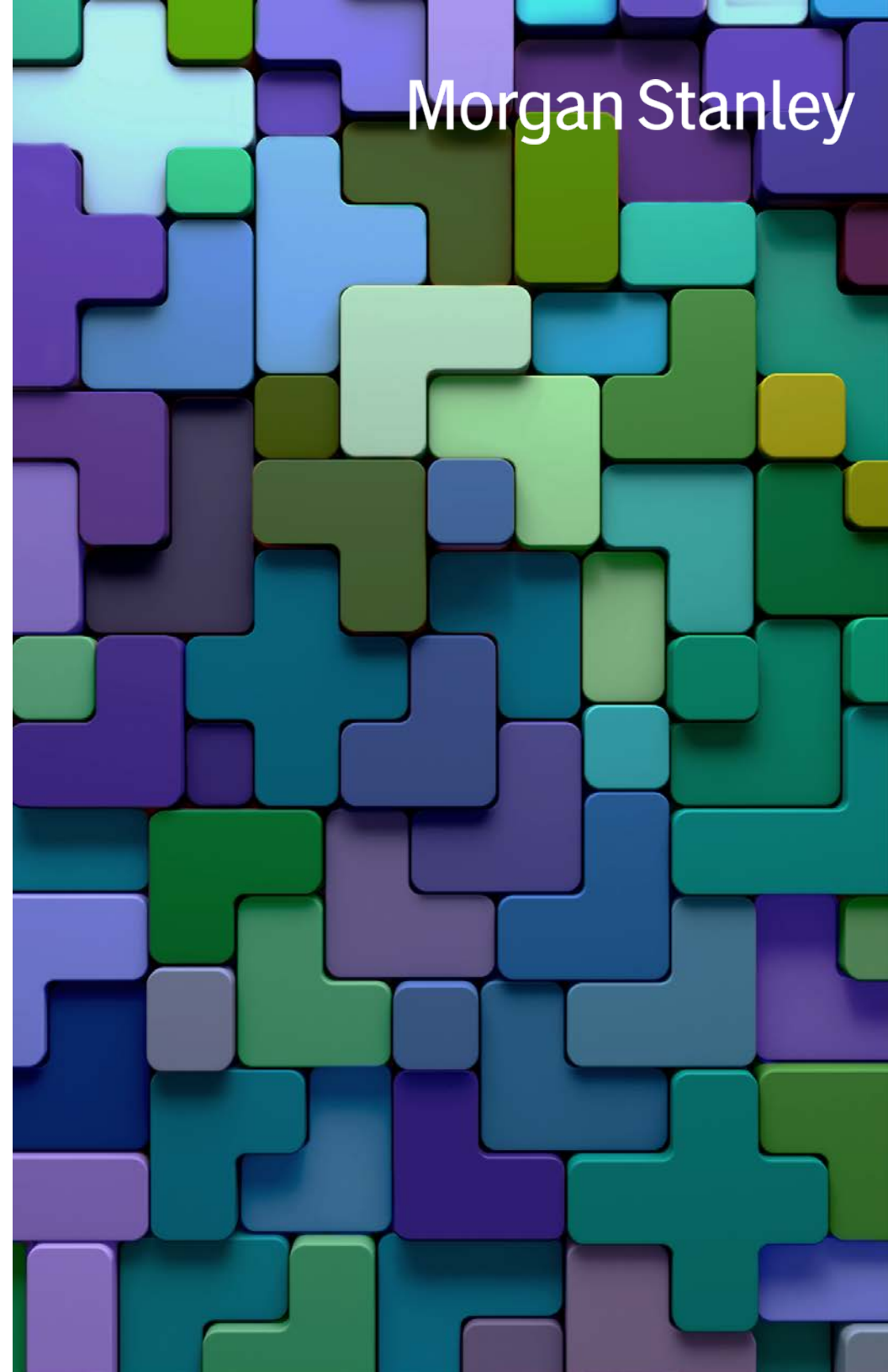


Concentrated Stock Solutions by Morgan Stanley

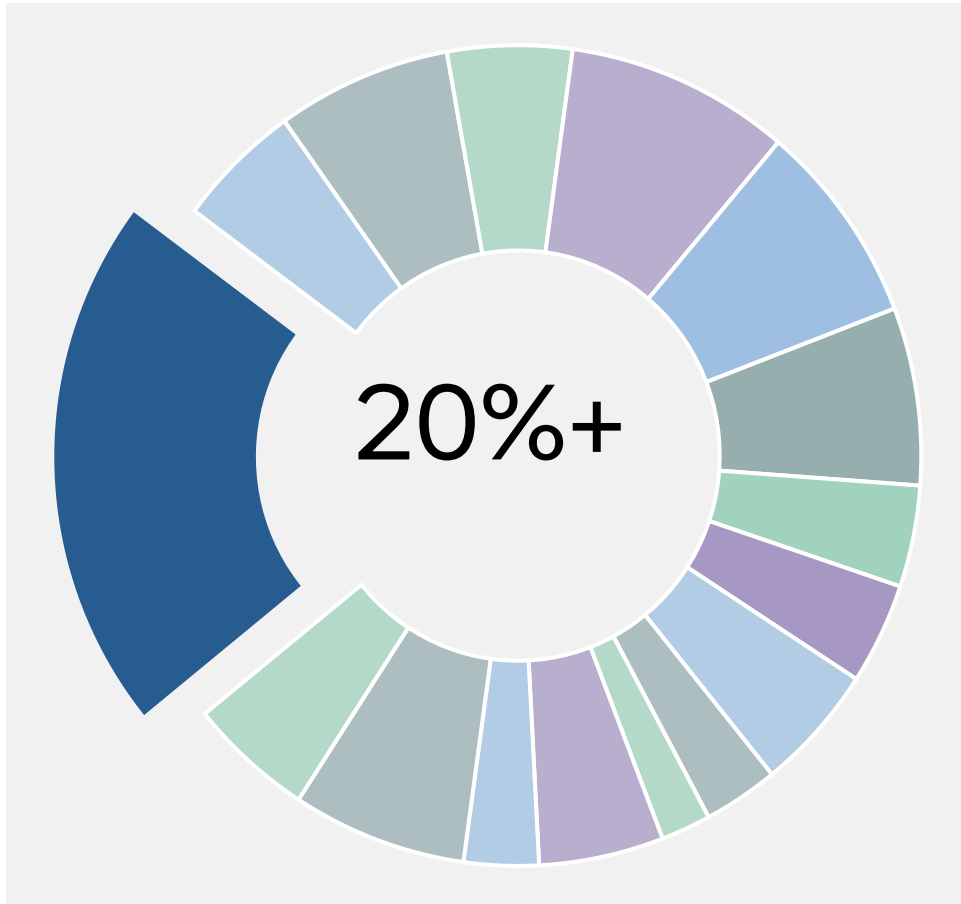
Diversification. Tax-Efficiency. Risk Management.



Can There Be Too Much of a Good Thing?

Past Successes May Introduce New Risks when a Single Stock Makes up a Disproportionate Amount of Your Wealth

HOW MUCH IS TOO MUCH?



When a single stock represents a large percentage (20%+) of your overall portfolio value, it's considered a **concentrated position**.

This may not immediately appear to be **problematic**; after all, the build-up generally came from a rise in stock value.

Yet there is a **downside**: More volatility and increased susceptibility to market downturns. In other words, increased risk.

A decline in the value of the investments held in a concentrated portfolio of a limited number of securities would cause the portfolio's overall value to decline to a greater degree than that of a less concentrated portfolio.

Concentrated Positions Start Positive

Concentrated Stock Positions Were Rarely Acquired at the Current Size. They Almost Always Reflect Past Price Appreciation or Some Other Positive Event.

COMMON SOURCES AND REASONS FOR CONCENTRATED STOCK POSITIONS INCLUDE:

Employment Achievements

Founders' stock / company ownership

Public company shares received in a merger or acquisition

Incentive compensation paid to company executives and other key employees

Long-Term Investment Gains

Gifts and inheritances

Owning stock that has outperformed other holdings over time

Distributions from successful venture and private equity investments

Note there are meaningful limitations on transacting in securities or derivatives if you are considered an "affiliate" of the issuer of the securities, are otherwise in a role or relationship with the issuer in which you may have access to material non-public information, or be subject to policies relating to transactions in the relevant company's securities and derivatives. You should ask your company compliance about any regulatory or company policy limitations applicable to your transacting in the securities or derivatives, as such transactions may be prohibited or subject to conditions.

Concentrated Stock Can Be a Mixed Blessing

Celebrate the Success that Created your Concentrated Position. But be Aware that Over Time, It Can Grow Into A Portfolio Risk.



Concentrated stock's **outsized contribution to portfolio risk** may lead to greater portfolio volatility



Unrealized capital gains, from price appreciation may prevent you from rebalancing your portfolio to align with stated goals



You may find yourself **losing perspective**, overemphasizing positive aspects of the concentrated stock while discounting the negative



Unintended concentrated positions **can threaten your investment goals**, changing the risk profile of your portfolio



After understanding the risks, would you consider a mix of strategies that would enable you to diversify your portfolio—in a tax smart way?

Concentrated Stock Can Increase Your Risk

Three Uncomfortable Truths*

1

Yesterday's winners rarely continue winning.

60% of stocks that outperformed over a 5-year period became underperformers in the subsequent 5 years.

2

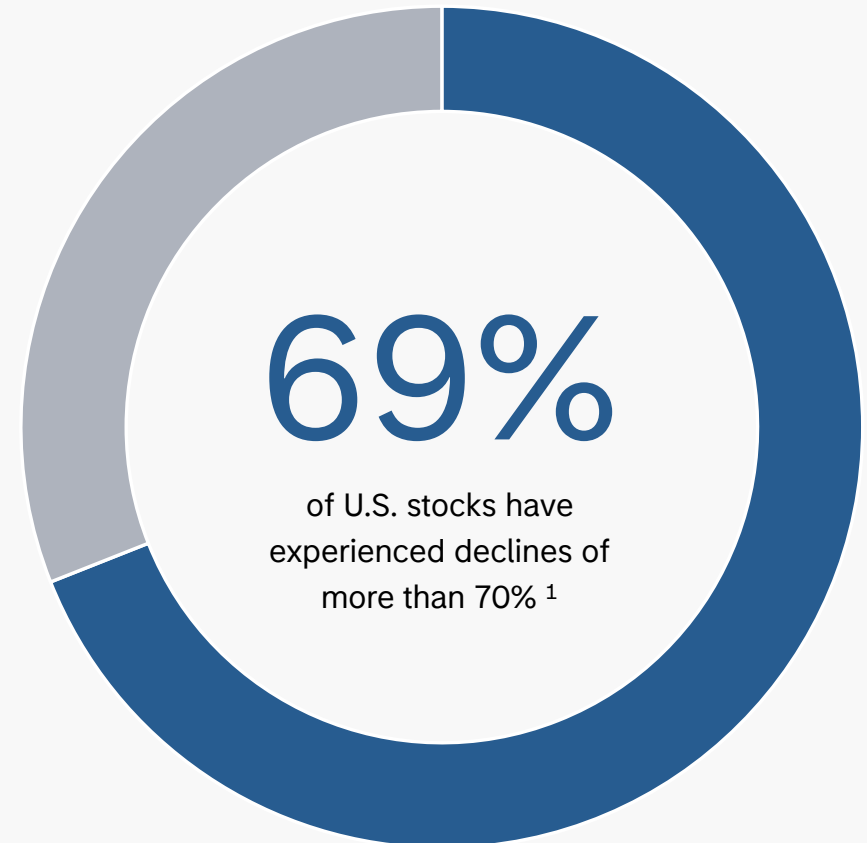
Today's volatile markets are not an aberration.

For stocks in the Russell 1000 Index since 2014, the average volatility has measured 37%, compared to just 15% for the index itself.

3

Tomorrow's downturns inhibit future success.

Nearly half of Russell 1000 stocks have suffered a catastrophic loss (50%+ decline) over the past decade, and many never fully recover.



* Source: Morgan Stanley Portfolio Risk Platform; Morgan Stanley Wealth Management Global Investment Office

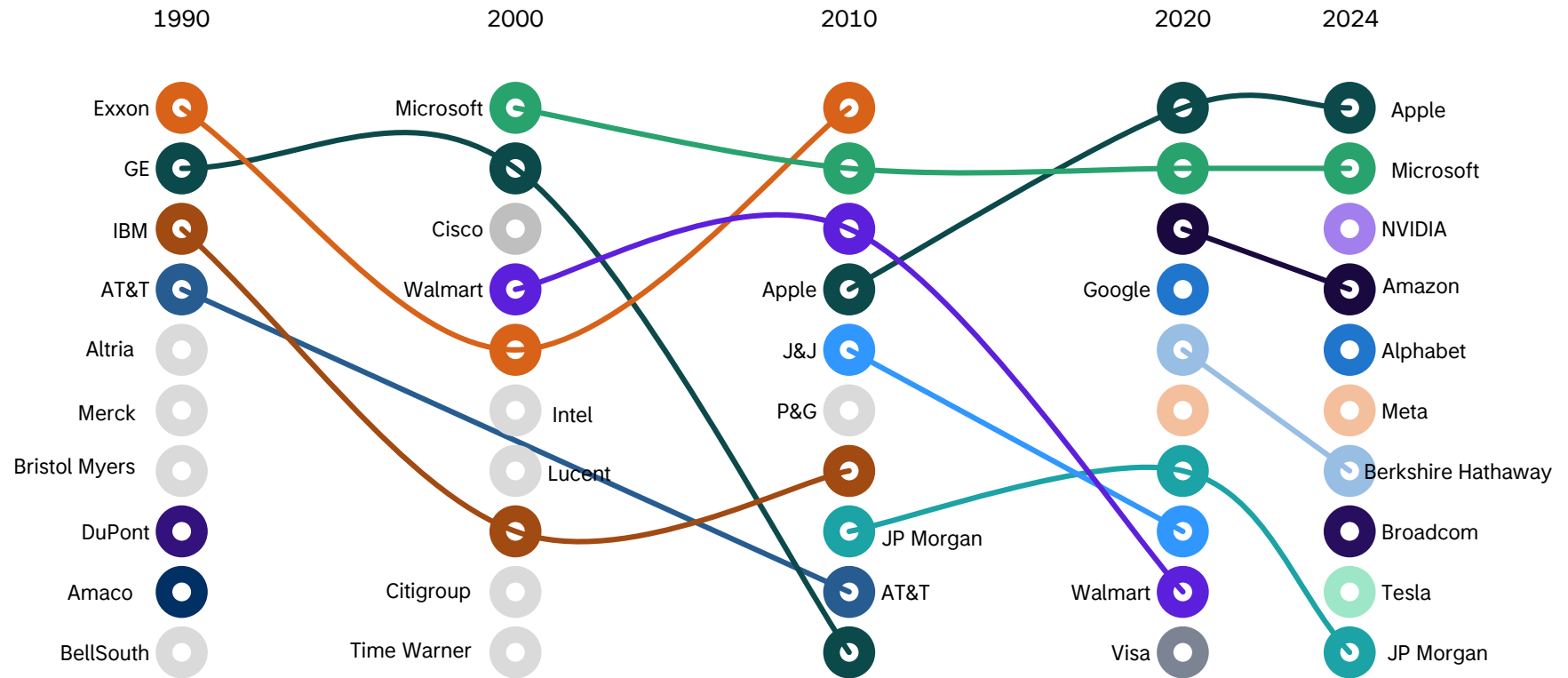
1. Ned Davis Research, Eaton Vance. Derived from a universe of 26,563 actively traded stocks listed on NYSE, Nasdaq, and NYSE American (formerly AMEX) since 12/31/1980; and based on relative total return versus the S&P 500 over the listed trading period of the stock through 12/31/2024. Returns are calculated daily, starting on 1/3/1972. Recovery is defined as recovery in price to high prior to maximum drawdown.

Russell 1000 Index measures the performance of the 1,000 largest companies based on total market capitalization.

Deep Dive: Top 10 US Companies Shift Over Time

Top US Companies Evolve Decade to Decade – Especially in the Current Digital Era

EVOLUTION OF TOP 10 US COMPANIES (1990-2024)



History shows that change is often the only constant. Diversifying is one of the best ways to manage the risk of changing economic, market, and global conditions.

Reasons for Holding On To Concentrated Stock

You May Have Both Financial and Behavioral Reasons Keeping you From Diversifying. Let's Look at Them One by One.



The tax hit from selling would be too big



I've held this stock for years. Why change now?



What if I sell and then the stock takes off?



I know this company... it's poised for success



The company was good to me when I worked there

LEGITIMATE TAX CONCERNS

Morgan Stanley has committed significant resources and investment toward tax-efficient strategies to help you diversify and manage potential tax impact.

INERTIA HAS CONSEQUENCES

An outsized portion of your portfolio can present outsized risk and volatility—even when resulting from positive outcomes

FEAR OF MISSING OUT

History shows most stocks experience major drawdowns. You can maintain some upside potential while balancing the risk with a multi-strategy approach that leverages our research

RISK OF OVERCONFIDENCE

A more diversified approach still gives you exposure while protecting your overall financial plan. 60% of past winners become underperformers in the subsequent 5 years

LOYALTY HAS LIMITS

We can design a strategy that maintains exposure while also protecting the financial future you've worked so hard to build



Managing your risk and staying on track with your financial plan may require you to diversify. The key is to do it in a smart way that offers answers to these concerns.

A Framework for Diversification and Tax Efficiency

HOPES, a Framework of Interconnected Solutions for a Personal Diversification Plan that Considers Your Individual Goals, Situation and Tax Considerations.

H

HOLD

Defer capital gains and maintain potential upside in the stock

O

OPTIONS STRATEGIES

Mitigate downside risk, dampen volatility, generate potential income or monetize the position

P

PLANNED GIVING

Combine charitable giving with tax optimization and generate potential income

E

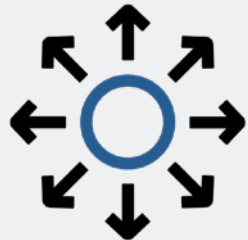
EXCHANGE FUNDS

Achieve diversification with tax deferral

S

SELL... IN A TAX SMART WAY

Generate immediate liquidity



PERSONAL. HOLISTIC. TAX-EFFICIENT

Our HOPES framework applies a multi-faceted approach to addressing the complex challenge of concentrated stock positions.

It integrates the range of available strategies to recommend an optimal plan that considers your individual situation and preferences—incorporating tax efficiency as appropriate.

This framework helps overcome the tendency to hold on to concentrated positions, mitigate risk and transform significant unrealized assets into a diversified portfolio.

Morgan Stanley Has Innovative Solutions

Morgan Stanley has invested significant resources in enhancements to improve strategic diversification. We can help you not just diversify—but diversify well.

Solutions for concentrated stock built on the size, scale & support of Morgan Stanley Wealth Management

Tax Efficient Solutions

Access our leading-edge tax management capabilities that allow greater customization and personalized tax mandates along with direct indexing solutions.¹

Exclusive Thought Leadership and Analytics

Direct access to intellectual capital and dedicated teams of strategists from our Global Investment Office—so you can make informed portfolio decisions.

Innovative Alternatives Solutions

Gain access to exclusive tax-deferral strategies, including exchange funds, opportunity zones, and long/short private funds.

For qualified investors.

Equity Compensation Guidance

Varied types of equity awards have different rules and implications. With support from our Executive Planning & Equity Compensation Team, your Financial Advisor can help you optimize your benefits.²

Sophisticated Risk Platform

Our state-of-the-art risk platform can identify, analyze and communicate existing concentration risk in client portfolios, including those held away.

Capital Markets Capabilities

Leverage institutional research and trading capabilities, including hedging and monetization, listed and bespoke options/derivatives, 10b5-1 for executives, block trading and more.

Talk to your Morgan Stanley Financial Advisor to learn more about diversifying your concentrated positions

¹ Direct Indexing may adversely impact account performance. There is no guarantee that Direct indexing will produce the desired tax results.

² Note there are meaningful limitations on transacting in securities or derivatives if considered an “affiliate” of the issuer of the securities, are otherwise in a role or relationship with the issuer in which you may have access to material non-public information or be subject to policies relating to transactions in the relevant company’s securities and derivatives. You should ask your company compliance about any regulatory or company policy limitations applicable to your transacting in the securities or derivatives, as such transactions may be prohibited or subject to conditions.

Deep Dive: Tax-Efficient and Options Strategies

Morgan Stanley delivers comprehensive tax management capabilities and options strategies that can help you navigate the complex tax implications of diversifying concentrated positions.

We can help you diversify your concentrated portfolio in a tax-smart way

Our integrated approach combines sophisticated technology, expert advisory services and access to industry-leading platforms to help you transition from concentration to diversification while preserving more of your wealth.

Total Tax 365

Our year-round approach to tax-efficient investing can help manage the tax impact of transitioning concentrated positions through:

- Strategic tax-loss harvesting to offset gains from diversification
- Intelligent withdrawal sequencing across accounts

Leading Edge Solutions

Access specialized solutions to help diversify:

- Direct indexing, including Parametric funds, the industry powerhouse and pioneer of these tax-efficient strategies
- Patented ¹ fractional share trading capabilities, for reduced minimum investments.
- Tax-managed SMAs with daily loss-harvesting capabilities
- Donor Advised Funds to incorporate charitable giving into investment strategy

Customized Transition Planning

Work with our concentrated equity specialists to develop multi-year diversification strategies that:

- Execute hedging, monetization, yield enhancement or exit strategies via exchange traded or bespoke options/derivatives
- Options overlay SMA for capped stock upside with reduced portfolio volatility

Transform your concentrated position into a diversified portfolio while working toward mitigating taxes

¹ US Patent #12073466, relates to system and resources for fractional management of resources

Deep Dive: Innovative Alternatives Solutions

Morgan Stanley's industry-leading alternatives platform offers sophisticated tax-deferral strategies and unique diversification opportunities beyond traditional markets.

Access exclusive solutions through our industry-leading alternatives platform

For qualified investors, our alternatives platform includes hundreds of funds, including Exchange Funds

Exchange Funds

Diversify concentration and defer the recognition of taxes through our tax-efficient exchange funds*

- Swap concentrated shares for diversified fund units without triggering capital gains
- Access professionally managed portfolios of stocks that track broad market indices
- Daily redemption privileges

Long/Short Funds

Long/short funds present an investment strategy that can offer potential tax-management advantages for investors.

- Long/short funds aim for returns in both rising and falling markets, potentially with tax loss harvesting capabilities
- They provide risk management and potential downside protection
- Market-neutral strategies can help to minimize overall market exposure
- There may be tax implications when using this strategy

Qualified Opportunity Zones Funds

Defer taxes on previously earned capital gain

- Current deferral period is set to expire in Dec. 2026 (with taxes owed in April 2027)

If the applicable holding period is met, potential to step-up your cost basis or permanently exclude taxable income on Qualified Opportunity Zone Fund gains while investing in undercapitalized communities

- Provide potential long term, tax-free appreciation through investing in real estate markets

Note that certain tax treatments may differ, and less tax benefits may be available, at the state level, depending on the state.

Use institutional-quality alternative investments to transform concentration risk into a sophisticated, diversified portfolio.

* Subject to redemption fees in the initial 3 years of investment (waiver upon shareholder death and in certain other circumstances). Early redemption before 7 years also likely means a return of original shares, not a group of diversified stocks.

Deep Dive: Thought Leadership and Analytics

Morgan Stanley's Global Investment Office (GIO) combines 200+ analysts and strategists with proprietary analytical tools to deliver institutional quality insights.

Access world-class research and analytics to guide your diversification strategy

Our powerful combination of thought leadership, proprietary analytics and professional expertise provides clients with sophisticated risk assessment, opportunity insights and market intelligence to drive efficient diversification.

Comprehensive Market Intelligence

Access the same research that guides our institutional clients through:

- Strategic asset allocation models updated regularly by our Global Investment Committee
- Tactical, strategic and secular investment horizons (from 12-18 months to 20+ years)
- Real-time market analysis across asset classes, sectors and geographies

Proprietary Analytics

Evaluate your concentrated position with sophisticated tools including:

- **Equity Vulnerability Score:** Quantitative ranking of drawdown risk that combines multiple metrics across three categories
- **Tactical Equity Framework:** Eight-factor model for shorter-term performance insights
- Portfolio construction guidance integrating both tools for optimal diversification timing

Actionable Investment Themes

Translate complex market dynamics into clear strategies through:

- Regular publications including research reports and market outlooks
- Concentrated position insights on sector risks and opportunities
- Access to thought leadership from our Global Investment Committee of nine industry leaders

Transform your concentrated risk with the intellectual capital that powers Morgan Stanley's investment platform.

Source: Global Investment Office. The Equity Vulnerability Score is a quantitative factor-based ranking of US stocks' relative vulnerability to future drawdowns. For more information on factor definitions, please ask your Financial Advisor for the GIC special report, "Tactical Equity Framework: Guiding Allocations Through Dynamic Factors" published on Jan. 14, 2025.

Deep Dive: Equity Compensation Guidance

Employee Stock and Options can Offer Opportunities, but also a Significant Level of Risk and Complexity – Including the Potential for a Concentrated Position

Equity awards are governed by a complex set of rules that requires careful planning

With support from our Executive Planning & Equity Compensation Team, your Financial Advisor can help you optimize your benefits

Understanding Your Benefits

Various types of equity awards have different rules and implications

- Nonqualified stock options (NQSO)
- Qualified incentive stock options (ISO)
- Restricted stock units (RSU) and awards (RSA)
- Performance stock units (PSU) and awards (PSA)

Tailoring a Plan

- The tax consequences of some equity awards are determined by how long you hold the shares after exercise or vest.
- Equity awards impact asset diversification across your entire portfolio.
- A portfolio of option grants may have greater volatility than an equivalent portfolio of stocks
- You may wish to reduce concentration risk by exercising option grants or selling the acquired stock

Efficiency Through Technology

The Morgan Stanley Equity Award Analysis Tool empowers your Financial Advisor to help you understand the hypothetical tax, cash flow and risk implications of your equity awards

- By integrating Equity Award Analysis with your goals plan, you gain a comprehensive view of your total wealth

Your Financial Advisor can help you understand, optimize and diversify equity compensation benefits

Note there are meaningful limitations on transacting in securities or derivatives if you are considered an “affiliate” of the issuer of the securities, are otherwise in a role or relationship with the issuer in which you may have access to material non-public information, or be subject to policies relating to transactions in the relevant company’s securities and derivatives. You should ask your company compliance about any regulatory or company policy limitations applicable to your transacting in the securities or derivatives, as such transactions may be prohibited or subject to conditions.

Deep Dive: Sophisticated Risk Platform

Morgan Stanley's Portfolio Risk Platform empowers investors to see, understand, and analyze their financial risk, not just within a particular portfolio but across their entire financial picture

An institutional approach to risk management

Combining research, technology and innovation, Morgan Stanley's Portfolio Risk Platform provides a powerful guide to understanding risks.

Comprehensive Risk Analysis

The Platform assesses more than 3,000 different risk factors of the underlying securities and funds to help you understand the drivers of risk

- Hypothetically illustrate how different market events might impact your current holdings and overall financial future
- Understand which market factors are driving your overall risk including concentrated equities

See Your Exposures

Concentration can go beyond one stock

- Review your risk of overexposure across a single stock, asset classes, sectors or styles
- Stress test your portfolio by showing sensitivity to more than 70 market and historical scenarios including national and international stock market shocks to the S&P 500, Dow Jones, FTSE 100, DAX, Nikkei and more

Understanding Your Risk Allocation

Asset allocation or sector weightings alone do not explain what drives your portfolio.

- Paired with Risk Allocation, our platform can help you better understand the drivers of risk and how they contribute, correlate, or detract risk and potential returns
- Understand your risk allotment and what securities / sectors may provide the greatest diversification benefits
- Review your allocation at the sector, style, rate, spread, or country level

As a Morgan Stanley Client you have multiple views of your risk across tools including through Morgan Stanley Online

Deep Dive: Capital Markets Capabilities

Capital Markets brings you access to the Firm's intellectual capital across equities, fixed income and structured investments through personalized industry-leading financial products, services and insights

Personalized innovative, financial products, services and insights

We deliver solutions across asset classes including ways to diversify a concentrated position

Structured Solutions

A unique approach to identify investment ideas and sourcing implementation strategies

- Provide you with a wide variety of products tied to the performance of underlying assets from different asset classes
- Execute hedging, monetization, yield enhancement or exit strategies via exchange traded or Over-the-Counter (OTC) options/derivatives

Hedging and Monetization Strategies

Strategies appealing to those who wish to maintain liquidity and manage risk without selling their stock outright

- Variable prepaid forwards: Investors receive cash upfront, equivalent to the current value of their stock, while agreeing to deliver a variable number of shares or cash in the future.
- This approach limits upside potential but provides a hedge against downside risk, as it limits possible losses if the stock's value decreases.

Research Connectivity

Our Sector Specialists are subject matter experts with connectivity across Morgan Stanley Research, Institutional Sales and Trading

- Customized equity investment advice linked to your concentration diversification efforts
- High level market commentary helps your Financial Advisor understand where markets are headed and how to capture the best possible returns within your risk profile

Your Financial Advisor has access to structured investments geared to help you diversify your concentrated holding

Investors Maintain Concentrated Stock Positions for Many Reasons

Sometimes Those Reasons are Intentional, and Sometimes They Aren't

Proactively discussing your concentrated stock position can help ensure your portfolio is appropriately balanced so you manage risk, minimize taxes, and stay aligned with your long-term goals



Talk to your Morgan Stanley Financial Advisor to learn more about diversifying your concentrated positions.

Options Disclosures and Considerations

If you are considering options as part of your investment plan, your Morgan Stanley Financial Advisor or Private Wealth Advisor is required to provide you with the “Characteristics and Risks of Standardized Options” booklet from the Options Clearing Corporation.

Options carry a high level of risk and are not appropriate for all investors.

Certain requirements must be met to trade options through Morgan Stanley. Investing involves risks, including loss of principal. Hedging and protective strategies generally involve additional costs and do not assure a profit or guarantee against loss. With long options, investors may lose 100% of funds invested. Covered calls provide cash flow, downside protection only to the extent of the premium received, and limit upside potential to the strike price plus premium received. Spread trading must be done in a margin account.

Before engaging in the purchase or sale of options, clients should understand the nature and extent of their rights and obligations and be aware of the risks involved, including, without limitation, the risks pertaining to the business and financial condition of the issuer of the underlying security/instrument. Options investing, like other forms of investing, involves tax considerations, transaction costs and margin requirements that can significantly affect clients’ potential profits and losses. The transaction costs of options investing consist primarily of commissions (which are imposed in opening, closing, exercise and assignment transactions) but may also include margin and interest costs in particular transactions. Transaction costs are especially significant in options strategies calling for multiple purchases and sales of options, such as multiple leg strategies, including spreads, straddles and collars. If a client is considering engaging in options trading, the Financial Advisor and Private Wealth Advisor are required to provide the client with the “Characteristics and Risks of Standardized Options” (ODD) booklet from the Options Clearing Corporation. Clients should not enter into options transactions until they have read and understood the Disclosure Document and discussed transaction costs with the Financial Advisor or Private Wealth Advisor. A copy of the ODD is also available online at: <https://www.theocc.com/getmedia/a151a9ae-d784-4a15-bdeb-23a029f50b70/riskstoc.pdf>.

The sale of the stock through an option assignment or the closing/expiration of an option position may produce a tax consequence. Certain in-the-money covered call writes are deemed ‘unqualified’ and carry certain tax consequences. Prior to entering into any proposed transaction, recipients should determine, in consultation with their own investment, legal, tax, regulatory and accounting advisors, the economic risks and merits, as well as the legal, tax, regulatory and accounting characteristics and consequences, of the transaction. Morgan Stanley Smith Barney LLC and its affiliates do not provide tax or legal advice. To the extent that this material or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law. Any such taxpayer should seek advice based on the taxpayer’s particular circumstances from an independent tax advisor.

Supporting documentation for any claims (including any claims made on behalf of options programs or the options expertise of salespersons), comparisons, recommendations, statistics, or other technical data, will be supplied upon request.

There are many factors that an investor should be aware of when trading options including interest rates, volatility, stock splits, stock dividends, stock distributions, currency exchange rates, etc.

Annualized returns will not be calculated for holding periods less than 60 days.

If a secondary market in options becomes unavailable and prevents a closing transaction, the options writer’s obligation would remain until expiration or assignment.

NOTE: This statement is not intended to enumerate all of the risks entailed in trading options. It is expected that you will read the booklet entitled “Characteristics and Risks of Standardized Options” (see <https://www.theocc.com/getmedia/a151a9ae-d784-4a15-bdeb-23a029f50b70/riskstoc.pdf>). Please direct your attention to Chapter X, “Principal Risks of Options Positions.”

Options and Derivatives Risk

Pre-Paid Variable Forwards (PPVFs) are customized OTC derivative transactions with a single broker-dealer counterparty. This exposes the investor to counterparty credit risk, meaning the investor’s ability to monetize or hedge the position depends on the creditworthiness and ongoing performance of the counterparty.

Additionally, entering into a PPVF may trigger constructive sale treatment under the Internal Revenue Code, potentially accelerating taxable capital gains. Investors should consult with qualified tax advisors prior to execution to fully understand these implications.

PPVFs also involve embedded costs, including financing charges and derivative pricing spreads, which may reduce the net benefit of the strategy. These costs can be difficult to assess in advance and may vary based on market conditions and the negotiated terms.

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 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.

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 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; Risks associated with the operations, personnel, and processes of the manager; and Risks associated with cybersecurity. As a diversified global financial services firm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other activities. In the ordinary course of its business, Morgan Stanley Wealth Management therefore engages in activities where Morgan Stanley Wealth Management's interests may conflict with the interests of its clients, including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conflicts of interest will be resolved in favor of its clients or any such fund. Alternative investments involve complex tax structures, tax inefficient investing, and delays in distributing important tax information. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice. All expressions of opinion are subject to change without notice and are not intended to be a forecast of future events or results. Further, opinions expressed herein may differ from the opinions expressed by Morgan Stanley Wealth Management and/or other businesses/affiliates of Morgan Stanley Wealth Management. This is not a "research report" as defined by FINRA Rule 2241 or a "debt research report" as defined by FINRA Rule 2242 and was not prepared by the Research Departments of Morgan Stanley Smith Barney LLC or Morgan Stanley & Co. LLC or its affiliates. Certain information contained herein may constitute forward-looking statements. Due to various risks and uncertainties, actual events, results or the performance of a fund may differ materially from those reflected or contemplated in such forward-looking statements. Clients should carefully consider the investment objectives, risks, charges, and expenses of a fund before investing. While the HFRI indices are frequently used, they have limitations (some of which are typical of other widely used indices). These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and the index may omit funds, the inclusion of which might significantly affect the performance shown). The HFRI indices are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe and may be biased in several ways. Composite index results are shown for illustrative purposes and do not represent the performance of a specific investment. Individual funds have specific tax risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice. Interests in alternative investment products are offered pursuant to the terms of the applicable offering memorandum, are distributed by Morgan Stanley Wealth Management and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley Wealth Management or any of its affiliates, (3) are not guaranteed by Morgan Stanley Wealth Management and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Wealth Management is a registered broker-dealer, not a bank. This material is not to be reproduced or distributed to any other persons (other than professional advisors of the investors or prospective investors, as applicable, receiving this material) and is intended solely for the use of the persons to whom it has been delivered. This material is not for distribution to the general public. Past performance is no guarantee of future results. Actual results may vary. SIPC insurance does not apply to precious metals, other commodities, or traditional alternative investments. In Consulting Group's advisory programs, alternative investments are limited to US-registered mutual funds, separate account strategies and exchange-traded funds (ETFs) that seek to pursue alternative investment strategies or returns utilizing publicly traded securities. Investment products in this category may employ various investment strategies and techniques for both hedging and more speculative purposes such as short-selling, leverage, derivatives and options, which can increase volatility and the risk of investment loss. Alternative investments are not appropriate for all investors.

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.

As a diversified global financial services firm, Morgan Stanley engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other activities. In the ordinary course of its business, Morgan Stanley therefore engages in activities where Morgan Stanley interests may conflict with the interests of its clients, including the private investment funds it manages. Morgan Stanley can give no assurance that conflicts of interest will be resolved in favor of its clients or any such fund. All expressions of opinion are subject to change without notice and are not intended to be a forecast of future events or results. **Private Markets:** As part of the Morgan Stanley Private Markets – Access program, Morgan Stanley will be limited solely to a role as an introducer and will not be serving as a placement agent or adviser. Eligible investors must enroll in the program in order to see any investment opportunities. Investments require independent evaluation, due diligence, review & analysis. Neither Morgan Stanley nor any of its affiliates is making any recommendation to purchase or take any action of any sort and is not providing any advice on investments. Investors are asked to work directly with the issuer/sponsor and with your own independent (non-Morgan Stanley) financial, legal, accounting, tax, and other professional advisors to evaluate the investment opportunity.

Investors are responsible for complying with the terms of any applicable exemption from securities law requirements and any potential Private Company issuer restrictions for any sale of Private Company shares, and you must obtain your own legal counsel to advise you in connection with such requirements and Private Company issuer restrictions. You should consult with your third-party advisors regarding the risks of transacting in Private Company shares, including the risk of transacting in a market with little or no price transparency or liquidity. Morgan Stanley provides no opinion or view on the valuation of any Private Company shares, or the sufficiency, fairness or competitiveness of any price obtained. Private Securities do not trade on any national securities exchange and, as such, any potential liquidity (i.e., the potential for any buying interest that might satisfy your sell interest) in such Private Company shares is very limited.

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.

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 AI-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 account 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.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE-AWARE INVESTMENTS ("ESG")

Certain portfolios may include investment holdings deemed Environmental, Social and Governance ("ESG") investments. For reference, environmental ("E") factors can include, but are not limited to, climate change, pollution, waste, and how an issuer protects and/or conserves natural resources. Social ("S") factors can include, but are not limited to, how an issuer manages its relationships with individuals, such as its employees, shareholders, and customers as well as its community. Governance ("G") factors can include, but are not limited to, how an issuer operates, such as its leadership composition, pay and incentive structures, internal controls, and the rights of equity and debt holders. You should carefully review an investment product's prospectus or other offering documents,

disclosures and/or marketing material to learn more about how it incorporates ESG factors into its investment strategy.

ESG investments may also be referred to as sustainable investments, impact aware investments, socially responsible investments or diversity, equity, and inclusion ("DEI") investments. It is important to understand there are inconsistent ESG definitions and criteria within the industry, as well as multiple ESG ratings providers that provide ESG ratings of the same subject companies and/or securities that vary among the providers. This is due to a current lack of consistent global reporting and auditing standards as well as differences in definitions, methodologies, processes, data sources and subjectivity among ESG rating providers when determining a rating. Certain issuers of investments including, but not limited to, separately managed accounts (SMAs), mutual funds and exchange traded-funds (ETFs) may have differing and inconsistent views concerning ESG criteria where the ESG claims made in offering documents or other literature may overstate ESG impact. Further, socially responsible norms vary by region, and an issuer's ESG practices or Morgan Stanley's assessment of an issuer's ESG practices can change over time.

Portfolios that include investment holdings deemed ESG investments or that employ ESG screening criteria as part of an overall strategy may experience performance that is lower or higher than a portfolio not employing such practices. Portfolios with ESG restrictions and strategies as well as ESG investments may not be able to take advantage of the same opportunities or market trends as portfolios where ESG criteria is not applied. There is no assurance that an ESG investing strategy or techniques employed will be successful. Past performance is not a guarantee or a dependable measure of future results. For risks related to a specific fund, please refer to the fund's prospectus or summary prospectus.

Investment managers can have different approaches to ESG and can offer strategies that differ from the strategies offered by other investment managers with respect to the same theme or topic. Additionally, when evaluating investments, an investment manager is dependent upon information and data that may be incomplete, inaccurate or unavailable, which could cause the manager to incorrectly assess an investment's ESG characteristics or performance. Such data or information may be obtained through voluntary or third-party reporting. Morgan Stanley does not verify that such information and data is accurate and makes no representation or warranty as to its accuracy, timeliness, or completeness when evaluating an issuer. This can cause Morgan Stanley to incorrectly assess an issuer's business practices with respect to its ESG practices. As a result, it is difficult to compare ESG investment products.

Morgan Stanley's assessment of an issuer's ESG practices or an ESG portfolio is as of the date of this material. No assurance is provided that the underlying assets have maintained or will maintain any applicable ESG designations or any stated ESG compliance, or that the underlying assets have been operated or will be operated in an ESG-compliant manner. The ESG impacts of the securities and any underlying assets may vary over time.

This can cause Morgan Stanley to incorrectly assess an issuer's business practices with respect to its ESG practices. As a result, it is difficult to compare ESG investment products.

Morgan Stanley makes no representation as to the compliance or otherwise of any fund or portfolio with any laws or regulatory guidelines, recommendations, requirements or similar relating to the ESG characterization of any fund or portfolio, or in connection with or to meet any of your investing ESG objectives, metrics or criteria.

The appropriateness of a particular ESG investment or strategy will depend on an investor's individual circumstances and objectives. Principal value and return of an investment will fluctuate with changes in market conditions.

The Morgan Stanley Impact Quotient report is an assessment of an investor's portfolio (or subset thereof) utilizing various environmental, social, and governance ("ESG") factors. The metrics included in the report are based on key topic areas for sustainable and impact investing. Assessment of the investor's portfolio's alignment with ESG factors, established by Morgan Stanley, is evaluated based on available data and expertise from MSCI ESG Research, ISS-ESG and Fossil Free Indexes.

The Morgan Stanley Impact Quotient report does not represent Morgan Stanley's view of any individual fund or security, is not a judgment on any company's commitment to sustainability issues, and is provided for informational purposes only. The report is not a "research report" as defined by FINRA Rules 2241 and 2242. It is not prepared by the Research Departments of Morgan Stanley Smith Barney LLC or Morgan Stanley & Co. LLC or its affiliates.

The information provided by Morgan Stanley Impact Quotient does not provide a complete basis for recommending a particular product to an investor. Financial Advisors must carefully and thoroughly evaluate a specific product and understand its potential risks as well as benefits. They should carefully review available information about the product, such as a research report, offering document or prospectus, as applicable.

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.**

"Home equity" refers to a home equity loan that is a second mortgage that allows you to use the equity in your home as collateral to borrow money. "Home equity," as referenced here, is not a line of credit but a closed-end loan. The funds are loaned to you as a lump sum at a fixed or adjustable interest rate, and you make your monthly payments during a repayment period.

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, siblings 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 from Morgan Stanley.

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>.

Morgan Stanley 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. Certain conditions must be satisfied to obtain FDIC insurance coverage. 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), provided that certain conditions are satisfied. 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.

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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.

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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. Incremental rate discounts of 0.125% for qualifying new assets of between \$500,000 and \$999,999.99; 0.250% for qualifying new assets between \$1,000,000 and \$4,999,999.99; 0.375% for qualifying new assets between \$5,000,000 and \$9,999,999.99; and 0.500% for qualifying new assets \$10,000,000 and over. Terms are subject to change. New assets can be deposited into existing or new MSWM accounts. Brokerage and E*TRADE from Morgan Stanley accounts are eligible. Discount is applied on top of the rate discount you may be eligible for in the existing relationship pricing program. Qualifying new assets may be deposited 30 days before the Application Date and will be measured on the 10th business day before the mortgage closing date, at which time the eligible assets and the rate discount eligibility will be confirmed. If the assets are not in a qualifying account on the 10th business day before closing, the closing date may have to move, or the discount may not be applied. New qualifying assets are defined as Inflows less outflows, not impacted by market fluctuations. Retirement assets deposited after the Application Date are not eligible to be used to qualify for this offer. Assets transferred from E*TRADE from Morgan Stanley to Morgan Stanley Smith Barney, LLC are not eligible as net new assets.

Limits and conditions apply. Mobile remote check deposits are subject to certain terms and conditions. Daily limits vary and are dependent on asset level. Transfers of up to \$100,000 daily for existing Reserved clients.

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

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Results show a statistical estimate of a portfolio's reaction to a simulated market scenario or simulated historical scenario (such hypothetical scenarios also referred to throughout as 'Stress Test Scenarios') based on a portfolio's estimated exposure to different risk factors. Performance is hypothetical and does not represent any actual portfolio performance. See Important Disclosures on the report material for i. a description of the methodology used and assumptions made to calculate the hypothetical performance, including definitions of simulated market scenarios and simulated historical scenarios, ii. information about any fees, expenses and costs that were excluded in the calculation of this hypothetical performance, iii. an explanation of the risks and limitations of relying on hypothetical performance results and iv. information regarding the use of proxies RESULTS OF THE STRESS TEST SCENARIOS ARE NOT GUARANTEES OF WHAT WILL HAPPEN BASED ON THESE ASSUMPTIONS. Information on this page provides an analysis of how a portfolio might react during the relevant simulated market scenario or simulated historical scenario presented, if it had occurred at one moment in time, based on the factors described in a PRP report. The portfolio return has been reduced by 0.005%, which represents a single day's worth of a maximum advisory program fee of 2.0% in order to reflect the impact of applicable advisory fees for advisory portfolios. The portfolio return is rounded to the nearest hundredth digit after application of this fee. Although this fee is not

applicable to brokerage relationships, it has been applied to the analysis, which may result in hypothetical returns that are slightly lower than what would have been achieved by a brokerage account. The actual fee may be less than this amount and will generally be charged monthly and not daily.

How is liquidity calculated?

The liquidity analytics represent the hypothetical projected ease of selling the assets in a portfolio without causing a drastic change in the price of those assets. Liquidity is calculated by comparing the size of each position in a portfolio to its average trading volume (ADV) to determine each position's Days to Unwind (DTU), a representation of the estimated amount of time it would take to sell a position without impacting the price of a security (based on an assumed percentage of ADV able to be traded in a given day, known as the Participation Rate). Generally, the greater the size of a position relative to that security's ADV, the higher the DTU will be. The model assumes a linear relationship between the DTU and the liquidation value of a security. A portfolio level DTU is then calculated using the asset weighted average of the positions, and Liquidity Classification is assigned based on the below DTU levels:

Liquidity Classification:

- Potentially High Liquidity – Less than or equal to 2 days to unwind
- Potentially Moderate Liquidity – Greater than 2 days and less than or equal to 10 days to unwind
- Potentially Less Liquidity – Greater than 10 days and less than or equal to 15 days to unwind
- Potentially Low Liquidity – Greater than 15 days to unwind

The Average Daily Volume (ADV) of a position is meant to estimate the next day's trading volume based on observations over a rolling period obtained at the end of the previous day. Where trading volume data is insufficient, a factor model based on indicative security information is utilized. For asset classes that have rich data sets and relatively frequent trading, such as public market equities, forecasting an ADV requires less advanced modeling techniques. Fixed income or OTC securities might not have daily observable trading volume, however that does not necessarily imply that there is no liquidity for these securities. For those asset classes, the model will use statistical techniques to determine the probability that a security will trade that day. The model then combines the probability of trade with the observed daily trading values from a proxy security to calculate an expected ADV which is used in the model calculations.

The liquidity estimate may differ (sometimes significantly) from historical, realized liquidity depending on the time period and assumptions of the liquidity model. The assumptions used in this model reflect normal market conditions, and the results of the model may vary significantly from realized liquidity during stressed markets. Some model assumptions may vary and evolve over time based on market and economic conditions.

Use of Fallback Values

For investment products that are lightly traded or are not exchange traded such as annuities and private alternatives, the model will use an assumed DTU value. This value is based on common attributes of the product type and / or asset class and might not be reflective of the actual liquidity available for a given security. Securities with insufficient data will also leverage fallbacks based on their product type.

MMI / Barron's nominations were reviewed and evaluated by a specially appointed MMI Industry Awards Steering Council and the MMI Membership Experience Committee (MEC). The council and committee members represent all segments of the MMI membership—asset managers, wealth managers and solutions providers. The Steering Council and MEC reviewed the nominations based on:

- Level of innovation and forward-thinking
- Potential to effect noticeable change in the investment advisory industry
- Advancement of existing investment advisory practices and protocols
- Potential to deliver improved outcomes for financial advisors and investor

After carefully reviewing the nominations submitted, the Steering Council and MEC determined a slate of finalists in each award category. The primary contacts at each of MMI's 208 members firms were eligible to vote to determine the winners in each category.

MMI / Barron's did not receive compensation from the participating firms in exchange for the award and Morgan Stanley did not pay a fee to MMI / Barron's in exchange for the award. Morgan Stanley is not affiliated with MMI / Barron's. This award was granted to Morgan Stanley based on the time period from October 2022 to June 2023. the Money Management Institute (MMI) is the industry association representing financial services firms and Barron's is a financial magazine both groups are responsible for the award.

The American Financial Technology Award's Best Risk Management Initiative was awarded in 2022. This ranking was determined based on an evaluation process conducted by Waters Technology during the period from 02/09/2022 – 04/11/22. Neither Morgan Stanley Smith Barney LLC nor its Financial Advisors or Private Wealth Advisors paid a fee to Waters Technology. This ranking is based on an evaluation led by Waters Technology's editorial team, judging the content and quality of submissions. Rankings are based on the opinions of Waters Technology and this award may not be representative of any one client's experience. This Award is not indicative of the Financial Advisor's future performance. Morgan Stanley Smith Barney LLC is not affiliated with Waters Technology. For more information, see <https://www.aftas.org/>.

The Aite Group Impact Innovation Award for Digital Client Engagement was granted to Morgan Stanley Smith Barney LLC ("Morgan Stanley") following an evaluation process conducted by Aite Group analysts. To be considered for this award, Morgan Stanley submitted an Impact Innovation Nomination Award Worksheet to Aite Group on March 19, 2021 and provided a live demonstration of Morgan Stanley's Portfolio Risk Platform to representatives of Aite Group on April 7, 2021. Morgan Stanley was the only firm to win this award out of more than 40 submissions. Aite Group judged each submission on the following criteria: (1) Level of innovation and competitive advantage; (2) Market needs assessment; (3) Impact on customer experience; (4) Impact on customer operational efficiency; (5) Level of new revenue opportunity for the organization; (6) Impact on customer retention/new customer attraction; (7) Level of scalability across customer base; (8) Future roadmap. Aite Group does not receive compensation from the participating firms in exchange for the award and Morgan Stanley did not pay a fee to Aite Group in exchange for the award. Morgan Stanley is not affiliated with Aite Group. This award was granted to Morgan Stanley based on the time period from March 2021 to May 2021. Aite Group is an independent research and advisory firm focused on business, technology, and regulatory issues in financial services and is responsible for determining the recipient of this award.

The Celent Model Wealth Manager 2024 Award for Data and Analytics was granted to Morgan Stanley Smith Barney LLC ("Morgan Stanley") following an evaluation process conducted by Celent analysts. To be considered for this award, Morgan Stanley submitted a Model Wealth Manager 2024 Nomination Award Worksheet to Celent on or about October 2023. Celent judged each submission on three criteria: (1) Measurable business benefits of live initiatives; (2) degree of innovation relative to the industry; and (3) technology or implementation excellence. In order to win, the initiatives must demonstrate clear business benefits, innovation, and technology or implementation excellence.

Celent does not receive compensation from the participating firms in exchange for the award and Morgan Stanley did not pay a fee to Celent in exchange for the award. Morgan Stanley is not affiliated with Celent. Based on their submission in October 2023 for Celent's 2024 Model Awards program, Celent granted Morgan Stanley their awards in January 2024 and publicly shared the news in March 2024. Celent is a global financial services research and advisory firm and is responsible for determining the recipient of this award.

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