experience a status change for a variety of reasons, including:

- Persistent underperformance
- Violation of guidelines and style drift
- Significant change in key staff
- Inadequate operational resources or controls
- Litigation or regulatory issues
- Negative finding on a background check update

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Three Levels of Conviction

RIGOROUS MANAGER ANALYSIS



Approved List

Approved List managers meet an acceptable due diligence standard based upon GIMA's evaluation and are approved for use in advisory programs.

Focus List

Our high-conviction list of managers approved for use in advisory programs. Focus List status indicates GIMA's high confidence level in the overall quality of the investment option and its ability to outperform applicable benchmarks over a full market cycle

Tactical Opportunities List

Draws from the Approved and Focus Lists to identify traditional managers that may benefit from expected market trends, such as outperformance by a particular style, factor, or asset class over a somewhat shorter time period – typically defined as 1-3 years

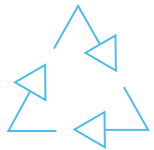
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1. The functions of manager analysis and review are available only through advisory accounts.

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What Do We Look for in a Manager?

Although GIMA does not have one blueprint that we think each approved manager should adhere to, we do have preferred attributes that we like to see in an investment strategy.



INVESTMENT PROCESS & CHARACTERISTICS

- Talented and deep Investment team
- Clearly articulated, repeatable and consistent process
- Strong security selection
- High active share
- High conviction portfolio
- Additive top down process
- Strong risk management
- Duration and yield curve management
- Disciplined buy & sell process
- Strong relative & risk-adjusted performance
- Outperformance driven by security selection
- Style and performance pattern consistency



BUSINESS

- Equitable distribution of employee ownership
- Strong business leadership
- Strong investment culture
- Low personnel turnover
- Reasonable succession planning
- Diversified, stable asset base
- Extensive resources
- Investment professional incentives
- Investment professional contracts
- Alignment of interests with clients
- Incentives



OPERATIONS & COMPLIANCE

- Documented policies and procedures
- Clear and equitable trade rotation
- Representative composite performance
- Minimum composite dispersion
- Reasonable asset levels
- Reasonable fees
- Clean regulatory history
- Documented code of ethics
- Disaster recovery procedures
- Institutional quality infrastructure

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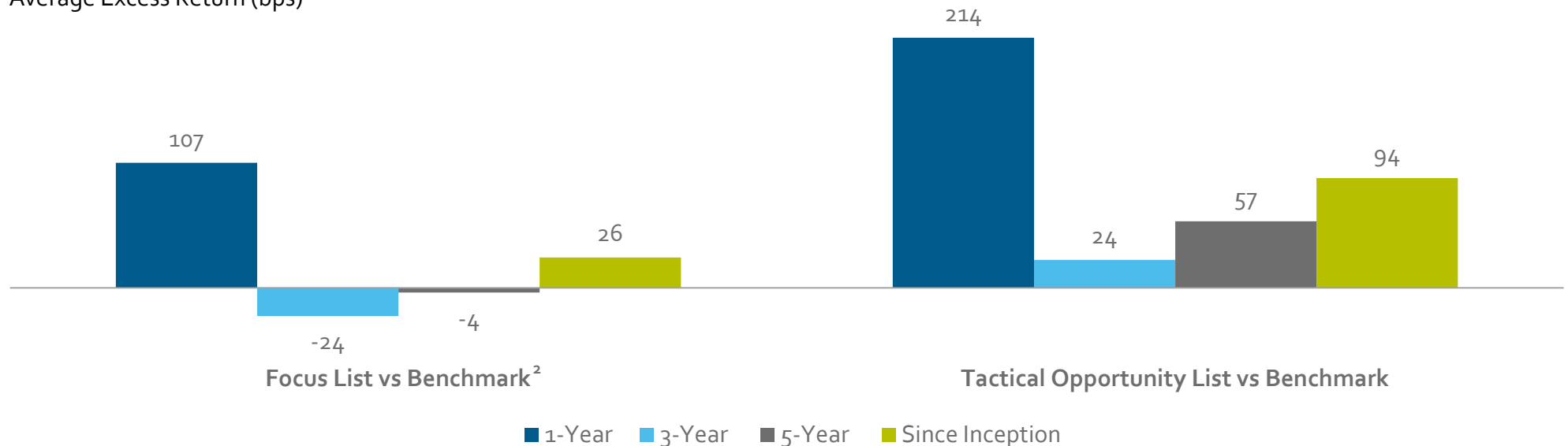
Our Manager Selection Process Has Outperformed Industry

Amid market volatility, strategies covered by the Global Investment Manager Analysis (GIMA) team have continued to outperform benchmarks and peers. We see this across the broad array of strategies in our high-conviction lists.

MORGAN STANLEY HIGH CONVICTION LISTS

As the level of conviction has increased, so has the longer-term performance of our managers.¹

Average Excess Return (bps)



1. Source: CompSiteIQ, Performance Analytics, Morgan Stanley Wealth Management as of March 31, 2018. Performance is relative to each product's appropriate style benchmark. Results shown represent total return (includes dividends) and exclude brokerage commissions or advisory fees. **Had the results reflected brokerage commissions or advisory fees, the performance would have been lower.**
2. Focus and Tactical Opportunities Lists inceptioned on August 1, 2008. Only a limited number of alternative investment products are included in the Focus List, and none are included in the Tactical Opportunities List.

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A Patented Ranking Process Seeks to Identify Strong Managers

An exclusive approach...

In 2014, Morgan Stanley Wealth Management received a patent grant on the “Adverse Active Alpha” manager ranking process. In 2016, the process was expanded to include Fixed Income portfolios.

...that is compelling in our view

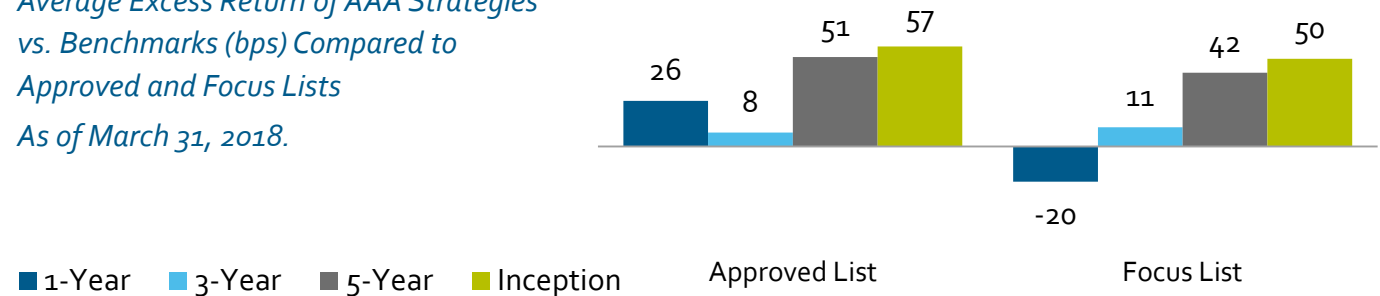
Highly-ranked strategies outperformed benchmarks and peers since implementation, despite the difficult environment for active management.

ADVERSE ACTIVE ALPHASM CHARACTERISTICS



OUTPERFORMANCE OF “ADVERSE ACTIVE ALPHA” STRATEGIES⁽¹⁾

Average Excess Return of AAA Strategies vs. Benchmarks (bps) Compared to Approved and Focus Lists As of March 31, 2018.



¹ Does not reflect advisory fees. Performance is relative to each product’s appropriate style benchmark. The performance shown is that of all separately managed accounts and mutual funds on the Morgan Stanley platform in the respective categories identified. The purpose of the chart is to show the utility of Adverse Active Alpha methodology in manager selection. Adverse Active Alpha List inception on January 1, 2013

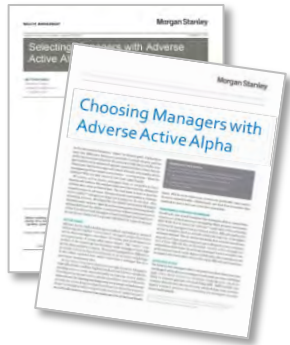
Source: CompSiteIQ, Performance analytics, Morgan Stanley Wealth Management as of March 31, 2018. From January 1, 2013 to December 31, 2015, the Adverse Active Alpha List includes only equity strategies on the GIMA Focus List that also rank in the top two quintiles according to the Adverse Active Alpha ranking process. Starting January 1, 2016 the Adverse Active Alpha List includes both equity and Fixed Income strategies. The number of products meeting the criteria is currently approximately 190 out of the approximately 1,400 products covered by GIMA and is subject to change. Includes gross of advisory fee SMA performance and NAV mutual fund performance. Past performance is not a guarantee of future results.

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An Extensive Library of Manager Reports and Analysis

MANAGER ANALYSIS REPORTS

- Extensive written manager analysis library on every covered investment strategy (client approved)



SPECIAL REPORTS

Recent reports include:

- Opportunities in Private Credit
- Opportunities in Private Real Estate
- Private Investments in the Secondary Market

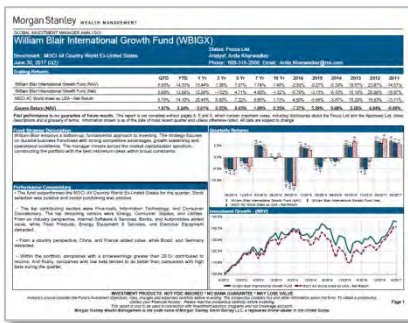


ADVERSE ACTIVE ALPHASM



QUARTERLY PERFORMANCE

- Attribution
- Characteristics
- Holdings
- Risk Statistics
- Analyst Commentary



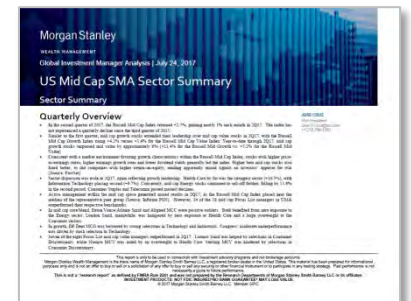
STATUS LISTS

- Focus List Reports (Semi-annual)
- Approved List Reports (12-18 months)
- Tactical Opportunities List



SECTOR SUMMARIES

- Quarterly sector summaries for each major capitalization and style category



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Morgan Stanley's investment advisory programs may require a minimum asset level and, depending on your specific investment objectives and financial position, may not be suitable for you. Please see the Morgan Stanley Smith Barney LLC program disclosure brochure (the "Morgan Stanley ADV") for more information in the investment advisory programs available. The Morgan Stanley ADV is available at www.morganstanley.com/ADV. **Sources of Data.** Information in this material in this report has been obtained from sources that we believe to be reliable, but we do not guarantee its accuracy, completeness or timeliness. Third-party data providers make no warranties or representations relating to the accuracy, completeness or timeliness of the data they provide and are not liable for any damages relating to this data. All opinions included in this material constitute the Firm's judgment as of the date of this material and are subject to change without notice. This material was not prepared by the research departments of Morgan Stanley & Co. LLC or Morgan Stanley Smith Barney LLC. Some historical figures may be revised due to newly identified programs, firm restatements, etc.

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; Risks associated with the operations, personnel, and processes of the manager; and Risks associated with cybersecurity. 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 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 FINRA Rule 2241 or a "debt research report" as defined by FINRA Rule 2242 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 Wealth Management and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley Wealth Management or any of its affiliates, (3) are not guaranteed by Morgan Stanley Wealth Management and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Wealth Management is a registered broker-dealer, not a bank. This material is not to be reproduced or distributed to any other persons (other than professional advisors of the investors or prospective investors, as applicable, receiving this material) and is intended solely for the use of the persons to whom it has been delivered. This material is not for distribution to the general public. Past performance is no guarantee of future results. Actual results may vary. SIPC insurance does not apply to precious metals, other commodities, or traditional alternative investments. In Consulting Group's advisory programs, alternative investments are limited to US-registered mutual funds, separate account strategies and exchange-traded funds (ETFs) that seek to pursue alternative investment strategies or returns utilizing publicly traded securities. Investment products in this category may employ various investment strategies and techniques for both hedging and more speculative purposes such as short-selling, leverage, derivatives and options, which can increase volatility and the risk of investment loss. Alternative investments are not suitable for all investors. 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.

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.

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

Indices are unmanaged and investors cannot directly invest in them. They are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Composite index results are shown for illustrative purposes only, generally do not represent the performance of a specific investment, may not, for a variety of reasons, be a suitable comparison or benchmark for a particular investment and may not necessarily reflect the actual investment strategy or objective of a particular investment. Consequently, comparing an investment to a particular index may be of limited use.

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.

Investment and services offered through Morgan Stanley Private Wealth Management, a division of Morgan Stanley Smith Barney LLC, Member SIPC.

Investment, insurance and annuity products offered through Morgan Stanley Smith Barney LLC are: NOT FDIC INSURED | MAY LOSE VALUE | NOT BANK GUARANTEED | NOT A BANK DEPOSIT | NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY

Morgan Stanley Smith Barney LLC is a registered Broker/Dealer, Member SIPC, and not a bank. Where appropriate, Morgan Stanley Smith Barney LLC has entered into arrangements with banks and other third parties to assist in offering certain banking related products and services.

For index, indicator and survey definitions referenced in this report please visit the following: <https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions>

The Consulting Group Capital Markets Funds, Firm Discretionary UMA Model Portfolios, and other asset allocation or any other model portfolios discussed in this material are available only to investors participating in Morgan Stanley Consulting Group advisory programs. Depending upon which advisory program you choose, you will pay an asset-based wrap fee every quarter ("the Fee"), which may be up to 2.0% annually. In general, the Fee covers investment advisory services, the execution of transactions through Morgan Stanley, custody of the client's assets with Morgan Stanley, and reporting. In addition to the Fee, you will pay the fees and expenses of any funds in which your account is invested. Fund fees and expenses are charges directly to the pools of assets the fund invests in and are reflected in each fund's share price. These fees and expenses are an additional cost to you and will not be included in the Fee amount in your account statements. For additional information on the Morgan Stanley Consulting Group advisory programs, see the applicable ADV brochure, available at www.morganstanley.com/ADV or from your Morgan Stanley Financial Advisor or Private Wealth Advisor. To learn more about the Consulting Group Capital Markets Funds, visit the Funds' website at www.morganstanley.com/cgcm. Consulting Group is a business of Morgan Stanley.

TRAK CGCM Program Asset Allocation Models There are model portfolios corresponding to five risk-tolerance levels available in the TRAK CGCM program. Model 1 is the least aggressive portfolio and consists mostly of bonds. As the model numbers increase, the models have higher allocations to equities and become more aggressive. **TRAK CGCM** is a mutual fund asset allocation program. In constructing the TRAK CGCM Program Model Portfolios, Morgan Stanley Wealth Management uses, among other things, model asset allocations produced by Morgan Wealth Management's Global Investment Committee (the "GIC"). The TRAK CGCM Program Model Portfolios are specific to the TRAK CGCM program (based on program features and parameters, and any other requirements of Morgan Stanley Wealth Management's Consulting Group). The TRAK CGCM Program Model Portfolios may therefore differ in some respects from model portfolios available in other Morgan Stanley Wealth Management programs or from asset allocation models published by the Global Investment Committee.

529 Plans - Investors should carefully read the Program Disclosure statement, which contains more information on investment options, risk factors, fees and expenses, and possible tax consequences before purchasing a 529 plan. You can obtain a copy of the Program Disclosure Statement from the 529 plan sponsor or your Financial Advisor. Assets can accumulate and be withdrawn federally tax-free only if they are used to pay for qualified expenses. Earnings on nonqualified distributions will be subject to income tax and a 10% federal income tax penalty. Contribution limits vary by state. Refer to the individual plan for specific contribution guidelines. Before investing, investors should consider whether tax or other benefits are only available for investments in the investor's home state 529 college savings plan. If an account owner or the beneficiary resides in or pays income taxes to a state that offers its own 529 college savings or pre-paid tuition plan (an "In-State Plan"), that state may offer state or local tax benefits. These tax benefits may include deductible contributions, deferral of taxes on earnings and/or tax-free withdrawals. In addition, some states waive or discount fees or offer other benefits for state residents or taxpayers who participate in the In-State Plan. An account owner may be denied any or all state or local tax benefits or expense reductions by investing in another state's plan (an "Out-of-State Plan"). In addition, an account owner's state or locality may seek to recover the value of tax benefits (by assessing income or penalty taxes) should an account owner rollover or transfer assets from an In-State Plan to an Out-of-State Plan. While state and local tax consequences and plan expenses are not the only factors to consider when investing in a 529 Plan, they are important to an account owner's investment return and should be taken into account when selecting a 529 plan.

Lifestyle Advisory Services: Products and services are provided by third party service providers, not Morgan Stanley Smith Barney LLC ("Morgan Stanley"). Morgan Stanley may not receive a referral fee or have any input concerning such products or services. There may be additional service providers for comparative purposes. Please perform a thorough due diligence and make your own independent decision.

To obtain **Tax-Management Services**, a client must complete the Tax-Management Form, and deliver the signed form to Morgan Stanley. For more information on Tax-Management Services, including its features and limitations, please ask your Financial Advisor for the Tax Management Form. Review the form carefully with your tax advisor. Tax-Management Services: (a) apply only to equity investments in separate account sleeves of client accounts; (b) are not available for all accounts or clients; and (c) may adversely impact account performance. Tax-management services do not constitute tax advice or a complete tax-sensitive investment management program. There is no guarantee that tax-management services will produce the desired tax results.

Morgan Stanley Smith Barney LLC does not accept appointments nor will it act as a trustee but it will provide access to trust services through an appropriate third-party corporate trustee.

A **LifeView Financial Goal Analysis or LifeView Financial Plan ("Financial Plan")** is based on the methodology, estimates, and assumptions, as described in your report, as well as personal data provided by you. It should be considered a working document that can assist you with your objectives. Morgan Stanley Smith Barney LLC ("Morgan Stanley") makes no guarantees as to future results or that an individual's investment objectives will be achieved. The responsibility for implementing, monitoring and adjusting your financial goal analysis or financial plan rests with you. After your Financial Advisor delivers your report to you, if you so desire, your Financial Advisor can help you implement any part that you choose; however, you are not obligated to work with your Financial Advisor or Morgan Stanley.

Since **life and long-term care insurance** are medically underwritten, you should not cancel your current policy until your new policy is in force. A change to your current policy may incur charges, fees

and costs. A new policy will require a medical exam. Surrender charges may be imposed and the period of time for which the surrender charges apply may increase with a new policy. You should consult with your own tax advisors regarding your potential tax liability on surrenders.

The Morgan Stanley Global Impact Funding Trust, Inc. ("MS GIFT, Inc.") is an organization described in Section 501(c) (3) of the Internal Revenue Code of 1986, as amended. MS Global Impact Funding Trust ("MS GIFT") is a donor-advised fund. Morgan Stanley Smith Barney LLC provides investment management and administrative services to MS GIFT.

Margin Loans are investment products offered through Morgan Stanley Smith Barney LLC. Margin Loans are securities based loans, which can be risky, and are not suitable for all investors. **Liquidity Access Line ("LAL")** is a securities based loan/line of credit product, the lender of which is either Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A., as applicable, each an affiliate of Morgan Stanley Smith Barney LLC. **Tailored Lending** is a loan/line of credit product offered by Morgan Stanley Private Bank, National Association, an affiliate of Morgan Stanley Smith Barney LLC.

Express CreditLine ("ECL") is a securities based loan/line of credit product offered by Morgan Stanley Smith Barney LLC. A Tailored Lending credit facility may be a committed or demand loan/line of credit. All LAL and Tailored Lending loans/lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Private Bank, National Association (or, for LAL, Morgan Stanley Bank, N.A., as applicable). All ECL loans/lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Smith Barney LLC. LAL, Tailored Lending and ECL loans/lines of credit may not be available in all locations. Rates, terms, and programs are subject to change without notice. In conjunction with establishing an LAL loan/line of credit, an LAL facilitation account will also be opened in the client's name at Morgan Stanley Smith Barney LLC at no charge. Other restrictions may apply. The information contained herein should not be construed as a commitment to lend. Morgan Stanley Private Bank, National Association and Morgan Stanley Bank, N.A. are Members FDIC that are primarily regulated by the Office of the Comptroller of the Currency.

Important Risk Information for Securities Based Lending: You need to understand that: (1) Sufficient collateral must be maintained to support your loan(s) and to take future advances; (2) You may have to deposit additional cash or eligible securities on short notice; (3) Some or all of your securities may be sold without prior notice in order to maintain account equity at required maintenance levels. You will not be entitled to choose the securities that will be sold. These actions may interrupt your long-term investment strategy and may result in adverse tax consequences or in additional fees being assessed; (4) Morgan Stanley Bank, N.A., Morgan Stanley Private Bank, National Association or Morgan Stanley Smith Barney LLC (collectively referred to as "Morgan Stanley") reserves the right not to fund any advance request due to insufficient collateral or for any other reason except for any portion of a securities based loan that is identified as a committed facility; (5) Morgan Stanley reserves the right to increase your collateral maintenance requirements at any time without notice; and (6) Morgan Stanley reserves the right to call securities based loans at any time and for any reason. With the exception of a margin loan, the proceeds from securities based loan products may not be used to purchase, trade, or carry margin stock (or securities, with respect to Express CreditLine); repay margin debt that was used to purchase, trade or carry margin stock (or securities, with respect to Express CreditLine); and cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account. To be eligible for a securities based loan, a client must have a brokerage account at Morgan Stanley Smith Barney LLC that contains eligible securities, which shall serve as collateral for the securities based loan.

Residential mortgage loans/home equity lines of credit are offered by Morgan Stanley Private Bank, National Association, an affiliate of Morgan Stanley Smith Barney LLC. With the exception of the pledged-asset feature, an investment relationship with Morgan Stanley Smith Barney LLC does not have to be established or maintained to obtain the residential mortgage products offered by Morgan Stanley Private Bank, National Association. All residential mortgage loans/home equity lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Private Bank, National Association. Rates, terms, and programs are subject to change without notice. Residential mortgage loans/home equity lines of credit may not be available in all states; not available in Guam, Puerto Rico and the U.S. Virgin Islands. Other restrictions may apply. The information contained herein should not be construed as a commitment to lend. Morgan Stanley Private Bank, National Association is an Equal Housing Lender and Member FDIC that is primarily regulated by the Office of the Comptroller of the Currency. Nationwide Mortgage Licensing System Unique Identifier #663185. The proceeds from a residential mortgage loan (including draws and advances from a home equity line of credit) are not permitted to be used to purchase, trade, or carry eligible margin stock; repay margin debt that was used to purchase, trade, or carry margin stock; or to make payments on any amounts owed under the note, loan agreement, or loan security agreement; and cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account.

Interest-only loans enable borrowers to make monthly payments of only the accrued monthly interest on the loan during the introductory interest-only period. Once that period ends, borrowers must make monthly payments of principal and interest for the remaining loan term, and payments will be substantially higher than the interest-only payments. During the interest-only period, the total interest that the borrower will be obligated to pay will vary based on the amount of principal paid down, if any. If a borrower makes just an interest-only payment, and no payment of principal, the total interest payable by the borrower during the interest-only period will be greater than the total interest that a borrower would be obligated to pay on a traditional loan of the same interest rate having principal-and-interest payments. In making comparisons between an interest-only loan and a traditional loan, borrowers should carefully review the terms and conditions of the various loan products

available and weigh the relative merits of each type of loan product appropriately. A **conforming loan** means a residential mortgage loan offered by Morgan Stanley Private Bank, National Association that is saleable to Fannie Mae or Freddie Mac because it conforms to these entities' guidelines, including, for example, loan amount limits that range from \$424,000 to \$636,150 for one unit properties, depending on location (and even higher in Hawaii). Through the **pledged-asset feature** offered by Morgan Stanley Private Bank, National Association, the applicant(s) or third party pledgor (collectively "Client") may be able to pledge eligible securities in lieu of a full or partial cash down payment or in connection with a refinance mortgage loan. To be eligible for the pledged-asset feature a Client must have a brokerage account at Morgan Stanley Smith Barney LLC. If the value of the pledged securities in the account drops below the agreed-upon level stated in the loan documents, a Client may be required to deposit additional securities or other collateral (such as cash) to stay in compliance with the terms of the mortgage loan. If a Client does not deposit additional securities or other collateral, the Client's pledged securities may be sold to satisfy the Client's obligation, and the Client will not be entitled to choose which assets will be sold. Thus in deciding whether the pledged-asset feature is appropriate, a Client should consider the degree to which he or she is comfortable subjecting his or her investment in a home to the fluctuations of the securities market. The pledged-asset feature is not available in all states. Other restrictions may apply.

Relationship-based pricing offered by Morgan Stanley Private Bank, National Association is based on the value of clients', or their immediate family members' (i.e., grandparents, parents, and children) eligible assets (collectively "Household Assets") held within accounts at Morgan Stanley Smith Barney LLC. To be eligible for relationship-based pricing, Household Assets must be maintained within appropriate eligible accounts prior to the closing date of the residential mortgage loan. Relationship-based pricing is not available on conforming loans. **3/1, 5/1, 7/1, 10/1 adjustable rate mortgage ("ARM") loans** are based on the 1-Year London Interbank Offered Rate ("LIBOR") with various loan term options.

1-Month Interest only ARM loan is based on 1-Month LIBOR. 1-Month Interest only ARM loan is not available in Maine. The Active Assets Account is a brokerage account offered through Morgan Stanley Smith Barney LLC. The **Morgan Stanley Mobile App** is currently available for iPhone® and iPad® from the App StoreSM and AndroidTM on Google PlayTM. Standard messaging and data rates from your provider may apply. The **Morgan Stanley Credit Card** from American Express or the Platinum Card® from American Express exclusively for Morgan Stanley is only available for clients who have an eligible Morgan Stanley Smith Barney LLC brokerage account ("eligible account"). Eligible account means a Morgan Stanley Smith Barney LLC brokerage account held in your name or in the name of a revocable trust where the client is the grantor and trustee, except for the **following** accounts: Charitable Remainder Annuity Trusts, Charitable Remainder Unitrusts, irrevocable trusts and employer-sponsored accounts. Eligibility is subject to change. American Express may cancel your Card Account and participation in this program, if you do not maintain an eligible account. Morgan Stanley Smith Barney LLC may compensate your Financial Advisor and other employees in connection with your acquisition or use of either the Morgan Stanley Credit Card from American Express or the Platinum Card® from American Express exclusively for Morgan Stanley. The **Morgan Stanley Cards from American Express** are issued by American Express Bank, FSB, not Morgan Stanley Smith Barney LLC. Services and rewards for the Cards are provided by Morgan Stanley Smith Barney LLC, American Express or other third parties. Restrictions and other limitations apply. See the terms and conditions for the Cards for details. Clients are urged to review fully before applying. The **Morgan Stanley Debit Card** is currently issued by UMB Bank, n.a., pursuant to a license from MasterCard International Incorporated. MasterCard and Maestro are registered trademarks of MasterCard International Incorporated. The third-party trademarks and service marks contained herein are the property of their respective owners.

Premier Cash Management is an incentive program that recognizes and rewards clients for choosing Morgan Stanley for their everyday cash management needs. Clients must meet certain criteria in order to qualify for the Premier Cash Management program, and Morgan Stanley Smith Barney LLC reserves the right to change or terminate the program at any time and without notice. Where appropriate, Morgan Stanley Smith Barney LLC has entered into arrangements with affiliated and non-affiliated parties to assist in offering certain products and services related to Premier Cash Management. Please refer to the Premier Cash Management Terms and Conditions for further details. Securities based loans are provided by Morgan Stanley Smith Barney LLC, Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A, as applicable.

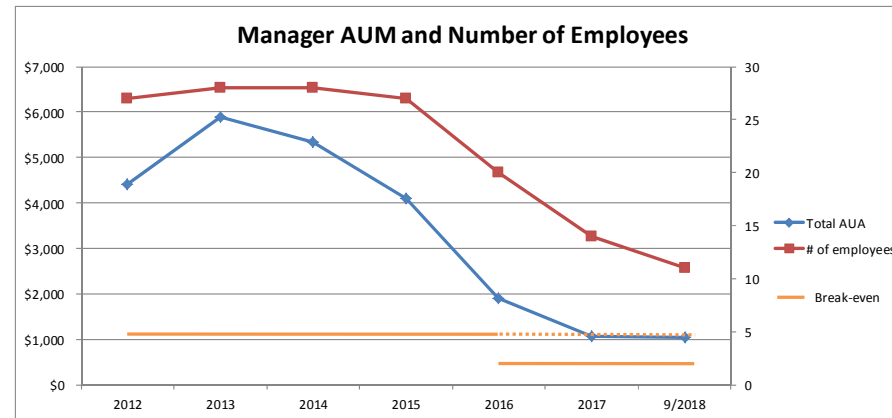
Commercial Real Estate Financing is provided by Morgan Stanley Private Bank, National Association ("MSPBNA"). MSPBNA is a Member FDIC and an affiliate of Morgan Stanley Smith Barney LLC. Commercial Real Estate Financing loans are subject to the underwriting standards and independent approval of MSPBNA. Commercial Real Estate Financing loans may not be available in all locations. The proceeds from a Commercial Real Estate Financing loan cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account.

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What May Cause a Downgrade of a Manager

- GIMA’s signaling: Generally a “Watch” issued prior to Downgrade. Recommended replacement issued at Downgrade.
 - Manager A: Watch issued Feb 2019. Firm AUM of \$16.3bn in 2013 drops to \$2.7bn as of 12/31/18.
 - Manager B: Watch issued January 2019. Firm AUM declined from \$7.8bn in 2014 to \$2.9bn as of 12/31/18.
- Sample reasons for termination:
 - Declining firm AUM along with heightened business risks. Declining product AUM.
 - Turnover of key investment staff.
 - Poor risk adjusted performance vs expectations & peers over expanded period.
 - Significant changes to investment approach.
- Must weight manager/product risks versus potential tax consequences of a transaction.

AUA	2012	2013	2014	2015	2016	2017	9/2018
Product A	\$2,920	\$3,902	\$3,581	\$2,880	\$1,488	\$848	\$858
Product B	\$560	\$681	\$587	\$397	\$169	\$99	\$87
Product C	\$458	\$845	\$835	\$517	\$150	\$94	\$77
Total AUA (MM)	\$4,400	\$5,900	\$5,350	\$4,100	\$1,910	\$1,060	\$1,053
\$ Change (MM)	\$600	\$1,500	(\$550)	(\$1,250)	(\$2,190)	(\$850)	(\$7)
% Change	16%	34%	-9%	-23%	-53%	-45%	-1%
# of Employees	27	28	28	27	20	14	11

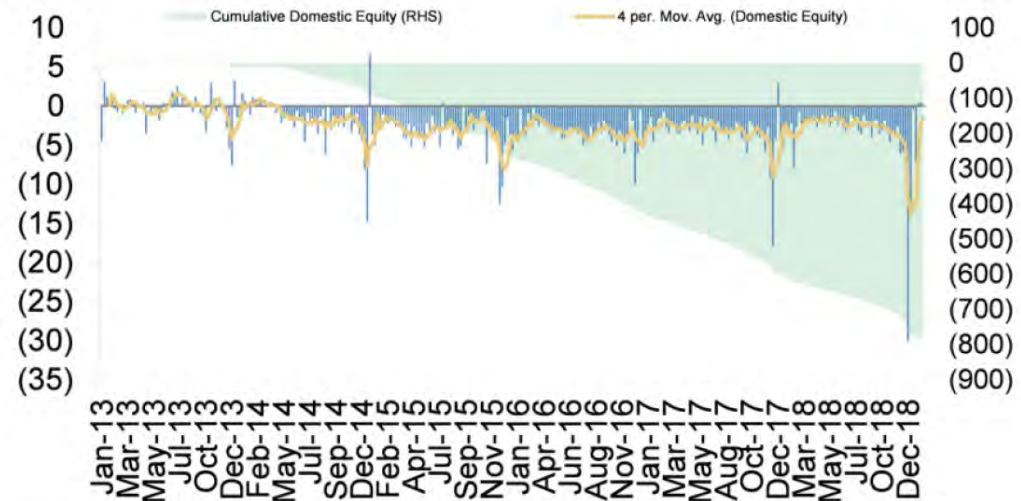


Disruption of Traditional Asset Management

- August 2018: Fidelity began offering no-fee index funds.
- November 2018: Vanguard reduced minimums in near-free products.
- December 2018: Record Y-o-Y domestic equity outflows.
- January 2019:
 - State Street, BlackRock & BNY announce layoffs.
 - Franklin offers staff buyouts.
- February 2019:
 - Legg Mason announces cost-cutting goals which includes layoffs and centralizing admin across affiliates.
 - AB announces layoffs as part of HQ move to cheaper Nashville area.

Exhibit 16: Domestic Equity Fund Flows: Three weeks of inflows after 53 weeks of outflows

Domestic Equity Fund Flows (\$B): Outflows in 241 of 250 weeks



Source: Morgan Stanley Research, EPFR. Excludes ETFs.

Year	Nos of Mutual Funds		<u>Domestic Equity</u> (incl Sector Funds)		<u>Domestic Equity (without</u> <u>Sector Funds)</u>	
2018	7,941	4%	4,246	1%	3,824	1%
2017	7,631	1%	4,215	3%	3,795	3%
2016	7,548	9%	4,092	3%	3,685	3%
2015	6,919	7%	3,989	4%	3,585	4%
2014	6,490	6%	3,835	4%	3,439	4%
2013	6,127	6%	3,693	4%	3,307	4%
2012	5,754		3,556		3,181	

Source: Morningstar, GIMA Analytics

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Indices are unmanaged. They do not reflect any management, custody, transaction or other expenses, and generally assume reinvestment of dividends, accrued income and capital gains. Past performance of indices does not guarantee future results. You cannot invest directly in an index. Performance of indices may be more or less volatile than any investment product. The risk of loss in value of a specific investment (such as with an investment manager or in a fund) is not the same as the risk of loss in a broad market index. Therefore, the historical returns of an index will not be the same as the historical returns of a particular investment product.

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Asset Class and Other Risks Investing in **stocks**, **mutual funds** and **exchange-traded funds (“ETFs”)** entails the risks of market volatility. The value of all types of investments may increase or decrease over varying time periods. Besides the general risk of holding securities that may decline in value, closed-end funds may have additional risks related to declining market prices relative to net asset values (NAVs), active manager underperformance, and potential leverage. Some funds also invest in foreign securities, which may involve currency risk. **Equity securities** may fluctuate in response to news on companies, industries, market conditions and general economic environment. Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies. Investing in **smaller/mid-cap companies** involves greater risks not associated with investing in more established companies, such as business risk, significant stock price fluctuations and illiquidity. **International investing** entails greater risk, as well as greater potential rewards compared to U.S. investing. These risks include political and economic uncertainties of foreign countries as well as the risk of currency fluctuations. These risks are magnified in countries with **emerging markets**, since these countries may have relatively unstable governments and less established markets and economics.

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Municipal Research and Strategy

NORTH AMERICA

MATTHEW GASTALL

Executive Director

Morgan Stanley Wealth Management

Matthew.Gastall@morganstanley.com

212 296 2602

MONICA GUERRA

Vice President

Morgan Stanley Wealth Management

Monica.Guerra@morganstanley.com

212 296 7175

April 2019



Agenda

1) **Macro**: Public Finance Market Update

- Issuer and Investor Perspective

1) **Legislative Update**: The 116th Congress

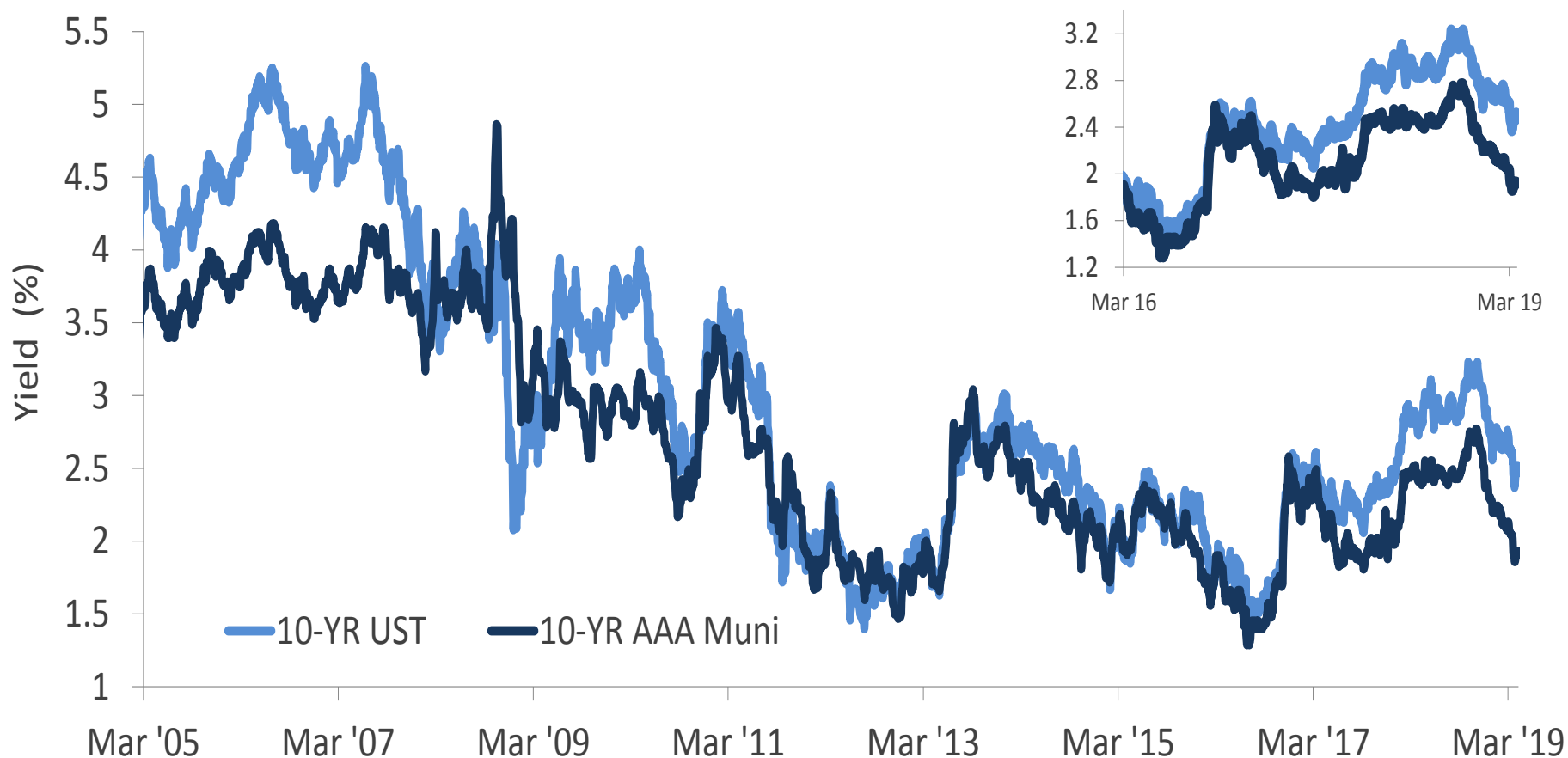
2) **Micro**: Current Events and Credit Fundamentals

Macro: Yields and Ratios Decline on Muni “Blue Skies”



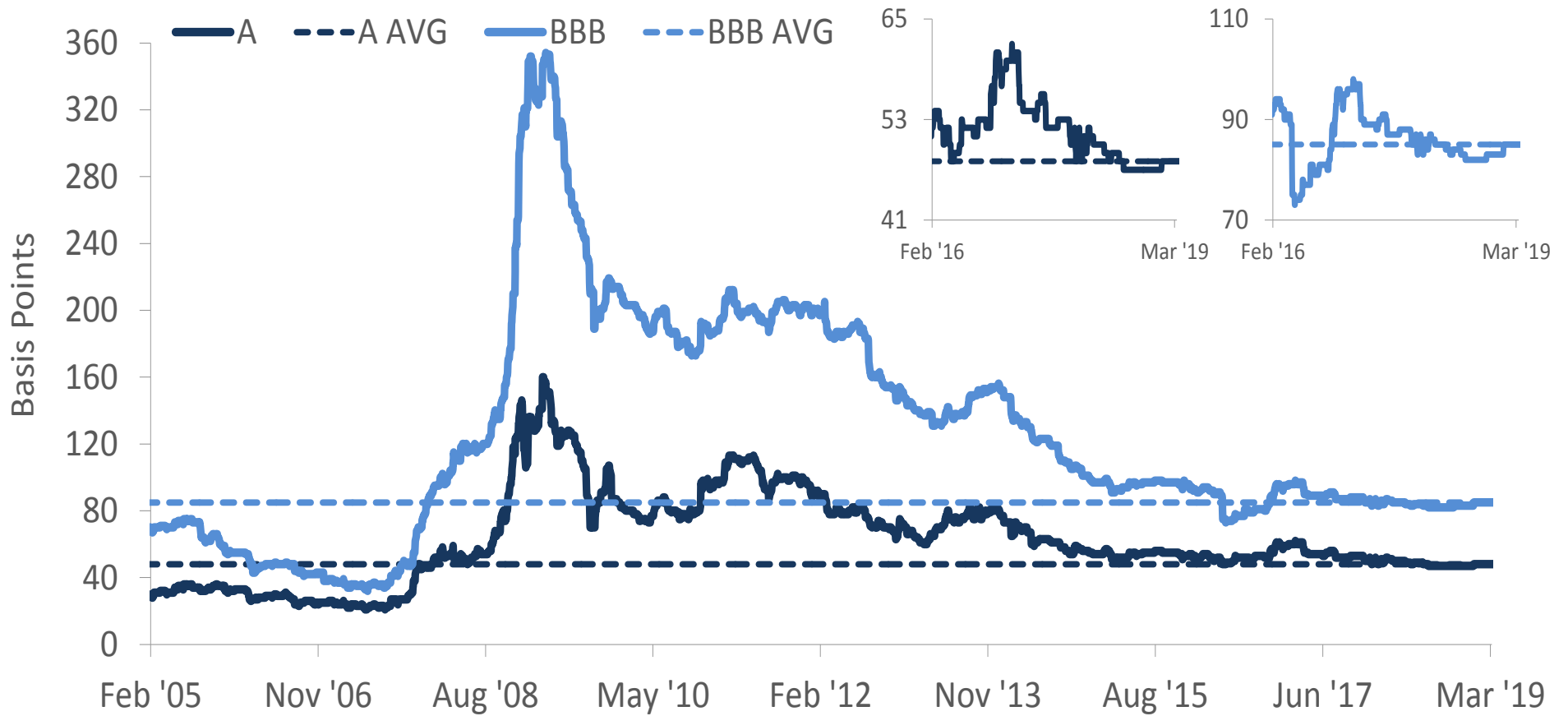
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: + 30-Year Rates Bull Market Continues ...



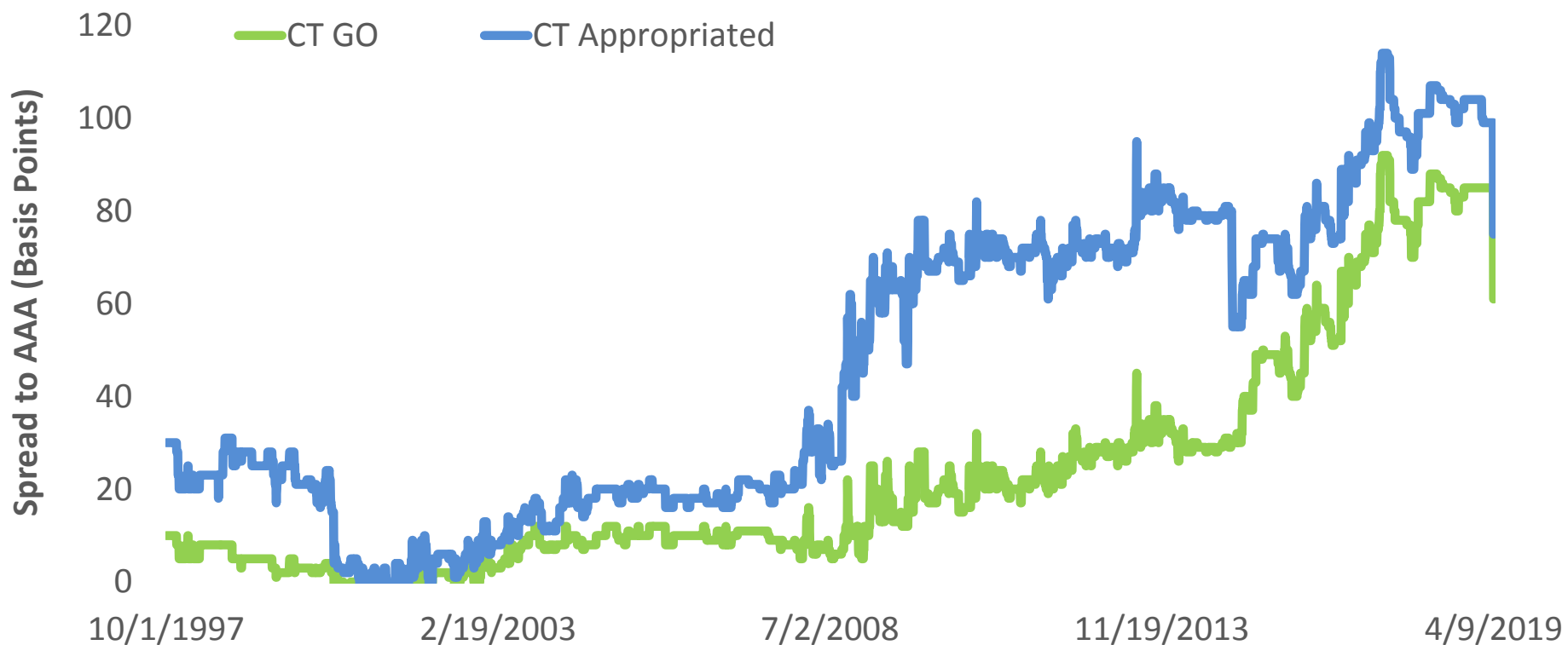
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: Tight Credit Spreads; Lower-Rated Issuers Yield Less



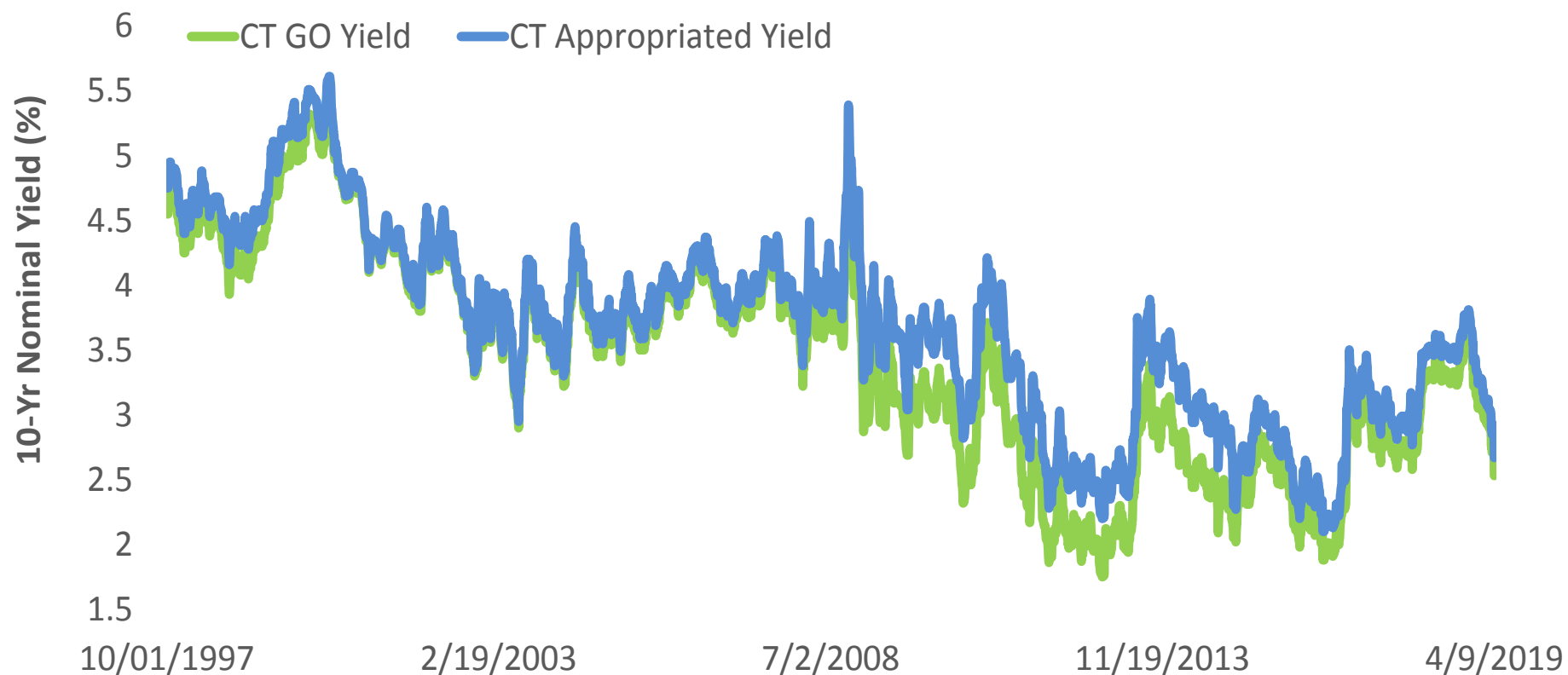
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: Connecticut 10-Yr Spread Timeline



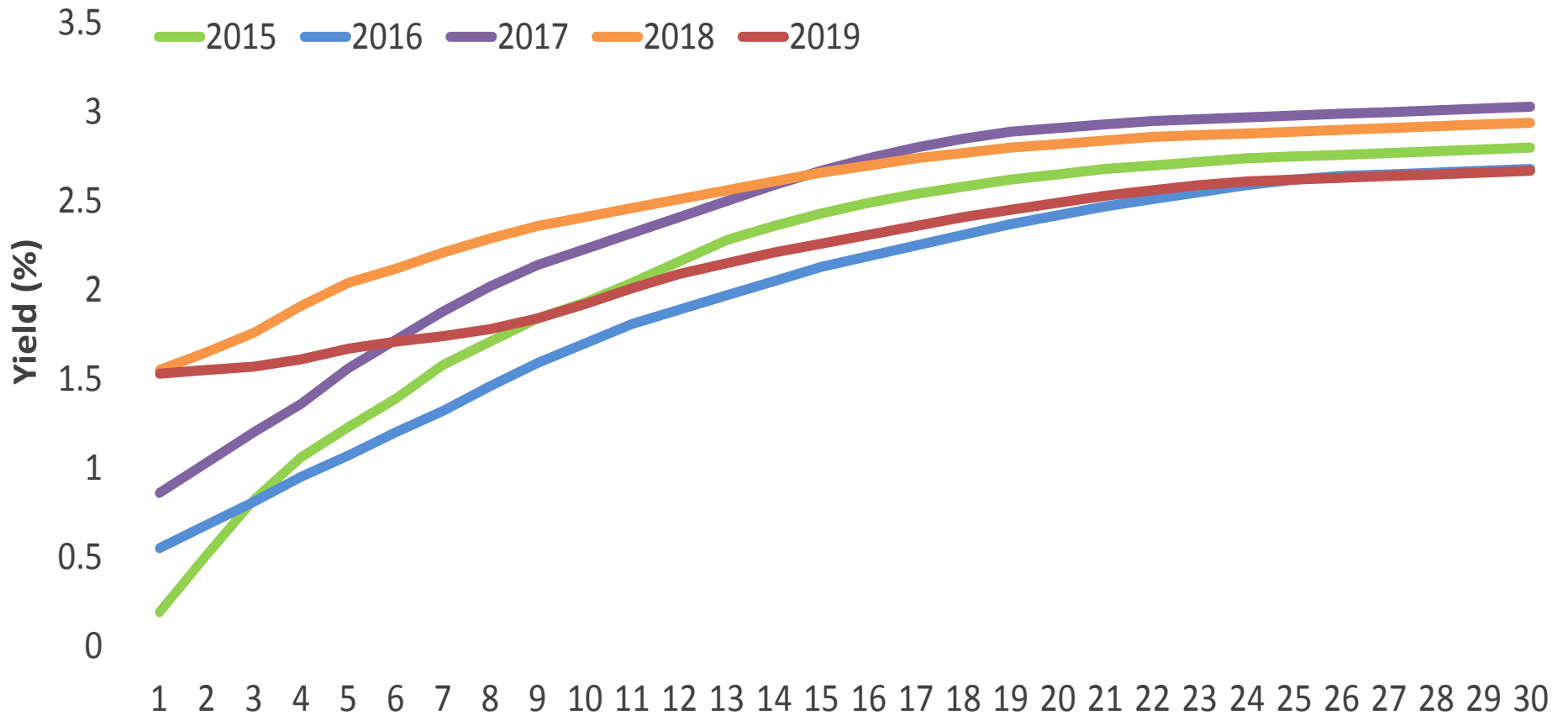
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: Connecticut 10-Year Yield Timeline



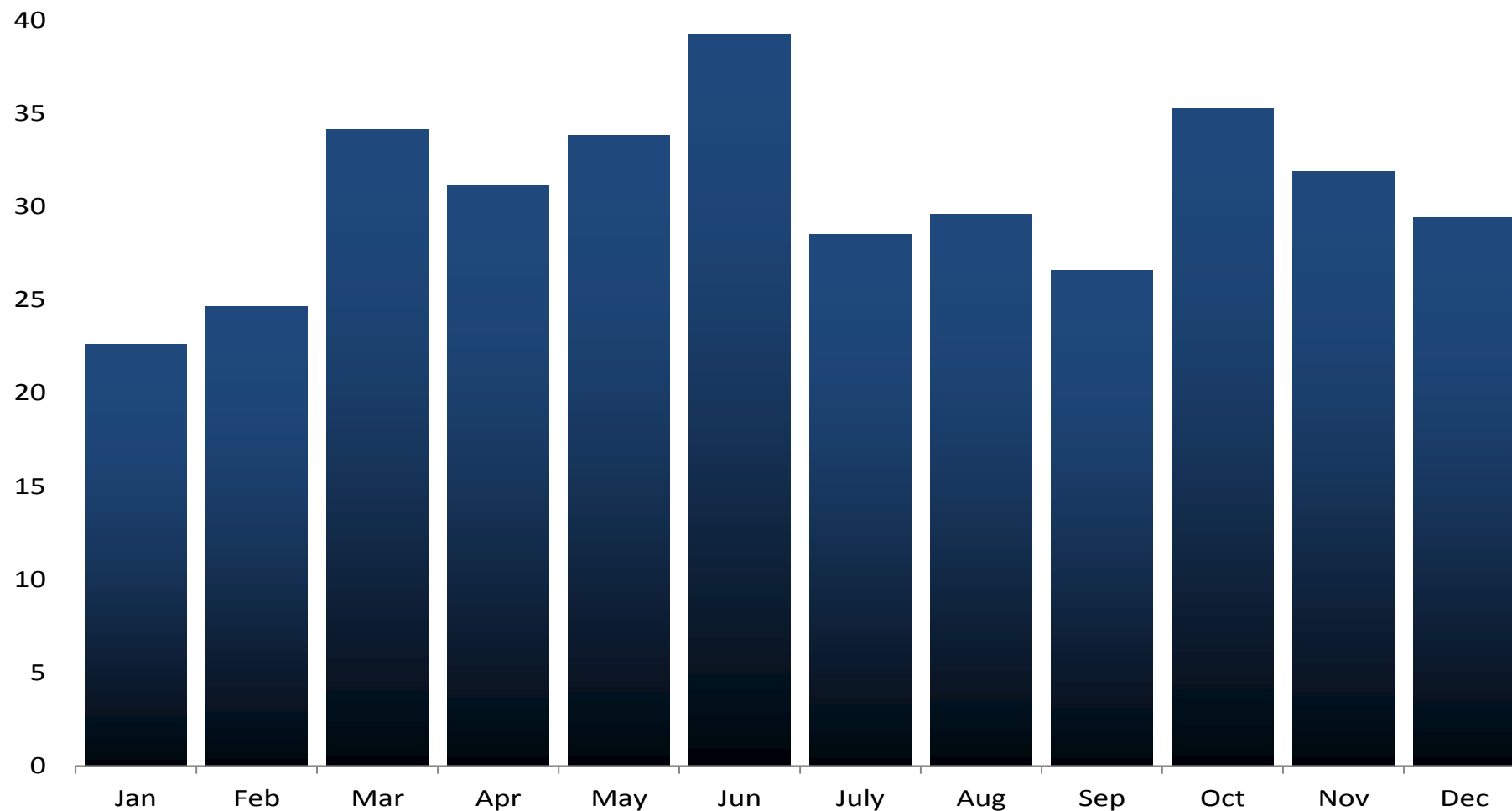
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: “Bear-Flattening” Yield Curve; Shorter Maturities Have Yielded More



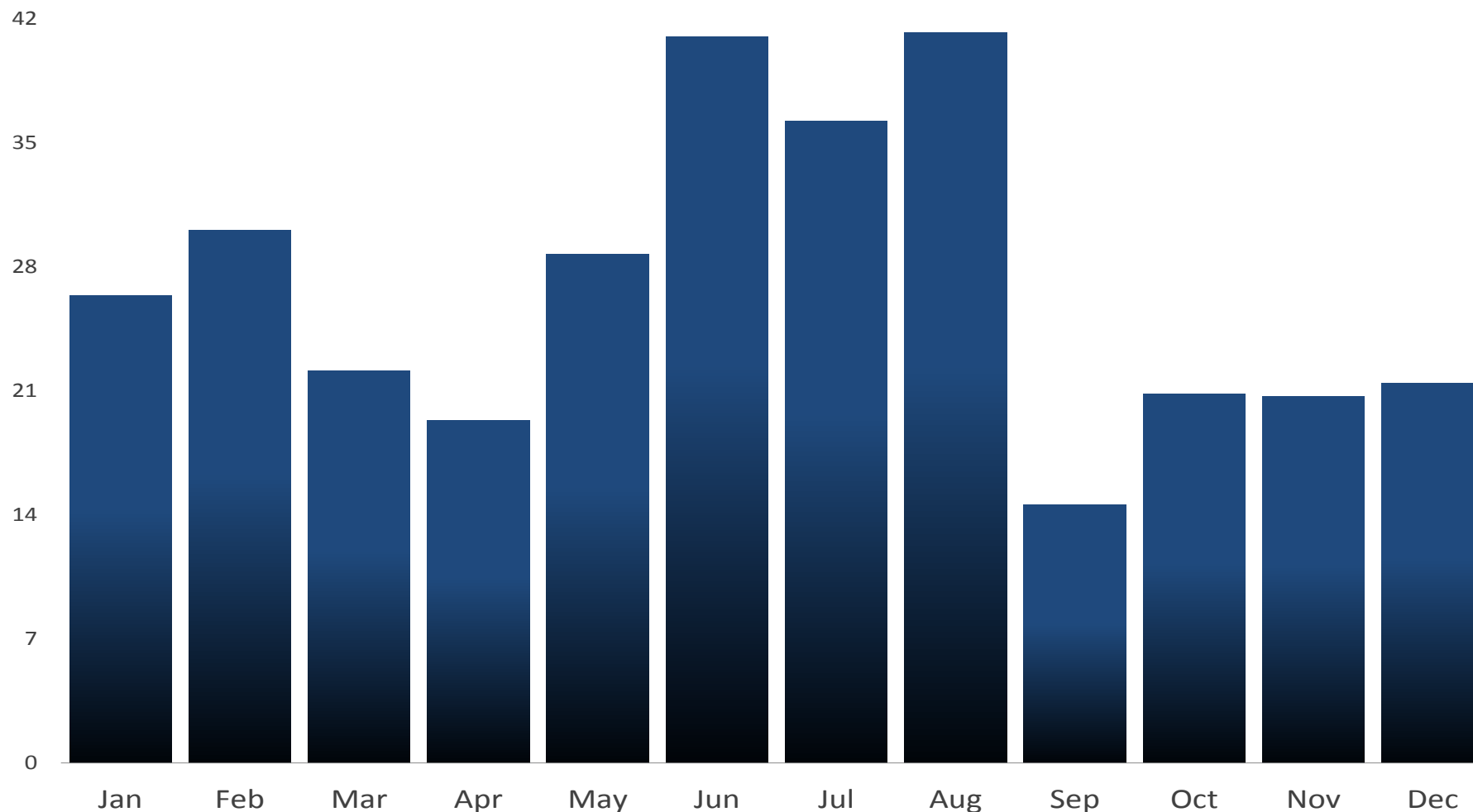
*Chart exhibits the yield curve on the same day (April 10) of each year since 2015
Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, Thomson Reuters as of 4/10/19

Macro: Average Monthly Supply; Seasonal Transition



Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, The Bond Buyer, Thomson Reuters as of 4/10/19

Macro: Redemption-Driven Reinvestment Demand



Source: Morgan Stanley Wealth Management Municipal Research, Bloomberg, ICE, Thomson Reuters as of 4/10/19

Investor Strategy

- 1) Investors Prepare for Potential Spring Entry Points
- 2) Methodically Add Pre-Summer Exposure
 - Pockets of Supply-Induced Underperformance, Preferably During Stability Following Broader Rate Rise
- 3) Short/Neutral Duration, High-Quality
 - Evenly Distributed Call Options; Above-Market Coupons
- 4) Maintain Appropriate Cash Exposures
 - Blend Quality Taxable Counterparts
 - Particularly Low Federal Bracket / Low Tax States

Legislative Update: The 116th Congress

Infrastructure

- **Move America Act**
 - *Move America Bonds (MABs)*: Expands definition of traditional PABs
 - *Move America Credits*: May be used jointly or in lieu of MABs
 - Early indications of bi-partisan support & multiple financing options on the table
- **Build America Bonds**
 - Discussion primarily lead by interest groups and presidential hopefuls
 - Legislation yet to be introduced to House or Senate

Advanced Refundings

- Cited as an early priority for the House Ways and Means Committee, it has since been sidelined due to Senate opposition

State and Local Tax (SALT) Deduction

- House and Senate eager to pass clean tax extender for some TCJA provisions
- Potential investor impact

Sector Outlooks

Sector	Minimum Rating*	Commentary
State GO & State Appropriated	A1/A+	Pension/OPEB challenges exist. High-tax state SALT challenges possible. Volatility/downgrades continue. Be selective.
Local GO	Aa1/AA+	State aid, pension challenges, and SALT challenges apparent. We strongly advocate selectivity and high credit quality.
Essential Service (Water & Sewer)	A2/A	Essential purpose beneficial, where applicable; capital needs may create select challenges.
US Public Power	A2/A	Favorable non-cyclicalities of revenues; evolving power markets and regulation may create select challenges.
State Housing Finance Agencies	Aa2/AA	Exposed to housing market momentum; diversified business models; recession risk; SALT challenges in high-tax states.
Higher Education	Aa3/AA-	We recommend higher-rated, well-established institutions due to student selectivity and price sensitivity.
Transportation	A2/A	Bolstered by economic growth and manageable oil prices. Recession risk exists.
Not-for-Profit Hospitals	A1/A+	Medicaid expansion support and near-term ACA stability help credit quality. Focus on larger systems.
Tax-Secured / Dedicated-Tax	A1/A+	Generally less political risk. We prefer high-quality income, sales, and utility tax bonds with no commingling of revenues.

Source: Morgan Stanley Wealth Management Municipal Research as of 4/10/19

Please refer to important information, disclosures and qualifications at the end of this material.

Public Finance Credit Analysis

General Obligation & Appropriated Debt

- Taxpayer Base
 - Population Elasticity, Growth, Size, Health
 - Taxpayer Concentration
 - Operating Revenue Dependence (Sector/Industry)
 - Expenditure Concentration
- Overall Debt Profile
 - Net tax-supported debt per capita/% revenue
 - Fixed / variable rate; swaps / derivatives
- Legal / Political Abilities
 - Constitutional Restrictions
 - Cost of Living / Doing Business

- Priority of Payment / Percentage of Appropriated Debt
- Political Environment
- Economic Health
- Location/Geography
- Pension/OPEB Liabilities
- Development Status
- Foreclosure Rates
- Interfund Borrowings
- Liquidity/Reserves
- Collective Bargaining Strength
- Infrastructure Needs
- Market Access

Revenue and Dedicated Tax

- Operating / non-operating revenue and expense breakdown
 - Farebox recovery ratio
- State / local government dependence
- Demand Elasticity
 - Essential service; monopolistic / competition
 - Rate/fare increase flexibility
- Economic Health
 - GSP / GDP by state
- Overall Debt Profile
 - Fixed / variable; swaps / derivatives
 - Liquidity support (SBPA/LOC)

- Macroeconomic Variables/Sector Impacts
 - Commodity prices, currency trends
- Infrastructure Needs / Leverage ratios
- Payment Priority – Seniors vs. Subs
- Liquidity / Days Cash on Hand
- Debt-Service Coverage Ratios / Reserve Fund
- Political Exposure; Collective Bargaining Strength
- Revenue & Expense Trends
- Population Elasticity, Growth, Size
- Pension Exposure (GASB 67 & 68)
- Management Quality
- Market Access

Risk Considerations and Disclosures

WEALTH MANAGEMENT INVESTMENT RESOURCES

Risk Considerations

Bonds are subject to interest rate risk. When interest rates rise, bond prices fall; generally the longer a bond's maturity, the more sensitive it is to this risk. Bonds may also be subject to call risk, which is the risk that the issuer will redeem the debt at its option, fully or partially, before the scheduled maturity date. The market value of debt instruments may fluctuate, and proceeds from sales prior to maturity may be more or less than the amount originally invested or the maturity value due to changes in market conditions or changes in the credit quality of the issuer. Bonds are subject to the credit risk of the issuer. This is the risk that the issuer might be unable to make interest and/or principal payments on a timely basis. Bonds are also subject to reinvestment risk, which is the risk that principal and/or interest payments from a given investment may be reinvested at a lower interest rate.

Bonds rated below investment grade may have speculative characteristics and present significant risks beyond those of other securities, including greater credit risk and price volatility in the secondary market. Investors should be careful to consider these risks alongside their individual circumstances, objectives and risk tolerance before investing in high-yield bonds. High yield bonds should comprise only a limited portion of a balanced portfolio.

Interest on **municipal bonds** is generally exempt from federal income tax; however, some bonds may be subject to the alternative minimum tax (AMT). Also, municipal bonds acquired in the secondary market at a discount may be subject to the market discount tax provisions, and therefore could give rise to taxable income. Typically, state tax-exemption applies if securities are issued within one's state of residence and, if applicable, local tax-exemption applies if securities are issued within one's city of residence. The tax-exempt status of municipal securities may be changed by legislative process, which could affect their value and marketability.

Build America Bonds described herein are backed by the credit quality of the issuer, and not the Federal Government. These Build America Bonds are structured as direct payment bonds, in which a direct Federal subsidy is paid to the state or local government issuer.

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. Generally, if interest rates rise, bond prices fall and vice versa. Longer-term bonds carry a longer or higher duration than shorter-term bonds; as such, they would be affected by changing interest rates for a greater period of time if interest rates were to increase. Consequently, the price of a long-term bond would drop significantly as compared to the price of a short-term bond.

Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision.

Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies.

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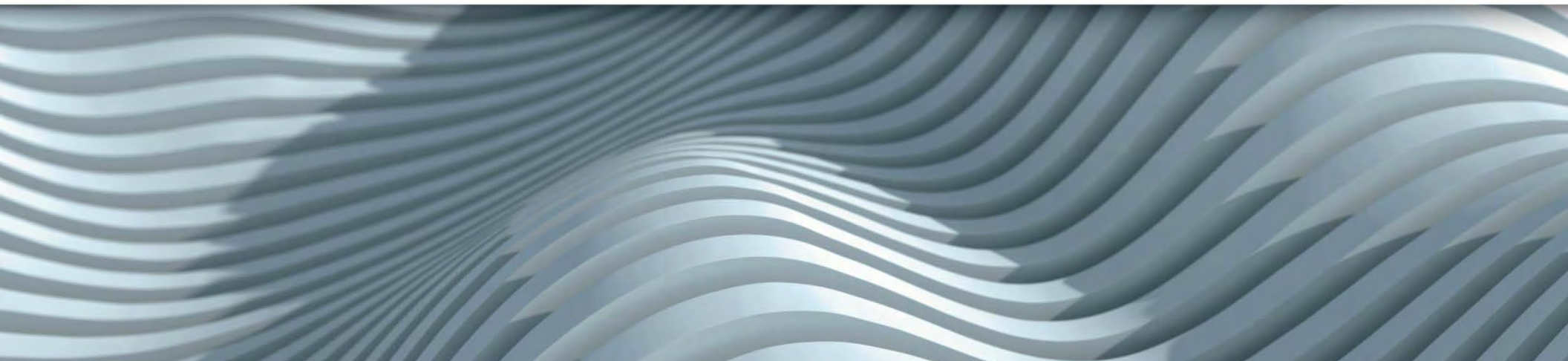
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Asset Allocation in Changing Markets

Kevin Demers, Market Research & Strategy

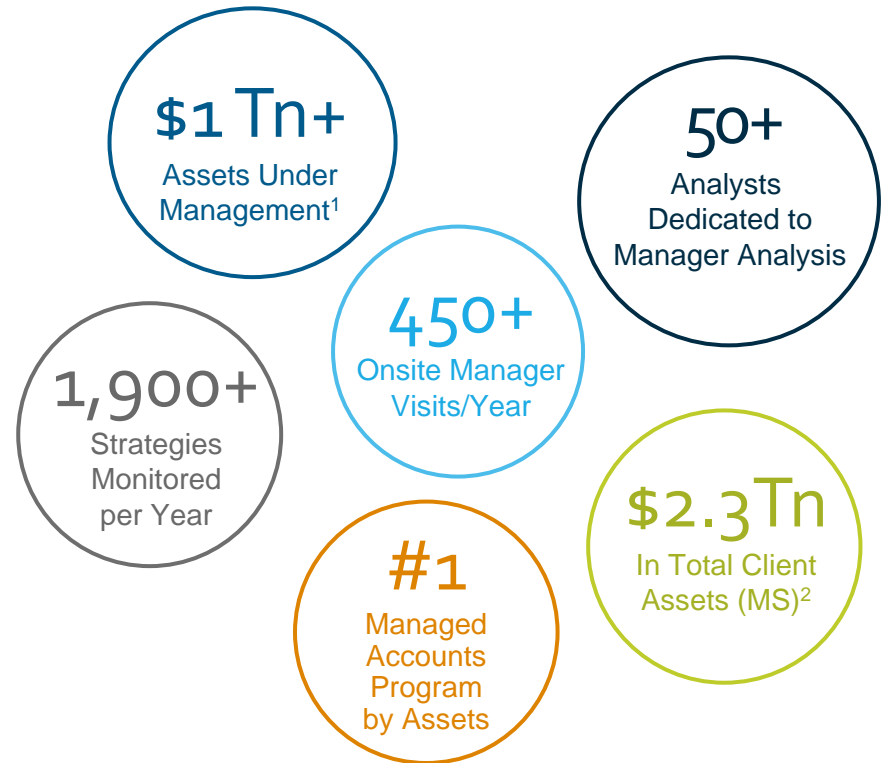
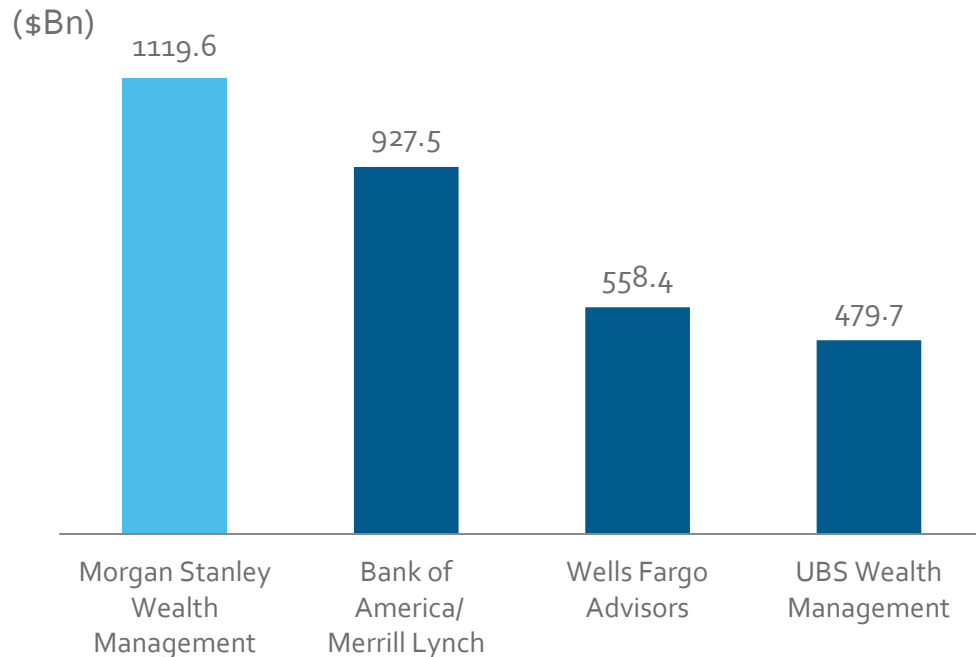
April 2019



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#1 IN INVESTMENT ADVISORY ASSETS UNDER MANAGEMENT¹



1. Cerulli Associates. 4Q 2018 Summary, Managed Account Research. Cerulli Associates' data are based on data submitted by firms participating in Cerulli's survey. Morgan Stanley Wealth Management was ranked No. 1 in terms of assets under management out of the firms listed in the industry for the quarter with respect to Top Managed Account Program Sponsors Across All Industry Segments. This category includes separate account consultant programs, mutual fund advisory programs, ETF advisory programs, rep as portfolio manager programs, rep as advisor programs and unified managed account programs. Separate account consultant programs are programs in which asset managers manage investors' assets in discretionary separate accounts. Mutual fund advisory programs and ETF advisory programs are discretionary and nondiscretionary programs designed to systematically allocate investors' assets across a wide range of mutual funds or ETFs. Rep as portfolio manager programs are discretionary programs in which advice is an essential element; planning is undertaken or advice is treated as a separate service from brokerage. Rep as advisor programs are nondiscretionary programs where the advisor has not been given discretion by the client and must obtain approval each time a change is made to the account or its investments. Unified managed accounts are vehicle-neutral platforms that simplify the delivery of multiple investment vehicles, such as separate accounts, mutual funds, exchange-traded funds and individual securities through their integration within a single environment. Rankings are subject to change.

2. Morgan Stanley Reports Fourth Quarter 2018, January 17, 2019.

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Asset Allocation Advice from Leading Thinkers



Michael Wilson
 Chair and Chief Investment Officer
 Chief U.S. Equity Strategist
 25 years of experience
 Former Head of Content Distribution for North American Equities at MS & Co.; MBA, Kellogg School of Management at Northwestern University



Andrew Sheets
 Chief Global Cross-Asset Strategist
 13 years of experience
 Ranked by Institutional Investor; ScB, Brown University



Rui de Figueiredo
 Co-Head of Solutions & Multi-Asset Group
 20 years of experience
 Former Head of Research at Citi Alternative Investments
 Ph.D. and MA, Stanford University



Vishwanath Tirupattur
 Head of US Fixed Income Research
 20 years of experience
 Former portfolio manager, The Chubb Corporation
 MS, Virginia Tech; Ph. D., University of Illinois



Lisa Shalett
 Chief Investment Officer, Wealth Management
 Head of Wealth Management Investment Resources
 27 years of experience
 Former CEO, Sanford C. Bernstein; MBA, Harvard Business School



Martin Leibowitz
 Vice Chairman of Research
 Global Strategy
 47 years of experience
 Former Vice Chairman and Chief Investment Officer at TIAA-CREF; M.S. Univ. of Chicago; Ph.D., NYU

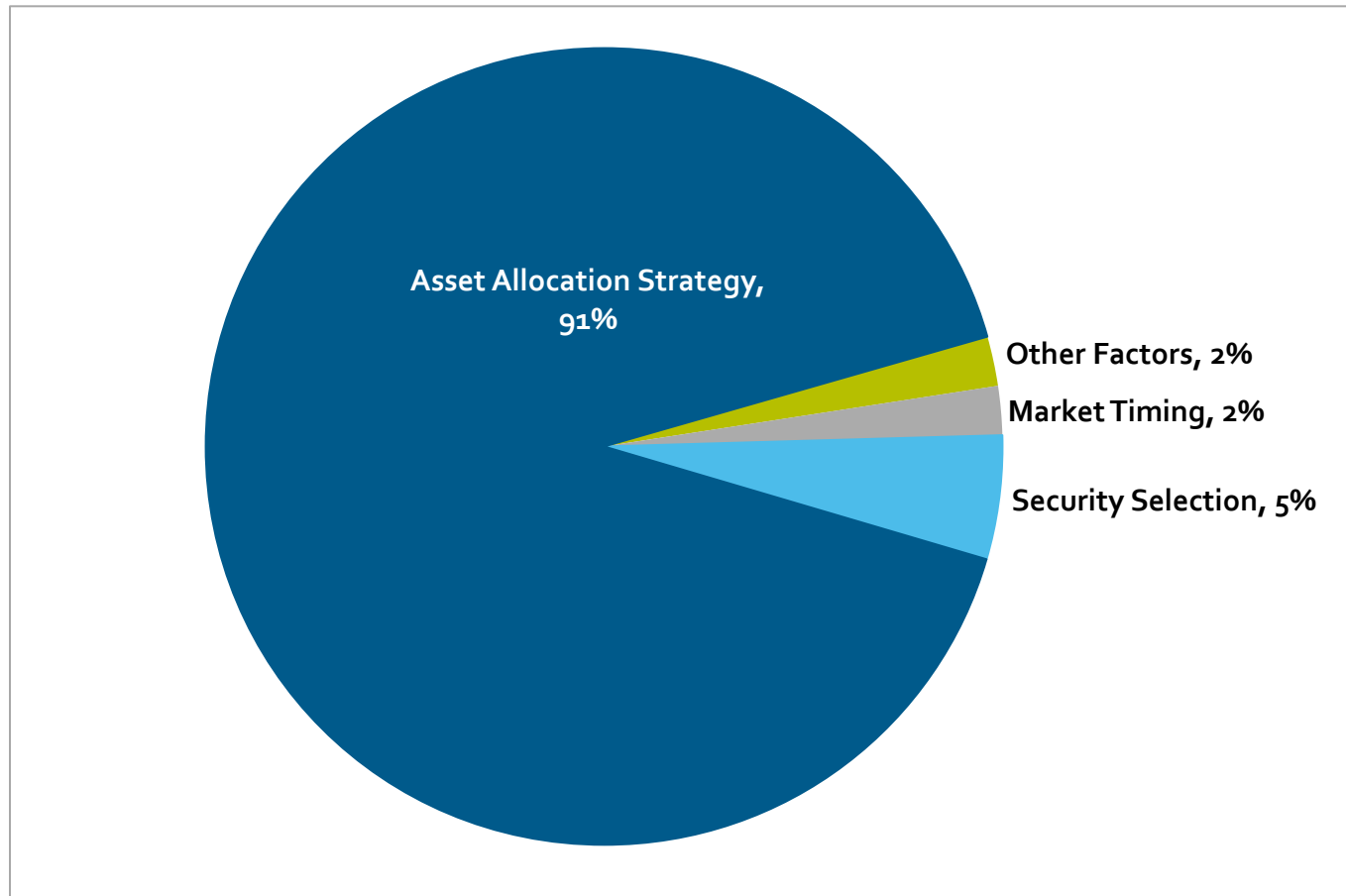


Andrew Slimmon
 Senior Portfolio Manager & Head of Applied Equity Advisors
 27 years of experience
 Former portfolio manager, Brown Brothers Harriman; MBA, University of Chicago

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Asset Allocation – The Most Important Determinant of Risk Exposures and Investment Outcomes

Sources of Return Variation



Source: Roger G. Ibbotson. *Does Asset Allocation Policy Explain 10, 90 or 100 Percent of Performance?* Financial Analyst Journal, January/February 2000; Brinson, Singer and Beebower. *Determination of Performance II: An Update*, Financial Analyst Journal, May/June 1991. Based on US pension-fund data from 1977 to 1987.

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2018 Was Simple—Don't Fight the Fed; For 2019, It's the Same Mantra, but the Other Way

Red/Green Box Means Asset Class has Underperformed/Outperformed Inflation

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 YTD
US 10yr	MSCI EM	REITS	US 10yr	MSCI China	Russell 2000	REITS	MSCI Japan	Commodities	MSCI China	US 2yr	MSCI China
US 2yr	MSCI China	Russell 2000	Inflation Bonds	MSCI Europe	S&P 500	S&P 500	REITS	Russell 2000	MSCI EM	US 10yr	REITS
US Agg. Bond	Global HY	Commodities	EM\$Sov Credit	Global HY	MSCI Japan	US 10yr	US 10yr	US HY	MSCI Europe	US Agg. Bond	Russell 2000
US IG	US HY	MSCI EM	US IG	REITS	MSCI Europe	MSCI China	EM\$Sov Credit	Global HY	MSCI Japan	US HY	S&P 500
Inflation Bonds	Commodities	MSCI Japan	US Agg. Bond	MSCI EM	US HY	US IG	S&P 500	S&P 500	S&P 500	US IG	MSCI Europe
EM\$Sov Credit	MSCI Europe	US HY	REITS	EM\$Sov Credit	Global HY	EM\$Sov Credit	US 2yr	MSCI EM	Russell 2000	EM Local Debt	MSCI EM
US HY	EM\$Sov Credit	S&P 500	US HY	Russell 2000	MSCI China	US Agg. Bond	US Agg. Bond	EM\$Sov Credit	EM Local Debt	Global HY	Commodities
Global HY	REITS	Global HY	Global HY	S&P 500	REITS	Russell 2000	US IG	REITS	Global HY	REITS	US HY
Commodities	Russell 2000	EM Local Debt	S&P 500	US HY	US 2yr	Inflation Bonds	MSCI Europe	US IG	EM\$Sov Credit	Inflation Bonds	MSCI Japan
MSCI Japan	S&P 500	EM\$Sov Credit	US 2yr	EM Local Debt	US IG	US HY	Global HY	EM Local Debt	REITS	EM\$Sov Credit	Global HY
Russell 2000	US IG	US 10yr	EM Local Debt	US IG	US Agg. Bond	US 2yr	Russell 2000	Inflation Bonds	Inflation Bonds	S&P 500	EM\$Sov Credit
S&P 500	EM Local Debt	US IG	Russell 2000	Inflation Bonds	MSCI EM	Global HY	US HY	MSCI Japan	Commodities	Commodities	US IG
REITS	Inflation Bonds	US Agg. Bond	Commodities	MSCI Japan	Inflation Bonds	MSCI EM	Inflation Bonds	US Agg. Bond	US HY	Russell 2000	Inflation Bonds
MSCI Europe	MSCI Japan	MSCI China	MSCI Europe	US Agg. Bond	EM Local Debt	EM Local Debt	MSCI China	MSCI China	US IG	MSCI Japan	US Agg. Bond
MSCI China	US Agg. Bond	MSCI Europe	MSCI Japan	US 10yr	US 10yr	MSCI Japan	EM Local Debt	US 2yr	US Agg. Bond	MSCI EM	US 10yr
MSCI EM	US 2yr	Inflation Bonds	MSCI EM	Commodities	EM\$Sov Credit	MSCI Europe	MSCI EM	US 10yr	US 10yr	MSCI Europe	EM Local Debt
	US 10yr	US 2yr	MSCI China	US 2yr	Commodities	Commodities	Commodities	MSCI Europe	US 2yr	MSCI China	US 2yr



Risk Off

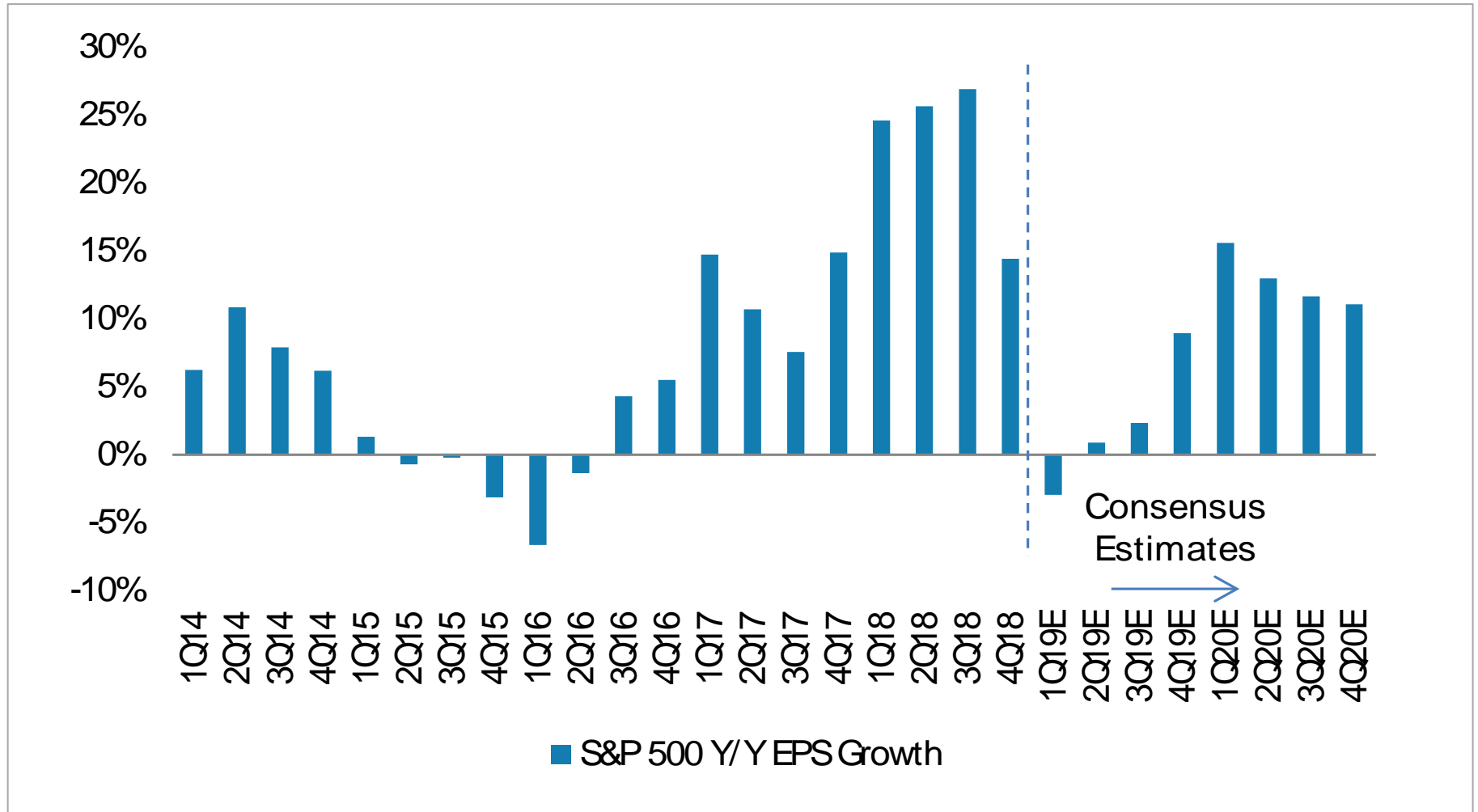


Risk On

Source: Morgan Stanley & Co. Research as of April 1, 2019

Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Please refer to important information, disclosures and qualifications at the end of this material.

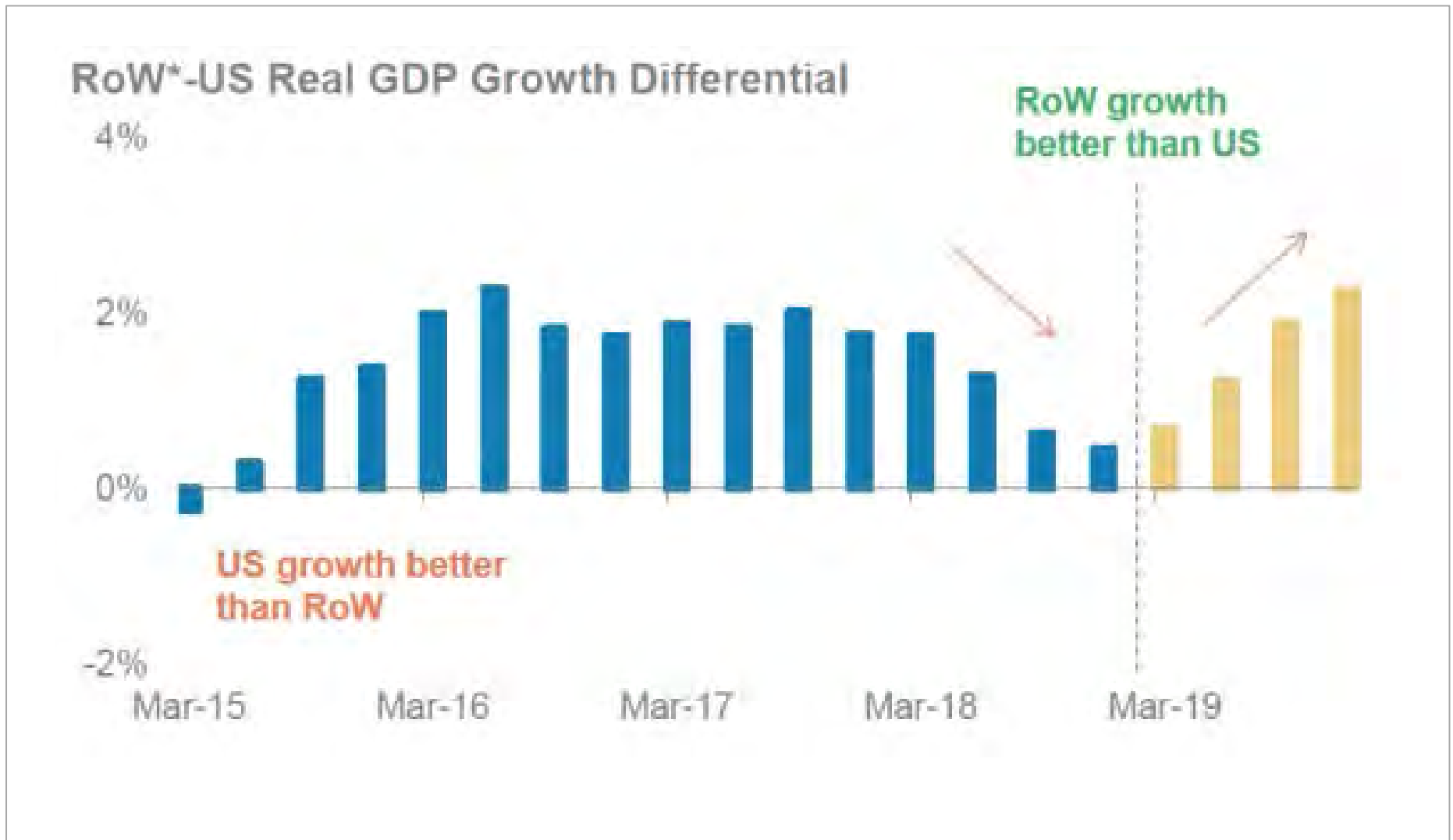
Consensus Now Expects the Earnings Recession to End as Quickly as It Arrives



Source: Thomson Financial, Morgan Stanley & Co. Research as of March 29, 2019

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Growth Is Expected to Be Better Outside of the US Going Forward



Source: Haver Analytics, Morgan Stanley & Co. Research forecasts; Note: RoW includes all countries under Morgan Stanley & Co. Research Coverage. Yellow bars represent Morgan Stanley & Co. forecasts. Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Please refer to important information, disclosures and qualifications at the end of this material.

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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.

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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.

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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; Risks associated with the operations, personnel, and processes of the manager; and Risks associated with cybersecurity. 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

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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 Wealth Management and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley Wealth Management or any of its affiliates, (3) are not guaranteed by Morgan Stanley Wealth Management and its affiliates, and (4) involve investment risks, including possible loss of principal. 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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.

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Indices are unmanaged and investors cannot directly invest in them. They are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Composite index results are shown for illustrative purposes only, generally do not represent the performance of a specific investment, may not, for a variety of reasons, be a suitable comparison or benchmark for a particular investment and may not necessarily reflect the actual investment strategy or objective of a particular investment. Consequently, comparing an investment to a particular index may be of limited use.

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For index, indicator and survey definitions referenced in this report please visit the following: <https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions>

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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The Consulting Group Capital Markets Funds, Firm Discretionary UMA Model Portfolios, and other asset allocation or any other model portfolios discussed in this material are available only to investors participating in Morgan Stanley Consulting Group advisory programs. Depending upon which advisory program you choose, you will pay an asset-based wrap fee every quarter ("the Fee"), which may be up to 2.0% annually. In general, the Fee covers investment advisory services, the execution of transactions through Morgan Stanley, custody of the client's assets with Morgan Stanley, and reporting. In addition to the Fee, you will pay the fees and expenses of any funds in which your account is invested. Fund fees and expenses are charges directly to the pools of assets the fund invests in and are reflected in each fund's share price. These fees and expenses are an additional cost to you and will not be included in the Fee amount in your account statements. For additional information on the Morgan Stanley Consulting Group advisory programs, see the applicable ADV brochure, available at www.morganstanley.com/ADV or from your Morgan Stanley Financial Advisor or Private Wealth Advisor. To learn more about the Consulting Group Capital Markets Funds, visit the Funds' website at www.morganstanley.com/cgcm. Consulting Group is a business of Morgan Stanley.

TRAK CGCM Program Asset Allocation Models There are model portfolios corresponding to five risk-tolerance levels available in the TRAK CGCM program. Model 1 is the least aggressive portfolio and consists mostly of bonds. As the model numbers increase, the models have higher allocations to equities and become more aggressive. **TRAK CGCM** is a mutual fund asset allocation program. In constructing the TRAK CGCM Program Model Portfolios, Morgan Stanley Wealth Management uses, among other things, model asset allocations produced by Morgan Wealth Management's Global Investment Committee (the "GIC"). The TRAK CGCM Program Model Portfolios are specific to the TRAK CGCM program (based on program features and parameters, and any other requirements of Morgan Stanley Wealth Management's Consulting Group). The TRAK CGCM Program Model Portfolios may therefore differ in some respects from model portfolios available in other Morgan Stanley Wealth Management programs or from asset allocation models published by the Global Investment Committee.

529 Plans - Investors should carefully read the Program Disclosure statement, which contains more information on investment options, risk factors, fees and expenses, and possible tax consequences before purchasing a 529 plan. You can obtain a copy of the Program Disclosure Statement from the 529 plan sponsor or your Financial Advisor. Assets can accumulate and be withdrawn federally tax-free only if they are used to pay for qualified expenses. Earnings on nonqualified distributions will be subject to income tax and a 10% federal income tax penalty. Contribution limits vary by state. Refer to the individual plan for specific contribution guidelines. Before investing, investors should consider whether tax or other benefits are only available for investments in the investor's home state 529 college savings plan. If an account owner or the beneficiary resides in or pays income taxes to a state that offers its own 529 college savings or pre-paid tuition plan (an "In-State Plan"), that state may offer state or local tax benefits. These tax benefits may include deductible contributions, deferral of taxes on earnings and/or tax-free withdrawals. In addition, some states waive or discount fees or offer other benefits for state residents or taxpayers who participate in the In-State Plan. An account owner may be denied any or all state or local tax benefits or expense reductions by investing in another state's plan (an "Out-of-State Plan"). In addition, an account owner's state or locality may seek to recover the value of tax benefits (by assessing income or penalty taxes) should an account owner rollover or transfer assets from an In-State Plan to an Out-of-State Plan. While state and local tax consequences and plan expenses are not the only factors to consider when investing in a 529 Plan, they are important to an account owner's investment return and should be taken into account when selecting a 529 plan.

Lifestyle Advisory Services: Products and services are provided by third party service providers, not Morgan Stanley Smith Barney LLC ("Morgan Stanley"). Morgan Stanley may not receive a referral fee or have any input concerning such products or services. There may be additional service providers for comparative purposes. Please perform a thorough due diligence and make your own independent decision.

To obtain **Tax-Management Services**, a client must complete the Tax-Management Form, and deliver the signed form to Morgan Stanley. For more information on Tax-Management Services, including its features and limitations, please ask your Financial Advisor for the Tax Management Form. Review the form carefully with your tax advisor. Tax-Management Services: (a) apply only to equity investments in separate account sleeves of client accounts; (b) are not available for all accounts or clients; and (c) may adversely impact account performance. Tax-management services do not constitute tax advice or a complete tax-sensitive investment management program. There is no guarantee that tax-management services will produce the desired tax results.

Morgan Stanley Smith Barney LLC does not accept appointments nor will it act as a trustee but it will provide access to trust services through an appropriate third-party corporate trustee.

A **LifeView Financial Goal Analysis or LifeView Financial Plan ("Financial Plan")** is based on the methodology, estimates, and assumptions, as described in your report, as well as personal data provided by you. It should be considered a working document that can assist you with your objectives. Morgan Stanley Smith Barney LLC ("Morgan Stanley") makes no guarantees as to future results or that an individual's investment objectives will be achieved. The responsibility for implementing, monitoring and adjusting your financial goal analysis or financial plan rests with you. After your Financial Advisor delivers your report to you, if you so desire, your Financial Advisor can help you implement any part that you choose; however, you are not obligated to work with your Financial Advisor or Morgan Stanley.

Since **life and long-term care insurance** are medically underwritten, you should not cancel your current policy until your new policy is in force. A change to your current policy may incur charges, fees

and costs. A new policy will require a medical exam. Surrender charges may be imposed and the period of time for which the surrender charges apply may increase with a new policy. You should consult with your own tax advisors regarding your potential tax liability on surrenders.

The Morgan Stanley Global Impact Funding Trust, Inc. ("MS GIFT, Inc.") is an organization described in Section 501(c) (3) of the Internal Revenue Code of 1986, as amended. MS Global Impact Funding Trust ("MS GIFT") is a donor-advised fund. Morgan Stanley Smith Barney LLC provides investment management and administrative services to MS GIFT.

Margin Loans are investment products offered through Morgan Stanley Smith Barney LLC. Margin Loans are securities based loans, which can be risky, and are not suitable for all investors. **Liquidity Access Line ("LAL")** is a securities based loan/line of credit product, the lender of which is either Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A., as applicable, each an affiliate of Morgan Stanley Smith Barney LLC. **Tailored Lending** is a loan/line of credit product offered by Morgan Stanley Private Bank, National Association, an affiliate of Morgan Stanley Smith Barney LLC.

Express CreditLine ("ECL") is a securities based loan/line of credit product offered by Morgan Stanley Smith Barney LLC. A Tailored Lending credit facility may be a committed or demand loan/line of credit. All LAL and Tailored Lending loans/lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Private Bank, National Association (or, for LAL, Morgan Stanley Bank, N.A., as applicable). All ECL loans/lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Smith Barney LLC. LAL, Tailored Lending and ECL loans/lines of credit may not be available in all locations. Rates, terms, and programs are subject to change without notice. In conjunction with establishing an LAL loan/line of credit, an LAL facilitation account will also be opened in the client's name at Morgan Stanley Smith Barney LLC at no charge. Other restrictions may apply. The information contained herein should not be construed as a commitment to lend. Morgan Stanley Private Bank, National Association and Morgan Stanley Bank, N.A. are Members FDIC that are primarily regulated by the Office of the Comptroller of the Currency.

Important Risk Information for Securities Based Lending: You need to understand that: (1) Sufficient collateral must be maintained to support your loan(s) and to take future advances; (2) You may have to deposit additional cash or eligible securities on short notice; (3) Some or all of your securities may be sold without prior notice in order to maintain account equity at required maintenance levels. You will not be entitled to choose the securities that will be sold. These actions may interrupt your long-term investment strategy and may result in adverse tax consequences or in additional fees being assessed; (4) Morgan Stanley Bank, N.A., Morgan Stanley Private Bank, National Association or Morgan Stanley Smith Barney LLC (collectively referred to as "Morgan Stanley") reserves the right not to fund any advance request due to insufficient collateral or for any other reason except for any portion of a securities based loan that is identified as a committed facility; (5) Morgan Stanley reserves the right to increase your collateral maintenance requirements at any time without notice; and (6) Morgan Stanley reserves the right to call securities based loans at any time and for any reason. With the exception of a margin loan, the proceeds from securities based loan products may not be used to purchase, trade, or carry margin stock (or securities, with respect to Express CreditLine); repay margin debt that was used to purchase, trade or carry margin stock (or securities, with respect to Express CreditLine); and cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account. To be eligible for a securities based loan, a client must have a brokerage account at Morgan Stanley Smith Barney LLC that contains eligible securities, which shall serve as collateral for the securities based loan.

Residential mortgage loans/home equity lines of credit are offered by Morgan Stanley Private Bank, National Association, an affiliate of Morgan Stanley Smith Barney LLC. With the exception of the pledged-asset feature, an investment relationship with Morgan Stanley Smith Barney LLC does not have to be established or maintained to obtain the residential mortgage products offered by Morgan Stanley Private Bank, National Association. All residential mortgage loans/home equity lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Private Bank, National Association. Rates, terms, and programs are subject to change without notice. Residential mortgage loans/home equity lines of credit may not be available in all states; not available in Guam, Puerto Rico and the U.S. Virgin Islands. Other restrictions may apply. The information contained herein should not be construed as a commitment to lend. Morgan Stanley Private Bank, National Association is an Equal Housing Lender and Member FDIC that is primarily regulated by the Office of the Comptroller of the Currency. Nationwide Mortgage Licensing System Unique Identifier #663185. The proceeds from a residential mortgage loan (including draws and advances from a home equity line of credit) are not permitted to be used to purchase, trade, or carry eligible margin stock; repay margin debt that was used to purchase, trade, or carry margin stock; or to make payments on any amounts owed under the note, loan agreement, or loan security agreement; and cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account.

Interest-only loans enable borrowers to make monthly payments of only the accrued monthly interest on the loan during the introductory interest-only period. Once that period ends, borrowers must make monthly payments of principal and interest for the remaining loan term, and payments will be substantially higher than the interest-only payments. During the interest-only period, the total interest that the borrower will be obligated to pay will vary based on the amount of principal paid down, if any. If a borrower makes just an interest-only payment, and no payment of principal, the total interest payable by the borrower during the interest-only period will be greater than the total interest that a borrower would be obligated to pay on a traditional loan of the same interest rate having principal-and-interest payments. In making comparisons between an interest-only loan and a traditional loan, borrowers should carefully review the terms and conditions of the various loan products

available and weigh the relative merits of each type of loan product appropriately. A **conforming loan** means a residential mortgage loan offered by Morgan Stanley Private Bank, National Association that is saleable to Fannie Mae or Freddie Mac because it conforms to these entities' guidelines, including, for example, loan amount limits that range from \$424,000 to \$636,150 for one unit properties, depending on location (and even higher in Hawaii). Through the **pledged-asset feature** offered by Morgan Stanley Private Bank, National Association, the applicant(s) or third party pledgor (collectively "Client") may be able to pledge eligible securities in lieu of a full or partial cash down payment or in connection with a refinance mortgage loan. To be eligible for the pledged-asset feature a Client must have a brokerage account at Morgan Stanley Smith Barney LLC. If the value of the pledged securities in the account drops below the agreed-upon level stated in the loan documents, a Client may be required to deposit additional securities or other collateral (such as cash) to stay in compliance with the terms of the mortgage loan. If a Client does not deposit additional securities or other collateral, the Client's pledged securities may be sold to satisfy the Client's obligation, and the Client will not be entitled to choose which assets will be sold. Thus in deciding whether the pledged-asset feature is appropriate, a Client should consider the degree to which he or she is comfortable subjecting his or her investment in a home to the fluctuations of the securities market. The pledged-asset feature is not available in all states. Other restrictions may apply.

Relationship-based pricing offered by Morgan Stanley Private Bank, National Association is based on the value of clients', or their immediate family members' (i.e., grandparents, parents, and children) eligible assets (collectively "Household Assets") held within accounts at Morgan Stanley Smith Barney LLC. To be eligible for relationship-based pricing, Household Assets must be maintained within appropriate eligible accounts prior to the closing date of the residential mortgage loan. Relationship-based pricing is not available on conforming loans. **3/1, 5/1, 7/1, 10/1 adjustable rate mortgage ("ARM") loans** are based on the 1-Year London Interbank Offered Rate ("LIBOR") with various loan term options.

1-Month Interest only ARM loan is based on 1-Month LIBOR. 1-Month Interest only ARM loan is not available in Maine. The Active Assets Account is a brokerage account offered through Morgan Stanley Smith Barney LLC. The **Morgan Stanley Mobile App** is currently available for iPhone® and iPad® from the App StoreSM and AndroidTM on Google PlayTM. Standard messaging and data rates from your provider may apply. The **Morgan Stanley Credit Card** from American Express or the Platinum Card® from American Express exclusively for Morgan Stanley is only available for clients who have an eligible Morgan Stanley Smith Barney LLC brokerage account ("eligible account"). Eligible account means a Morgan Stanley Smith Barney LLC brokerage account held in your name or in the name of a revocable trust where the client is the grantor and trustee, except for the **following** accounts: Charitable Remainder Annuity Trusts, Charitable Remainder Unitrusts, irrevocable trusts and employer-sponsored accounts. Eligibility is subject to change. American Express may cancel your Card Account and participation in this program, if you do not maintain an eligible account. Morgan Stanley Smith Barney LLC may compensate your Financial Advisor and other employees in connection with your acquisition or use of either the Morgan Stanley Credit Card from American Express or the Platinum Card® from American Express exclusively for Morgan Stanley. The **Morgan Stanley Cards from American Express** are issued by American Express Bank, FSB, not Morgan Stanley Smith Barney LLC. Services and rewards for the Cards are provided by Morgan Stanley Smith Barney LLC, American Express or other third parties. Restrictions and other limitations apply. See the terms and conditions for the Cards for details. Clients are urged to review fully before applying. The **Morgan Stanley Debit Card** is currently issued by UMB Bank, n.a., pursuant to a license from MasterCard International Incorporated. MasterCard and Maestro are registered trademarks of MasterCard International Incorporated. The third-party trademarks and service marks contained herein are the property of their respective owners.

Premier Cash Management is an incentive program that recognizes and rewards clients for choosing Morgan Stanley for their everyday cash management needs. Clients must meet certain criteria in order to qualify for the Premier Cash Management program, and Morgan Stanley Smith Barney LLC reserves the right to change or terminate the program at any time and without notice. Where appropriate, Morgan Stanley Smith Barney LLC has entered into arrangements with affiliated and non-affiliated parties to assist in offering certain products and services related to Premier Cash Management. Please refer to the Premier Cash Management Terms and Conditions for further details. Securities based loans are provided by Morgan Stanley Smith Barney LLC, Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A, as applicable.

Commercial Real Estate Financing is provided by Morgan Stanley Private Bank, National Association ("MSPBNA"). MSPBNA is a Member FDIC and an affiliate of Morgan Stanley Smith Barney LLC. Commercial Real Estate Financing loans are subject to the underwriting standards and independent approval of MSPBNA. Commercial Real Estate Financing loans may not be available in all locations. The proceeds from a Commercial Real Estate Financing loan cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account.

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