Graystone Consulting℠
A business of Morgan Stanley

Chicago, IL Office
760 W Main Street
Suite 200
Barrington, IL 60010
Tel: (847) 382-6608

Wichita, KS Office
1617 N Waterfront Parkway
Suite 200
Wichita, KS 67206
Tel: (316) 630-4488

New York Office
522 Fifth Avenue
14th Floor
New York, NY 10036
Tel: (212) 296-1064

Intro to Investing

COMMUNITY FIRST® FOUNDATION
Powering Community Together

George T Cook, CIMA®
Institutional Consulting Director
George.T.Cook@msgraystone.com

Wm. G. (Bill) Hendrix, CIMA®
Institutional Consulting Director
William.G.Hendrix@msgraystone.com

Robert J. Morris
Institutional Consulting Director
Robert.J.Morris@msgraystone.com

Suzanne Lindquist
Executive Director
Suzanne.Lindquist@morganstanley.com

Investing Can Be Complicated and Overwhelming

As of January 2, 2020

When formulating an investment strategy, it's important to have a strong understanding of three key fundamentals:

- **Major Asset Classes**
  - The four major asset classes we focus on are Cash & Cash Alternatives, Fixed Income, Equities and Alternative Investments
  - We also provide a description of major investment vehicles such as Mutual Funds and ETFs
- **Basic Tenets of Investing**
  - These include the benefits of compounding interest, the importance of staying invested, and how market timing can impact your portfolio
- **Asset Allocation and Diversification**
  - The importance of asset allocation and diversification within a portfolio to mitigate risk

We recommend that investors formulate a plan for their investments based on their goals. This requires an understanding of both time horizon and risk tolerance.

Source: Morgan Stanley Wealth Management GIC

Major Asset Classes

Basic Tenets of Investing

Asset Allocation & Diversification

One of the Most Important Parts of Investing Is Selecting Appropriate Asset Classes for Your Goals

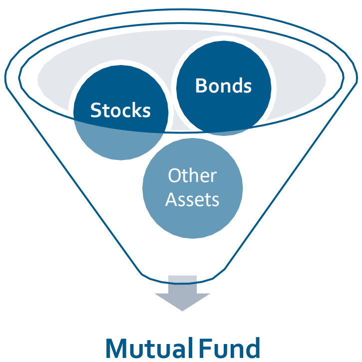
Major Asset Classes

Asset Class	Description	Uses
Cash & Cash Alternatives	• Matures <1 year • Highly liquid securities	• Capital Preservation
Fixed Income	• Potential periodic income at regular intervals • Varied maturity	• Capital Preservation • Stable Income Stream
Equity	• Company ownership	• Capital Appreciation • Income
Alternatives	• Lower correlation to the market/other asset classes	• Capital Appreciation • Diversification

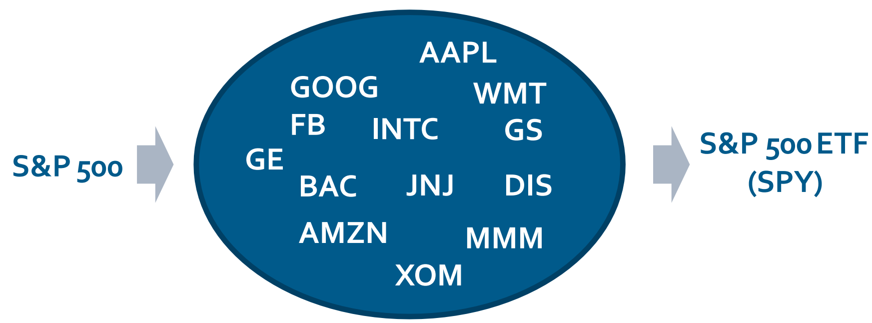
Source: Morgan Stanley Wealth Management Investment Resources

Mutual Funds (MFs) and Exchange Traded Funds (ETFs) Basics

- A **Mutual Fund** is an investment vehicle funded by shareholders for the purpose of investing in stocks, bonds, money market instruments and other assets
- Mutual Funds are typically actively managed by professional money managers who make security selection decisions that can lead to higher fees than ETFs
- Mutual Funds enable investment across asset classes that might otherwise be out of reach due to minimum account sizes or high cost



- An **ETF** is an investment vehicle designed to mimic the daily movement of a market index or other benchmark
- ETFs are typically passively managed and do not involve security selection. This tracking of the market may not offer the same level of potential dividend returns as owning the stock
- ETFs enable you to gain market exposure at a lower cost, and with more transparency than comparable investment products



Source: Morgan Stanley Wealth Management GIC. Equity securities shown as constituents of the S&P 500 as well as the S&P 500 ETF are for illustrative purposes only.

Asset Class Map

Cash

- Cash Alternatives
  - CDs
  - Money Market
  - US T-Bill
- US Cash Deposits
- Non-USD Deposits

Fixed Income

- Investment Grade
  - Treasuries
  - Agencies
  - Corporates
  - Inflation Protected
  - Non-Us
  - Mortgages
  - Municipals
  - Floating Rates
- Non Investment Grade
  - US High Yield
  - Emerging Markets Debt
  - Municipal High Yield
- Convertible Bonds

Equities

- US
  - Large Cap
  - Mid Cap
  - Small Cap
- Developed Market
  - Large Cap
  - Mid Cap
  - Small Cap
- Emerging Markets
  - BRIC
  - Beyond BRIC
  - Frontier
- Preferred Stocks

Alternatives

- Real Assets
- Absolute Return Assets
- Equity Hedge Assets
- Equity Return Assets
- Private Investments

Source: Bloomberg, Morgan Stanley Wealth Management GIC. Beyond BRIC- emerging market countries besides Brazil, Russia, India, and China. Frontier - frontier countries are typically less developed than EM nations. MSCI currently defines 32 nations as frontier markets. These markets tend to be the riskiest markets in the world.

Cash Alternatives for Liquidity and Capital Preservation

Cash				
Cash Alternatives			US Cash Deposits	Non-USD Deposits
CDs	Money Market	US T-Bill		

Certificate of Deposit (CD)

- A CD is a document issued by the bank to an investor who agrees to deposit their money for a set period of time for an interest rate typically higher than their savings account

Money Market Funds

- Money market funds are mutual funds that invest in short-term debt securities and act like savings accounts but provide higher yield

US Treasury Bills

- Treasury Bills are securities issued by the United States Department of Treasury. When issued to companies, such companies are essentially lending the government money

Source: Morgan Stanley Wealth Management Investment Resources

Fixed Income for Stable Income Stream

Fixed Income											
Investment Grade								Non Investment Grade			Convertible Bonds
Treasuries	Agencies	Corporates	Inflation Protected	Non-Us	Mortgages	Municipals	Floating Rates	US High Yield	Emerging Markets Debt	Municipal High Yield	

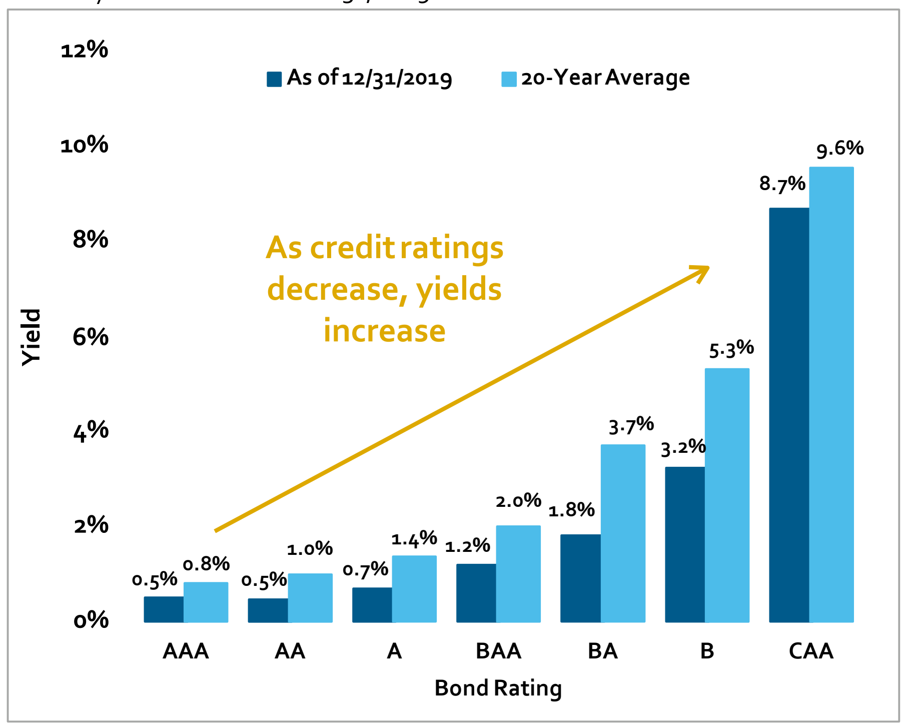
CONSERVATIVE → AGGRESSIVE

Fixed Income Coupon

- Coupons or interest payments are the yield collected by the investor at a fixed interval, typically semi-annually
- The amount of the coupon is determined by the coupon rate or interest rate
- Coupons make up a large portion of the total return of fixed income securities

Corporate Spreads[1] Vs. Average

Monthly data as of December 31, 2019



Source: Morgan Stanley Wealth Management Investment Resources. (1) Option-Adjusted Spread is the measurement of the spread of a fixed-income security rate and the risk-free rate of return, which is adjusted to take into account an embedded option. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time.

Equity for Capital Appreciation

Equities									
US			Developed Market			Emerging Markets			Preferred Stocks
Large Cap	Mid Cap	Small Cap	Large Cap	Mid Cap	Small Cap	BRIC	Beyond BRIC	Frontier	

Dividend

- An equity security that pays regular dividends, often because the firm is past the point of needing to reinvest profits
- Most have lower levels of volatility than overall stock market and offer higher-than-average market dividend yields

Value

- A value stock is a security that has fallen out of favor in the market place and is typically priced lower than stocks of similar companies
- Investing in a value stock attempts to capitalize on inefficiencies in the market price

Growth

- A growth stock is a security whose earnings are expected to grow at a higher-than-market rate
- Growth stocks typically do not pay dividends and are chosen for their potential capital gains

Source: Morgan Stanley Wealth Management Investment Resources

Alternatives for Diversification From Traditional Markets

Alternatives				
Real Assets	Absolute Return Assets	Equity Hedge Assets	Equity Return Assets	Private Investments

Real Assets

- Real Assets are tangible assets that derive their value from their own intrinsic and inherent qualities

Absolute Return Assets

- Absolute Return assets seek to achieve a targeted return independent of any benchmark or other standard

Equity Hedge Assets

- Equity Hedge assets seek to hedge the equity exposure and are usually negatively correlated with equities

Equity Return Assets

- Equity Return assets seek to return above-average equity returns through more complex strategies, i.e., equity long/short and event driven/ credit strategies

Private Investments

- Investments in private companies, or investment vehicles that aim to provide higher-than-market returns through a longer-term, illiquid investment strategy

Source: Morgan Stanley Wealth Management Investment Resources

Major Asset Classes

Basic Tenets of Investing

Asset Allocation & Diversification

The Value & Wonder of Compound Interest

Definition: "Compound interest is the addition of interest to the principal sum of a loan or deposit, or in other words, interest on interest. It is the result of reinvesting interest, rather than paying it out, so that interest in the next period is then earned on the principal sum plus previously accumulated interest."

Simple Interest

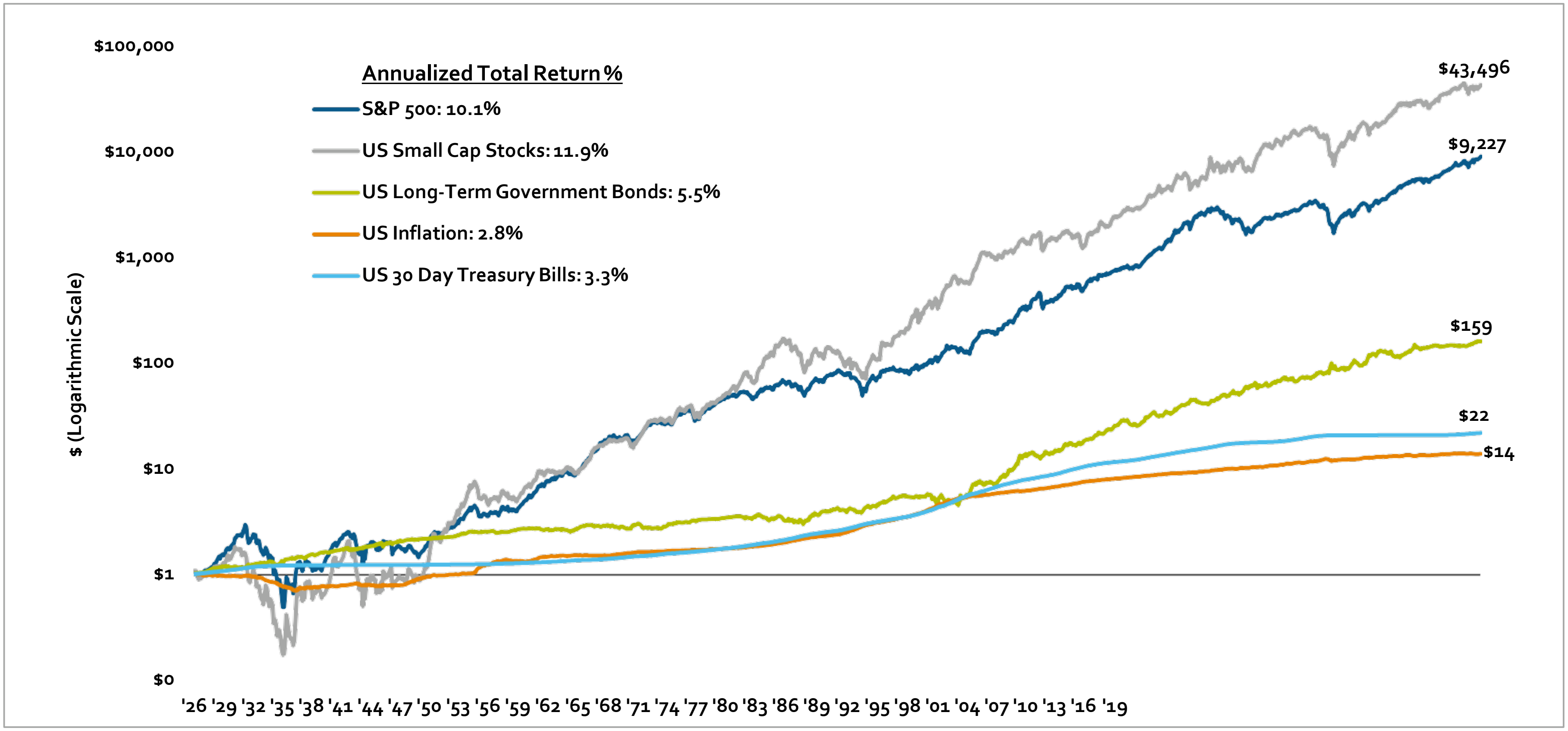
	Interest Earned	Total
Today	$ -	$ 100.00
Year 1	$ 10.00	$ 110.00
Year 2	$ 10.00	$ 120.00
Year 3	$ 10.00	$ 130.00
Year 4	$ 10.00	$ 140.00
Year 5	$ 10.00	$ 150.00
Year 6	$ 10.00	$ 160.00
Year 7	$ 10.00	$ 170.00
Year 8	$ 10.00	$ 180.00
Year 9	$ 10.00	$ 190.00
Year 10	$ 10.00	**$ 200.00**

Compound Interest

	Interest Earned	Total
Today	$ -	$ 100.00
Year 1	$ 10.00	$ 110.00
Year 2	$ 11.00	$ 121.00
Year 3	$ 12.10	$ 133.10
Year 4	$ 13.31	$ 146.41
Year 5	$ 14.64	$ 161.05
Year 6	$ 16.11	$ 177.16
Year 7	$ 17.72	$ 194.87
Year 8	$ 19.49	$ 214.36
Year 9	$ 21.44	$ 235.79
Year 10	$ 23.58	**$ 259.37**

Successful Investing Involves Patience and Fortitude

Cumulative Total Return of $1 January 31, 1926 – December 31, 2019

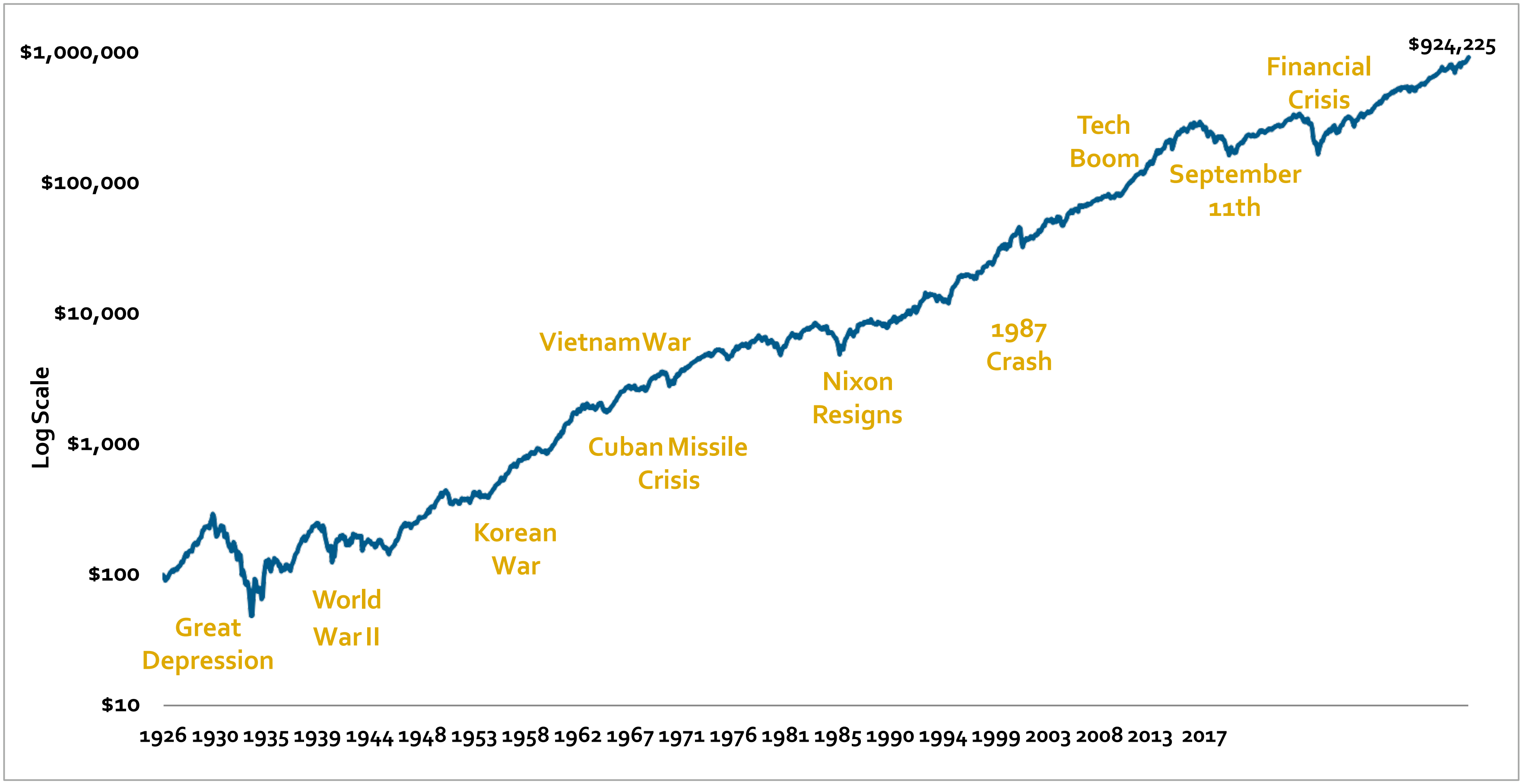


Source: Calculated by Morgan Stanley Wealth Management GIC using data provided by Morningstar. (c) 2019 Morningstar, Inc. All rights reserved. Used with permission. This information contained herein: (i) is proprietary to Morningstar and/or its content providers; (ii) may not be copied or distributed; and (iii) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Aside from the S&P 500, all indices shown above are Ibbotson indices. The hypothetical $1 investment is for illustrative purposes only. It does not represent the performance of any specific investment. For more information about the risks to hypothetical performance please refer to the Risk Considerations section at the end of this material.

Over the Long Term, S&P 500 Has Grown Despite Negative Events

S&P 500: Growth of $100

January 1926 – December 2019



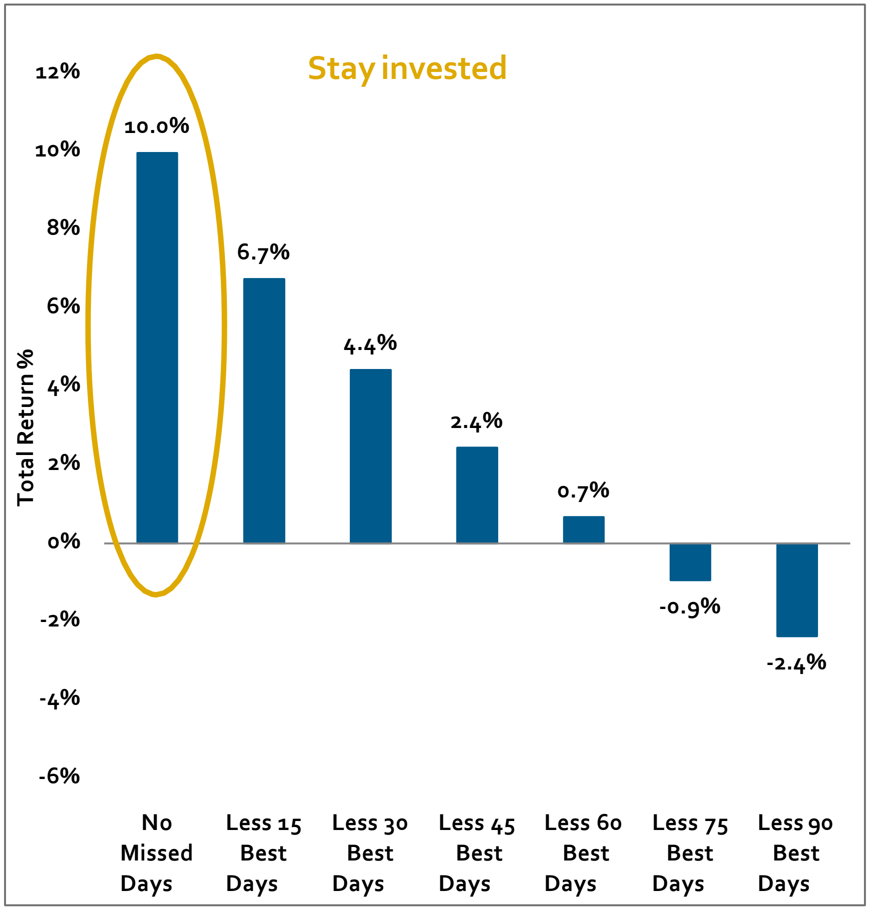
Source: Bloomberg

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

Market Timing Is a Flawed and Costly Strategy

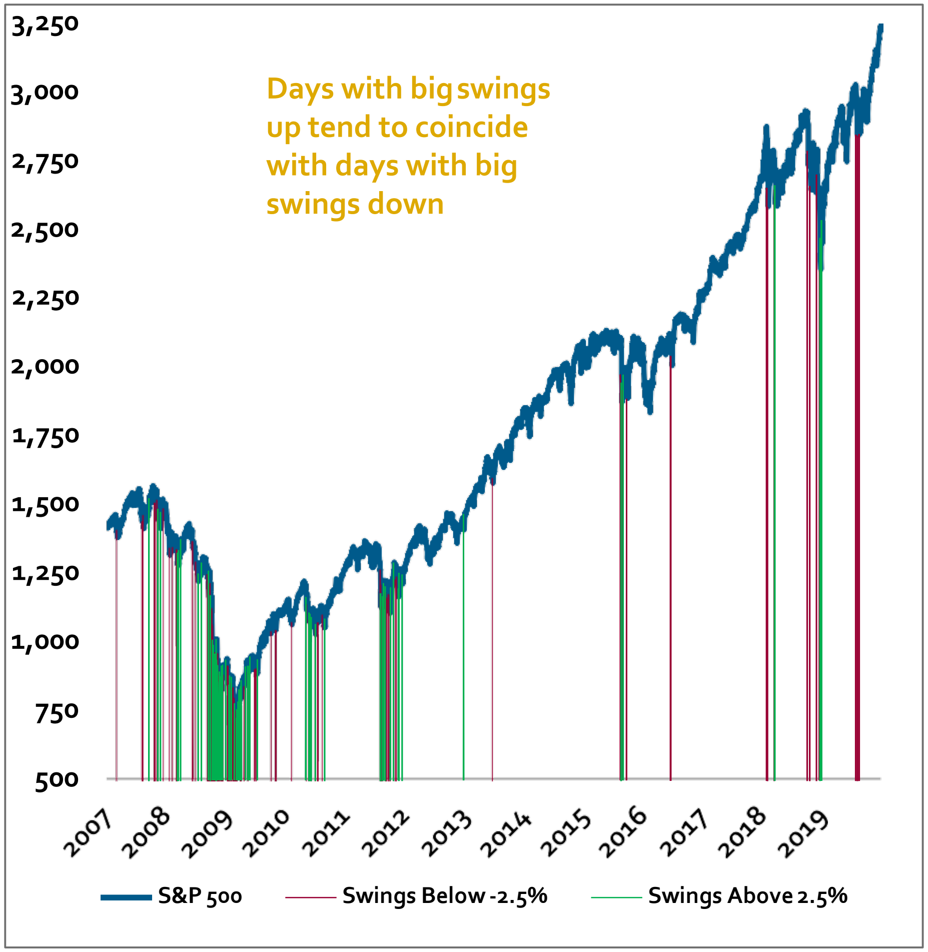
Annualized Total Returns of S&P 500 (1990-2019)

As of December 31, 2019



Days with Large Price Changes Tend to Cluster Together

As of December 31, 2019

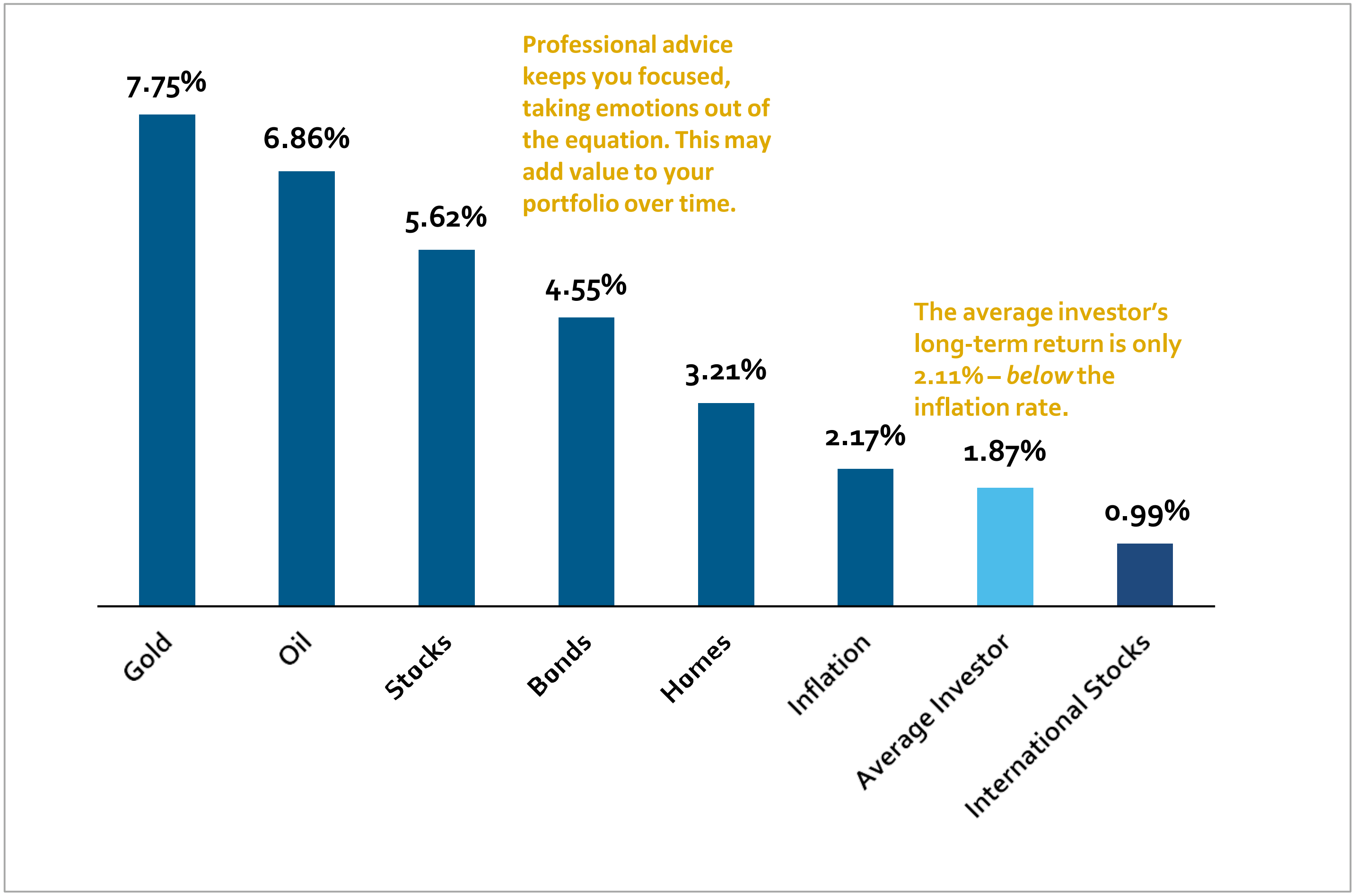


Source: Bloomberg, FactSet, Morgan Stanley Wealth Management GIC. Note: Best days are defined as the days with the highest single-day returns in the S&P 500, Bloomberg.

Going It Alone – Without a Plan – Can Be Costly

20-Year Annualized Returns by Asset Class (1997-2017)

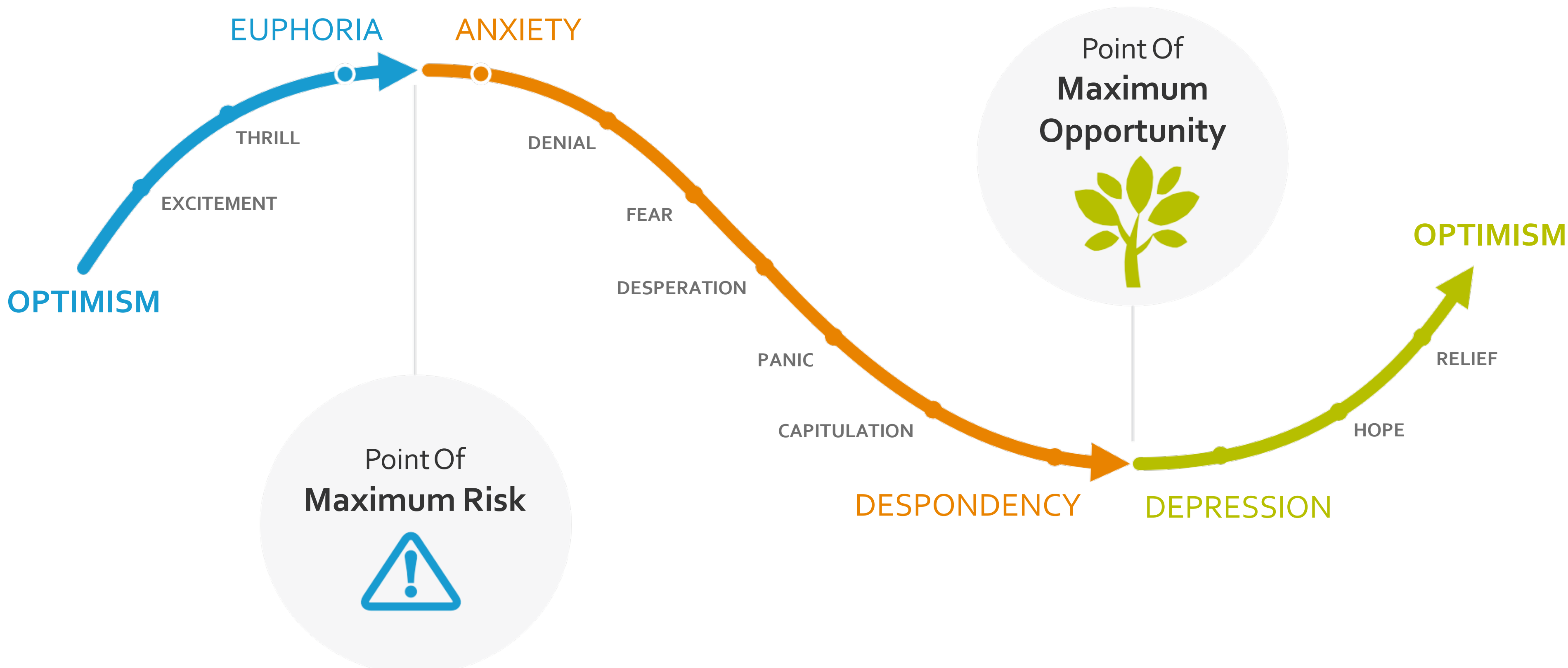
Annual as of December 31, 2017



Source: Factset, Morgan Stanley Wealth Management GIC. Past performance is no guarantee of future results. It is not possible to directly invest in an index. Oil is represented by the change in price of the NYMEX Light Sweet Crude Future contract. Contract size is 1,000 barrels with a contract price quoted in US Dollars and Cents per barrel. Delivery dates take place every month of the year. Gold is represented by the change in the spot price of gold in USD per ounce. Homes are represented by the National Association of Realtors' (NAR) Existing One Family Home Sales Median Price Index. Stocks are represented by the S&P 500 Index, an unmanaged index that consists of the common stocks of 500 large-capitalization companies, within various industrial sectors, most of which are listed on the New York Stock Exchange. Bonds are represented by the Bloomberg Barclays US Aggregate Bond Index, an unmanaged market-weighted index that consists of investment-grade corporate bonds (rated BBB or better), mortgages and US Treasury and government agency issues with at least 1 year to maturity. International stocks are represented by the MSCI EAFE Index, a broad-based measure of international stock performance. Inflation is represented by the Consumer Price Index. Average Investor is represented by Dalbar's average asset allocation investor return, which utilizes the net of aggregate mutual fund sales, redemptions and exchanges each month as a measure of investor behavior. Returns are annualized (and total return where applicable) and represent the 20-year period ending 12/31/14 to match Dalbar's most recent analysis.

It’s Easy to Let Emotions Get in the Way

Having a plan and sticking to it can help you avoid common mistakes such as buying and selling at the wrong time out of panic or exuberance.



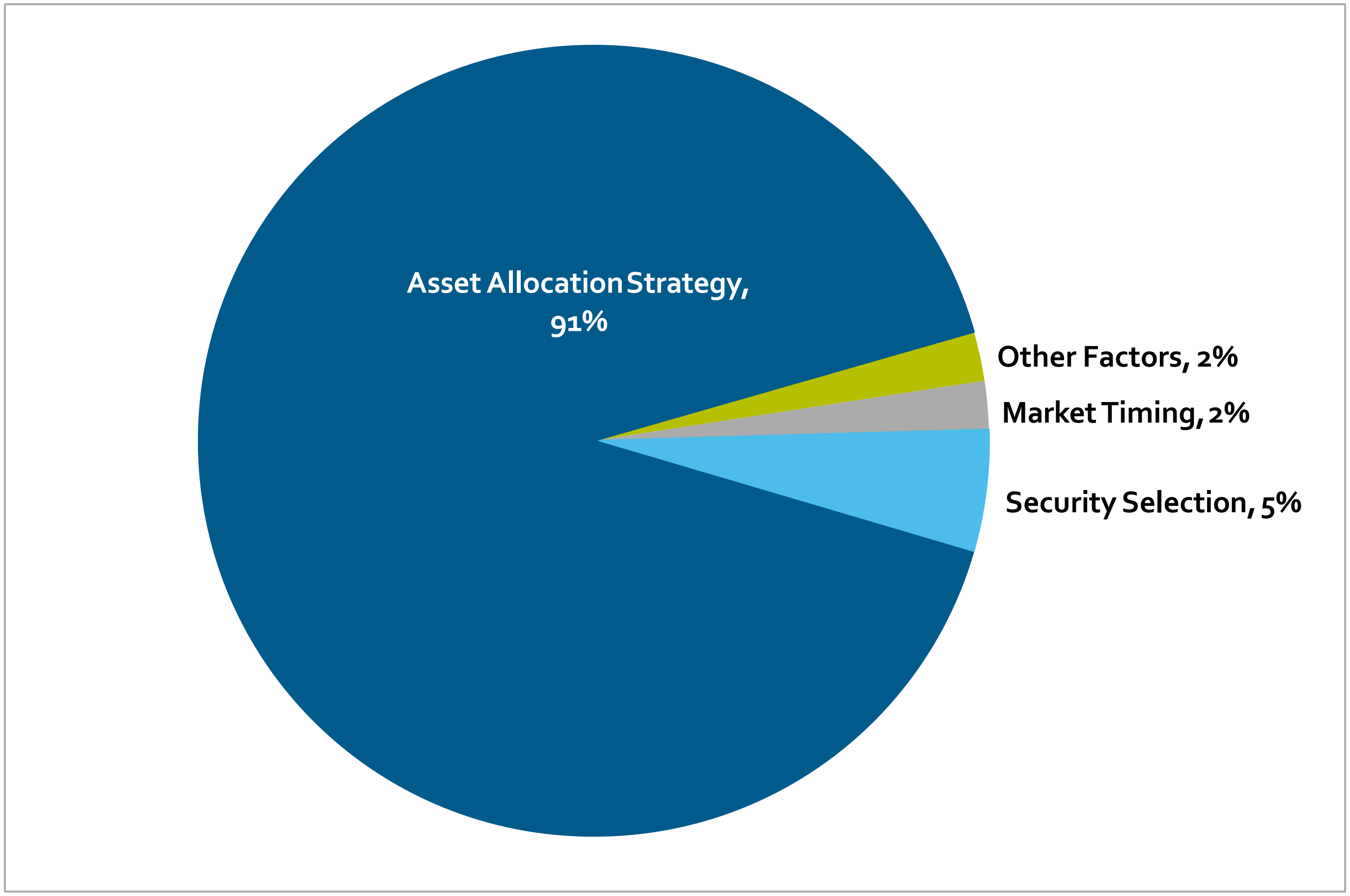
Major Asset Classes

Basic Tenets of Investing

Asset Allocation & Diversification

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

Sources of Return Variation



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

Effective Asset Allocation Depends on Understanding Both Risk and Return

Various asset classes tend to have different risk and return characteristics

Typically, the higher the potential risk, the higher the potential return for an asset class, and the lower the risk, the lower the potential return.

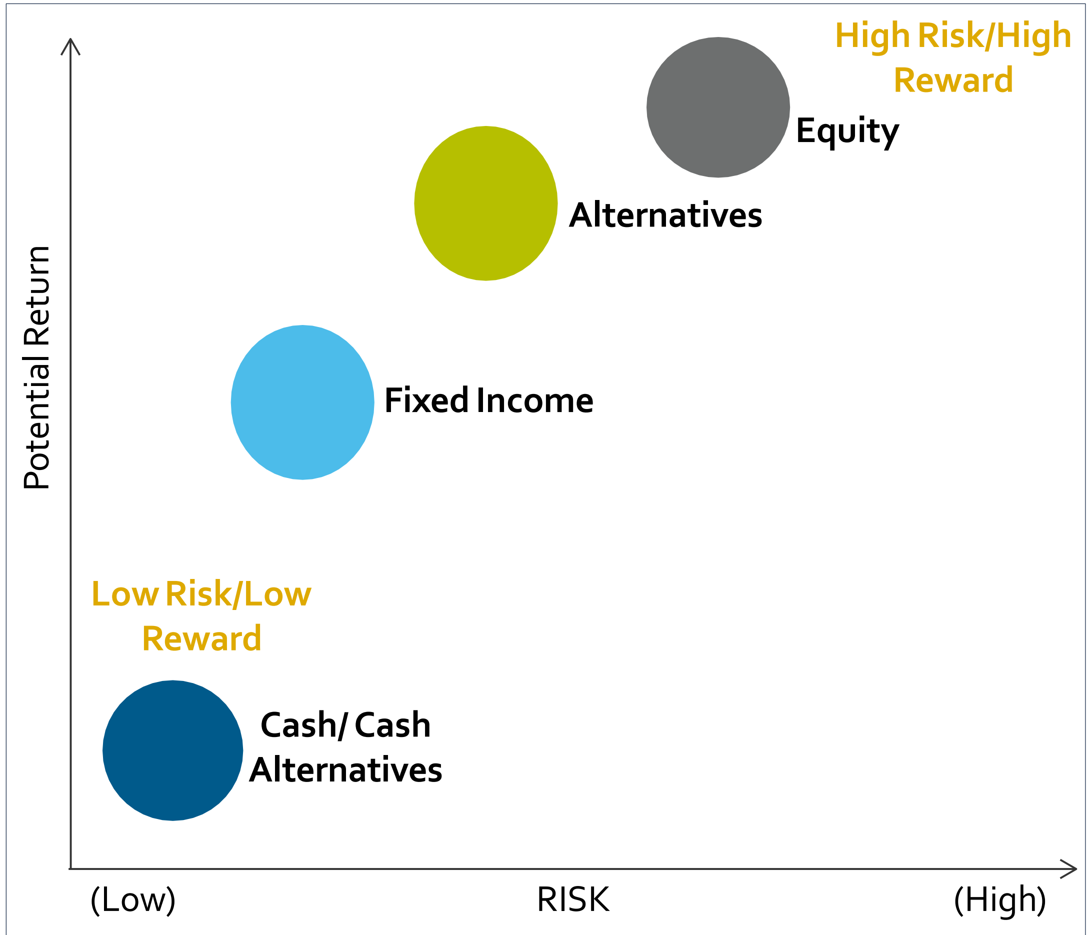
20-Year Annualized Risk and Return

Monthly data as of December 31, 2019

Asset Class	Annualized Return	Annualized Volatility
Cash	1.7%	0.5%
Fixed Income	5.0%	3.4%
Alternatives	5.1%	6.0%
Equity	6.2%	14.5%

Annualized Risk and Return of Asset Classes

Example for Illustrative Purposes Only



Source: FactSet, Bloomberg, Morgan Stanley Wealth Management GIC. Cash is represented by 90-Day T-bills: Citigroup 3M T-Bill Index; Equity by US Large Cap Equities: S&P 500 Index; Fixed Income by US Investment Grade Bonds: Barclays US Aggregate Index; Alternatives by HFRI Fund Weighted Composite Index.

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

Diversified Portfolios Built With Uncorrelated Asset Classes

Asset Class Correlations[1]

Monthly Data as of December 31, 2019; Managed Futures and Hedged Strategies as of November 30, 2019

	Cash	US Investment Grade Bonds	High Yield Bonds (USD)	Int'l Investment Grade Bonds (Hedged to USD)	Large Cap Stocks	Developed Non US Stocks	Emerging Market Stocks	Managed Futures	Hedged Strategies	Commodities
Cash	1.00									
US Investment Grade Bonds	0.16	1.00								
High Yield Bonds (USD)	-0.04	0.24	1.00							
Int'l Investment Grade Bonds (Hedged to USD)	0.18	0.72	0.16	1.00						
Large Cap Stocks	0.00	0.09	0.64	0.06	1.00					
Developed Non-US Stocks	-0.05	0.08	0.60	0.07	0.75	1.00				
Emerging Market Stocks	-0.04	0.02	0.71	0.01	0.68	0.73	1.00			
Managed Futures	0.10	0.27	-0.10	0.26	-0.09	-0.04	-0.06	1.00		
Hedged Strategies	0.15	0.07	0.57	0.05	0.55	0.56	0.66	0.19	1.00	
Commodities	0.03	0.02	0.36	-0.09	0.31	0.39	0.43	0.09	0.40	1.00

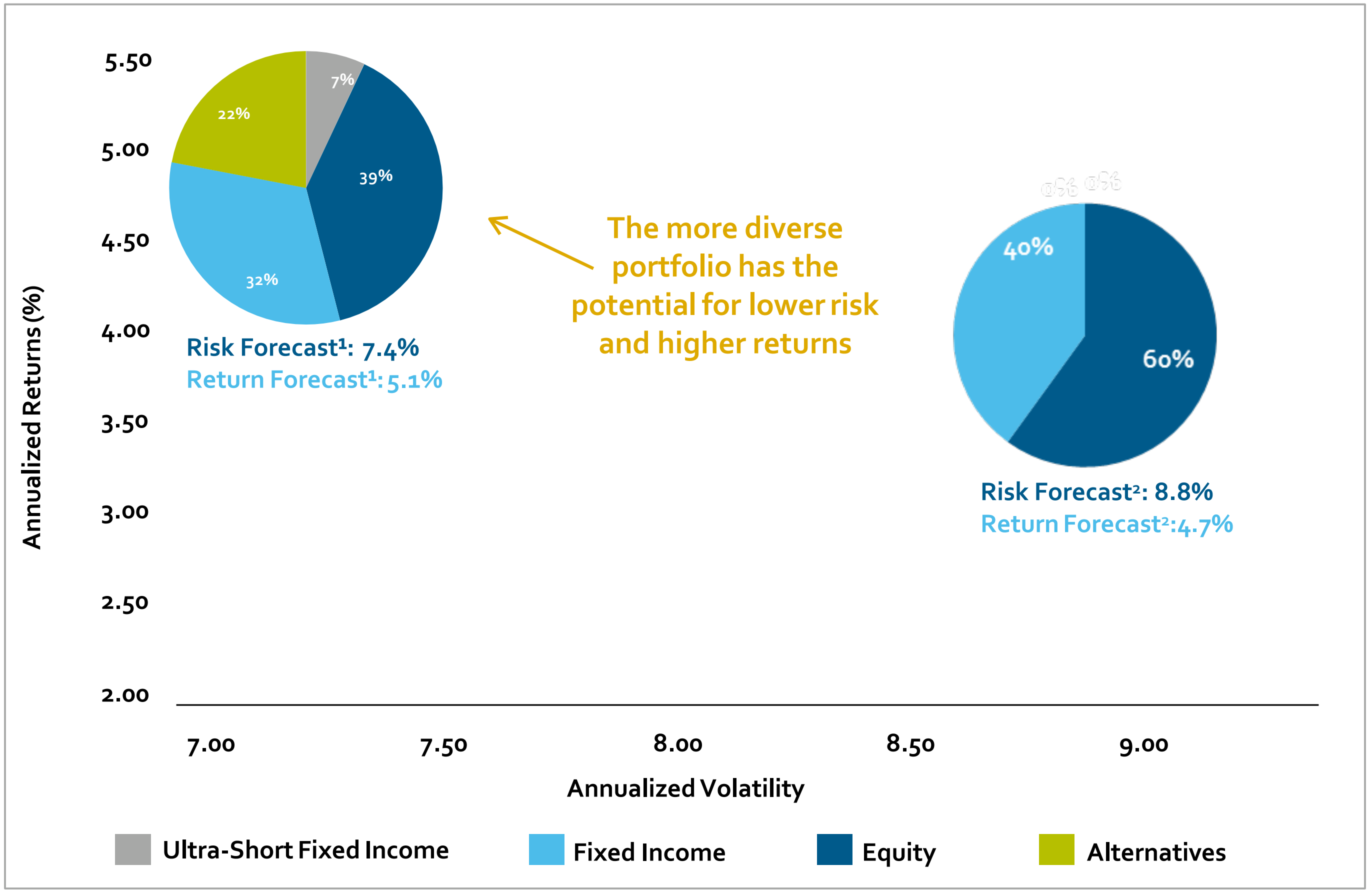
Investing in uncorrelated asset classes is key to risk and return management

Source: FactSet, Bloomberg, Morgan Stanley Wealth Management GIC. (1) Based on monthly returns. Correlation is a statistical method of measuring the strength of a linear relationship between two variables. The correlation between two variables can assume any value from -1.00 to +1.00, inclusive. Hedged strategies consist of hedge funds and managed futures. Indices used for this analysis include: 90-Day T-bills for Cash, Bloomberg Barclays US Aggregate for US Investment Grade, Bloomberg Barclays Global High Yield for High Yield, Bloomberg Barclays Global Aggregate ex US for Intl Investment Grade, S&P 500 for US Large-Cap Equities, MSCI EAFE for International Equities, MSCI EM IMI for EM, BarclayHedge BTOP 50 for Managed Futures, HFRI Fund of Funds for Hedged Strategies, Bloomberg Commodity Index for Commodities.

Diversification Can Positively Impact Portfolios

Diversified Portfolios Can Provide Better Risk and Return Opportunities

Example for Illustrative Purposes Only

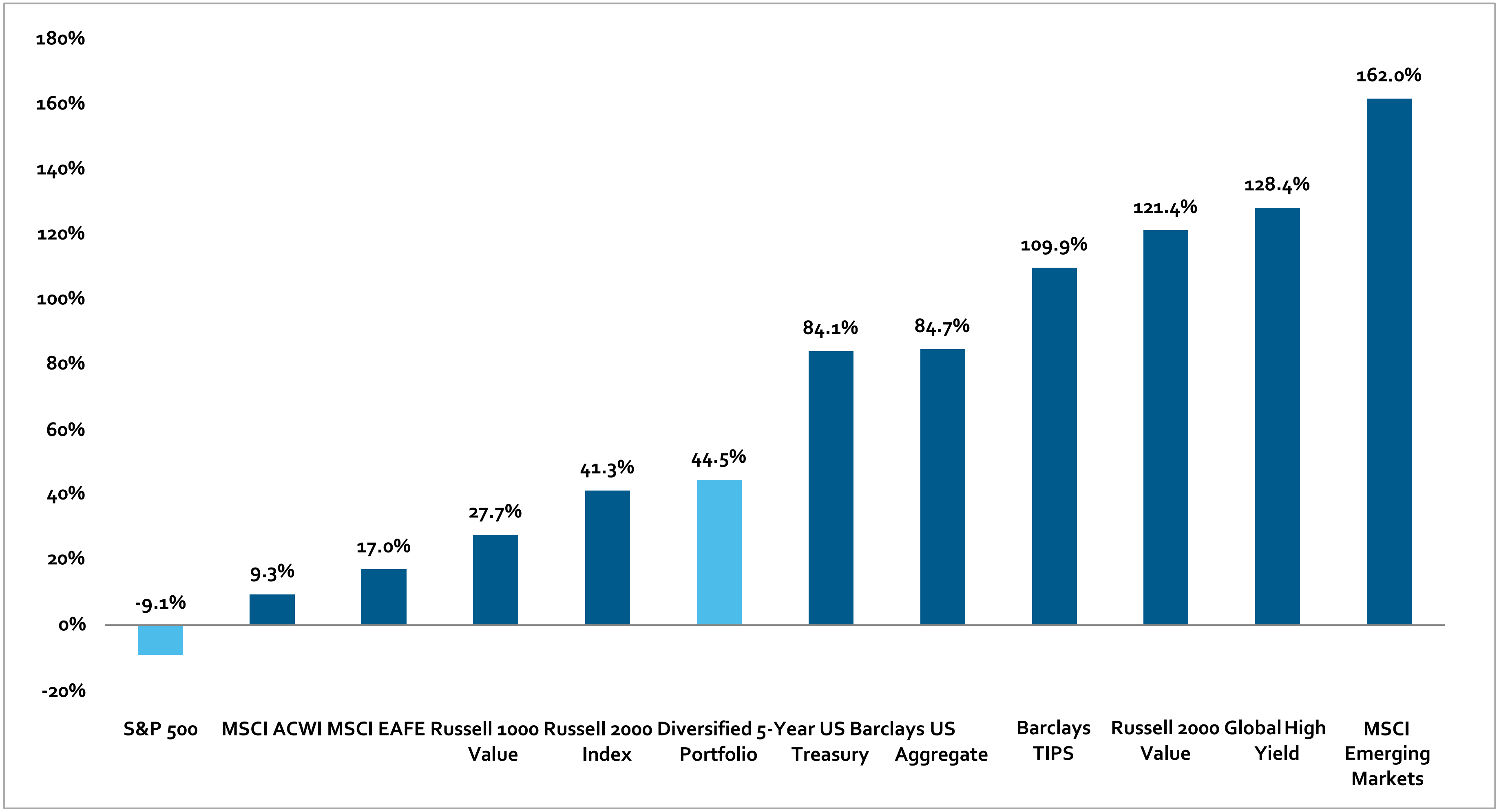


Source: Bloomberg, FactSet, Morgan Stanley Wealth Management GIC. Global Equities: MSCI AC World Index. US Bonds: Bloomberg Barclays US Aggregate Index. Ultrashort Fixed Income: Citigroup 3-Month Treasury Bill Index. Alternatives consist of REITs, MLPs, Absolute Return Assets and Equity Hedge Assets as found in GIC Model 3. (1)Forecasts are based on capital market assumptions as published in the *GIC's Inputs for GIC Asset Allocation: Annual Update of Capital Market Assumptions*, April 2,2019. (2) Morgan Stanley Wealth Management GIC. Returns and Volatility are annualized numbers; GIC Forecast is a 7-year forecast based on strategic return assumptions in the *Inputs for GIC Asset Allocation: Annual Update of Capital Market Assumptions*, April 2019; equities represented by the Russell 1000 Index and bonds by the Bloomberg Barclays Capital US Aggregate Index.

“Lost Decade” (2000-2010) Demonstrates the Importance of Global Diversification and Asset Allocation

Total Returns

January 2000-December 2009



Source: FactSet, Morgan Stanley Wealth Management GIC. Note: Diversified Portfolio is comprised of 50% MSCI All Country World Index/45% Bloomberg Barclays US Aggregate Bond Index/5% Citigroup 3-Month T-Bill Index.

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

The Right Asset Allocation Will Ensure a Diversified Portfolio

Monthly as of December 31, 2019

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10-Yrs ('10-'19) Ann. Return	10-Yrs ('10-'19) Volatility
EM Equities 40.2%	Managed Futures 13.6%	EM Equities 82.9%	MLPs 35.9%	MLPs 13.9%	REITs 29.8%	US Equities 32.4%	REITs 14.7%	US Equities 1.4%	MLPs 18.3%	EM Equities 37.3%	US Debt 0.0%	US Equities 31.5%	US Equities 13.6%	MLPs 17.2%
Commod. 16.2%	DM Int'l Debt 11.7%	MLPs 76.4%	EM Equities 20.2%	Inflation-Linked 13.6%	High Yield 19.6%	MLPs 27.6%	US Equities 13.7%	DM Int'l Equities 0.9%	High Yield 14.3%	DM Int'l Equities 26.7%	DM Int'l Debt -0.8%	REITs 23.6%	REITs 8.9%	Commod. 13.6%
MLPs 12.7%	US Debt 5.2%	High Yield 59.4%	REITs 20.0%	US Debt 7.8%	EM Equities 19.1%	DM Int'l Equities 24.0%	Managed Futures 12.3%	US Debt 0.5%	US Equities 12.0%	US Equities 21.8%	Inflation-Linked -1.3%	DM Int'l Equities 23.1%	Diversified Portfolio 7.7%	US Equities 13.5%
Inflation-Linked 11.6%	Inflation-Linked -2.4%	REITs 41.3%	Commod. 16.8%	DM Int'l Debt 6.0%	DM Int'l Equities 18.2%	Diversified Portfolio 15.1%	US Debt 6.0%	REITs -0.4%	Commod. 11.8%	EMD 15.2%	High Yield -4.1%	EM Equities 18.1%	High Yield 7.3%	REITs 12.0%
DM Int'l Debt 11.2%	EMD -5.2%	DM Int'l Equities 33.9%	EMD 15.7%	High Yield 3.1%	EMD 16.8%	Hedged Strategies 8.8%	MLPs 4.8%	Managed Futures -0.9%	EM Equities 10.3%	REITs 15.0%	US Equities -4.4%	Diversified Portfolio 16.4%	DM Int'l Equities 6.4%	EM Equities 11.9%
DM Int'l Equities 10.8%	Hedged Strategies -21.4%	US Equities 26.5%	US Equities 15.1%	US Equities 2.1%	US Equities 16.0%	High Yield 7.3%	Diversified Portfolio 4.7%	Inflation-Linked -1.4%	EMD 9.9%	Diversified Portfolio 14.9%	Managed Futures -4.6%	EMD 13.5%	US Debt 4.3%	DM Int'l Equities 11.5%
Hedged Strategies 10.3%	Diversified Portfolio -25.7%	Diversified Portfolio 23.6%	High Yield 14.8%	EMD -1.8%	Diversified Portfolio 12.0%	REITs 2.2%	Inflation-Linked 3.6%	Diversified Portfolio -1.9%	Diversified Portfolio 7.5%	High Yield 10.4%	REITs -5.5%	High Yield 12.6%	MLPs 4.2%	DM Int'l Debt 6.9%
Diversified Portfolio 7.9%	High Yield -26.9%	EMD 22.0%	Diversified Portfolio 12.7%	Diversified Portfolio -2.1%	Inflation-Linked 7.0%	Managed Futures 0.7%	Hedged Strategies 3.4%	High Yield -2.7%	Inflation-Linked 4.7%	DM Int'l Debt 8.8%	Diversified Portfolio -6.1%	US Debt 8.7%	EM Equities 4.0%	High Yield 6.8%
Managed Futures 7.6%	Commod. -35.6%	Commod. 18.9%	DM Int'l Equities 9.8%	Managed Futures -4.3%	MLPs 4.8%	EM Equities -1.9%	High Yield 0.0%	Hedged Strategies -3.6%	REITs 4.6%	Hedged Strategies 6.0%	EMD -6.2%	Hedged Strategies 8.7%	Inflation-Linked 3.4%	Managed Futures 6.6%
US Debt 7.0%	MLPs -36.9%	Hedged Strategies 11.5%	DM Int'l Debt 7.0%	Hedged Strategies -5.7%	Hedged Strategies 4.8%	US Debt -2.0%	EM Equities -1.4%	DM Int'l Debt -4.4%	US Debt 2.6%	US Debt 3.5%	Hedged Strategies -7.0%	Inflation-Linked 8.4%	EMD 2.7%	Diversified Portfolio 5.6%
EMD 6.5%	US Equities -37.0%	Inflation-Linked 11.4%	US Debt 6.5%	REITs -8.1%	US Debt 4.2%	DM Int'l Debt -5.6%	DM Int'l Debt -3.0%	EM Equities -13.5%	Hedged Strategies 2.5%	Inflation-Linked 3.0%	Commod. -11.2%	Commod. 7.7%	DM Int'l Debt 1.4%	Inflation-Linked 4.3%
US Equities 5.5%	DM Int'l Equities -43.4%	US Debt 5.9%	Managed Futures 6.4%	DM Int'l Equities -12.2%	DM Int'l Debt 0.5%	Inflation-Linked -8.6%	DM Int'l Equities -4.5%	EMD -14.9%	DM Int'l Debt 2.1%	Commod. 1.7%	MLPs -12.4%	Managed Futures 7.1%	Hedged Strategies 1.1%	Hedged Strategies 4.0%
High Yield 3.2%	REITs -48.9%	DM Int'l Debt 3.7%	Inflation-Linked 6.3%	Commod. -13.3%	Commod. -1.1%	EMD -9.0%	EMD -5.7%	Commod. -24.7%	DM Int'l Equities 1.6%	Managed Futures -0.8%	DM Int'l Equities -14.0%	MLPs 6.6%	Managed Futures 0.8%	EMD 3.7%
REITs -4.7%	EM Equities -53.6%	Managed Futures -4.8%	Hedged Strategies 4.2%	EM Equities -19.2%	Managed Futures -1.8%	Commod. -9.5%	Commod. -17.0%	MLPs -32.6%	Managed Futures -4.4%	MLPs -6.5%	EM Equities -14.7%	DM Int'l Debt 4.6%	Commod. -4.7%	US Debt 2.9%

Diversified Portfolio 7.7%

Source: FactSet, Morgan Stanley Wealth Management GIC; Indices used: Barclays Capital US Aggregate for US Bonds. Citi 3M Treasury Bill for cash, Bloomberg Barclays US Aggregate for US Bonds, Barclays Global Majors ex US for DM Int'l Bonds, Barclays US TIPS for Inflation-linked securities, Barclays Global High Yield for global high yield, JP Morgan EMBI for EM Bonds, S&P 500 for US Stocks, MSCI EAFE IMI for Int'l Stocks, MSCI EM IMI for Emerging Market Stocks, FTSE EPRA/NAREIT Global for REITs, Bloomberg Commodity Index for commodities, HFRX Macro/CTA Index for Managed Futures, Alerian MLP Index for MLPs , and HFRX Global Hedge Funds for hedged strategies. Diversified portfolio is comprised of 25% S&P 500, 10% Russell 2000, 15% MSCI EAFE, 5% MSCI EME, 25% Barclays US Aggregate, 5% 3 mo. T-Bills, 5% HFRX Global Hedge Funds, 5% Bloomberg Commodity Index, and 5% FTSE EPRA/NAREIT Global Index. MLP data begins on January 1, 2007.

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 ofer or solicitation to purchase or sell any security, other investment or service, or to attract any funds or deposits. Investments mentioned may not be suitable for all clients. Any product discussed herein may be purchased only after a client has carefully reviewed the ofering 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 ofering 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 ofers investment program services through a variety of investment programs, which are opened pursuant to written client agreements. Each program ofers 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 specifc investment objectives and fnancial position, may not be suitable for you. Please see the Morgan Stanley Smith Barney LLC program disclosure brochure (the "Morgan Stanley ADV") for more information in the investment advisory programs available. The Morgan Stanley ADV is available at www.morganstanley.com/ADV. **Sources of Data.** Information in this material in this report has been obtained from sources that we believe to be reliable, but we do not guarantee its accuracy, completeness or timeliness. Third-party data providers make no warranties or representations relating to the accuracy, completeness or timeliness of the data they provide and are not liable for any damages relating to this data. All opinions included in this material constitute the Firm's judgment as of the date of this material and are subject to change without notice . This material was not prepared by the research departments of Morgan Stanley & Co. LLC or Morgan Stanley Smith Barney LLC. Some historical fgures may be revised due to newly identifed programs, frm 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 identifes specifc 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 refected in the GIC Asset Allocation Models which , when compounded over a period of years, would decrease returns.

Adverse Active Alpha (AAA) is a patented screening and scoring process designed to help identify high -quality equity and fxed 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 beneft of hindsight. In addition, highly ranked managers can have difering risk profles that might not be suitable for all investors. Our view is that Adverse Active Alpha is a good starting point and should be used in conjunction with other information . Morgan Stanley Wealth Management's qualitative and quantitative investment manager due diligence process are equally important factors for investors when considering managers for use through an investment advisory program. Factors including, but not limited to, manager turnover and changes to investment process can partially or fully negate a positive Adverse Active Alpha ranking. Additionally, highly ranked managers can have difering risk profles that might not be suitable for all investors. For more information on AAA, please see the Adverse Active Alpha Ranking Model and Selecting Managers with Adverse Active Alpha whitepapers . The whitepaper are available from your Financial Advisor or Private Wealth Advisor. ADVERSE ACTIVE ALPHA is a registered service mark of Morgan Stanley and/or its afliates. 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 diferent expenses and investment minimums. Your Financial Advisor or Private Wealth Advisor can provide more information on whether any particular strategy is available in more than one form in a particular investment advisory program. In most Morgan Stanley Wealth Management investment advisory accounts, fees are deducted quarterly and have a compounding efect on performance. For example, on an advisory account with a 3% annual fee, if the gross annual performance is 6.00%, the compounding efect of the fees will result in a net performance of approximately 3.93% after one year, 1 after three years, and 21.23% after fve years. **Conficts 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 conficts 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 afliates. Such persons may have an ongoing business relationship with certain investment managers or mutual fund companies whereby they, Morgan Stanley Wealth Management or its afliates receive compensation from, or otherwise related to, those investment managers or mutual funds. For example, a Financial Advisor may suggest that GIMA evaluates an investment manager or fund in which a portion of his or her clients' assets are already invested. While such a recommendation is permissible, GIMA is responsible for the opinions expressed by GIMA. See the conficts of interest section in the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management for a discussion of other types of conficts that may be relevant to GIMA's evaluation of managers and funds. In addition, Morgan Stanley Wealth Management, MS & Co., managers and their afliates 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 afliates 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 ofer 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 a client-specifc suitability analysis or recommendation, or ofer to participate in any investment. Therefore, clients should not use this profle as the sole basis for investment decisions. They should consider all relevant information, including their existing portfolio, investment objectives, risk tolerance, liquidity needs and investment time horizon. Such a suitability determination may lead to asset allocation results that are materially diferent from the asset allocation shown in this profle. Talk to your Financial Advisor about what would be a suitable asset allocation for you, whether CGCM is a suitable program for you.

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

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

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

The type of mutual funds and ETFs discussed in this presentation utilizes nontraditional or complex investment strategies and/or derivatives. Examples of these types of funds include those that utilize one or more of the below noted investment strategies or categories or which seek exposure to the following markets: (1) commodities (e .g., agricultural, energy and metals), currency, precious metals; (2) managed futures; (3) leveraged, inverse or inverse leveraged; (4) bear market, hedging, long-short equity, market neutral; (5) real estate; (6) volatility (seeking exposure to the CBOE VIX Index). Investors should keep in mind that while mutual funds and ETFs may, at times, utilize nontraditional investment options and strategies, they should not be equated with unregistered privately ofered 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 difering liquidity profle can have a material impact on the investment returns generated by a mutual or ETF pursuing an alternative investing strategy compared with a traditional hedge fund pursuing the same strategy.

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

KEY ASSET CLASS CONSIDERATIONS AND OTHER RISKS

Investing in the markets entails the risk of market volatility. The value of all types of investments, including stocks, mutual funds, exchange-traded funds ("ETFs"), closed-end funds, and unit investment trusts, may increase or decrease over varying time periods. To the extent the investments depicted herein represent **international securities**, you should be aware that there may be additional risks associated with international investing, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes, and diferences in fnancial and accounting standards. These risks may be magnifed in **emerging markets and frontier markets**. **Small- and mid-capitalization companies** may lack the fnancial resources, product diversifcation 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 **fxed income securities** will fuctuate 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 Infation Protection Securities' (TIPS)** coupon payments and underlying principal are automatically increased to compensate for infation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to ofer a low return. Because the return of TIPS is linked to infation, TIPS may signifcantly underperform versus conventional U.S. Treasuries in times of low infation. There is no guarantee that investors will receive par if TIPS are sold prior to maturity. The returns on a portfolio consisting primarily of **environmental, social, and governance-aware investments ("ESG")** may be lower or higher than a portfolio that is more diversifed or where decisions are based solely on investment considerations. Because ESG criteria exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria. The companies identifed and investment examples are for illustrative purposes only and should not be deemed a recommendation to purchase, hold or sell any securities or investment products. They are intended to demonstrate the approaches taken by managers who focus on ESG criteria in their investment strategy. There can be no guarantee that a client's account will be managed as described herein. **Options** and margin trading involve substantial risk and are not suitable for all investors. Besides the general investment risk of holding securities that may decline in value and the possible loss of principal invested, **closed-end funds** may have additional risks related to declining market prices relative to net asset values (NAVs), active manager underperformance and potential leverage. Closed-end funds, unlike open-end funds, are not continuously ofered. There is a one-time public ofering and once issued, shares of closed-end funds are sold in the open market through a stock exchange. NAV is total assets less total liabilities divided by the number of shares outstanding . At the time an investor purchases shares of a closed-end fund, shares may have a market price that is above or below NAV. Portfolios that invest a large percentage of assets in only one industry **sector** (or in only a few sectors) are more vulnerable to price fuctuation than those that diversify among a broad range of sectors.

Alternative investments often are speculative and include a high degree of risk. Investors could lose all or a substantial amount of their investment. Alternative investments are suitable only for eligible, long-term investors who are willing to forgo liquidity and put capital at risk for an indefnite 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 diversifcation 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 diversifed global fnancial services frm,

Morgan Stanley Wealth Management engages in a broad spectrum of activities including fnancial 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 confict with the interests of its clients , including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conficts of interest will be resolved in favor of its clients or any such fund. All expressions of opinion are subject to change without notice and are not intended to be a forecast of future events or results. Further, opinions expressed herein may difer from the opinions expressed by Morgan Stanley Wealth Management and/or other businesses/afliates of Morgan Stanley Wealth Management. This is not a "research report" as defned by FINRA Rule 2241 or a "debt research report" as defned 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 afliates. 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 difer materially from those refected 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 refect 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 signifcantly afect 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 specifc investment. Individual funds have specifc 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 ofered pursuant to the terms of the applicable ofering memorandum, are distributed by Morgan Stanley Wealth Management and certain of its afliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley Wealth Management or any of its afliates, (3) are not guaranteed by Morgan Stanley Wealth Management and its afliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Wealth Management is a registered broker-dealer, not a bank. This material is not to be reproduced or distributed to any other persons (other than professional advisors of the investors or prospective investors , as applicable, receiving this material) and is intended solely for the use of the persons to whom it has been delivered. This material is not for distribution to the general public. Past performance is no guarantee of future results. Actual results may vary. SIPC insurance does not apply to precious metals, other commodities, or traditional alternative investments. In Consulting Group's advisory programs, alternative investments are limited to US-registered mutual funds, separate account strategies and exchange-traded funds (ETFs) that seek to pursue alternative investment strategies or returns utilizing publicly traded securities. Investment products in this category may employ various investment strategies and techniques for both hedging and more speculative purposes such as short -selling, leverage, derivatives and options, which can increase volatility and the risk of investment loss. Alternative investments are not suitable for all investors. As a diversifed global fnancial services frm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including fnancial 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 confict with the interests of its clients , including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conficts of interest will be resolved in favor of its clients or any such fund. Alternative investments involve complex tax structures, tax inefcient investing, and delays in distributing important tax information. Individual funds have specifc 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.

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 confict of interest in ofering alternative investments because Morgan Stanley Wealth Management or our afliates, 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 ofer 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 infate 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 infated 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 afect 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 difcult to quantify the efects precisely, investors should be aware that idiosyncratic factors may be giving hedge fund index returns an artifcial "lift" or upwardsbias.

Hedge Funds of Funds and many funds of funds are private investment vehicles restricted to certain qualifed 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-inefcient 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 ofset 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 fuctuations 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 signifcant leverage, are generally illiquid, have substantial charges, subject investors to conficts of interest, and are suitable only for the risk capital portion of an investor's portfolio. Managed futures investments do not replace equities or bonds but rather may act as a complement in a well diversifed portfolio . Managed Futures are complex and not appropriate for all investors. **Rebalancing** does not protect against a loss in declining fnancial markets. There may be a potential tax implication with a rebalancing strategy.

Asset allocation and diversifcation do not assure a proft or protect against loss in declining fnancial markets. Past performance is no guarantee of future results. Actual results may vary.

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

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

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 signifcantly diferent 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 specifc investment, may not, for a variety of reasons, be a suitable comparison or benchmark for a particular investment and may not necessarily refect the actual investment strategy or objective of a particular investment. Consequently, comparing an investment to a particular index may be of limited use.

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

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

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

Investment, insurance and annuity products ofered 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 GOVERNMENTAGENCY

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 ofering certain banking related products and services.

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

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

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

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

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

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

Master Limited Partnerships (MLPs) are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk. Individual MLPs are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk. The potential tax benefts from investing in MLPs depend on their being treated as partnerships for federal income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund's value. MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is refected in the daily NAV, and, as a result, the MLP fund's after-tax performance could difer signifcantly from the underlying assets even if the pre-tax performance is closely tracked.

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

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

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

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

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

Growth investing does not guarantee a proft or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations. **Value investing** does not guarantee a proft or eliminate risk. Not all companies whose stocks are

considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected .
Any type of **continuous or periodic investment plan** does not assure a proft and does not protect against loss in declining markets. Since such a plan involves continuous investment in securities regardless of fuctuating price levels of such securities, the investor should consider his fnancial ability to continue his purchases through periods of low price levels.
This material is disseminated in the United States of America by Morgan Stanley Smith Barney LLC. Morgan Stanley Wealth Management is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be , and do not constitute, advice within the meaning of the Municipal Advisor Rule. This material, or any portion thereof, may not be reprinted, sold or redistributed without the written consent of Morgan Stanley Smith Barney LLC.