

Private Equity

An Important Alternative for Your Asset Allocation



The Alternative Investments Landscape: Private Equity

Contents

What is Private Equity?	What are Secondary Private Equity Transactions?
What Does the Private Equity Landscape Look Like Today?	How is Private Equity Performance Measured?
How Does Private Equity Differ from Traditional Investments?	What Qualities are Critical for Successful Private Equity Investing?
Why are Investors Interested in Private Equity?	Alternative Investment Manager Due Diligence at Morgan Stanley
In What Kinds of Companies Do Private Equity Funds Invest?	Our Private Equity Platform
What is the Lifecycle of a Typical Private Equity Investment?	Alternative Investments Eligibility

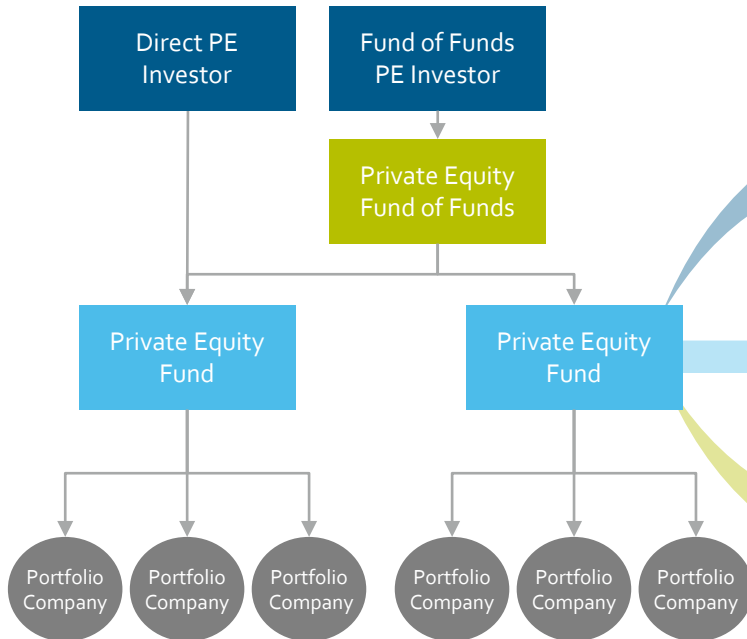
Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

What is Private Equity?

With investment opportunities, generally in privately held companies, that are not available through traditional public markets, private equity may offer both attractive long-term return potential and the opportunity for diversification through historically low correlation to traditional strategies.

DIRECT FUNDS VS. FUND OF FUNDS



MEANS OF PRIVATE EQUITY ACCESS



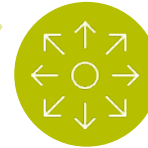
Primary Funds

Private equity funds are typically based on a 'GP-LP' structure, whereby investors (the limited partners, or LPs) commit funds to the private equity fund (the general partner, or GP). The GP pools LP commitments and draws down capital to invest in underlying assets. Once the investments are realized, capital distributions are made back to the LPs.



Secondary Funds

Secondary transactions refer to the buying and selling of pre-existing limited partnership interests in private equity funds. The purchasing of secondary fund interests provides several benefits to investors, including mitigation of the J-curve and manager diversification.



Co-investments

Invest alongside GPs in individual deals which are typically offered to larger existing LPs in the fund. Co-investments are increasingly prevalent in the current market environment where investors see the benefit of investing in single direct deals.

Source: Morgan Stanley Wealth Management GIMA. Note: These investments are only appropriate for long-term investors willing to forgo liquidity and put capital at risk for an indefinite time. Since direct private equity and fund of funds invest over multiple years, vintage year diversification is achieved. Vintage year is defined as the first year that a private equity fund draws down or "calls" committed capital. Private equity valuations are generally estimates until there is a realization event.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

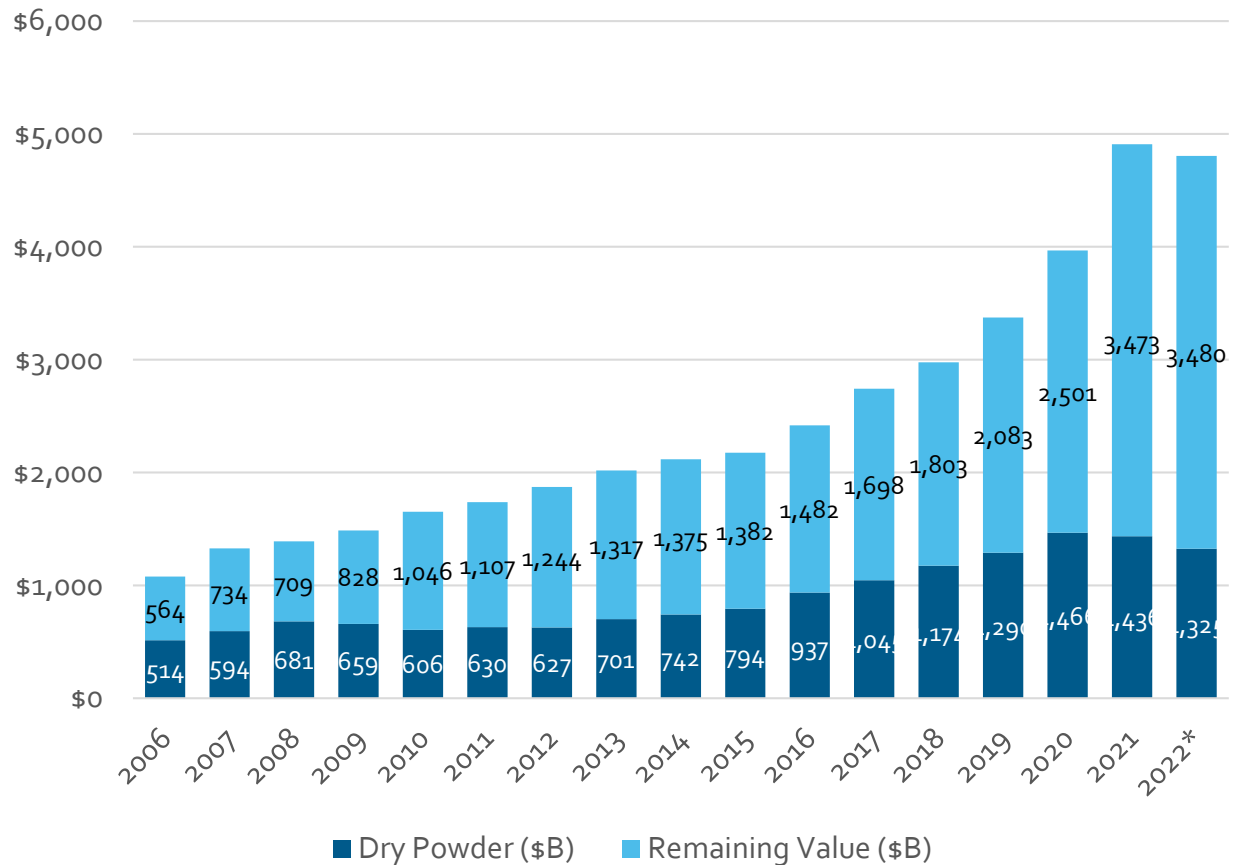
What Does the Private Equity Landscape Look Like Today?

THE RISE IN PRIVATE EQUITY

- While private equity has been a source of investment capital for decades, it has been expanding rapidly over the past several years.
- The private equity industry is now a large, global and developed industry. Its popularity is evident in the growth in PE assets under management (AUM), as shown in the graph, which combines the amount of new funds committed to future private equity investments (dry powder), and the amount invested in private equity (unrealized value).
- As illustrated in the graph, global private equity AUM has grown to a record \$4.8 trillion as of December 2022.
- Along with other alternative investments, the private equity industry has evolved to include a variety of strategies, and now appeals to a greater variety of investors as a result.

PRIVATE EQUITY ASSETS UNDER MANAGEMENT HAVE SOARED¹

As of December 31, 2022 (\$ in billions)



¹ PitchBook. *Data as of December 31, 2022 and includes global buyout, growth equity and venture capital. Inc. Morgan Stanley Wealth Management GIMA.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

How Does Private Equity Differ from Traditional Investments?

Unlike the stocks of publicly owned companies, private equity is not subject to day-to-day market fluctuations. As a result, private equity managers can invest the capital that you provide with a longer-term time frame that offers the potential to ride out difficult markets, build revenues and exit the investment via strategic sale or initial public offering at a more advantageous time.

DRIVERS OF ALPHA	PUBLIC MARKETS	PRIVATE MARKETS	WHY DOES IT MATTER?
Random events	✓	✓	
Manager skill	✓	✓	
Company selection	✓	✓	Picking the best portfolio companies is a key skill for successful managers
Incentive alignment		✓	GP investment alongside LPs ensures that both parties' interests are aligned
Access to better information		✓	GPs generally have more information for their privately held companies than they would as public market investors
Long-term perspective		✓	GPs generally don't have quarterly pressure to report strong earnings to the market and can instead focus on making necessary long-term improvements
Capital structure improvement		✓	GPs typically have the ability to pay down or take on debt, refinance, or issue equity
Strategic influence		✓	GPs are often able to set and improve the strategic direction of a portfolio company's management team
Ability to drive improvement		✓	GPs are often able to find efficiencies and synergies that improve the value of the underlying company

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

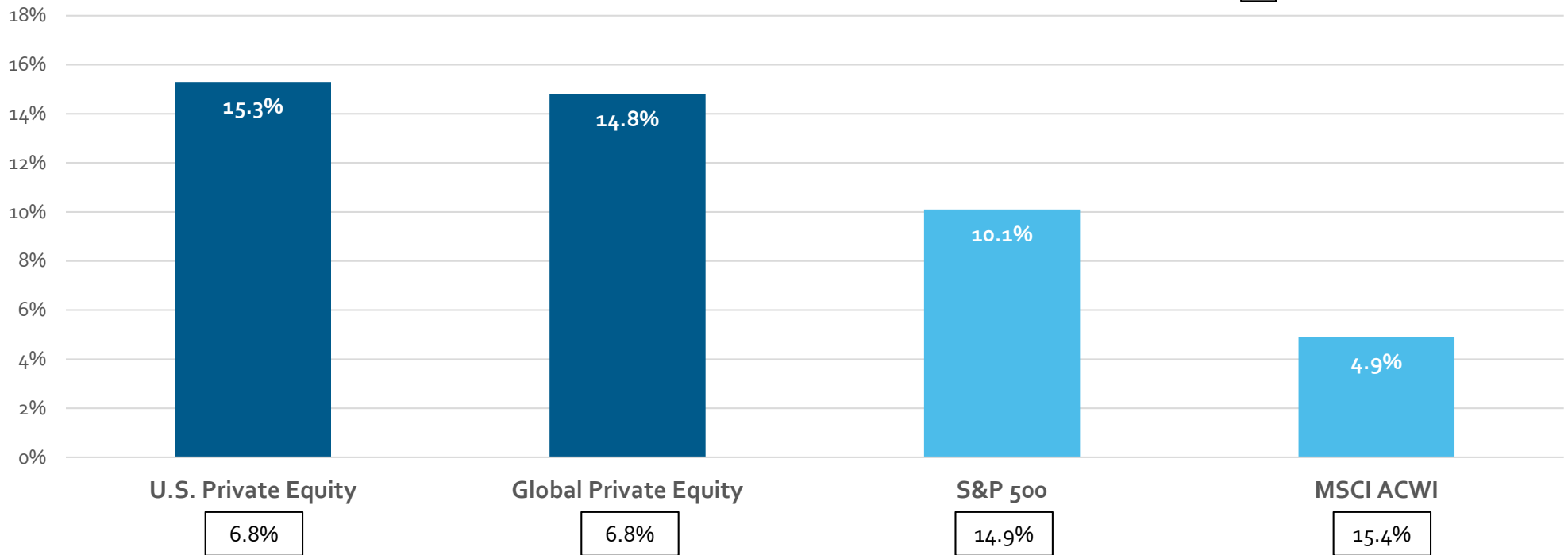
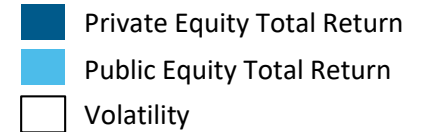
Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy.

Why are Investors Interested in Private Equity?

Private equity has historically offered attractive long-term returns vs. public equity markets. Investors have been rewarded for taking on less liquidity.

PRIVATE EQUITY¹ VS. PUBLIC EQUITY: (1990 - 2023)

Annualized Total Returns as of March 31, 2023²



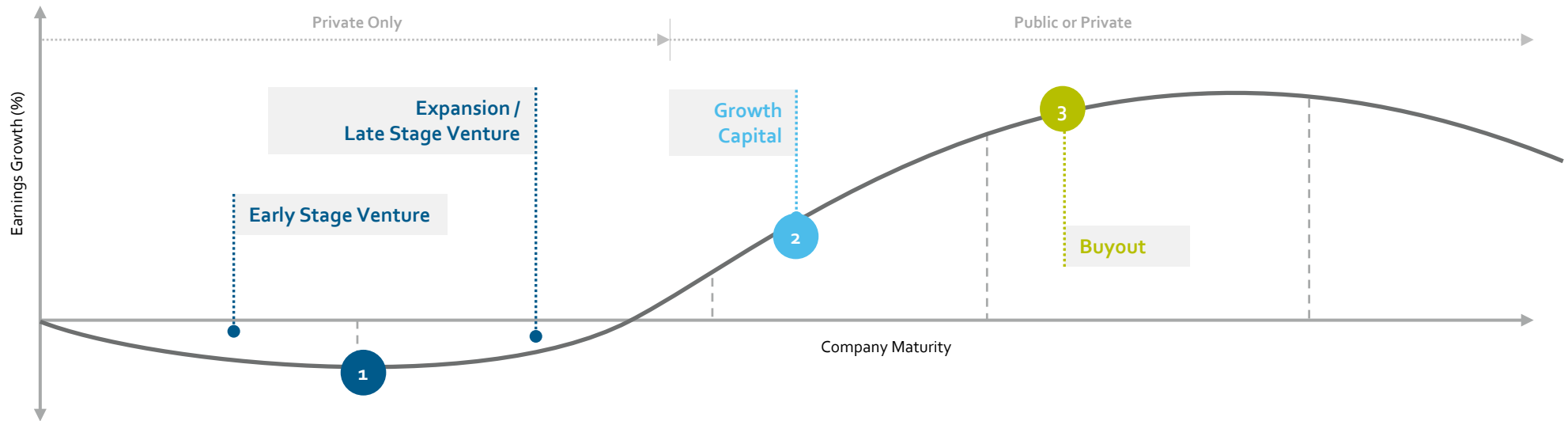
Source: FactSet, Morgan Stanley Wealth Management. (1) US Private Equity Index Data: The Cambridge Associates Private Equity Index tracks the returns of buyout and growth equity. The data is updated quarterly using the Cambridge Associates Benchmark Calculator, with a lag of several months. Global Private Equity sourced from Cambridge Associates Private Equity Index Total Return Index and includes buyout and growth equity. (2) US and Global Private Equity data subject to 5-month lag; therefore, all asset classes are depicted as of displayed date for consistency. Private equity returns are net to limited partners. MSCI ACWI returns are based off of price, not total return in order to get a full data set starting in 1990.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

In What Kinds of Companies Do Private Equity Funds Invest?

Private equity draws value from all stages of the company lifecycle:



1. Venture Capital

- Seed or start-up equity in private companies that may not be generating revenue or profits, pre-IPO
- Most often found in the application of new technology, new marketing concepts and new products
- Often sub-divided by the stage of development, ranging from early-stage to late-stage venture

2. Growth Capital

- Equity investments in companies to provide funding for growth and expansion
- Usually provided to later-stage companies with products and services that are already generating significant revenue
- Companies that seek growth capital will often do so in order to finance transformative events in their life cycle

3. Buyout

- Equity investments to acquire a controlling interest in a company, typically with the use of financial leverage
- Usually categorized from small/mid to large/mega capitalization funds
- Investors in buyout strategies are interested in more mature companies with demonstrated cash flow

Source: Morgan Stanley Wealth Management GIMA.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

What is the Lifecycle of a Typical Private Equity Investment?

The J-curve illustrates the tendency of private equity funds to deliver negative returns in early years and investment gains in later years. In the early years, fund fees and expenses are incurred before investments have had time to mature and accrete value. As investments are realized and expenses are amortized over a greater time period, funds typically exit the J-curve.

1. Portfolio Construction
(Investment / Commitment Phase)

The private investment lifecycle begins with investors, or a Limited Partner (LP), making a capital commitment to a fund
Once a fund is closed to new commitments, the General Partner (GP) will begin to allocate capital to appropriate investments

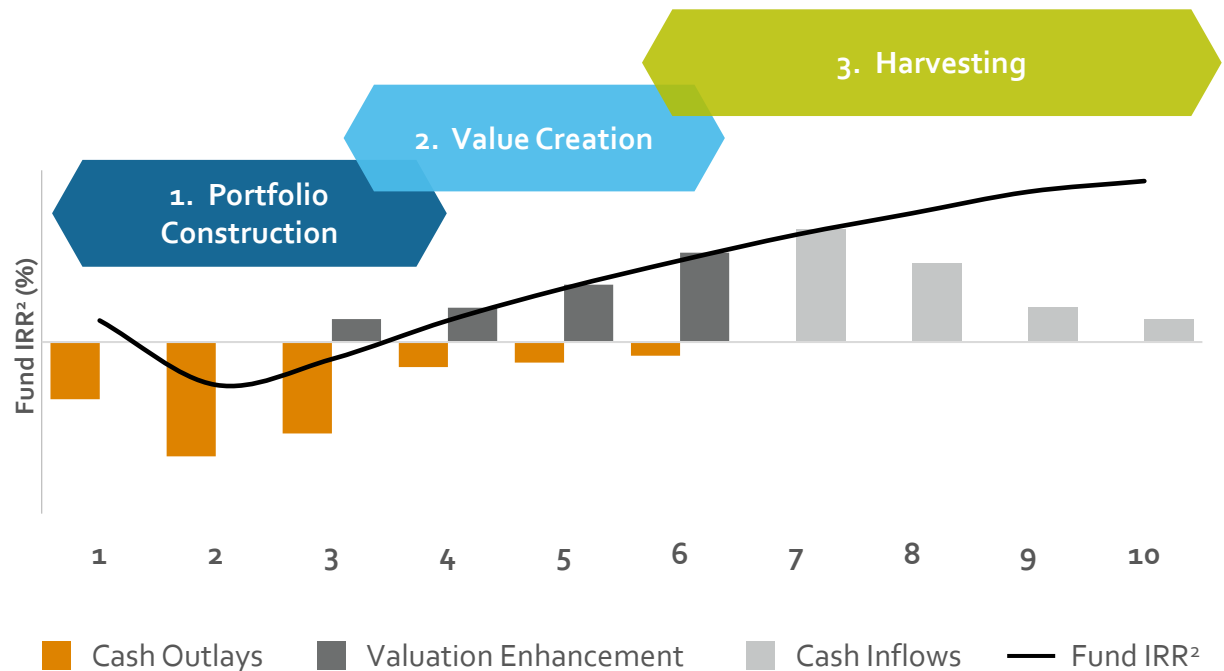
2. Value Creation

Upon making an investment, the goal of the GP is to effect change on each company; during the value creation phase, the GP provides active support through various strategic improvements such as revenue enhancements and cost reductions

3. Harvesting
(Distribution Phase)

As investments mature, the GP shifts more into "harvest" mode where the GP actively seeks to monetize investments and return capital to investors in the form of principal and capital gains

HYPOTHETICAL ILLUSTRATION OF THE J-CURVE¹

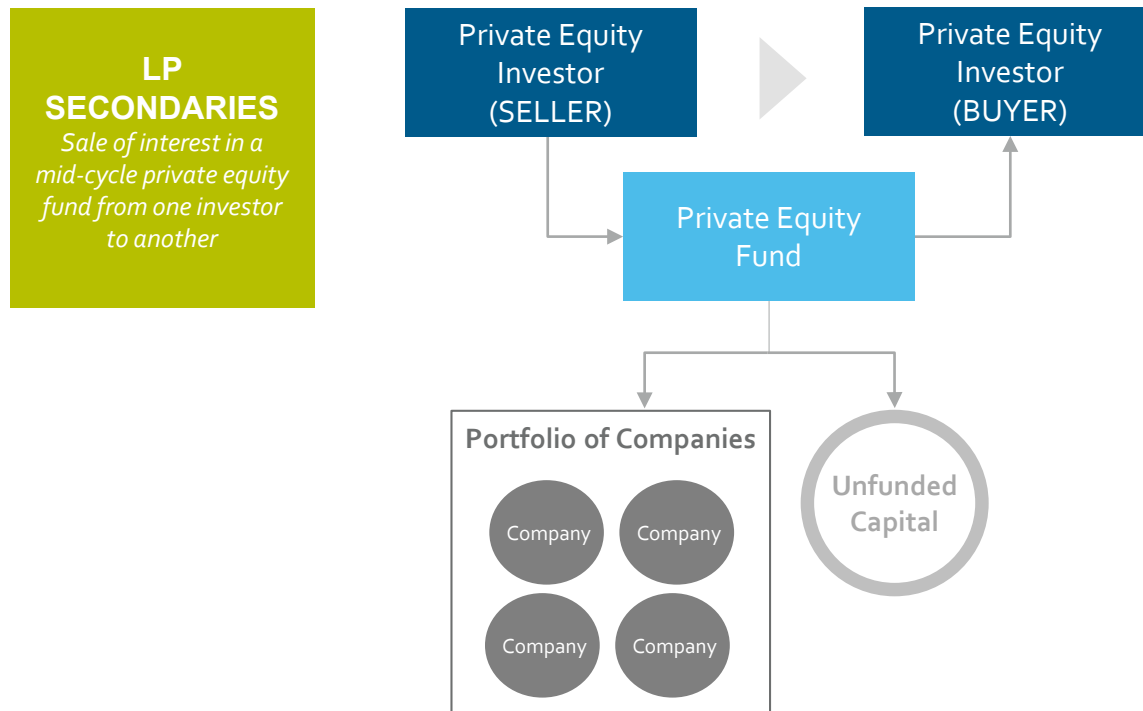


Source: Morgan Stanley Wealth Management GIMA. For illustrative purposes only.

- The J-curve effect refers to a "J" shaped section of a time-series graph in which the curve falls into negative territory and then gradually rises to a higher level than before the decline.
 - Internal rate of return (IRR), a metric used in capital budgeting, measures profitability of potential investments. IRR is a discount rate that makes the net present value (NPV) of all cash flows from a project equal to zero.
- Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.
- 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.

What are Secondary Private Equity Transactions?

In recent years, the secondary market for private equity fund limited partnership interests has deepened. As a result, a number of private equity funds dedicated to the acquisition of secondary interests has proliferated.



LP SECONDARIES

Sale of interest in a mid-cycle private equity fund from one investor to another

WHY SECONDARY PRIVATE EQUITY?

"J-Curve" Mitigation

Secondaries are typically purchased after a private equity fund has invested a substantial portion of its capital and entered its value creation phase. That means secondary private equity investors may experience earlier capital distributions with a more evenly distributed pattern of returns, or smoothing of the J-curve, than primary private equity funds. Further, secondary interests are often purchased at a discount to Net Asset Value.

Reduced "Blind-pool Risk"

Investors in secondary funds possess information about its holdings, and managers of secondary private equity portfolios can examine and analyze existing funds and their respective portfolio companies.

Investment Strategies

Managers can diversify to a greater extent across a variety of factors, including strategy type, fund, manager and vintage. This diversification can benefit smaller investors who have not invested in, or do not have a long-term commitment to, private equity. Therefore, an investment in secondary private equity could promptly establish a core, diversified portfolio.

Source: Morgan Stanley Wealth Management GIMA. Note: These investments are only appropriate for long-term investors. Since direct private equity and fund of funds invest over multiple years, vintage year diversification is achieved. Vintage year is defined as the first year that a private equity fund draws down or "calls" committed capital. Private equity valuations are generally estimates until there is a realization event.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

How is Private Equity Performance Measured?

The two most common measures of performance are the Internal Rate of Return (IRR) and Multiple on Invested Capital (MOIC). Returns for private investments are typically calculated and stated not as the annual returns of any particular year, but as compounded returns from a certain year (typically, the year of formation of the fund) to the current reporting period. Unlike IRR, MOICs are not impacted by the timing of cash flows.

	DPI <i>Distributions to Paid-In Multiple</i>	RVPI <i>Residual Value to Paid-In Multiple</i>	TVPI <i>Total Value to Paid-In Multiple</i>	IRR <i>Internal Rate of Return</i>
How it's calculated	$\frac{\text{Cumulative Distributions}}{\text{Paid-In Capital}}$	$\frac{\text{Residual Value}}{\text{Paid-in Capital}}$	$\frac{(\text{Cumulative Distributions} + \text{Residual Value})}{\text{Paid-In Capital}}$	$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$
Why it matters	Shows how much of the fund has been realized, or paid out, to investors.	Shows how much of the fund's return is yet unrealized and therefore how sensitive it is to market values.	TVPI is a core performance metric and shows the fund's total value as a multiple of an investor's cost basis. Its primary limitation is that while it tells an investor how much the investment returned as a function of dollars invested, it does not take into account how long it took to generate these returns.	IRR is the discount rate that sets the net present value of all cashflows related to the private equity investment to zero. It tells investors how much an investment returned while taking into account how long it took to generate the return.

CONSIDER THIS: Two private equity investments each return twice the total paid-in capital to investors. Private Equity Fund A took ten years to generate these returns, while Private Equity Fund B generated these returns in only 5 years. Both funds would have the same investment multiple (2.0X), but Fund B would have a higher IRR than Fund A.

Source: Morgan Stanley Wealth Management GIMA.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

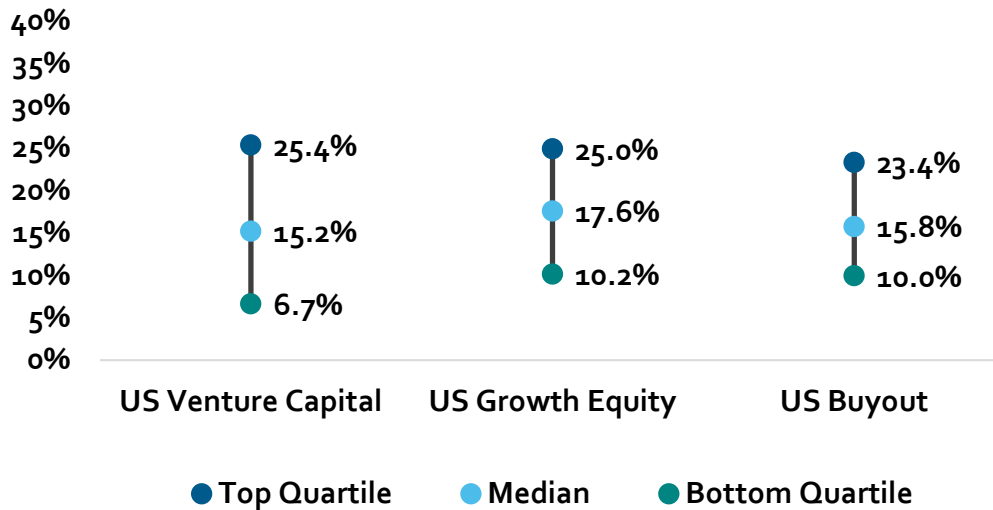
What Qualities are Critical for Successful Private Equity Investing?

Private investments, unlike other asset classes, are somewhat unique in that manager outperformance tends to be consistent without reversion to the mean. Due to the high dispersion between top and bottom quartile performing funds, manager selection is critical when choosing private investments, as is diversification across vintage years.

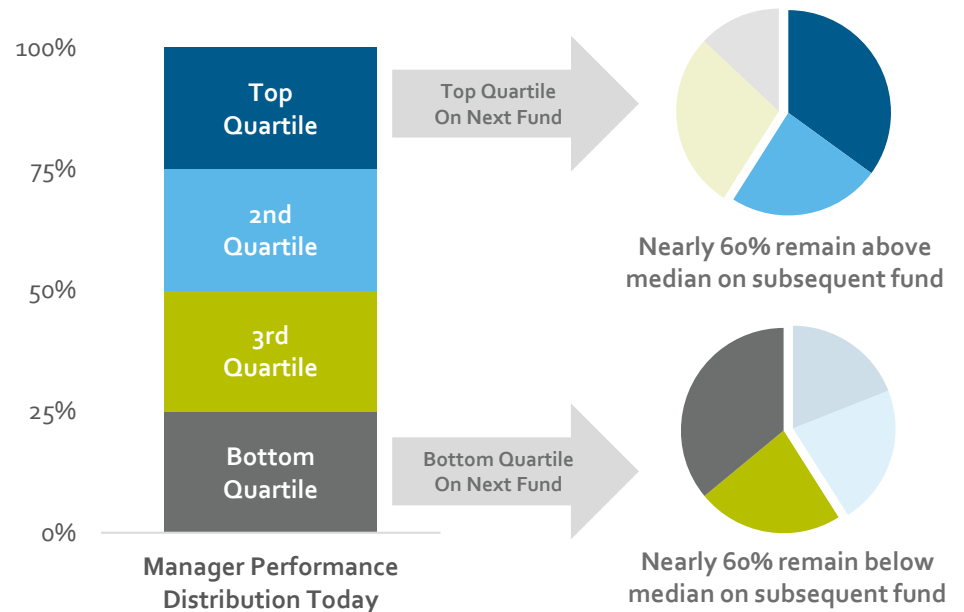
WIDE PERFORMANCE DISPERSION MAKES MANAGER SELECTION CRITICAL...

Private Equity Median Net IRRs¹ and Quartile Boundaries by Vintage Year²

As of March 31, 2023, For Vintage Years 2005-2019



... WHICH IS FURTHER REINFORCED BY PERSISTENCE OF RETURNS³



Morgan Stanley Wealth Management GIMA; Private Equity index data sourced from Thomson ONE’s Cambridge Associates benchmarking database. Private Equity is represented by Buyout, Growth Equity, Mezzanine, and Private Equity Energy. Private equity returns are net to limited partners. Performance illustrated does not reflect fees or expenses, actual investor returns would be lower if these were deducted. Investors cannot invest directly in an index. (1) Internal rate of return (IRR) is a metric used in capital budgeting measuring the profitability of potential investments. IRR is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. The structure of PE means that funds of those vintage years are still in the early stages of the investment period, so performance is not very indicative of what ultimately will be around a 10-year fund. (2) Vintage year is defined as the first year that a private equity fund draws down or “calls” committed capital. Many returns may still be negative because of the J-curve effect. The J-curve effect refers to a “J” shaped section of a time-series graph in which the curve falls into negative territory and then gradually rises to a higher level than before the decline. (3) Morgan Stanley Wealth Management GIMA, Blackstone; Steven N. Kaplan, Robert S. Harris, Tim Jenkinson, Rudiger Stucker, “Has Persistence Persisted in Private Equity? Evidence from Buyout and Venture Capital Funds,” (February 2014). Darden Business School Paper: 2304808. Vintages from 1984-2008; more recent vintages may still be investing and have few realizations.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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.

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.

Alternative Investment Manager Due Diligence at Morgan Stanley

The Global Investment Manager Analysis (GIMA) team engages with a broad array of investment managers to identify high-quality strategies for your portfolio. Before managers are selected for inclusion on the platform, GIMA employs a thorough and rigorous due diligence process.

IDENTIFYING HIGH-QUALITY MANAGERS

~35 investment and operational due diligence analysts provide product-agnostic advice

Decisions are governed by experienced committee(s)

Funds are continuously evaluated to reaffirm manager conviction

RIGOROUS MANAGER ANALYSIS



~7% OF FUNDS REVIEWED ANNUALLY MEET OUR HIGHEST STANDARDS

~200 ALTERNATIVE FUNDS OPEN FOR INVESTMENT

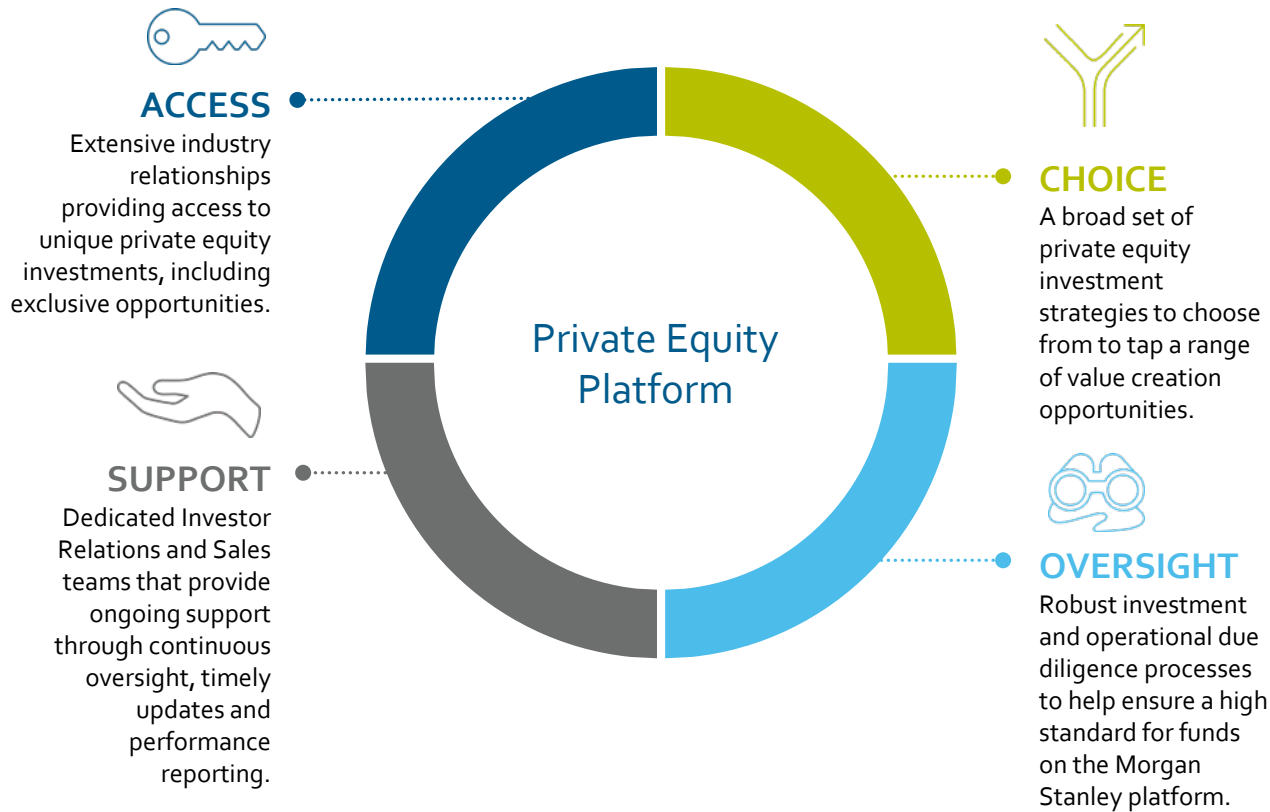
Source: Morgan Stanley Wealth Management Global Investment Manager Analysis. As of December 31, 2023.

Includes offerings available broadly on the platform. A majority of investments reviewed and selected by GIMA pay or cause to be paid an ongoing fee to Morgan Stanley Wealth Management in connection with Morgan Stanley Wealth Management clients that purchase such investments. Please see the disclosures at the end of this presentation for more information.

Alternative Investments are not appropriate for all investors and are only available to qualified investors. 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.

Our Private Equity Platform

Private equity funds may offer both attractive long-term return potential and the opportunity for diversification, as private equity historically has a low correlation to public markets.



PLATFORM OVERVIEW

Offerings

Morgan Stanley offers a broad selection of private equity funds through an open architecture platform of proprietary and nonproprietary managers specializing in a wide variety of strategies:

- Morgan Stanley Investment Management direct and multi-manager investment funds
- Third-Party Managers

Investment types

- Single Manager Private Equity Funds (Primary Investment and Co-investment Opportunities)
- Funds of Private Equity Funds (Primary Investment, Secondary Opportunities and Co-investment Opportunities)

Investment strategies

- Venture Capital
- Growth Equity
- Buyout
- Secondaries
- Co-investments

Source: Morgan Stanley Wealth Management Alternative Investments Group.

Private equity funds typically invest in securities, instruments, and assets that are not, and are not expected to become, publicly traded and therefore may require a substantial length of time to realize a return or fully liquidate. They typically have high management, performance and placement fees which can lower the returns achieved by 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 with significant lock-up periods and no secondary market, 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. Diversification does not assure a profit or protect against loss.

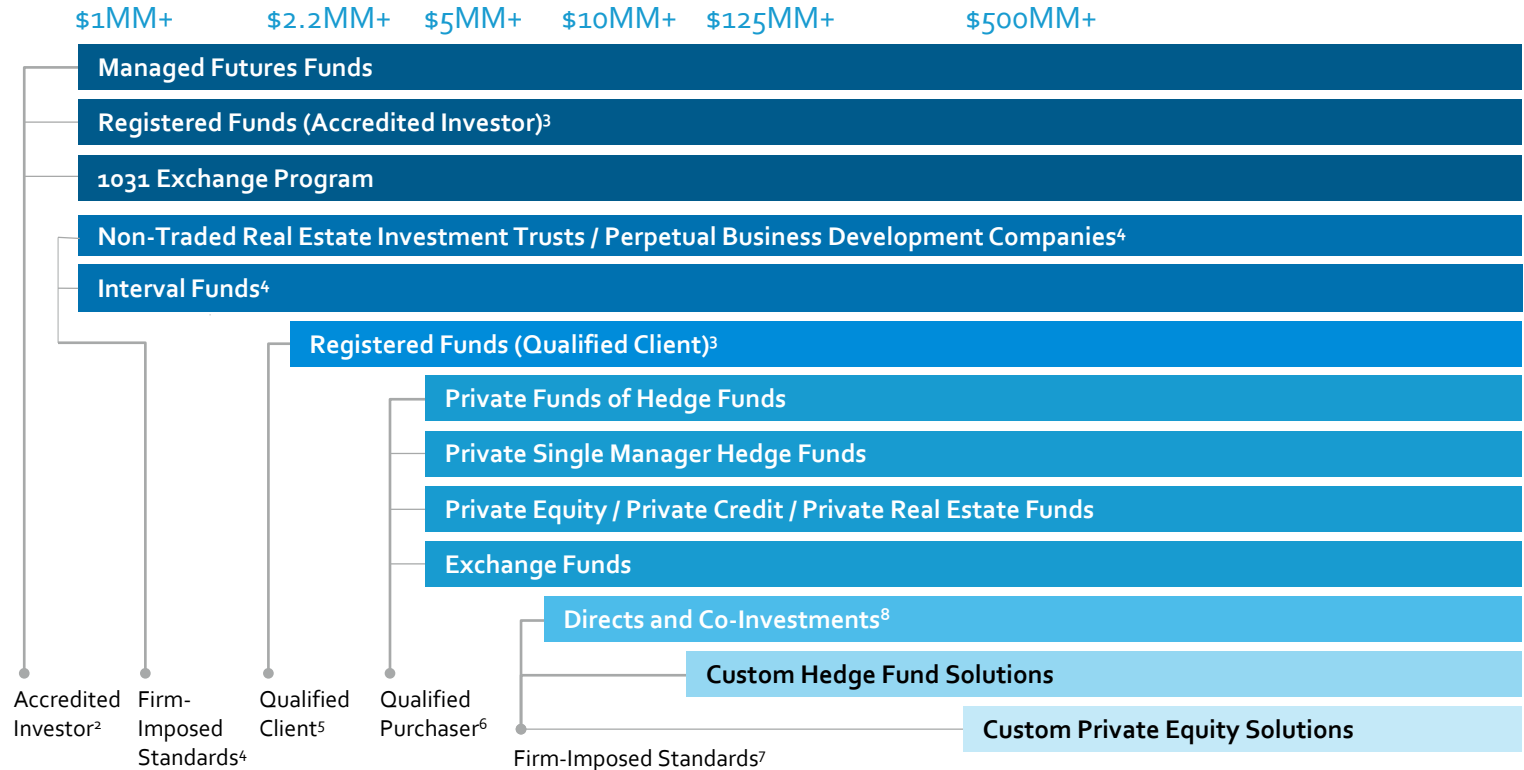
Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy.

Alternative Investments Eligibility

CLIENT NET WORTH/NET INVESTABLE ASSET MINIMUMS

Investors participating in alternative investments offered through Morgan Stanley must meet certain SEC and/or state standards depending on the structure of the fund or service. Morgan Stanley may impose a qualification standard that is higher than those required to meet SEC/state standards. Additionally, individual funds or services may have their own investment minimum and eligibility criteria.

Alternative investments are offered only to qualified investors. Client eligibility¹ to purchase alternative investments is typically based on the client's net worth, or as applicable, net investable assets, as shown:



1. Eligibility on its own does not satisfy all requirements and guidelines, nor does it imply appropriateness. Speak with your Financial Advisor or Private Wealth Advisor to help determine if alternative investments may be appropriate for you. Please see the Important Disclosures at the end of this publication for additional information and the applicable offering documents for specific eligibility requirements.
2. Funds that rely on an Accredited Investor standard generally require a minimum net worth of \$1 million for an individual (excluding primary residence), and \$5 million for an entity.
3. The specific Registered Fund structure will determine eligibility standards. Funds that rely on an Accredited Investor standard and/or a Qualified Client Standard generally include Registered Funds of Hedge Funds, Registered Single Manager Hedge Funds, Registered Private Equity Funds, Registered or Private Real Asset Funds and Private Business Development Companies.
4. Non-Traded Real Estate Investment Trusts and Perpetual Business Development Companies generally require a minimum net worth of \$1 million or income of \$200K and \$250K net worth for an individual, and \$5 million for an entity, and must meet specific liquid net worth requirements. Interval Funds generally require a minimum net worth of \$1 million or income of \$200K and \$250K net worth for an individual, and \$5 million for an entity. Please see applicable offering documents.
5. Funds that rely on a Qualified Client standard require an individual or entity to have a minimum net worth of \$2.2 million, exclusive of primary residence, or have at least \$1.1 million invested under management with the manager of the fund.
6. Funds that rely on a Qualified Purchaser standard must also meet Accredited Investor standards and require minimum net investable assets of \$5 million for an individual, and \$25 million for an entity.
7. In addition to meeting Accredited Investor and Qualified Purchaser standards, these funds are subject to firm-imposed higher eligibility standards.
8. Eligibility is reviewed on a case-by-case basis and is subject to change.

Alternative Investments are not appropriate for all investors and are only available to qualified investors. 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.

Morgan Stanley Wealth Management is the trade name of Morgan Stanley Smith Barney LLC, a registered broker-dealer in the United States.

The sole purpose of this material is to inform, and it in no way is intended to be an offer or solicitation to purchase or sell any security, other investment or service, or to attract any funds or deposits. Investments mentioned may not be appropriate for all clients. Any product discussed herein may be purchased only after a client has carefully reviewed the offering memorandum and executed the subscription documents. Morgan Stanley Wealth Management has not considered the actual or desired investment objectives, goals, strategies, guidelines, or factual circumstances of any investor in any fund(s). Before making any investment, each investor should carefully consider the risks associated with the investment, as discussed in the applicable offering memorandum, and make a determination based upon their own particular circumstances, that the investment is consistent with their investment objectives and risk tolerance. Morgan Stanley Smith Barney LLC offers investment program services through a variety of investment programs, which are opened pursuant to written client agreements. Each program offers investment managers, funds and features that are not available in other programs; conversely, some investment managers, funds or investment strategies may be available in more than one program.

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 appropriate 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 AlphaSM 2.0 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 appropriate 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 appropriate for all investors.

The proprietary **Value Score** methodology considers an active investment strategies' value proposition relative to its costs. From a historical quantitative study of several quantitative markers, Value Score measures perceived forward-looking benefit and computes (1) "fair value" expense ratios for most traditional investment managers across 40 categories and (2) managers' perceived "excess value" by comparing the fair value expense ratios to actual expense ratios. Managers are then ranked within each category by their excess value to assign a Value Score. Our analysis suggests that greater levels of excess value have historically corresponded to attractive subsequent performance.

For more information on the ranking models, please see Adverse Active AlphaSM 2.0: Scoring Active Managers According to Potential Alpha and Value Score: Scoring Fee Efficiency by Comparing Managers' "Fair Value" and Actual Expense Ratios. The whitepapers 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.

Additionally, highly ranked managers can have differing risk profiles that might not be appropriate 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. Generally, investment advisory accounts are subject to an annual asset-based fee (the "Fee") which is payable monthly in advance (some account types may be billed differently). In general, the Fee covers Morgan Stanley investment advisory services, custody of securities with Morgan Stanley, trade execution with or through Morgan Stanley or its affiliates, as well as compensation to any Morgan Stanley Financial Advisor.

In addition, each account that is invested in a program that is eligible to purchase certain investment products, such as mutual funds, will also pay a Platform Fee (which is subject to a Platform Fee offset) as described in the applicable ADV brochure. Accounts invested in the Select UMA program may also pay a separate Sub-Manager fee, if applicable.

If your account is invested in mutual funds or exchange traded funds (collectively "funds"), you will pay the fees and expenses of any funds in which your account is invested. Fees and expenses are charged directly to the pool 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 would not be included in the Fee amount in your account statements. The advisory program you choose is described in the applicable Morgan Stanley Smith Barney LLC ADV Brochure, available at www.morganstanley.com/ADV.

Morgan Stanley or Executing Sub-Managers, as applicable, in some of Morgan Stanley's Separately Managed Account ("SMA") programs may effect transactions through broker-dealers other than Morgan Stanley or our affiliates. In such instances, you may be assessed additional costs by the other firm in addition to the Morgan Stanley and Sub-Manager fees. Those costs will be included in the net price of the security, not separately reported on trade confirmations or account statements. Certain Sub-Managers have historically directed most, if not all, of their trades to outside firms. Information provided by Sub-Managers concerning trade execution away from Morgan Stanley is summarized at: www.morganstanley.com/wealth/investmentsolutions/pdfs/adv/sotresponse.pdf. For more information on trading and costs, please refer to the ADV Brochure for your program(s), available at www.morganstanley.com/ADV, or contact your Financial Advisor / Private Wealth Advisor.

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. Separately, certain strategies managed or sub-advised by us or our affiliates, including but not limited to MSIM and Eaton Vance Management ("EVM") and its investment affiliates, may be included in your account. 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.

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.

Morgan Stanley charges each fund family we offer a mutual fund support fee, also called a "revenue-sharing payment," on client account holdings in fund families according to a tiered rate that increases along with the management fee of the fund so that lower management fee funds pay lower rates than those with higher management fees.

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 an analysis of whether particular investments or strategies are appropriate for you or a recommendation, or an offer to participate in any investment. Therefore, clients should not use this material 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 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 an appropriate asset allocation for you, whether Morgan Stanley Pathway Funds is an appropriate 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.

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

The Morgan Stanley Pathway 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. 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 Morgan Stanley Pathway Funds, visit the Funds' website at <https://www.morganstanley.com/wealth-investmentsolutions/cgcm>. Consulting Group is a business of Morgan Stanley.

Morgan Stanley Pathway Program Asset Allocation Models There are model portfolios corresponding to five risk-tolerance levels available in the Pathway 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. Pathway is a mutual fund asset allocation program. In constructing the Pathway 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 Pathway Program Model Portfolios are specific to the Pathway program (based on program features and parameters, and any other requirements of Morgan Stanley Wealth Management's Consulting Group). The Pathway 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.

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 fund 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."

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.

Money Market Funds: You could lose money in money market funds. Although money market funds classified as government funds (i.e., money market funds that invest 99.5% of total assets in cash and/or securities backed by the U.S government) and retail funds (i.e., money market funds open to natural person investors only) seek to preserve value at \$1.00 per share, they cannot guarantee they will do so. The price of other money market funds will fluctuate and when you sell shares they may be worth more or less than originally paid. Money market funds may impose a fee upon sale or temporarily suspend sales if liquidity falls below required minimums. During suspensions, shares would not be available for purchases, withdrawals, check writing or ATM debits. A money market fund investment is not insured or guaranteed by the Federal Deposit Insurance Corporation or other government agency. The Fund's sponsor has no legal obligation to provide financial support to the Fund, and you should not expect that the sponsor will provide financial support to the Fund at any time.

Investors should carefully consider the investment objectives, risks, charges and expenses of a money market fund before investing. The prospectus contains this and other information about the money market fund. To obtain a prospectus, contact your Financial Advisor or visit the money market fund company's website. Please read the prospectus carefully before investing.

Exchange Funds are private placement vehicles that enable holders of concentrated single-stock positions to exchange those stocks for a diversified portfolio. Investors may benefit from greater diversification by exchanging a concentrated stock position for fund shares without triggering a taxable event. These funds are available only to qualified investors and may only be offered by Financial Advisors who are qualified to sell alternative investments. Before investing, investors should consider the following:

- Dividends are pooled
- Investors may forfeit their stock voting rights
- Investment may be illiquid for several years
- Investments may be leveraged or contain derivatives
- Significant early redemption fees may apply
- Changes to the U.S. tax code, which could be retroactive (potentially disallowing the favorable tax treatment of exchange funds)
- Investment risk and potential loss of principal

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**. Some funds also invest in foreign securities, which may involve currency risk. There is no assurance that the fund will achieve its investment objective. **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 appropriate 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. Shares of closed-end funds frequently trade at a discount from their NAV which may increase investors' risk of loss. The risk of loss due to this discount may be greater for investors expecting to sell their shares in a relatively short period after completion of the public offering. This characteristic is a risk separate and distinct from the risk that a closed-end fund's net asset value may decrease as a result of investment activities. NAV is total assets less total liabilities divided by the number of shares outstanding. At the time an investor purchases or sells 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.

Structured Investments are complex and not appropriate for all investors. An investment in Structures Investments involve risks. These risks can include but are not limited to: (1) Fluctuations in the price, level or yield of underlying instruments, interest rates, currency values and credit quality, (2) Substantial or total loss of principal, (3) Limits on participation in appreciation of underlying instrument, (4) Limited liquidity, (5) Issuer credit risk and (6) Conflicts of Interest. There is no assurance that a strategy of using structured product for wealth preservation, yield enhancement, and/or interest rate risk hedging will meet its objectives.

Alternative investments may be either traditional alternative investment vehicles, such as hedge funds, fund of hedge funds, private equity, private real estate and managed futures or, non-traditional products such as mutual funds and exchange-traded funds that also seek alternative-like exposure but have significant differences from traditional alternative investments. 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 appropriate only for eligible, long-term investors who are willing to forgo liquidity and put capital at risk for an indefinite period of time. They may be highly illiquid and can engage in leverage and other speculative practices that may increase the volatility and risk of loss. Alternative Investments typically have higher fees than traditional investments. Investors should carefully review and consider potential risks before investing. Certain of these risks may include but are not limited to: Loss of all or a substantial portion of the investment due to leveraging, short-selling, or other speculative practices; Lack of liquidity in that there may be no secondary market for a fund; Volatility of returns; Restrictions on transferring interests in a fund; Potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized; Absence of information regarding valuations and pricing; Complex tax structures and delays in tax reporting; Less regulation and higher fees than mutual funds; and Risks associated with the operations, personnel, and processes of the manager. Further, opinions regarding Alternative Investments expressed herein may differ from the opinions expressed by Morgan Stanley Wealth Management and/or other businesses/affiliates of Morgan Stanley Wealth Management.

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.

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.

Interests in alternative investment products are offered pursuant to the terms of the applicable offering memorandum, are distributed by Morgan Stanley Smith Barney LLC and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley or any of its affiliates, (3) are not guaranteed by Morgan Stanley and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Smith Barney LLC is a registered broker-dealer, not a bank.

A majority of Alternative Investment managers reviewed and selected by GIMA pay or cause to be paid an ongoing fee for distribution from their management fees to Morgan Stanley Wealth Management in connection with Morgan Stanley Wealth Management clients that purchase an interest in an Alternative Investment and in some instances pay these fees on the investments held by advisory clients. Morgan Stanley Wealth Management rebates such fees that are received and attributable to an Investment held by an advisory client and retains the fees paid in connection with investments held by brokerage clients. Morgan Stanley Wealth Management has a conflict of interest in offering alternative investments because Morgan Stanley Wealth Management or our affiliates, in most instances, earn more money in your account from your investments in alternative investments than from other investment options.

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 appropriate 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.

Virtual Currency Products (Cryptocurrencies)

Buying, selling, and transacting in Bitcoin, Ethereum or other digital assets (“Digital Assets”), and related funds and products, is highly speculative and may result in a loss of the entire investment. Risks and considerations include but are not limited to:

- Digital Assets have only been in existence for a short period of time and historical trading prices for Digital Assets have been highly volatile. **The price of Digital Assets could decline rapidly, and investors could lose their entire investment.**

- Certain Digital Asset funds and products, allow investors to invest on a more frequent basis than investors may withdraw from the fund or product, and interests in such funds or products are generally not freely transferrable. This means that, particularly given the volatility of Digital Assets, an investor will have to bear any losses with respect to its investment for an extended period of time and will not be able to react to changes in the price of the Digital Asset once invested (for example, by seeking to withdraw) as quickly as when making the decision to invest. Such Digital Asset funds and products, are intended only for persons who are able to bear the economic risk of investment and who do not need liquidity with respect to their investments.

- Given the volatility in the price of Digital Assets, the net asset value of a fund or product that invests in such assets at the time an investor’s subscription for interests in the fund or product is accepted may be significantly below or above the net asset value of the product or fund at the time the investor submitted subscription materials.

-
- Certain Digital Assets are not intended to function as currencies but are intended to have other use cases. These other Digital Assets may be subject to some or all of the risks and considerations set forth herein, as well as additional risks applicable to such Digital Assets. Buyers, sellers and users of such Digital Assets should thoroughly familiarize themselves with such risks and considerations before transacting in such Digital Assets.
 - The value of Digital Assets may be negatively impacted by future legal and regulatory developments, including but not limited to increased regulation of such Digital Assets. Any such developments may make such Digital Assets less valuable, impose additional burdens and expenses on a fund or product investing in such assets or impact the ability of such a fund or product to continue to operate, which may materially decrease the value of an investment therein.
 - Due to the new and evolving nature of digital currencies and the absence of comprehensive guidance, many significant aspects of the tax treatment of Digital Assets are uncertain. Prospective investors should consult their own tax advisors concerning the tax consequences to them of the purchase, ownership and disposition of Digital Assets, directly or indirectly through a fund or product, under U.S. federal income tax law, as well as the tax law of any relevant state, local or other jurisdiction.
 - Over the past several years, certain Digital Asset exchanges have experienced failures or interruptions in service due to fraud, security breaches, operational problems or business failure. Such events in the future could impact any fund's or product's ability to transact in Digital Assets if the fund or product relies on an impacted exchange and may also materially decrease the price of Digital Assets, thereby impacting the value of your investment, regardless of whether the fund or product relies on such an impacted exchange.
 - Although any Digital Asset product and its service providers have in place significant safeguards against loss, theft, destruction and inaccessibility, there is nonetheless a risk that some or all of a product's Digital Asset could be permanently lost, stolen, destroyed or inaccessible by virtue of, among other things, the loss or theft of the "private keys" necessary to access a product's Digital Asset.
 - Investors in funds or products investing or transacting in Digital Assets may not benefit to the same extent (or at all) from "airdrops" with respect to, or "forks" in, a Digital Asset's blockchain, compared to investors who hold Digital Assets directly instead of through a fund or product. Additionally, a "fork" in the Digital Asset blockchain could materially decrease the price of such Digital Asset.
 - Digital Assets are not legal tender, and are not backed by any government, corporation or other identified body, other than with respect to certain digital currencies that certain governments are or may be developing now or in the future. No law requires companies or individuals to accept digital currency as a form of payment (except, potentially, with respect to digital currencies developed by certain governments where such acceptance may be mandated). Instead, other than as described in the preceding sentences, Digital Asset products' use is limited to businesses and individuals that are willing to accept them. If no one were to accept digital currencies, virtual currency products would very likely become worthless.
 - Platforms that buy and sell Digital Assets can be hacked, and some have failed. In addition, like the platforms themselves, digital wallets can be hacked, and are subject to theft and fraud. As a result, like other investors have, you can lose some or all of your holdings of Digital Assets.
 - Unlike US banks and credit unions that provide certain guarantees of safety to depositors, there are no such safeguards provided to Digital Assets held in digital wallets by their providers or by regulators.
 - Due to the anonymity Digital Assets offer, they have known use in illegal activity, including drug dealing, money laundering, human trafficking, sanction evasion and other forms of illegal commerce. Abuses could impact legitimate consumers and speculators; for instance, law enforcement agencies could shut down or restrict the use of platforms and exchanges, limiting or shutting off entirely the ability to use or trade Digital Asset products.
 - Digital Assets may not have an established track record of credibility and trust. Further, any performance data relating to Digital Asset products may not be verifiable as pricing models are not uniform.
 - Investors should be aware of the potentially increased risks of transacting in Digital Assets relating to the risks and considerations, including fraud, theft, and lack of legitimacy, and other aspects and qualities of Digital Assets, before transacting in such assets.
 - The exchange rate of virtual currency products versus the USD historically has been very volatile and the exchange rate could drastically decline. For example, the exchange rate of certain Digital

Assets versus the USD has in the past dropped more than 50% in a single day. Other Digital Assets may be affected by such volatility as well.

- Digital Asset exchanges have limited operating and performance histories and are not regulated with the same controls or customer protections available to more traditional exchanges transacting equity, debt, and other assets and securities. There is no assurance that a person/exchange who currently accepts a Digital Asset as payment will continue to do so in the future.

- The regulatory framework of Digital Assets is evolving, and in some cases is uncertain, and Digital Assets themselves may not be governed and protected by applicable securities regulators and securities laws, including, but not limited to, Securities Investor Protection Corporation coverage, or other regulatory regimes.

- Morgan Stanley Smith Barney LLC or its affiliates (collectively, "Morgan Stanley") may currently, or in the future, offer or invest in Digital Asset products, services or platforms. The proprietary interests of Morgan Stanley may conflict with your interests.

- The foregoing list of considerations and risks are not and do not purport to be a complete enumeration or explanation of the risks involved in an investment in any product or fund investing or trading in Digital Assets.

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.

Rebalancing does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy. Investors should consult with their tax advisor before implementing such a strategy.

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 an appropriate 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.

Artificial intelligence (AI) is subject to limitations, and you should be aware that any output from an IA-supported tool or service made available by the Firm for your use is subject to such limitations, including but not limited to inaccuracy, incompleteness, or embedded bias. You should always verify the results of any AI-generated output.

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.

When Morgan Stanley Smith Barney LLC, its affiliates and Morgan Stanley Financial Advisors and Private Wealth Advisors (collectively, "Morgan Stanley") provide "investment advice" regarding a retirement or welfare benefit plan account, an individual retirement account or a Coverdell education savings account ("Retirement Account"), Morgan Stanley is a "fiduciary" as those terms are defined under the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), and/or the Internal Revenue Code of 1986 (the "Code"), as applicable. When Morgan Stanley provides investment education, takes orders on an unsolicited basis or otherwise does not provide "investment advice", Morgan Stanley will not be considered a "fiduciary" under ERISA and/or the Code. For more information regarding Morgan Stanley's role with respect to a Retirement Account, please visit www.morganstanley.com/disclosures/dol. Tax laws are complex and subject to change. Morgan Stanley does not provide tax or legal advice. Individuals are encouraged to consult their tax and legal advisors (a) before establishing a Retirement Account, and (b) regarding any potential tax, ERISA and related consequences of any investments or other transactions made with respect to a Retirement Account. Individuals should consult their tax advisor for matters involving taxation and tax planning and their attorney for matters involving trust and estate planning, charitable giving, philanthropic planning and other legal matters.

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.

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 be considered investment advice or a recommendation for either ERISA or Internal Revenue Code purposes and that (unless otherwise provided in a written agreement and/or as described at www.morganstanley.com/disclosures/dol) you remain solely responsible for your assets and all investment decisions with respect to your assets. Nevertheless, if Morgan Stanley or your Financial Advisor provides "investment advice," as that term is defined under Section 3(21) of ERISA, to you with respect to certain retirement, welfare benefit, or education savings account assets for a fee or other compensation, Morgan Stanley and/or your Financial Advisor will be providing such advice in its capacity as a fiduciary under ERISA and/or the Code. Morgan Stanley will only prepare a financial plan at your specific request using Morgan Stanley approved financial planning software.

The Morgan Stanley Goals-Planning System (GPS) includes a brokerage investment analysis tool. While securities held in a client's investment advisory accounts may be included in the analysis, the reports generated from the GPS Platform are not financial plans nor constitute a financial planning service. A financial plan generally seeks to address a wide spectrum of a client's long-term financial needs, and can include recommendations about insurance, savings, tax and estate planning, and investments, taking into consideration the client's goals and situation, including anticipated retirement or other employee benefits. Morgan Stanley Smith Barney LLC ("Morgan Stanley") will only prepare a financial plan at a client's specific request using Morgan Stanley approved financial planning software. Investing in financial instruments carries with it the possibility of losses and that a focus on above-market returns exposes the portfolio to above-average risk. Performance aspirations are not guaranteed and are subject to market conditions. High volatility investments may be subject to sudden and large falls in value, and there could be a large loss on realization which could be equal to the amount invested. **IMPORTANT:** The projections or other information provided by the Morgan Stanley Goals Planning System regarding the likelihood of various investment outcomes (including any assumed rates of return and income) are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Morgan Stanley does not represent or guarantee that the projected returns or income will or can be attained.

A LifeView Financial Goal Analysis ("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 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.

Important information about your relationship with your Financial Advisor and Morgan Stanley Smith Barney LLC when using LifeView Goal Analysis or LifeView Advisor. When your Financial Advisor prepares and delivers a Financial Goal Analysis (i.e., when using LifeView Goal Analysis), they will be acting in a brokerage capacity. When your Financial Advisor prepares a Financial Plan (i.e., when using LifeView Advisor), they will be acting in an investment advisory capacity with respect to the delivery of your Financial Plan. This Investment Advisory relationship will begin with the delivery of the Financial Plan and ends thirty days later, during which time your Financial Advisor can review the Financial Plan with you. To understand the differences between brokerage and advisory relationships, you should consult your Financial Advisor, or review our "Understanding Your Brokerage and Investment Advisory Relationships," brochure available at <https://www.morganstanley.com/wealth-relationshipwithms/pdfs/understandingyourrelationship.pdf>

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 Financial Advisor or 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 Financial Advisor or Private Wealth Advisor, may vary by product and over time.

Investment and services offered through Morgan Stanley Smith Barney LLC, Member SIPC.

Annuities and insurance products are offered in conjunction with Morgan Stanley Smith Barney LLC's licensed insurance agency affiliates. Not all products and services discussed herein are available through Morgan Stanley Smith Barney LLC's licensed insurance agency affiliates.

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 that sponsors a donor advised fund program. 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. Back office administration provided by RenPSG, an unaffiliated charitable gift administrator.

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.

Morgan Stanley Smith Barney LLC ("Morgan Stanley") is the manager of the **Morgan Stanley National Advisory 529 Plan** and is responsible for its administration, distribution and investment management. Morgan Stanley does not provide tax and/or legal advice to investors in the 529 Plan. Investors should consult their personal tax advisor for tax-related matters and their attorney for legal matters. For more information please see the Morgan Stanley National Advisory 529 Plan Description and the applicable Morgan Stanley ADV brochure at www.morganstanley.com/adv.

The Morgan Stanley National Advisory 529 Plan is a proprietary offering available exclusively to Morgan Stanley advisory account clients. The Plan is not transferable to other intermediaries.

The Morgan Stanley National Advisory 529 Plan. The North Carolina State Education Assistance Authority (the "Authority") is an instrumentality of the State of North Carolina sponsoring the Morgan Stanley National Advisory 529 Plan, and the 529 Plan is a component of the Parental Savings Trust Fund established by the General Assembly of North Carolina. Neither the Authority, the State of North Carolina nor any other affiliated public entity or any other public entity is guaranteeing the principal or earnings in any account. Contributions or accounts may lose value and nothing stated herein, the 529 Plan Description and Participation Agreement or any other account documentation shall be construed to create any obligation of the Authority, the North Carolina State Treasurer, the State of North Carolina, or any agency or instrumentality of the State of North Carolina to guarantee for the benefit of any parent, other interested party, or designated beneficiary the rate of return or other return for any contribution to the Parental Savings Trust Fund and the 529 Plan.

The Morgan Stanley National Advisory 529 Plan Description contains more information on investment options, risk factors, fees and expenses, and potential tax consequences, which should be carefully considered before investing. Investors can obtain a 529 Plan Description from their Financial Advisor and should read it carefully before investing.

Investments in the 529 Plan are not FDIC-insured, nor are they deposits or guaranteed by a bank or any other entity, so an individual may lose money through such investments.

Investors should consider many factors before deciding which 529 plan is appropriate. Some of these factors include: the plan's investment options and the historical investment performance of these options, the plan's flexibility and features, the reputation and expertise of the plan's investment manager, plan contribution limits and the federal and state tax benefits associated with an investment in the plan. Some states, for example, offer favorable tax treatment and other benefits to their residents only if they invest in the state's own qualified tuition program. Investors should determine their home state's tax treatment of 529 plans when considering whether to choose an in-state or out-of-state plan. Investors should consult with their tax or legal advisor before investing in any 529 plan or contact their state tax division for more information.

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.

The trust services referenced herein are provided by the third parties listed who are not affiliated with Morgan Stanley. Neither Morgan Stanley nor its affiliates are the provider of such trust services and will not have any input or responsibility concerning a client's eligibility for, or the terms and conditions associated with these trust services. Neither Morgan Stanley nor its affiliates shall be responsible for content of any advice or services provided by the unaffiliated third parties listed herein. Morgan Stanley or its affiliates may participate in transactions on a basis separate from the

referral of clients to these third parties and may receive compensation in connection with referrals made to them.

Trusts are not necessarily appropriate for all clients. There are risks and considerations which may outweigh any potential benefits. Establishing a trust will incur fees and expenses which may be substantial. Trusts often incur ongoing administrative fees and expenses such as the services of a corporate trustee or tax professional.

The Portfolio Analysis report ("Report") is generated by Morgan Stanley Smith Barney LLC's ("Morgan Stanley") Portfolio Risk Platform. The assumptions used in the Report incorporate portfolio risk and scenario analysis employed by BlackRock Solutions ("BRS"), a financial technology and risk analytics provider that is independent of Morgan Stanley. BRS' role is limited to providing risk analytics to Morgan Stanley, and BRS is not acting as a broker-dealer or investment adviser nor does it provide investment advice with respect to the Report. Morgan Stanley has validated and adopted the analytical conclusions of these risk models.

Any recommendations regarding external accounts/holdings are asset allocation only and do not include security recommendations. Transitioning from a brokerage to an advisory relationship may not be appropriate for some clients.

IMPORTANT: The projections or other information provided in the Report regarding the likelihood of various investment outcomes (including any assumed rates of return and income) are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Hypothetical investment results have inherent limitations.

- There are frequently large differences between hypothetical and actual results.
- Hypothetical results do not represent actual results and are generally designed with the benefit of hindsight.
- They cannot account for all factors associated with risk, including the impact of financial risk in actual trading or the ability to withstand losses or to adhere to a particular trading strategy in the face of trading losses.
- There are numerous other factors related to the markets in general or to the implementation of any specific strategy that cannot be fully accounted for in the preparation of hypothetical risk results and all of which can adversely affect actual performance.

Morgan Stanley cannot give any assurances that any estimates, assumptions or other aspects of the risk analyses will prove correct. They are subject to actual known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from those shown in a Report. The information is as of the date of the Report or as otherwise noted within the Report. Morgan Stanley expressly disclaims any obligation or undertaking to update or revise any statement or other information contained in a Report to reflect any change in past results, future expectations or circumstances upon which that statement or other information is based.

The Morgan Stanley Digital Vault ("Digital Vault") is accessible to clients with dedicated Financial Advisors. Documents shared via the Digital Vault should be limited to those relevant to your Morgan Stanley account relationship. Uploading a document to the Digital Vault does not obligate us to review or take any action on it, and we will not be liable for any failure to act upon the contents of such document. Please contact your Financial Advisor or Branch Management to discuss the appropriate process for providing the document to us for review. If you maintain a Trust or entity account with us, only our certification form will govern our obligations for such account. Please refer to the Morgan Stanley Digital Vault terms and conditions for more information.

Information related to your external accounts is provided for informational purposes only. It is provided by third parties, including the financial institutions where your external accounts are held. Morgan Stanley does not verify that the information is accurate and makes no representation or warranty as to its accuracy, timeliness, or completeness. Additional information about the features and services offered through Total Wealth View are available on the Total Wealth View site on Morgan Stanley Online and also in the Total Wealth View Terms and Conditions of Use.

Eaton Vance and Parametric Portfolio Associates are businesses of Morgan Stanley Investment Management and are affiliated with Morgan Stanley Wealth Management.

Lending products and 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.

Borrowing against securities may not be appropriate for everyone. Clients must be aware that there are risks associated with a securities based loan, including possible maintenance calls on short notice, and that market conditions can magnify any potential for loss. For details please see the important disclosures below.

Important Risk Information for Securities Based Lending: Clients must be aware that: (1) Sufficient collateral must be maintained to support the loan and to take future advances; (2) Clients may have to deposit additional cash or eligible securities on short notice; (3) Some or all of the pledged securities may be sold without prior notice in order to maintain account equity at required collateral maintenance levels. Clients will not be entitled to choose the securities that will be sold. These actions may interrupt 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") reserve 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 the 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.

The lending products described are separate and distinct, and are not connected in any way. The ability to qualify for one product is not connected to an individual's eligibility for another.

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. All LAL loans/lines of credit are subject to the underwriting standards and independent approval of Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A., as applicable. LAL loans/lines of credit may not be available in all locations. Rates, terms and conditions are subject to change without notice. To be eligible for an LAL loan/line of credit, a client must have a brokerage account at Morgan Stanley Smith Barney LLC that contains eligible securities, which shall serve as collateral for the LAL. 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. **The proceeds from a non-purpose LAL loan/line of credit (including draws and other advances) may not be used to purchase, trade, or carry margin stock; repay margin debt that was used to purchase, trade, or carry margin stock; and cannot be deposited into a Morgan Stanley Smith Barney LLC or other brokerage account.**

Clients may be responsible for the fees of a third party law firm engaged to review complex transactions (e.g., review of trust agreements). Clients may also be charged a fee for the issuance of a letter of credit, for prepayment of principal on fixed rate advances, and upon a client's request for certain cash management services (e.g., duplicate statement or check re-order).

Borrower shall pay Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A. ("Bank"), as applicable, a prepayment fee if any portion of the principal on a Fixed Rate Advance is prepaid prior to the applicable Scheduled Payment Date(s), regardless of the reason that the Fixed Rate Advance is prepaid, and including, without limitation, as a result of a demand by the Bank or liquidation of collateral by the Bank. The Bank, in its sole discretion, can make a Variable Rate Advance and apply the proceeds to such prepayment fee. Interest will accrue on the unpaid portion of the debited amount at a variable interest rate until the amount is paid in full .

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.

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. Borrowing against securities may not be appropriate for everyone. In deciding whether the pledged-asset feature is appropriate, a Client should consider, among other things, 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.

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.

The interest rate and payments on an adjustable rate mortgage ("ARM") loan may increase over the life of a loan as interest is fixed for a specified period and then will adjust periodically thereafter. The annual percentage rate may increase after consummation of the loan.

3/6M, 5/6M, 7/6M, 10/6M adjustable rate mortgage ("ARM") loans are based on the Secured Overnight Financing Rate ("SOFR") 30-Day Average.

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.

The Morgan Stanley Debit Card is issued by Morgan Stanley Private Bank, National Association 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. Investments and services offered through Morgan Stanley Smith Barney LLC, Member SIPC. Certain terms, conditions, restrictions, and exclusions apply. Please refer to the Morgan Stanley Debit Card Terms and Conditions at <http://www.morganstanley.com/debitcardterms> for additional information.

The Morgan Stanley American Express Card portfolio consists of three cards: The Platinum Card from American Express Exclusively for Morgan Stanley, the Morgan Stanley Blue Cash Preferred American Express Card, and the Morgan Stanley Credit Card.

The Platinum Card from American Express exclusively for Morgan Stanley and the Morgan Stanley Blue Cash Preferred American Express Card are available for acquisition, and eligible clients are invited to apply. Existing Morgan Stanley Credit Card members may continue to enjoy the benefits of their card, but this product is no longer available for acquisition.

The Platinum Card® from American Express exclusively for Morgan Stanley is only available for clients who have an Eligible Account with Morgan Stanley Smith Barney LLC.

The Morgan Stanley Blue Cash Preferred® Card is only available for clients who have an Eligible Account with Morgan Stanley Smith Barney LLC or its eligible affiliates, including but not limited to E*TRADE Securities LLC.

An "Eligible Account" is a brokerage account (i) held in your name, (ii) held by a trust where you are both the grantor and trustee of such trust, or (iii) held as a beneficial owner of a personal holding company, a non-operating limited liability company, a non-operating limited partnership, or a similar legal entity. 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.

The Platinum Card® from American Express exclusively for Morgan Stanley and the Morgan Stanley Blue Cash Preferred® Card are issued by American Express National Bank, 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.

Morgan Stanley, its affiliates, and Morgan Stanley Financial Advisors and employees are not in the business of providing tax or legal advice. Clients should speak with their tax advisor regarding the potential tax implications of the Rewards Program upon their specific circumstances.

The Platinum Card® from American Express Exclusively for Morgan Stanley and the Morgan Stanley Blue Cash Preferred® American Express Card are issued by American Express National Bank. ©2022 American Express National Bank.

American Express may share information about your Card Account with Morgan Stanley in support of Morgan Stanley programs and services. For information as to how Morgan Stanley will use your Card Account data please visit http://www.morganstanley.com/wealth/investmentsolutions/pdfs/adv/mssb_privacynotice.pdf.

The CashPlus Account is a brokerage account offered through Morgan Stanley Smith Barney LLC. Conditions and restrictions apply. Please refer to the CashPlus Account Disclosure Statement for further details at <https://www.morganstanley.com/wealth-disclosures/cashplusaccountdisclosurestatement.pdf>.

The qualifying criteria to avoid the monthly account fee for all CashPlus Accounts in an Account Link Group (ALG) is: an additional eligible Morgan Stanley investment account (that may include additional fees), one Morgan Stanley Online enrollment; for Premier CashPlus account \$2,500 monthly deposit or 10,000 Average BDP Daily Balance; for Platinum CashPlus account \$5,000 monthly deposit and \$25,000 Average BDP Daily Balance. For more information, please refer to the CashPlus Account Disclosure Statement at <https://www.morganstanley.com/wealth-disclosures/cashplusaccountdisclosurestatement.pdf>.

CashPlus Accounts receive SIPC coverage for securities and free credit balances and cash swept into the Bank Deposit Program receives FDIC insurance, both up to applicable limits.

Securities Investor Protection Corporation ("SIPC") — Morgan Stanley Smith Barney LLC is a member of SIPC, which protects securities of its customers up to \$500,000 (including \$250,000 for claims for cash). Losses due to market fluctuation are not protected by SIPC. To obtain information about SIPC, including an explanatory SIPC brochure, contact SIPC at 1-202-371-8300 or visit www.sipc.org.

Federal Deposit Insurance Corporation ("FDIC") — Cash balances swept into deposit accounts at participating banks in the Bank Deposit Program are protected by FDIC Insurance up to applicable FDIC limits. FDIC insurance is a federal government program administered by the Federal Deposit Insurance Corporation. This insurance covers bank deposits held in checking accounts, savings accounts, certificates of deposits and money market deposits (not money market funds). This insurance comes into play in the event of a bank failure and covers client cash up to a total of \$250,000 per bank, for each "insurable capacity" (e.g. each individual, joint, etc.). It does not cover investment products that are not deposits, such as mutual funds, annuities, life insurance policies, stocks or bonds. Refer to <https://www.fdic.gov> for additional details.

The Active Assets Account is a brokerage account offered through Morgan Stanley Smith Barney LLC.

Under the Bank Deposit Program, free credit balances held in an account(s) at Morgan Stanley Smith Barney LLC are automatically deposited into an interest-bearing deposit account(s), at FDIC-insured banks. For more information, view the [Bank Deposit Program Disclosure Statement](#).

Under the Savings and Preferred Savings programs ("Savings"), Morgan Stanley Smith Barney LLC makes available interest-bearing FDIC insured deposit accounts(s) at either Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A., each a national bank, Member FDIC, and an affiliate of Morgan Stanley Smith Barney LLC, as selected by the client. Deposits placed in Savings are eligible for FDIC insurance up to \$250,000 (including principal and interest) per depositor, per each bank selected by the client for all deposits held in the same insurable capacity (the Maximum Applicable Deposit Insurance Amount). All deposits per bank held in the same insurable capacity will be aggregated for purposes of the Maximum Applicable Deposit Insurance Amount, including deposits maintained through the Bank Deposit Program. The client is responsible for monitoring the total amount held with each bank. The bank also reserves the right to offer promotional rates from time to time. Detailed information on federal deposit insurance coverage is available on the FDIC's website (<https://www.fdic.gov/deposit/deposits/>). **The Savings programs are not**

intended for clients who need to have frequent access to funds and those funds will not be automatically accessed to reduce a debit or margin loan in your brokerage account. Withdrawals from an account in Savings are limited to 10 transactions per calendar month, and any withdrawal or transfer over the limit in any one calendar month will be subject to an excess withdrawal fee.

Reserved clients and CashPlus accounts are eligible for unlimited global ATM fee rebates. All other clients are eligible for up to \$200 in annual global ATM fee rebates.

While Morgan Stanley will always make transferred and deposited funds available immediately for investment purposes, we may not make all transferred or deposited funds immediately available for withdrawal. Funds deposited by check or funds transfer may be delayed depending on certain circumstances, such as dollar value, account status, etc., and could be held for up to six business days. Please contact your Financial Advisor or Private Wealth Advisor for additional information and/or review the Fund Availability Policy by signing into your Morgan Stanley Online account.

The Greenlight App and Debit Card is provided by Greenlight Financial Technologies, not Morgan Stanley or any of its affiliates. Morgan Stanley has entered into a referral partnership with Greenlight Technology Inc., the program manager for the Greenlight card and related mobile application. Greenlight charges a usage fee of \$4.99 per month. Morgan Stanley will reimburse this \$4.99 monthly fee to Greenlight on your behalf for one Greenlight account (up to five minors under 18 years old) as long as the following conditions are met:

- Enroll in Greenlight using the enrollment link on Morgan Stanley Online or Mobile;
- Enroll in the Greenlight standard plan (currently \$4.99/month (subject to change). Greenlight +Invest and Greenlight Max or any other current and future products are excluded from this offer; and
- Link a CashPlus Account for the Greenlight debit card funding.

Limited to one free Greenlight enrollment per CashPlus ALG. This fee waiver only applies while you fund the Greenlight Debit Card from your CashPlus Account. Other Morgan Stanley accounts are not eligible for this offer and the Greenlight usage fee will no longer be waived if you close the associated CashPlus account or change the funding source on the Greenlight Debit Card to any other account type, including another Morgan Stanley non-CashPlus account type.

Please review the Greenlight terms and conditions and other applicable fees for the service at [Greenlightcard.com](https://www.greenlightcard.com) before enrolling (such terms are subject to change at any time) Only the monthly usage fee is waived. You are responsible for all other fees associated with the use of the Greenlight service.

© 2023 Greenlight Financial Technology, Inc. Patents Pending. The Greenlight card is issued by Community Federal Savings Bank, member FDIC, pursuant to license by Mastercard International. Message and data rates may apply.

Mobile check deposits are subject to certain terms and conditions. Checks must be drawn on a U.S. Bank.

Send Money with Zelle® is available on the Morgan Stanley Mobile App for iPhone and Android. Enrollment is required and dollar and frequency limits may apply. Domestic fund transfers must be made from an eligible account at Morgan Stanley Smith Barney LLC (Morgan Stanley) to a US-based account at another financial institution. Morgan Stanley maintains arrangements with JP Morgan Chase Bank, N.A. and UMB Bank, N.A. as NACHA-participating depository financial institutions for the processing of transfers on Zelle®. Data connection required, and message and data rates may apply, including those from your communications service provider. Must have an eligible account in the U.S. to use Zelle®. Transactions typically occur in minutes when the recipient's email address or U.S. mobile number is already enrolled with Zelle®. See the Send Money with Zelle® terms for details.

Zelle® and the Zelle® related marks are wholly owned by Early Warning Services, LLC and are used herein under license. Morgan Stanley is not affiliated with Zelle®.

Electronic payments arrive to the payee within 1-2 business days, check payments arrive to the payee within 5 business days. Same-day and overnight payments are available for an additional fee within the available payment timeframes.

The Morgan Stanley Mobile App is currently available for iPhone® and iPad® from the App Store® and Android™ on Google Play™. Standard messaging and data rates from your provider may apply. Subject to device connectivity.

Cash management and lending products and services are provided by Morgan Stanley Smith Barney LLC, Morgan Stanley Private Bank, National Association or Morgan Stanley Bank, N.A, as applicable.

The information provided herein is not intended to address any particular matter and may not apply depending on the context, as all clients' circumstances are unique.

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.

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

© 2024 Morgan Stanley Smith Barney LLC. Member SIPC. Alternative investment securities discussed herein are not covered by the protections provided by the Securities Investor Protection Corporation, unless such securities are registered under the Securities Act of 1933, as amended, and are held in a Morgan Stanley Wealth Management Individual Retirement Account.

CRC 6059700 (11/23)