2Q 2024 REVIEW AND INSIGHTS

SECOND QUARTER 2024

David Wilkinson
Managing Director, Wealth Management
Private Wealth Advisor
(312) 453-9120
david.wilkinson@morganstanleypwm.com

2Q '24 CAPITAL MARKETS PERFORMANCE

The S&P 500 ended 2Q just below its all time high, the 12th best start to a year since 1950. The U.S. economy continues to enjoy solid GDP growth, low unemployment (4.1%), positive income growth, strong consumer and corporate balance sheets and declining inflation. Average home prices are rising 6% annually. Despite 550 basis points of rate hikes and $1 trillion of quantitative tightening, U.S. financial conditions remain accommodative.

Capital Market Returns

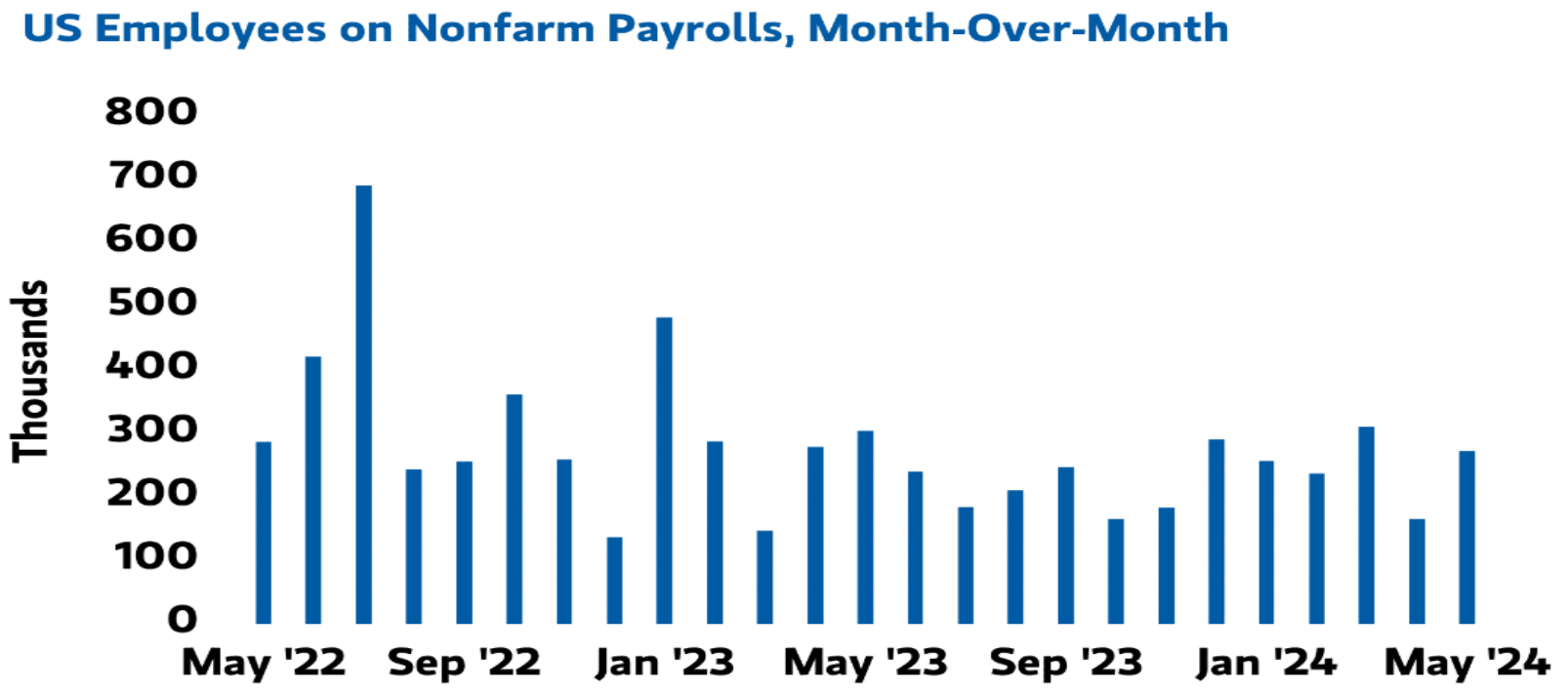
As of June 30, 2024; Private Real Estate as of March 31, 2024

ASSET CLASS	INDEX IN USD	3-MONTH	YTD	1-YR	3-YR ANN	5-YR ANN
Global Equity						
Global Equity	MSCI All Country World	3.0%	11.6%	19.9%	6.2%	11.4%
US Equity	S&P 500	4.3%	15.3%	24.6%	10.0%	15.0%
International Equity	MSCI All Country World ex US	1.2%	6.0%	12.2%	1.7%	6.4%
Emerging Markets Equity	MSCI Emerging Markets	5.1%	7.7%	13.0%	-3.6%	3.7%
Global Fixed Income						
Investment Grade Fixed Income	Bloomberg US Aggregate	0.1%	-0.7%	2.6%	-3.0%	-0.2%
Inflation-Linked Securities	Bloomberg Universal Govt Inflation-Linked	-0.4%	-0.9%	2.0%	-3.4%	-0.1%
High Yield	Bloomberg Global High Yield (H)	1.2%	3.9%	12.5%	1.6%	3.2%
Alternative Investments						
Global REITs	FTSE EPRA/NAREIT Global REITs	-2.1%	-3.3%	5.0%	-4.6%	-1.0%
Commodities	Bloomberg Commodities	2.9%	5.1%	5.0%	6.0%	7.7%
MLPs	Alerian MLP	3.4%	17.7%	35.8%	22.1%	11.8%
Hedged Strategies	HFRX Global Hedge Fund Index	0.4%	2.9%	5.4%	0.4%	3.1%
Managed Futures	HFRX Macro/CTA Index	-1.2%	4.6%	2.8%	1.4%	2.2%
Private Real Estate	NCREIF Private Real Estate	-	-1.0%	-7.2%	3.6%	3.8%
Global Cash						
Cash	Citigroup 3-month Treasury Bill	1.4%	2.8%	5.6%	3.2%	2.2%
Other Fixed Income						
Municipal Fixed Income	Bloomberg Municipal Bond	0.0%	-0.4%	3.2%	-0.9%	1.1%

Source: Bloomberg, Morgan Stanley Wealth Management GIO, data as of 6/30/2024

U.S. JOB GROWTH CONTINUES TO SURPRISE

U.S. nonfarm payrolls for June increased by 206,000, just slightly below the 218,000 average the past 12 months, and above the 190,000 expected increase. The Unemployment rate ticked higher to 4.1%, remaining below the Federal Reserve's Noncyclical Rate of Unemployment (formerly the Natural Rate of Unemployment) at 4.41%... In other words, *full employment*. Despite this, and with 4 months to go before elections, expect campaign talk on both sides to promise *more jobs*, as they have since 1932. Wage growth continues to moderate, with average hourly earnings increasing by 3.9% on a year-over-year basis.



Source: Bloomberg, Morgan Stanley Wealth Management GIO. Data as of June 7, 2024.

INFLATION PROGRESS SUGGESTS RATE CUTS COMING

The U.S. Consumer Price Index for June came in lower than expectations, with Core CPI +0.06%, continuing its sequential decline. Headline CPI was +3.0% year over year in June, down from 3.3% in May.

Morgan Stanley economists believes these levels enable the Federal Reserve to cut rates in September, followed by cuts at every Fed meeting through mid-2025.

CPI %MoM	Mar-24	Apr-24	May-24	Jun-24
Headline	0.38	0.31	0.01	-0.06
Core	0.36	0.29	0.16	0.06
Energy	1.13	1.12	-2.03	-2.04
Food	0.10	0.02	0.14	0.24
Core Goods	-0.15	-0.11	-0.04	-0.12
New Vehicles	-0.17	-0.45	-0.49	-0.16
Used Vehicles	-1.11	-1.38	0.60	-1.53
Apparel	0.65	1.20	-0.34	0.11
Other goods (ex. alcohol, drugs, tobacco)	-0.28	-0.15	-0.27	0.05
Core Services	0.52	0.41	0.22	0.13
OER	0.44	0.42	0.43	0.28
Rent of Primary Residence	0.41	0.35	0.39	0.26
Hotels	0.08	-0.16	-0.10	-2.02
Medical Services	0.56	0.45	0.34	0.17
Airfare	-0.37	-0.81	-3.56	-5.00
Motor Vehicle Insurance	2.58	1.76	-0.12	0.92
Core services ex-housing	0.65	0.42	-0.04	-0.05
Headline CPI NSA Index	312.332	313.548	314.069	314.175

Source: BLS, Morgan Stanley Research

Source: Morgan Stanley Research, U.S. Economics, July 11, 2024

U.S. STEADY – CHINA BOTTOMING – INDIA GROWING

Early estimates for U.S. 2Q GDP remain around 2.5%, still above the Federal Reserve's estimate of the long-term growth potential of the U.S. economy at 1.8%. Despite recession fears for the past year, the economy has remained strong due to solid consumer spending, real wage growth and significant gains in real wealth – which should drive the expansion forward into 2025. Healthy corporate balance sheets, federal government incentives, and a surge in demand for AI-related technology provides additional potential for moderate economic expansion.

In the Emerging Markets (EM), China's GDP growth has likely bottomed out under 5%, while their deflation problems persist. India's growth is set to outpace China, driven by structural and cyclical factors including an increasing capex cycle.

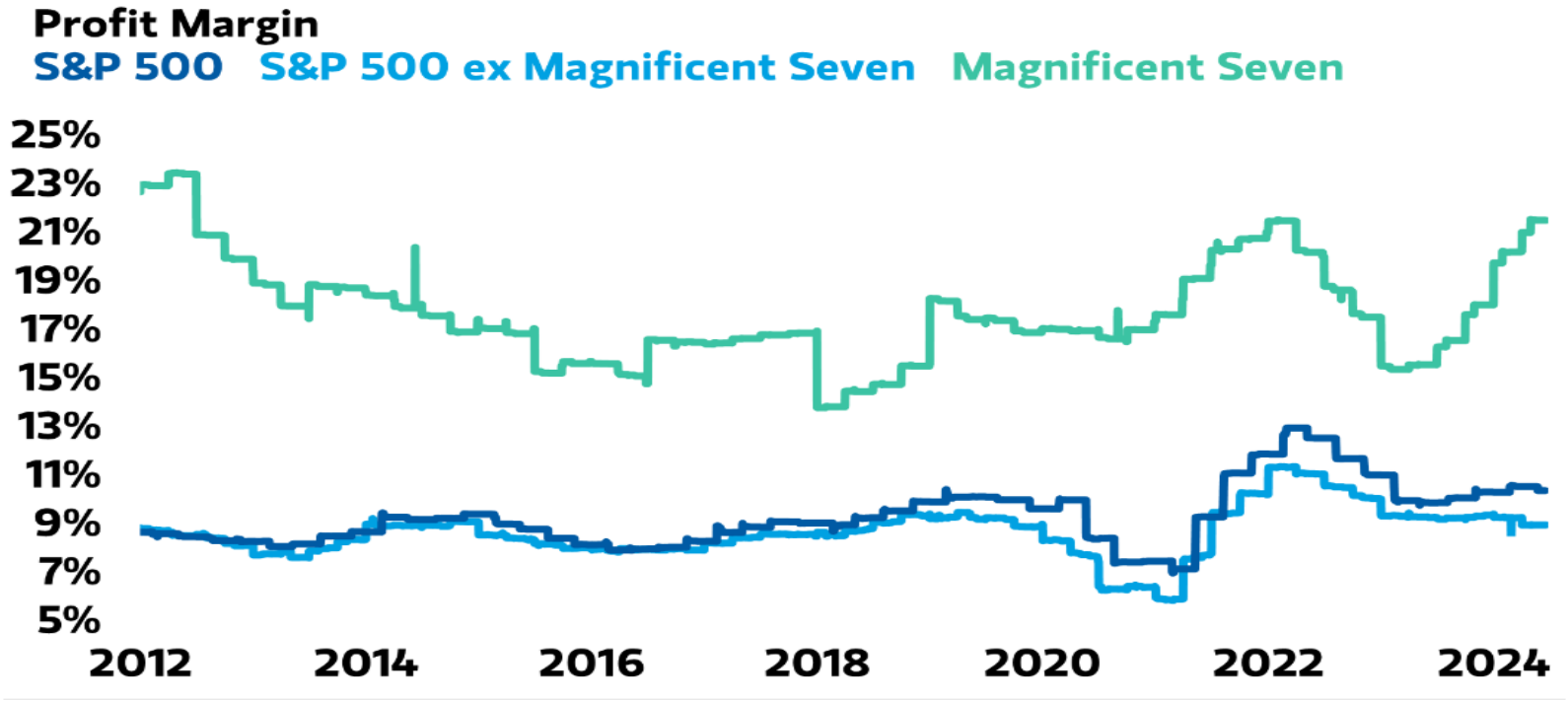
	2024E		2025E	
GDP (%Y)	MS	Cons	MS	Cons
G4				
US	2.6	2.4	2.1	1.7
US (4Q/4Q)*	2.1	1.7	2.1	2.0
Euro Area	0.7	0.6	1.2	1.4
Japan	0.5	0.7	1.1	1.1
UK	0.7	0.4	1.2	1.2
Selected EM				
China	4.8	4.9	4.5	4.5
India (F25/ F26)	6.8	6.7	6.5	6.5
Brazil	2.3	2.1	1.6	2.0
Mexico	1.7	2.2	1.6	1.8

	2024E		2025E	
CPI (%Y)	MS	Cons	MS	Cons
G4				
US	3.2	3.1	2.2	2.4
US (Core PCE, 4Q/4Q)*	2.7	2.8	2.1	2.2
Euro Area	2.4	2.4	2.1	2.1
Japan	2.9	2.3	2.1	1.8
UK	2.4	2.5	1.8	2.2
Selected EM				
China	0.5	0.7	0.8	1.5
India (F25/ F26)	4.5	4.5	4.5	4.5
Brazil	4.0	3.8	3.8	3.7
Mexico	4.4	4.2	3.8	3.7

Source: Morgan Stanley Global Economics Mid-Year Outlook, May 19, 2024

STOCK PRICES TEND TO FOLLOW PROFITS...

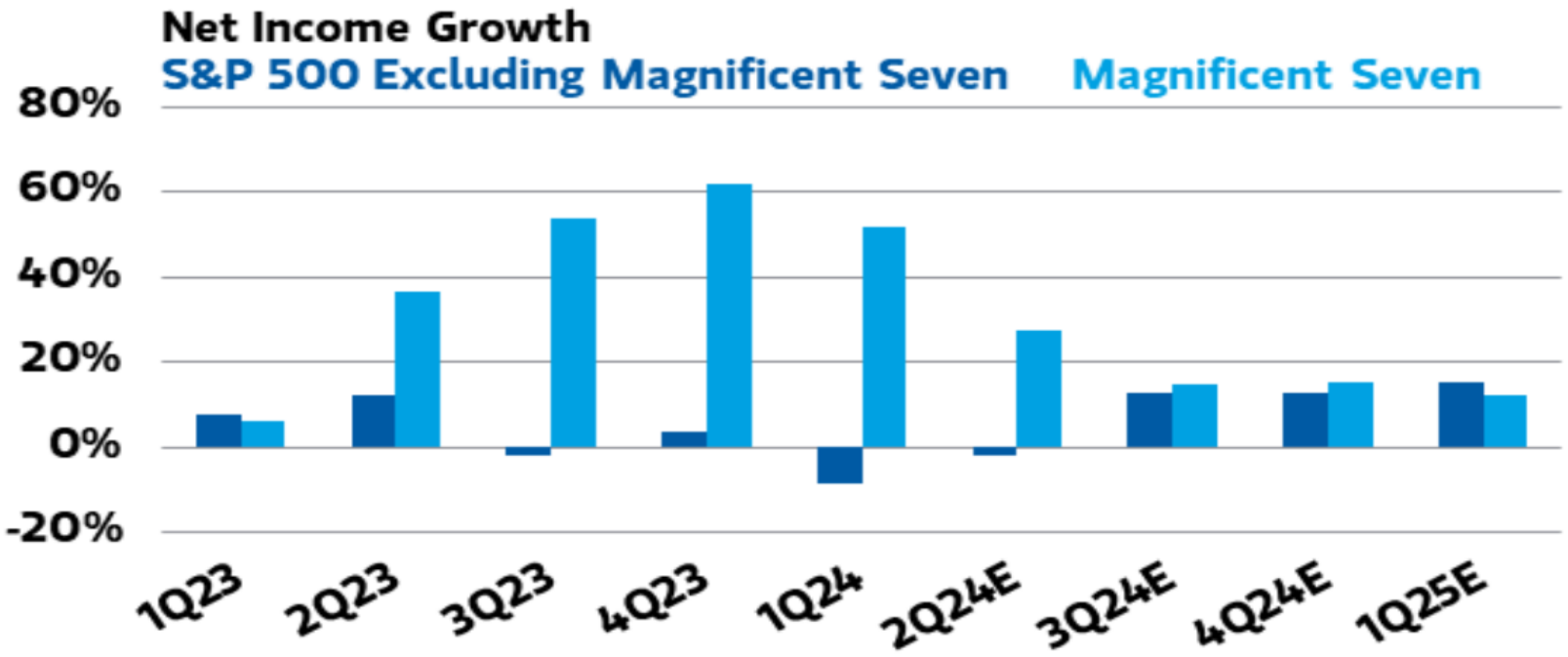
Year to date, the impact of just 6 technology stocks (Apple Amazon, Alphabet/Google, Meta, Microsoft, Nvidia) accounted for 60% of the S&P 500's 15.3% advance. The past four quarters, the "Magnificent Seven" (including Tesla) have delivered a capitalization-weighted operating margin of 21.6%, compared to an operating margin of 9.1% for the S&P 500 Index ex-Magnificent Seven. (Total S&P 500 is 10.5%) Not only are the Mag 7 more profitable, but their growth rates are faster than their peers. Investors have rewarded the group with an equal-weighted forward price/earnings ratio of 33.9X, as their anticipated benefits from generative AI are expected to drive further growth and profitability.



Source: Bloomberg, Morgan Stanley Wealth Management GIO. Data as of June 16, 2024.

. . . AND NET INCOME IS EXPECTED TO BROADEN

The Magnificent Seven have delivered most of the net income growth the past 5 quarters. The net income decline in 1Q/2024 for the S&P 500 ex-Magnificent 7 is expected to moderate in the second quarter. If this trend persists, all 11 S&P 500 sectors could see earnings grow on a year-over-year basis by the fourth quarter, something that hasn't occurred since the second quarter of 2021. Profit margins remain solid (12.4% in Q1, '24) with the combination of stronger than expected economic growth and easing labor pressures. Strong returns also helped fuel an acceleration of corporate stock buybacks, which could reach $1 trillion for the year, up 13% from last year.

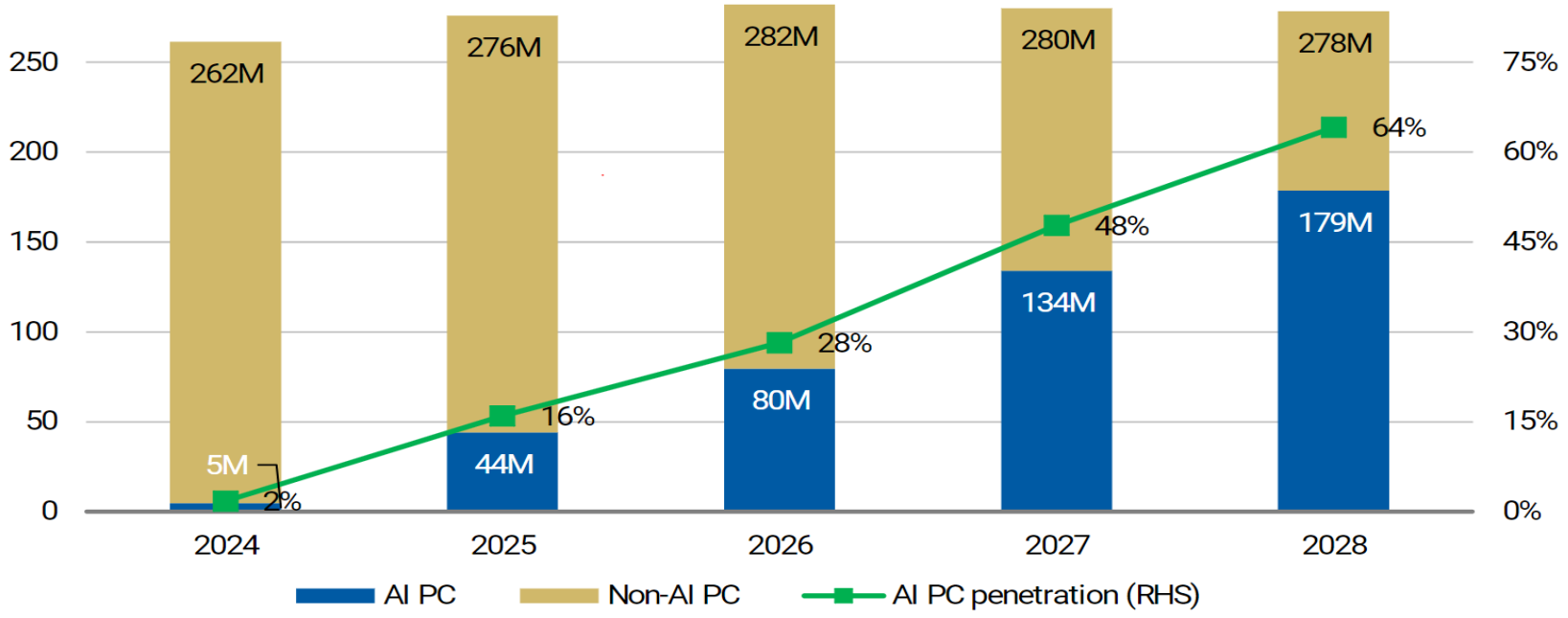


Source: Strategas, FactSet as of June 24, 2024. Morgan Stanley, GIC Weekly, July 1, 2024, JP Morgan 2024 Mid-Year Investment Outlook

NEW WAVE OF AI-ENABLED PC HARDWARE EXPECTED

Personal computers equipped with artificial intelligence capabilities have the potential to be the most exciting innovation to PCs since the launch of the world wide web in the late 1980s. With AI embedded in the device, the PC will learn from its user over time, enabling it to become a better/smarter tool and paving the way for increased productivity and creativity.

Morgan Stanley's 1Q24 survey of CIOs revealed that 75% are considering AI equipped PCs, up from 40% in our 1Q23 survey. Morgan Stanley estimates that less than 5 million AI equipped personal computers will be shipped this year, rising to approximately 179 million units by 2028, or ~64% of total PC market shipments.

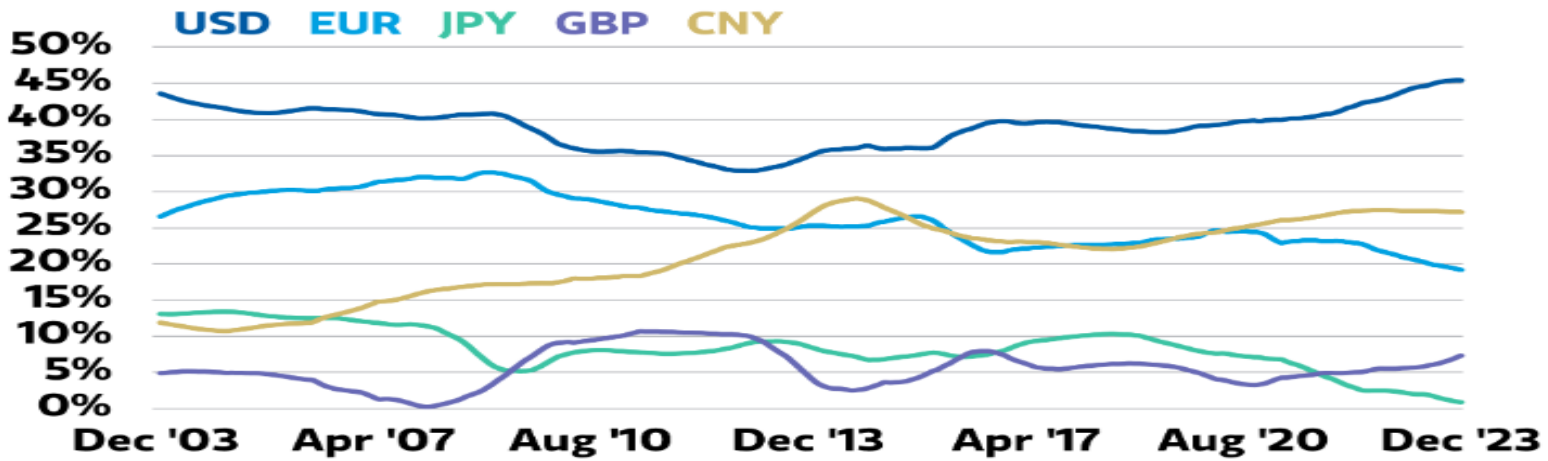


Source: Morgan Stanley Research, Global Technology, May 21, 2024

KING DOLLAR HAS NO CHALLENGERS...

The dollar's dominance and global influence are evident across multiple metrics - including central bank reserve allocations, global trade financing, foreign exchange activity, cross-border lending and debt issuance. The dollar's standing has remained unchallenged over the past decade, accounting for an average of 53% of the above metrics. Since around 2017, the consensus has been bearish on the dollar. However, US economic growth has surprised to the upside, while the eurozone does not show a similar trend. Also, while China has become a global economic power, the "3-D challenge" to China's economy - debt, deflation and demographics - will likely keep the Chinese renminbi from gaining much traction as a reserve currency.

Another measure of a currency's influence is how much other countries peg their exchange rates to it, or otherwise anchor themselves to the dominant currency. The so-called 'dollar bloc' recently accounted for *47% of global GDP - a 20-year high* (see chart). The chief challenge to eroding the dollar's dominant status is a lack of a credible alternative. History shows that *the dominant currency only loses its status once a sufficiently attractive challenger appears.*



Note: Methodology parameters include minimum and maximum values of 0 and 1, respectively.
Source: IMF, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of Dec. 31, 2023

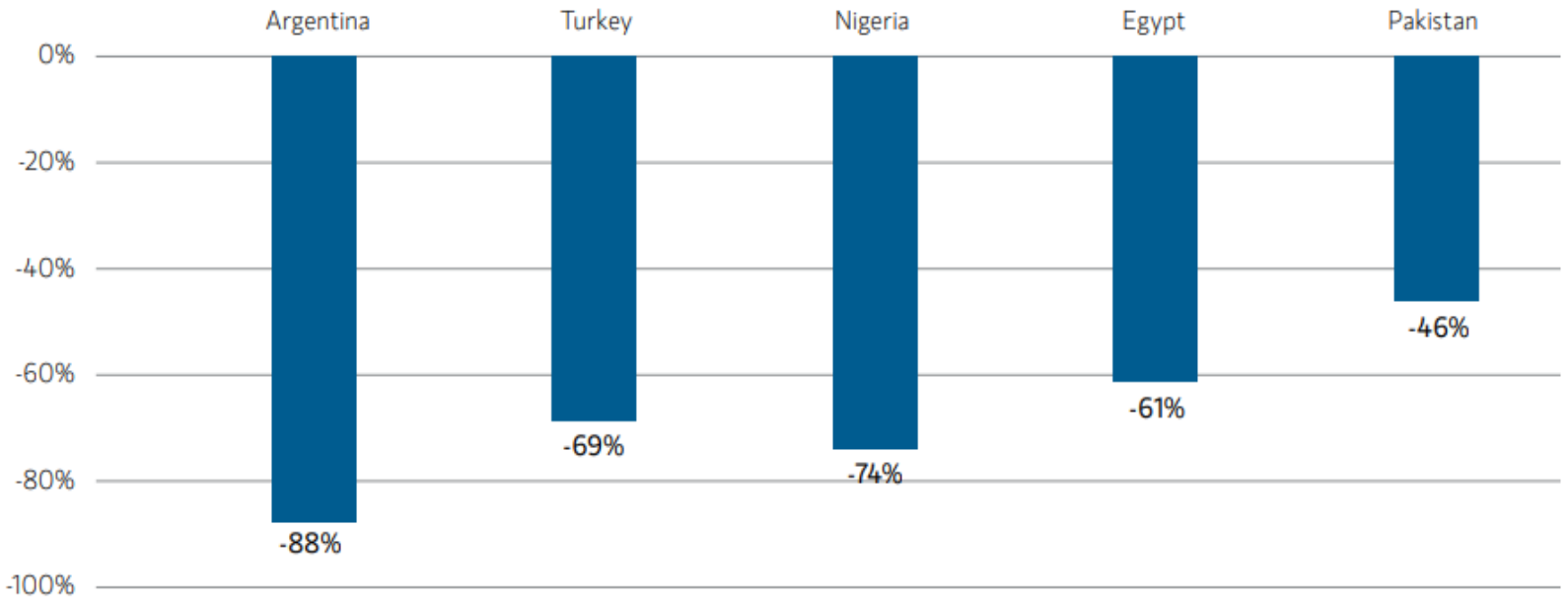
Source: Morgan Stanley Research, data of 12/31/23

. . . CURRENCY CARNAGE REMINDS INVESTORS OF RISKS . . .

The past few years has witnessed the greatest number of sovereigns in distress in over 25 years. While external shocks (Covid and the Ukraine War) exacerbated economic challenges, the primary issues were unorthodox policies such as high fiscal and current account deficits as well as loose monetary policy. These self-inflicted wounds can have a significant impact on currency values.

Policy Missteps Fuel Currency Devaluations

Currency depreciation across select small emerging and frontier markets



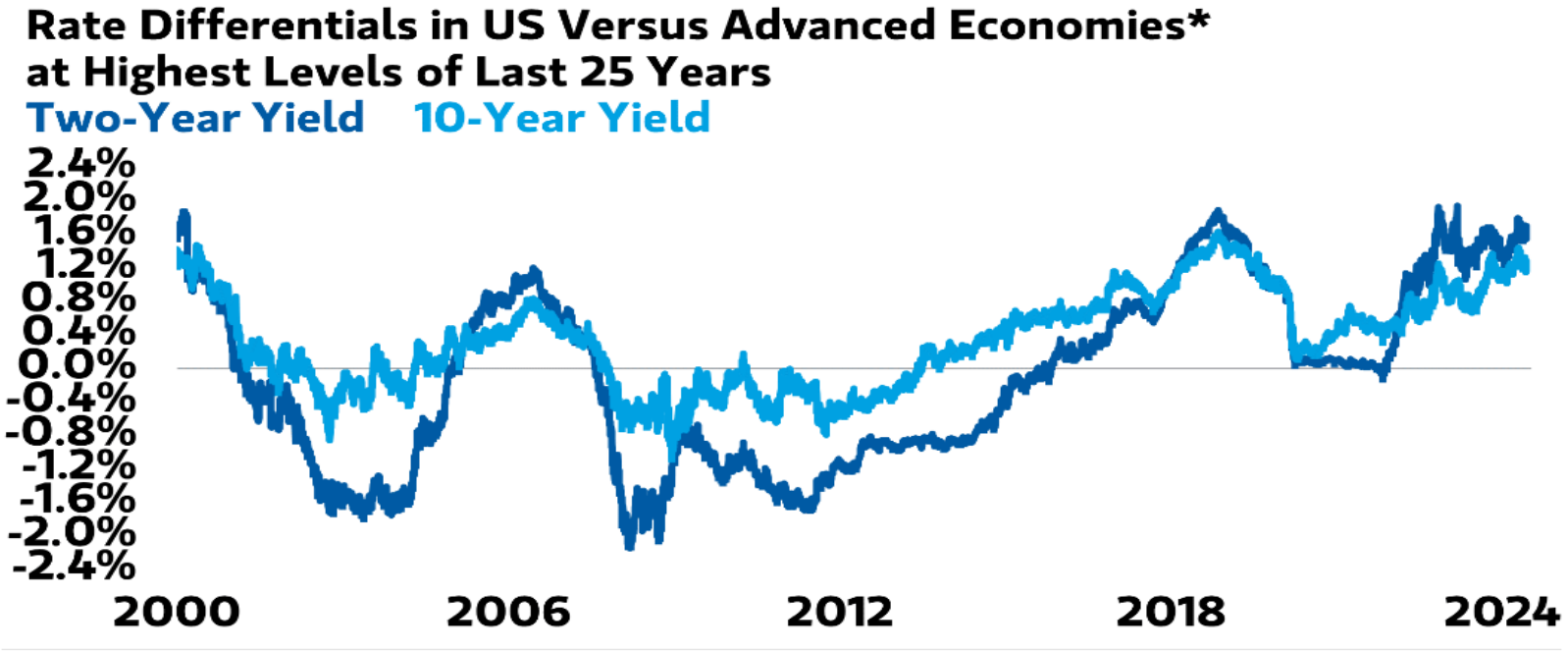
Source: Bloomberg, MSIM. Currency decline from Jan. 31, 2020, through May 31, 2024.

Source: Morgan Stanley Tales from the Emerging World, July 11, 2024

. . . REINFORCING USD ADVANTAGES . . .

Global investors with *unhedged* U.S. positions benefit from rallies in the underlying assets *as well as* the US dollar. Since the post-crisis low on March 6, 2009, US equities have consistently outpaced non-US equities, with the S&P 500 Index notching an *annualized differential of 8%* compared to the MSCI All-Country World ex-US Index.

Investors have reduced their expectations for Fed cuts in 2024—from seven in the January outlook to just two as of early July. At the same time, the European Central Bank (ECB) and the Bank of Japan (BoJ) have shifted to relatively more accommodative stances . This allows global investors in the U.S. to enjoy a yield advantage compared to their counterparts



*Note: Advanced Economies average of Germany, Japan, Great Britain, Canada, Australia and South Korea.
Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office as of June 7, 2024

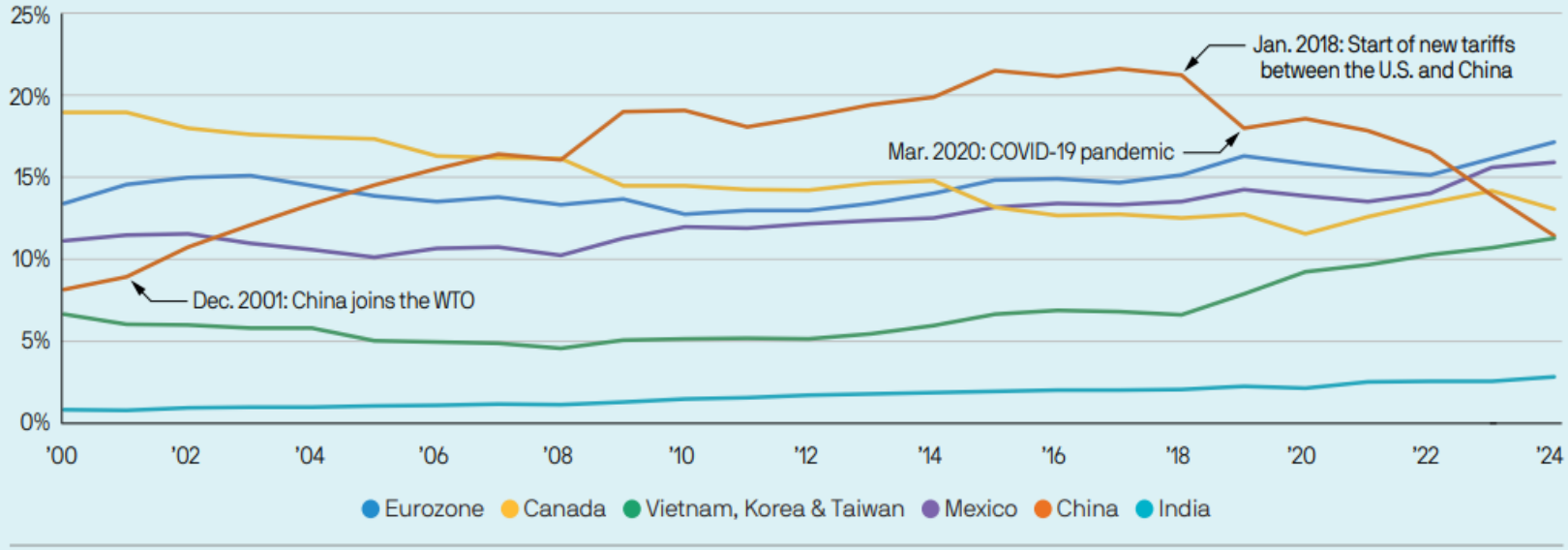
. . . POLITICS MATTER, TOO

China represented 22% of U.S. imports five years ago, and now accounts for only 12%. COVID-19, ongoing trade tensions and elevated geopolitical risks have caused companies to diversify their production locations and caused nations to favor trade with allies.

India, Vietnam and Taiwan should continue to see gains due to cost competitiveness, favorable industrial and corporate policies and rising middle-income consumer bases. Mexico will also continue to benefit due to existing (and expanding) manufacturing hubs and lower wages.

Key beneficiaries from supply chain shifts are ramping up imports to the U.S. and filling in the void left by China

Exhibit 4: U.S. goods imports by location, % of total imports, yearly



Source: FactSet, U.S. Census Bureau, J.P. Morgan Asset Management. WTO = World Trade Organization. Data are as of May 31, 2024.

FOR FURTHER THOUGHT

LOOKING FOR THE NEXT ERA'S TOP 1%

Since 2000, *only the top 1% of public companies generated approximately 40% of shareholders returns.*

Unfortunately for investors, there are no catch-all metrics to identify the top 1% of the *next* 25 years, but there are some leading indictors:

First movers are often found in academia. Patent quantity and quality tends to follow academia. Venture funding often follows patents. Public and/or growth capital generally arrives for scalability. Morgan Stanley believes candidates shown in the table to be either at, or past their inflection points.

According to this model, *Diabesity* may offer the most potential.

LONGSHOT CANDIDATES	AI Drug Recovery	Assisted Reproductive Technologies	Bioprinting	Brain Computer Interface	CRISPR & Tailored Medicines
Problem	The average novel therapy requires $1B+ of funding and 10+ years of development to achieve approval.	The proportion of women 35-39 having babies has tripled since 1975. 1 in 7 couples struggle conceiving.	Over 300,000 people in the US are awaiting organ transplants, of which over 200,000 are awaiting a kidney.	800M people live with a form of disability; 1%-2% of the global population live with a severe (motion or cognitive) disability.	Ageing will create a rise in age- related social expenditures in Europe from ~19% of GDP in 2000 to ~26% by 2050.
	~2% improvement in development rates could result in the generation of ~50 novel therapies.	AI vision models have an 81.5% success rate picking viable embryos vs embryologists at 51%.	3D bioprinting uses bioinks to print living cells layer by layer that imitate natural tissues.	BCIs have been in development since the 1960s but are now being implanted in humans.	CRISPR-Cas9 system has become a potent gene-editing tool capable of correcting gene-mediated age-related pathology.
Academic Momentum	High	Medium	Low	Low	Medium
Venture Momentum	High	High	Medium	Medium	Low
Patent Momentum	High	Medium	Low	Low	Medium
Addressable Market	High	High	Medium	Medium	High
Maturity	Medium	Low	Low	Low	Low
Hype	High	Low	Low	Medium	Medium
Longshot Ranking	2	4	8	7	5

	Diabesity	DNA Synthesis & Bio Foundries	Nano- & Xeno-Bots	Psychedelics	Smart Chemo & ADCs
Problem	>650M people suffer from obesity. There are >100M obese adults in the US and ~80 million overweight adults.	Adverse drug reactions estimated by the NIH to be between the 4th and 6th most common cause of death.	Physical robotics, when taken outside their programmed environment, cannot function well.	About 280 million people worldwide have depression, including 5% of adults and nearly 6% of adults above age 60.	Traditional chemotherapy still accounts for over 37% of cancer prescriptions for solid tumors.
	Our model now points to a $10B global market for obesity medication by 2030 and over $140B in a bull case.	Synthetic biology foundry TAM was ~$40B in 2021. Long term, health and food TAMs could surpass $2T.	Microrobotics for drug delivery is no longer constrained by computer miniaturization but rather by control.	Psilocybin has been shown to reduce depression symptoms by more than 50%.	Antibody drug conjugates (ADC) home in on cancer, opening up a >$140B market (vs $5B now).
Academic Momentum	Low	Medium	Low	Medium	Medium
Venture Momentum	Low	Medium	Low	Medium	Low
Patent Momentum	Low	Low	Low	Low	Medium
Addressable Market	High	High	High	Low	High
Maturity	High	Low	Low	Low	Medium
Hype	High	Medium	Low	Medium	Low
Longshot Ranking	1	6	10	9	3

Source: United Nations, World Economic Forum, Organization for Economic Cooperation and Development, Nature, Human Genome Project, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of April 23, 2024

APPENDIX

THE WBS GROUP



David Wilkinson
Managing Director
Private Wealth Advisor

David is a Managing Director and Alternative Investments Director at Morgan Stanley with over 40 years of investment experience. David received a BS from Iowa State University and a Trium MBA with distinction from the London School of Economics, New York University and HEC Paris.

David was featured in Barron's Magazine as one of the top advisors in the country in 2009, 2010, 2015-2023 and Forbes Magazine's List of America's Best-in-State Wealth Advisors each of the past 9 years. *

*2009-2010, 2015-2023 Barron's Top 100 Financial Advisors (formerly referred to as Barron's Top 1,000 Financial Advisors: State-by-State) Source: Barrons.com (2009-2010, 2015-2022). Data compiled by Barron's based on 12-month period concluding in Dec of the year prior to the issuance of the award.

2015-2023 Forbes Best-In- State Wealth AdvisorsSource: Forbes.com (2015-2023). Data compiled by SHOOK Research LLC based 12-month time period concluding in June of year prior to the issuance of the award.



Bradley Bass
Managing Director
Private Wealth Advisor

Drawing on fifteen years of experience in the financial services industry, Bradley Bass focuses primarily on the development and implementation of customized investment strategies for ultra high net worth families.

Prior to joining Morgan Stanley in 2015, Bradley spent seven years at Barclays, where he was a Director and served on the Investment Representative Advisory Council, a small group of the firm's most influential Advisors. While at Barclays, Bradley worked with several members of the Forbes 400 and numerous other affluent families with complex financial needs. Prior to working at Barclays, Bradley was an Associate at Lehman Brothers, where he focused on private equity and hedge fund investments.

Bradley holds a B.S. from the University of Colorado and an MBA from the University of Chicago. He is an active member of the Economics Club of Chicago and sits on the advisory board of Invest For Kids, a nonprofit organization that has raised over $10 million for Chicago-based children's charities.



Brian Schneider
Executive Director
Financial Advisor

For nearly two decades, Brian Schneider has been on the leading edge of trends in markets. In prior roles, he focused within the derivatives trading world, helping his clients develop and implement highly customized futures and options strategies. Employing professional market analysis, Brian maintains risk management as his number one priority. He joined Morgan Stanley in 2015 from Barclays Wealth America, where he served as an investment representative since 2011.

In 2008, Brian created BSAM Trading, LLC, where he began to run private funds across a broad spectrum of exchange-traded derivatives. Before that, beginning in 2006, he was a member of Dolder Investment Partnership and served as head trader, developing trading systems using both first and second derivatives. In 2003, Brian co-founded TradeInside.net, a first-of-its-kind, fully electronic Futures Commission Merchant. Prior to that, as senior partner at Resource Trading Group, Brian traded Dax futures, S&P futures, U.S. Treasury bonds, gold and corn, among many other derivatives. He has also been a market maker in various products such as CBOT BUND and gold futures, Eurex U.S. 10-year and 5-year futures, and One Chicago and NQLX ETF single-stock futures.

A contributor on Bloomberg Radio, CNBC and First Business, Brian was a member of the Chicago Board of Trade, CME and NYSE/LIFFE; a certified Eurex trader; and a certified Eurex Qualified Back Office Manager. He earned a B.A. *cum laude* in economics from Tufts University in 1998, and received his MBA from the University of Illinois, College of Business in 2011.

Please see additional information at the end of this document.

THE WBS GROUP



Cindy Jaracz
Vice President
PWM Group Director

With over 20 years of experience in the financial services industry, Cindy Jaracz specializes in ultra high net worth client relationships, portfolio maintenance, private equity administration, investment implementation, trading and operational procedures for the team.

Prior to rejoining Morgan Stanley in 2015, Cindy began her career as an analyst at a consulting firm in Chicago from 1997-2001, focusing on client performance reporting for 401(k), endowments and pensions. In 2001, she joined the performance reporting group at Morgan Stanley, focusing on ultra-high net worth clients. In 2007, Cindy joined the Private Investment Management Division of Lehman Brothers where she provided sales and administrative support to the SBS Team. She remained with the team after it was acquired by Barclays in 2008.

Cindy attended Loyola University Chicago where she received a B.A. in political science.



Frank Mahoney
Vice President
Director of Business Strategy

Frank Mahoney joined Morgan Stanley Private Wealth Management in 2009 and focuses on alternative asset manager analysis, investment strategy and relationship management. Prior to moving to Chicago, he spent two years managing an investor services team in the Morgan Stanley Alternative Investments department in New York and started his career as a hedge fund reporting analyst with AllianceBernstein.

A native New Yorker, Frank graduated from Syracuse University with degrees in Finance, Marketing and Economics and holds the Chartered Alternative Investment Analyst (CAIA) designation. Frank is on the board of Pilot Light Chefs, an organization that supports students as they learn and advocate for informed choices by bridging the lessons they learn in their classrooms to the foods on their lunch trays, at home, and in their communities. He also serves on the board of Warren W. Cherry Preschool.



Chelsea Fosse
Portfolio Associate

With over 5 years of experience in client relations and a demonstrated history of working in the financial services industry, Chelsea specializes in providing excellent service to ultra-high net worth families. She joined Morgan Stanley in 2018 focusing on portfolio maintenance, investment implementation, administrative support, and leverages Morgan Stanley's strong digital capabilities.

Chelsea received her B.S. in Economics, in conjunction with a B.A. in Business Legal Studies from Arizona State University and her MBA from DePaul University.



Cameron Preston
Vice President
Business Development Associate

With over 10 years of experience in the financial services industry, Cammie began her career at Citi Personal Wealth Management in 2006, providing client service for wealthy families. She joined Morgan Stanley in 2010 specializing in ultra high net worth client relationships, portfolio maintenance, trading operations and investment implementation.

Cammie attended Western Michigan University, where she received a B.A. in marketing.



Taylor Coughlin
Vice President
Wealth Management Associate

Taylor is a native Chicagoan and began her career working for a boutique Wealth Management firm after graduating from Indiana University's Hutton Honors College in 2010. Taylor joined our Morgan Stanley PWM team in 2015, where she specializes in managing and cultivating client relationships, investment allocation and implementation and customized client reporting.

Morgan Stanley Smith Barney LLC. Member SIPC. CRC 1999056

DISCLOSURES:

This material does not provide individually tailored investment advice. It has been prepared without regard to the individual financial circumstances and objectives of the persons who receive it. The strategies and/or investments discussed in this material may not be appropriate for all investors. Morgan Stanley Smith Barney LLC recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a Private Wealth Advisor. The appropriateness of a particular investment or strategy will depend on an investor's individual circumstances and objectives.

Morgan Stanley Smith Barney LLC ("Morgan Stanley"), its affiliates and Morgan Stanley Financial Advisors or Private Wealth Advisors do not provide tax or legal advice. Clients should consult their tax and legal advisors for matters involving taxation and tax planning.

The views expressed herein are those of the author and do not necessarily reflect the views of Morgan Stanley Wealth Management or its affiliates. All opinions are subject to change without notice. Neither the information provided nor any opinion expressed constitutes a solicitation for the purchase or sale of any security. **Past performance is no guarantee of future results.**

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment.

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

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

Investing in smaller companies involves greater risks not associated with investing in more established companies, such as business risk, significant stock price fluctuations and illiquidity.

International investing entails greater risk, as well as greater potential rewards compared to U.S. investing. These risks include potential and economic uncertainties of foreign countries as well as the risk of currency fluctuations. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economics.

REITs investing risks are similar to these associated with direct investments in real estate; lack of liquidity, limited diversification, and sensitivity to economic factors such as interest rate charges and market recessions.
portfolio.

Private equity interests may be highly illiquid, involve a high degree of risk and be subject to transfer restrictions.

Managed futures investments are speculative, involve a high degree of risk, use significant leverage, are generally illiquid, have substantial charges, subject investors to conflicts of interest, and are suitable only for the risk capital portion of an investor's portfolio. Before investing in any partnership and in order to make an informed decision, investors should read the applicable prospectus and/or offering documents carefully for additional information, including charges, expenses and risks. Investors should read the prospectus and/or offering documents carefully for additional information, including charges, expenses and risks. Managed futures investments do not replace equities or bonds but rather may act as a complement in a well diversified portfolio.

The prices of real assets – precious metals tend to fluctuate widely and in a unpredictable manner, and have historically experienced periods of flat or declining prices. Their prices are affected by several factors, including global supply and demand, investors expectations with respect to the rate of inflation, currency exchange rates, interest rates, investment and trading activities of hedge funds and commodity funds, and global or regional political, economic or financial events and situations.

Investing in commodities entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention.

Various factors, including an economic downturn, may cause a company to reduce or eliminate its dividend.

DISCLOSURES:

Any allocation containing alternative investments should note that they are highly illiquid and are only suitable for investors willing to put capital at risk for an indefinite period of time. Alternative investments often engage in leverage and other speculative investment practices, may involve complex tax structures, typically have higher fees, and generally are not subject to the same regulatory requirements as traditional asset classes.

An investment in alternative investments can be highly illiquid, is speculative and not suitable for all investors. Investing in alternative investments is only intended for experienced and sophisticated investors who are willing to bear the high economic risks associated with such an investment. Investors should carefully review and consider potential risks before investing. Some of these risks may include:

- 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 the fund and none is expected to develop;
- volatility of returns;
- restrictions on transferring interests in a fund;
- potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized;
- absence of information regarding valuations and pricing;
- complex tax structures and delays in tax reporting;
- less regulation and higher fees than mutual funds; and
- Risks associated with the operations, personnel, and processes of the manager

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

Information contained herein has been obtained from sources considered to be reliable, but we do not guarantee their accuracy or completeness.

- 2009-2010, 2015-2023 Barron's Top 100 Financial Advisors (formerly referred to as Barron's Top 1,000 Financial Advisors: State-by-State)
  Source: Barrons.com (2009-2010, 2015-2023). Data compiled by Barron's based on 12-month period concluding in Dec of the year prior to the issuance of the award. Barron's Top 100 Financial Advisors bases its ratings on qualitative criteria: professionals with a minimum of seven years of financial services experience, acceptable compliance records, client retention reports, customer satisfaction, and more. Financial Advisors are quantitatively rated based on varying types of revenues and assets advised by the financial professional, with weightings associated for each. Because individual client portfolio performance varies and is typically unaudited, this rating focuses on customer satisfaction and quality of advice. The rating may not be representative of any one client's experience because it reflects a sample of all of the experiences of the Financial Advisor's clients. The rating is not indicative of the Financial Advisor's past or future performance. Neither Morgan Stanley Smith Barney LLC nor its Financial Advisors or Private Wealth Advisors pays a fee to Barron's in exchange for the rating. Barron's is a registered trademark of Dow Jones & Company, L.P. All rights reserved.
- 2015-2023 Forbes Best-In- State Wealth Advisors
  Source: Forbes.com (Awarded 2015-2022) Data compiled by SHOOK Research LLC based 12-month time period concluding in June of year prior to the issuance of the award. Forbes Best-in-State Wealth Advisors ranking was developed by SHOOK Research and is based on in-person and telephone due diligence meetings to evaluate each advisor qualitatively, a major component of a ranking algorithm that includes: client retention, industry experience, review of compliance records, firm nominations; and quantitative criteria, including: assets under management and revenue generated for their firms. Investment performance is not a criterion. Rankings are based on the opinions of SHOOK Research, LLC and not indicative of future performance or representative of any one client's experience. Neither Morgan Stanley Smith Barney LLC nor its Financial Advisors or Private Wealth Advisors pay a fee to Forbes or SHOOK Research in exchange for the ranking. For more information: www.SHOOKresearch.com.

DISCLOSURES:

Indices are unmanaged. An investor cannot invest directly in an index.

S&P 500 Index is an unmanaged, market value-weighted index of 500 stocks generally representative of the broad stock market.

Russell 3000® Index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market.

The **Russell 2000 Index** measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000® Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership.

The **MSCI World Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. As of May 30 2011, the MSCI World Index consists of the following 24 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. As of May 30 2011, the MSCI Emerging Markets Index consists of the following 21 emerging market country indices: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The **MSCI EMU (European Economic and Monetary Union) Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of countries within EMU. The MSCI EMU Index consists of the following 11 developed market country indices: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, and Spain.

The **MSCI Japan Index** is a free-float adjusted market capitalization weighted index that is designed to track the equity market performance of Japanese securities listed on Tokyo Stock Exchange, Osaka Stock Exchange, JASDAQ and Nagoya Stock Exchange. The MSCI Japan Total Return Index takes into account both price performance and income from dividend payments. The MSCI Japan Index is constructed based on the MSCI Global Investable Market Indices Methodology, targeting a free-float market capitalization coverage of 85%. The index has a base date of December 31, 1987.

The **MSCI Frontier Markets Index** is a free float adjusted market capitalization index that is designed to measure equity market performance of frontier markets.

The **Nikkei 225 Index** is an index showing the average closing prices of 225 stocks on the Tokyo Stock Exchange.

Barclays Capital Global Aggregate Bond Index contains investment grade and high yield credit securities from the Multiverse Index. (The Multiverse Index is the merger of two index groups: the Global Aggregate Index and the Global High Yield Index.) The investment grade component of the Global Credit Index is a subset of the Global Aggregate Index, and contains credit securities from the U.S. Aggregate, Pan-European Aggregate, Asian-Pacific Aggregate, Eurodollar, 144A, and Euro-Yen indices. The high yield component is a subset of the Global High Yield Index, and contains securities from the U.S. Corporate High Yield, Pan-European High Yield, and Emerging Markets indices.

Barclays Capital Global Inflation-Linked Index measures the performance of the major government inflation-linked bond markets. The index is designed to include only those markets in which a global government linker fund is likely to invest. Markets currently included in the index are Australia, Canada, France, Germany, Greece, Italy, Japan, Sweden, the United Kingdom and the United States.

Barclays Capital US Corporate High Yield Bond Index: This index is composed of fixed-rate, publicly issued, non-investment grade debt.

Barclays Capital Global High Yield Index is a broad-based measure of the global high-yield fixed income markets. The Global High-Yield Index represents that union of the U.S. High-Yield, Pan-European High-Yield, U.S. Emerging Markets High-Yield, CMBS High-Yield, and Pan-European Emerging Markets High-Yield Indices.

JP Morgan GBI-EM Global Diversified Index is a comprehensive Emerging Markets debt benchmark that tracks local currency bonds issued by Emerging Market governments. The GBI-EM Indices are comprised of only those countries from the GBI universe that meet our criteria for an Emerging Market, resulting in 17 countries from four regions. The GBI-EM Global is positioned as the investable benchmark that includes only those countries that are accessible by most of the international investor base. The GBI-EM Global excludes countries with explicit capital controls, but does not factor in regulatory/tax hurdles in assessing eligibility (India and China resulting in 15 investable countries). The GBI-EM Global is classified as the most investable of the three indices. The need for registration of the foreign investor with the local supervisory authorities or notification of transactions is not considered a significant restriction that would warrant exclusion.

FTSE EPRA-NAREIT Global Total Return Index provides investors with diverse representation of publicly traded equity REITs and listed property companies globally.

The **Dow Jones/UBS Commodity Index** is composed of commodities traded on U.S. exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange.

DISCLOSURES:

The **Barclay CTA Index** measures the composite performance of established programs. For purposes of this index, an established trading program is a trading program that has four years or more documented performance history. Once a trading program passes this four-year hurdle, its subsequent performance is included in this unweighted index. The Barclay Index does not represent an actual portfolio, which could be invested in, and therefore the index performance results should be deemed to be hypothetical in nature and of comparative value only.

HFRI Fund of Funds Index -- Fund of Funds invest with multiple managers through funds or managed accounts. The strategy designs a diversified portfolio of managers with the objective of significantly lowering the risk (volatility) of investing with an individual manager. The Fund of Funds manager has discretion in choosing which strategies to invest in for the portfolio. A manager may allocate funds to numerous managers within a single strategy, or with numerous managers in multiple strategies. The minimum investment in a Fund of Funds may be lower than an investment in an individual hedge fund or managed account. The investor has the advantage of diversification among managers and styles with significantly less capital than investing with separate managers.

Barclays Global Majors ex US s a subset of the Barclays Capital Global Bond Index in that it excludes the U.S. The index includes local currency denominated sovereign debt of 12 counties: Canada, France, Italy, Germany, Japan, United Kingdom, Australia, Belgium, Denmark, Netherlands, Spain and Sweden.

Barclays US TIPS is a an unmanaged market index comprised of all U.S. Treasury Inflation Protected Securities rated invested grade (Baa3 or better), have at least one year to final maturity, and at least $250 million par amount outstanding.

HFRX Macro/CTA is a Macro strategy managers trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant and integral to investment thesis.

Citi 3M Treasury Bill is equal dollar amounts of three-month Treasury bills are purchased at the beginning of each of three consecutive months. As each bill matures, all proceeds are rolled over or reinvested in a new three-month bill. The income used to calculate the monthly return is derived from subtracting the original amount invested from the maturity value. The yield curve average is the basis for calculating the return on the index. The index is rebalanced monthly by market capitalization.

JP Morgan EMBI is the JP Morgan Emerging Markets Bond Index

MSCI EAFE is Europe, Australasia, Far East - is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US and Canada. The MSCI EAFE Index consists of the following 21 developed market country indexes: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom (as of June 2014). Gross total return indices reinvest as much as possible of a company's dividend distributions. The reinvested amount is equal to the total dividend amount distributed to persons residing in the country of the dividend-paying company. Gross total return indices do not, however, include any tax credits.

Alerian MLP is a composite of the 50 most prominent energy Master Limited Partnerships that provides investors with an unbiased, comprehensive benchmark for this emerging asset class. The index, which is calculated using a float-adjusted, capitalization-weighted methodology, is disseminated real-time on a price-return basis (NYSE: AMZ), and the corresponding total-return index is disseminated daily through ticker AMZX. Relevant data points such as dividend yield are also published daily. This is the price return.

HFRX Global Hedge Funds is designed to be representative of the overall composition of the hedge fund universe. It is comprised of eight strategies; convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry.

Barclays Capital Municipal Bond Index is a broad measure of the municipal bond market with maturities of at least one year. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

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

DISCLOSURES:

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

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

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

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

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

DISCLOSURES:

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

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

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

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

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

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

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

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

DISCLOSURES:

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

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

KEY ASSET CLASS CONSIDERATIONS AND OTHER RISKS

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

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

DISCLOSURES:

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

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

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

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

DISCLOSURES:

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

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

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

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

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

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

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

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

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

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