Morgan Stanley

WEALTH MANAGEMENT

INVESTMENT STRATEGY

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On the Markets

Bear Market Realities

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As investors head toward the traditional, if not meteorological, end of summer—Labor Day weekend—they are contending with the potential end of a bear market rally. While such rallies are common, they are usually based on technicals and wishful thinking, as opposed to a shift in fundamentals. Recently, investors enjoyed a retracement approaching nearly half their 2022 losses, as the S&P 500 Index rose more than 17% in eight weeks. The catalyst appears to have been a belief in "peak inflation" and "peak Fed hawkishness," coinciding with a perceived peak in the 10-year US Treasury yield and gasoline prices.

Along with market optimism suggesting an impending pause in Federal Reserve rate hikes, "better than feared" second quarter earnings provided further comfort, as analyst estimates for 2023 remained within 1.5% of Jan. 1 levels. This backdrop of confidence helped lift valuations, with forward price/earnings ratios again rising above 18.5x and the equity risk premium (ERP) falling to a below-average 2.6%.

Although inflation may have reached its highpoint for the cycle in June, the GIC has cautioned that the bear market is likely not over. Our thesis hinges on two key assumptions: First, Fed tightening cycles to battle inflation have never ended with the fed funds rate below core inflation, which is running close to 6.0%. Our forecasts call for it to decline to approximately 3.5% by mid-2023, suggesting a terminal rate still at least five to six hikes away. Second, corporate profits, near 70-year highs relative to GDP, are increasingly vulnerable to slowing growth and higher costs of capital. As Mike Wilson's leadoff article explains, earnings vulnerability to the loss of pricing power and shifting operating leverage dynamics may be underestimated, setting up potential disappointments around next year's profit forecasts. Kevin Demers expands on this theme, highlighting the importance of earnings achievability, idiosyncratic risk and active stock picking versus passive index exposure. If we have learned one thing about bear markets, it is that it's not worth trying to be early, as investors usually underestimate downside risk. Finally, despite potential further declines, we are confident this is not a longer-run secular bear market extending beyond 2023. In fact, we are excited about upcoming new market leadership, unleashed by a powerful capex cycle, a boom in productivity and improving working-age demographics. Josh Pokrzywinski touches on some of these themes in his article titled "The Deflation Enablers." ■

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The Larger Risk Remains Earnings, Not Rates

Michael Wilson, Chief Investment Officer and Chief US Equity Strategist, Morgan Stanley & Co. LLC

The highly anticipated annual Federal Reserve meeting in Jackson Hole has come and gone with a very clear message: The Fed's fight against inflation is far from over. Chair Powell's messaging last Friday was crystal clear, and the equity markets, which previously may have gotten too excited and priced in a Fed pivot that isn't coming, did not take it well. In short, the robust rally since June is likely over for now.

From a technical standpoint, this move looks pretty textbook. In June, we reached extreme oversold conditions, with breadth (a gauge of individual stock participation in overall market movements) collapsing to some of the lowest readings on record. However, the rally stalled out exactly at the 200-day moving average for the S&P 500 Index and many key stocks. On that basis alone, the sharp reversal looks quite ominous to even the most basic technical analysts.

Having a bullish view on US stocks from a fundamental standpoint is also challenging. First, there is valuation. As we have discussed many times in our research, the price/earnings (P/E) ratio is a function of two inputs—the 10-year US Treasury yield and the equity risk premium (ERP). Simplistically, the US Treasury yield is the cost of capital component, while the ERP is primarily a function of growth. Generally speaking, the ERP is negatively correlated to growth. In other words, when growth is accelerating or expected to accelerate, the ERP tends to be lower than normal and vice versa. The problem with concluding that June was *the* low for the S&P 500 in this bear market is that the ERP never went above average. Instead, the fall in the P/E from December to June was entirely a function of the Fed's tightening of financial conditions and the higher cost of capital.

Even worse, the ERP plummeted over the past few months and reached near-record lows for the post-Great Financial Crisis period prior to Friday's sell-off. In fact, the only time the ERP has been lower in the past 14 years was at the end of the bear market rally in March earlier this year, and we know how that ended. Our model, which is based primarily on the year-over-year change in purchasing managers indexes, suggests the S&P 500 ERP should be closer to 400 basis points today than the 280 basis points we closed at the day of Chair Powell's Jackson Hole speech. Suffice it to say, that would imply a much lower multiple than where we currently trade. Specifically, assuming a 3.0% 10-year US Treasury yield implies a fair value P/E of approximately 14x.

FOCUS ON FORWARD ESTIMATES. While most investors remain preoccupied with the Fed and its next move, we have been more focused on earnings and the risk to forward estimates. In June, many investors began to share our concern, which is why stocks sold off so sharply, in our view. Companies began managing the quarter lower, and by the time second quarter earnings season rolled around, positioning was quite bearish and valuations were more reasonable, at 15.4x. This led to the "bad news is good news" rally or, as many people claimed, "better than feared" results.

Call us old school, but better than feared is not a good reason to invest in something if the price is high and the results are soft. In other words, it's a fine reason for stocks to see some relief from an oversold condition, but we wouldn't commit any real capital to such a strategy. Most importantly, results showed clear deterioration in incremental operating margins—a trend we believe is just starting. In short, we believe next twelve month (NTM) earnings forecasts remain much too high.

While earnings revision breadth is a good leading indicator, it tells us nothing about the magnitude of the cuts. As usual, the cuts to NTM earnings per share (EPS) forecasts have been de minimis to start this down cycle. Companies and analysts lowered the bar going into results for the second quarter but chose to maintain their forecasts for the year. As a result, the NTM EPS forecast for the S&P 500 has fallen by just 1.5% since the top in June. If we back out the energy sector, NTM EPS estimates have fallen by closer to 5%, but this is still just the beginning of the eventual decline we foresee.

The bottom line: Last week's highly anticipated Fed meeting turned out to be a nonevent for bonds, while it appeared to be a shock to stock investors. Ironically, given the lack of any material move in yields, all of the decline in P/Es was due to a rising ERP that remains well below fair market levels, in our view. Importantly, we do think last Friday's action could be the beginning of what is likely to be an elongated adjustment period for growth expectations. In our experience, such adjustments to earnings always take longer than they should. Throw on top of that the fact that operating leverage is now more extreme than it was prior to COVID, and the negative revision cycle could turn out to be worse than usual. ■

This article was excerpted from the Aug. 29 report from Morgan Stanley & Co. Research, "Weekly Warm-Up: Fed Hits Stocks but the Larger Risk Remains Earnings, Not Rates." For a copy of the full report please contact your Financial Advisor.

US EQUITIES

As Margin Pressures Build, Industry Susceptibility Varies

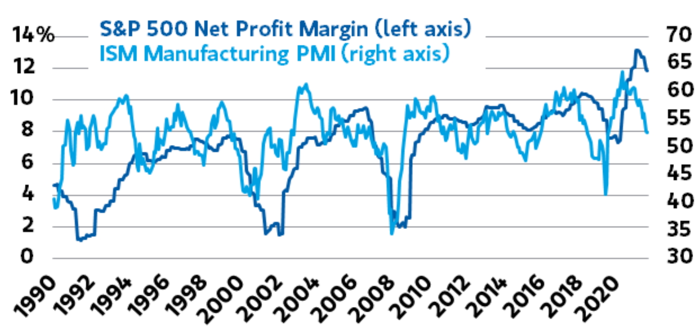
Kevin Demers, CFA, Investment Strategist, Morgan Stanley Wealth Management

Despite the now-familiar headwinds that buffeted US corporations during the recovery from COVID—namely, supply chain bottlenecks, higher interest rates and geopolitical tensions—fiscal stimulus and pandemic-driven cost reductions helped S&P 500 earnings rebound faster coming out of a recession than ever before. This generated positive operating leverage, leading to approximately 45% earnings growth in 2021, as net profit margins, which measure a firm's profitability based on a combination of revenue and cost inputs, increased to record highs.

Margin expansion, however, doesn't take place in isolation. It is incurred at the expense of customers or suppliers—either through higher prices received for goods or lower prices paid for raw materials and labor. At some stage of the profit cycle, the economy reaches an equilibrium, at which point demand falls as a result of untenably high prices, or input costs rise faster than they can be offset. After two years of record margin gains, we may be approaching such a point today, leaving equities in a precarious position given elevated valuations that assume similarly elevated profit margins. In that type of environment, an emphasis on stock selection, enhanced by industry evaluation, takes on added importance.

COSTS STARTING TO OUTPACE SALES. Exogenous events and supply chain disruption have increased production costs across the economy, which has fueled higher inflation. Consumer prices hit an annualized peak of 9.1% in June, outpaced by producer prices, which reached an eye-popping 18.5%. Unsurprisingly, these data points have coincided with slowing consumption, lower consumer and CEO confidence and decelerating manufacturing activity (see chart). This dynamic suggests that corporate expenses are increasing faster than sales, an unequivocally bad development for profit margins.

Slower Manufacturing Activity Precedes Profit Margin Declines

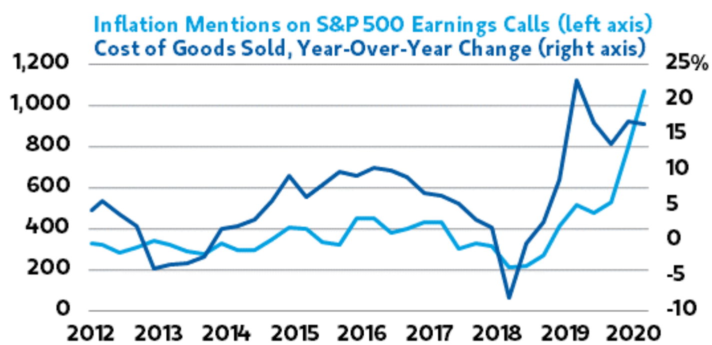


Source: Bloomberg as of July 31, 2022

Notably, this is the mirror image of the post-COVID recovery, when stimulus propped up demand while recession-era cost cuts were slow to return.

While investors are still debating the path for margins, company management teams have offered some direct hints. In fact, mentions of "inflation" in quarterly earnings calls and transcripts recently hit a 10-year high, coinciding with a sharp year-over-year increase in operating costs, as measured by the cost of goods sold (COGS) (see chart). To date, higher input costs have been offset by revenue gains generated via stronger pricing power, given that post-pandemic consumer balance sheets were able to support increased spending. We are skeptical that this trend can continue, however, given an increased focus on inflation across the economy. Many consumers have been trading down to lower-priced items, forcing companies to resort to promotional pricing to clear inventories. As demand headwinds build, pricing power will likely fade, leaving margins increasingly vulnerable to sticky cost pressures in areas like labor and supply chains.

Management Teams Have Been Indicating Higher Costs



Source: FactSet, Bloomberg as of June 30, 2022

THE VULNERABLE VERSUS THE RESILIENT. While the broader outlook for corporate margins appears challenged, there remain opportunities to differentiate between industries better or worse positioned to withstand these pressures. We compared profit margins to pre- and post-pandemic ranges and analyzed historical correlations with inflation (see table). Companies that operate in attractive industries with strong competitive advantages, brand equity and barriers to entry should be better able to protect margins as indiscriminate pricing power fades. In contrast, companies that operate in competitive industries with profits derived directly from commodity prices, or that suffer from high substitution threats, may be at risk. While we acknowledge that certain sectors may have experienced structural improvements (or impairments) in profitability due to the pandemic, we expect most industries to revert to historical trends.

Opportunities and Risks When Comparing Pre- and Post-COVID Margins

Industry	Operating Margin				Correlation
	Long-Term Average (%)	Post-COVID Average (%)	Pre-COVID Average (%)	Delta (Post-COVID vs. Pre-COVID) (%)	CPI
Negatively Exposed					
Metals & Mining	15.9	28.8	14.1	14.7	0.03
Automobiles	1.5	7.7	2.0	5.7	0.25
Semiconductors	20.9	28.9	24.0	4.9	0.01
Household Durables	13.3	16.8	13.0	3.9	0.28
Positively Exposed					
Textiles, Apparel & Luxury Goods	12.7	10.0	12.2	-2.2	0.07
Aerospace & Defense	14.5	13.0	15.4	-2.4	0.03
Water Utilities	32.9	30.7	33.1	-2.4	0.14
Electric Utilities	20.5	18.2	21.2	-3.0	-0.09
Communications Equipment	22.5	21.4	25.0	-3.5	0.05

Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office as of June 30, 2022

At Risk?

Metals and Mining. After years of underinvestment in capacity, the highly cyclical metals and mining industry has profited from elevated commodity prices and a global supply shortage. However, with high levels of fixed costs and potential headwinds from slowing economic growth, current margins, which are well above historical levels and dependent on continued commodity strength, may be at risk.

Automobiles. Original Equipment Manufacturers (OEMs) within the automobile industry have faced challenging supply chains that have left inventories depleted, propping up prices for both new and used cars. However, as consumption slows and pandemic-era demand wanes, sticky input costs will pressure margins at the same time that pricing power fades.

Semiconductors. Providing the building blocks of the global economy, the semiconductor industry is typically viewed as one of secular growth. While that may be true, short-term demand can be highly volatile due to double-ordering and cancellations. This leaves the industry at risk of margin-impeding price cuts to clear excess inventory. While the long-term thesis remains compelling, the industry's cyclical leverage will likely challenge margins. Supporting this view, several large semiconductor companies recently downgraded guidance for growth, providing real-time confirmation of these headwinds.

Household Durables. As consumption mix shifts from goods to services, elevated inventory relative to sales is imperiling pricing power in the household durables industry. Notably, margins, which are running above trend, tend to be correlated with underlying inflation. Looking forward, higher interest rates will negatively impact housing-related categories, slowing demand and pressuring profitability.

Opportunity?

Communications Equipment. Industries that have experienced a lag in demand and price recovery could provide margin catch-up potential. One to watch is the communications equipment industry. It provides critical infrastructure for data centers and corporate networks that need to be continually upgraded. Post-pandemic, supply-chain disruptions have negatively impacted profit margins, as companies have struggled to meet underlying demand. As supply chains clear amid resilient demand, margin pressures should ease, creating a more sanguine outlook.

Aerospace and Defense. As mobility improves, companies in the aerospace and defense industry may offer a late-cycle opportunity. The industry enjoys favorable pricing power given high barriers to entry, capital intensity and cost-plus contracts. However, a latent recovery in demand from airlines has pressured volumes. Should the industry normalize, we see an opportunity for positive operating leverage as pricing power holds amid falling input costs.

Utilities. The utilities industry is highly defensive given consistent demand drivers and wide competitive moats that are often protected by regulation. As costs have risen faster than the regulated return companies can earn, profit margins haven't been able to expand; this should turn into a tailwind if the environment becomes disinflationary. Additionally, recent legislation supporting clean-energy investments could further support profits.

Luxury Goods. Demand for products in the luxury goods industry tends to be less cyclical given established brand equity and relatively price-insensitive customers. This should offer margin reprieve, as pricing power tends to hold for companies benefiting from scarcity value among luxury products. Luxury goods also have valuable intangible assets, which have been revalued higher by inflation. As supply chains normalize and key growth markets like China reopen, the industry should be able to maintain pricing power given brand equity, while recovering costs on lower fulfillment and production expenses. ■

COMMODITIES

Has Gold Lost Its Luster? It's Complicated

Michael Suchanick, Investment Strategist, Morgan Stanley Wealth Management

Yukyung Choi, Investment Strategist, Morgan Stanley Wealth Management

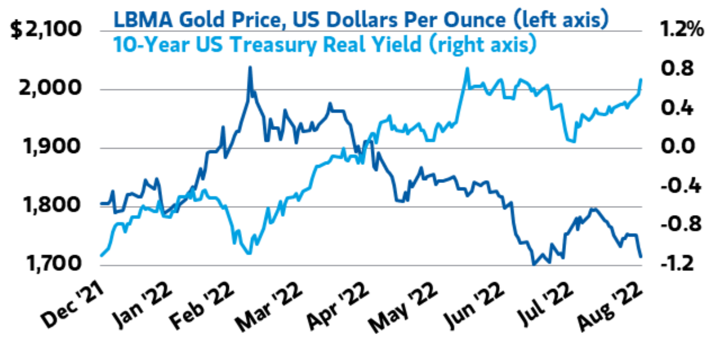
Gold is considered by some investors to be a winning bet amid inflation, market dislocation and geopolitical uncertainty. Given that all three have transpired recently, many have been disappointed in the precious metal, which, at $1,716 per ounce, is down more than 5% so far in 2022. One can argue that's partially a matter of aggressive expectations. After all, the metal has spent much of the year in positive territory, fulfilling some of its hoped-for hedging capacity, and its year-to-date return compares favorably to both broad equity and fixed income markets. Either way, gold's failure to follow through on its impressive first quarter gains can largely be attributed to two main factors.

RISING REAL RATES AN IMPEDIMENT. As a non-interest bearing asset, gold has historically exhibited a strong inverse correlation to real interest rates (nominal rates minus inflation). While bond prices move inversely to higher rates, eventually the higher rates tend to attract greater interest and flows, and investors may be able to invest funds from maturing bonds into higher-coupon securities. The greater the extent to which coupon income outpaces inflation, the greater the opportunity cost and the more the lack of a coupon can potentially be a disadvantage for assets like gold. After staying in negative territory and a relatively narrow band in 2021, the 10-year US Treasury real yield, recently at 0.67%, broke upward to start 2022 and has gained approximately 171 basis points (see chart).

Gold, like many commodities, has also tended to move inversely to the US dollar, which has experienced a powerful rally in 2022, at one point reaching a 42-year high. While they have at times moved in the same direction for extended periods, over the last 25 years, the correlation between gold and the US dollar is -0.4.

SUCCESS AS A HISTORICAL HEDGE. Despite this year's headwinds, funds designed to track the price of gold have seen fairly strong inflows. Exchange-traded funds (ETFs) invested in physical gold bullion have experienced $3.2 billion in net inflows so far in 2022. There are now approximately $94 billion in assets under management across 12 US-listed gold bullion funds. In eight of the past 10 calendar years, net flows for gold funds have been in lockstep directionally with gold's performance.

Gold Has Recently Moved Inversely to Real Rates

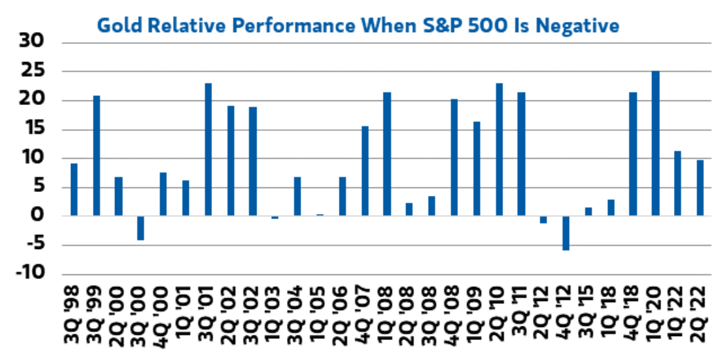


Source: Bloomberg as of Aug. 31, 2022

2022 has been an exception to that pattern: As gold has traded lower, flows into funds have been positive. We believe this speaks to ongoing investor confidence in gold as a successful, albeit imperfect, hedge in times of market stress.

Over the past 25 years through June 30, the S&P 500 Index generated negative returns in 29 out of 100 quarters (see chart). Gold outperformed the S&P 500 in 25 of those 29 quarters, by an average of nearly 13%. The correlation between gold and the S&P 500 was 0.03, indicating that, statistically speaking, the precious metal has generally worked as an equity market diversifier. More times than not, when the S&P 500 has delivered weak performance, gold's performance has been strong. ■

Over the Past 25 Years Gold Has Typically Outpaced US Equities When the Latter Have Declined

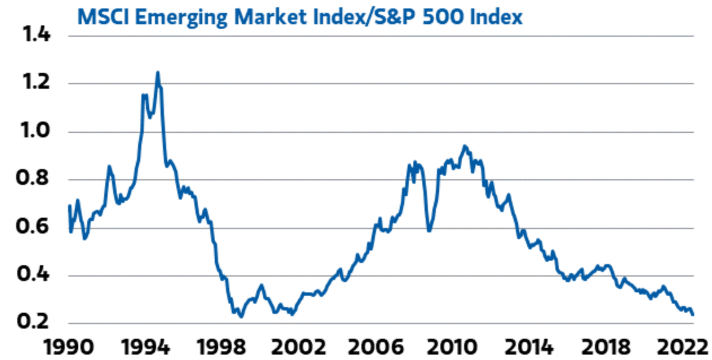


Source: PSN/Informa as of June 30, 2022

Short Takes

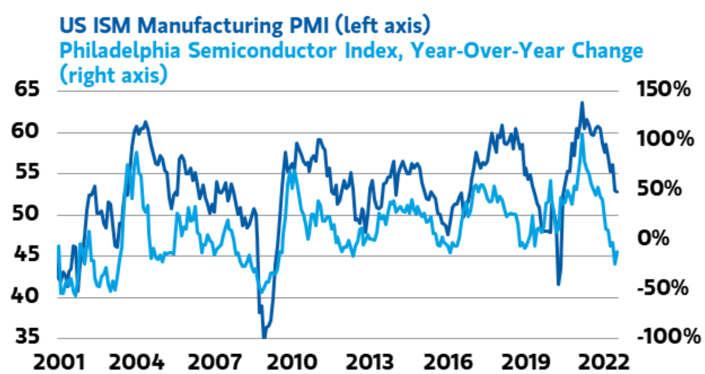
Emerging Markets Have Been Weighed Down by the Sell-Off in Chinese Stocks

Though down 16.2% on the year, the S&P 500 has convincingly outperformed emerging market equities. In fact, the ratio of the MSCI Emerging Markets Index to the S&P 500 Index is testing a 21-year low. Emerging market underperformance can be attributed largely to its elevated weighting in Chinese equities, which make up roughly 30% of the index's market capitalization. Chinese equities have been in a long and grueling downturn that accelerated in February amid growth concerns over COVID-induced lockdowns, geopolitical volatility and fallout from the property developer crisis. While risks to the downside for Chinese stocks remain—and thus for the Emerging Market Index—we believe positive catalysts, such as the resumption of policy easing and infrastructure spending in China, could support a modest recovery.–*Jonah Silverman*



Source: Bloomberg as of Aug. 29, 2022

Recent Underperformance in Semis Has Led Declines in US Manufacturing

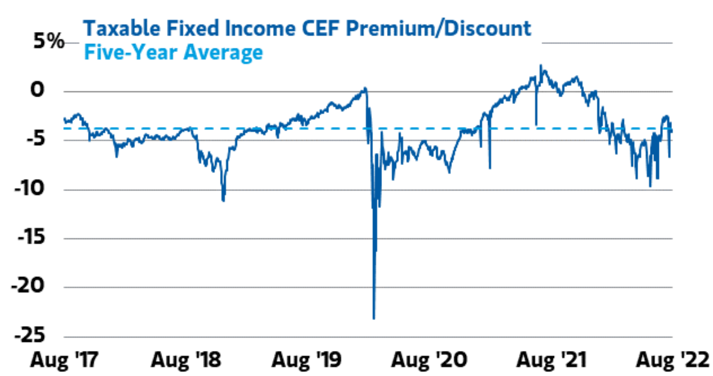


Source: Bloomberg as of July 31, 2022

The Philadelphia Semiconductor Index is down 31.5% for the year, with demand destruction the primary catalyst. During the pandemic, supply constraints led to excess demand for semiconductor chips; however, chipmakers are now preparing for a cycle with both higher inventory and contracting demand. Moreover, chip manufacturers are still facing supply chain issues. Historically, large increases or decreases in the semiconductor index have led US manufacturing purchasing managers indexes (PMIs) by six months. With the semiconductor index off roughly 23% annualized in June, we believe US growth is likely to continue to slow. Currently, the decline in the Philadelphia Semiconductor Index implies a manufacturing PMI below 50, considered contraction territory for the US economy.–*Matt Armstrong*

CEF Discounts Limited Despite Substantial Price Declines

This year has been difficult for a wide array of closed-end funds (CEFs), including those in the taxable fixed income category. In past down years, CEF investors, in a sense, have often been partially compensated by the opportunity to add to positions at suddenly wider market price discounts to net asset value (NAV), which enhance distribution rates relative to purchasing at NAV. This year, however, major discount widening has only been intermittent despite the pullback in equities and fixed income. While risk-off positioning often results in wider discounts, the average taxable bond CEF was recently trading at only a 4.1% discount. In addition to indicating demand for high income, valuations may reflect incremental buying from fund of closed-end fund strategies, which have expanded in number and size.–*Michelle Chyr*



Source: Morningstar as of Aug. 30, 2022

US EQUITIES

The Deflation Enablers

Joshua C. Pokrzywinski, Equity Analyst, Morgan Stanley & Co. LLC

As their costs rise, companies are under increasing pressure to invest in productivity-enhancing technologies. While cyclical forces may deter investment in an uncertain macro environment, we believe an aging capital base and changes to demographics, energy policy and security have made technologies focused on cost reductions and productivity more valuable. Depending in part on attributes such as barriers to entry and equity risk/reward, stocks empowering productivity and cost reduction, which we refer to as "deflation enablers," occupy an important position in today's market.

HIGHER WAGES, DECELERATING PRODUCTIVTY. Two key factors should support this push to accelerate investments in automation and productivity-enhancing technologies. The first is the potential for structurally higher wages, which pose a longer-term risk to US corporate profitability. The second is a lack of productivity-enhancing fixed capital investment in the US over the past couple of cycles—a dynamic that has contributed to a multicycle decline in productivity growth. With infrastructure now at the forefront of the political landscape, and the cost of labor and capital on the rise, corporate investments are likely to pivot toward productivity-enhancing capex and technologies that can lower the cost of doing business and improve profitability.

Morgan Stanley & Co.'s economists see a structural rise in wage growth as employee bargaining power returns and labor compensation catches up with historical productivity gains. At the economy-wide level, this poses a secular risk to profit margins, albeit an idiosyncratic one across sectors. In response to these dynamics, we think corporations will increasingly try to mitigate exposure to rising labor and other costs. Automation and digitization should be front and center, and many of the opportunities are likely to be inherently disinflationary.

We also believe there has been a lack of productivity-enhancing capex over the last several cycles. In fact, the average age of private fixed assets in the US is its highest since the 1950s. Partially as a result, productivity growth has been in a 20-year decline. The positive spin from a productivity standpoint is that the underlying drivers of this trend are shifting.

Several additional factors are important to keep in mind from a cyclical standpoint. The cost of capital is on the rise, which we think will push companies to invest for future growth instead of prioritizing buybacks and other financial engineering activities that are easier to pursue in a world of negative real rates. Monetary policy dominance is giving way to a focus on fiscal policy, with infrastructure investment at the forefront. This is very similar to the post–World War II era—the last time we exited financial repression.

As corporations adapt to the implications of higher-for-longer inflation on their cost bases, the need to explore cost-saving tools and technologies should, in turn, drive higher volume for companies providing deflationary-enabling products and services. These range in form and function from automation tools, designed to reduce increasingly expensive headcount, to cost-saving booking software for airlines, which must find ever-more innovative ways to offset rising jet-fuel prices.

With COVID-induced bottlenecks, rising geopolitical tensions and a greater focus on energy security, the decades-long deflationary narrative has been upended. Even as demand destruction leads to some moderation in recent sharp inflation prints, the fear of higher-for-longer inflation continues to be the big debate of the moment. In that context, we believe companies that provide innovative and/or cost effective solutions will see heightened demand and greater competitive advantages.

THREE MAJOR TECHNOLOGIES. In our view, three deflationary technologies stand out from the others: mass energy storage and mobility, clean energy and artificial intelligence (AI). Notably, they permeate multiple sectors and are at long-term inflection points in terms of their importance to both enterprises and the consumer.

Artificial Intelligence. The story of AI investment is usually presented as one of booms and busts, but that does not reflect the historical trend of computing power used by learning systems. Training for AI models is now growing at rates far beyond what Moore's Law (the contention that the speed and capacity of computers, consistent with the number of transistors on a microchip, should double every two years) would have projected. Indeed, the race for AI superiority—driven in part by desire for preeminence in national and corporate innovation—is accelerating at pace.

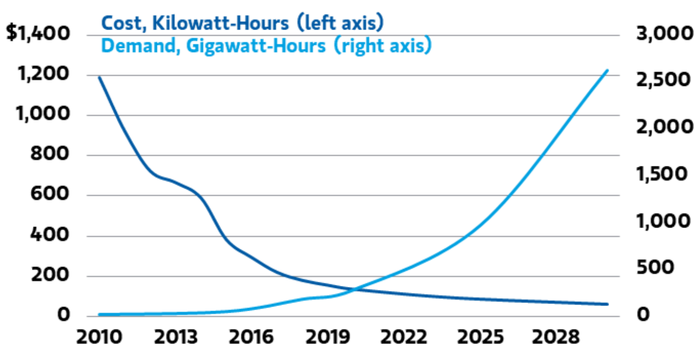
Reduction in doubling times has not been confined to just one field of AI models; rather, it has extended across language, speech, vision and gaming models. This has likely been caused by a combination of limits on the amount of computing power possible before 2012 and the willingness to spend on scaling up experiments, which has increased sharply in recent years as use cases have expanded. The amount of hardware used to achieve reduced AI training times has increased dramatically, with frontier systems being dominated by the use of accelerator chips. All told, AI is proving increasingly and relentlessly deflationary.

Clean Energy. While the energy transition will require a long and delicate balance, it's likely to be highly inflationary as well. Among other factors, higher utility bills have been driven in part by damage from extreme weather events, exacerbated by climate change.

Against this backdrop of inflationary fuels and utility bills, we believe companies with deflationary clean energy technologies and high barriers to entry will be able to grow rapidly and generate wider profit margins. This should lead to greater investment in deflation enablers in the energy segment, on which the global economy continues to depend. In our view, over the long term, clean energy can disrupt traditional electricity suppliers—especially utilities, with high and rising customer bills, above average exposure to physical risks from climate change and challenges ensuring adequate customer supply.

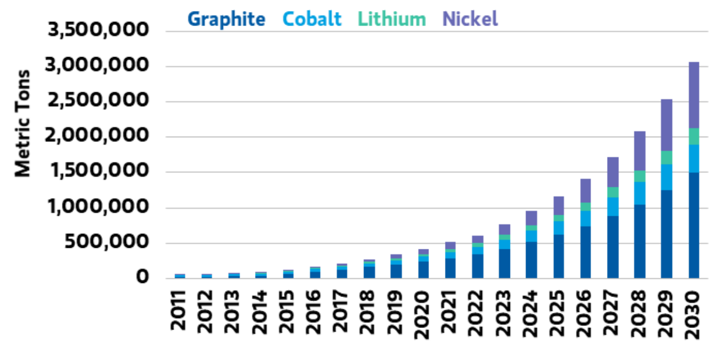
Mass Energy Storage and Mobility. Although the cost of batteries has been falling for some time, the demand for batteries and their component raw materials has undergone an exponential boost (see charts below), facilitated by competitive tensions leading to heightened investment and ambitious top-down government emissions goals. Granted, supply chains from source material to finished product remain immature—but production scaling costs are declining, and storage technology is only beginning to profoundly affect mobility, inclusivity and climate.

Battery Costs Have Fallen as Demand Has Been Rising



Note: Based on estimates from Bloomberg
Source: Bloomberg, Morgan Stanley & Co. Research as of July 20, 2022

Demand for Underlying Battery Components Has Increased



Note: Based on estimates from Bloomberg
Source: Bloomberg, Morgan Stanley & Co. Research as of July 20, 2022

Clearly, battery supply chains are imperfect, given the impacts of mining cobalt, the refining complexities of nickel and the economic incentives of extracting lithium. However, as investment by automobile original equipment manufacturers (OEMs) rises, along with generous European subsidies aimed at staying competitive with the US and China, the supply chain and innovation in new battery technologies augur for continued price declines as innovation and demand rise. ■

This article was excerpted from the July 20 report from Morgan Stanley & Co. Research, "The Deflation Enablers." For a copy of the full report please contact your Financial Advisor.

US BANKING

The Coming Capital Crunch

Vishwanath Tirupattur, Strategist, Morgan Stanley & Co. LLC
Jay Bacow, Strategist, Morgan Stanley & Co. LLC

As macro strategists, digging deep into company earnings is outside our jurisdiction, and we rely on our sector analysts for those nuggets of information that could matter to fixed income markets. Following last quarter's earnings announcements, insights from Betsy Graseck, Morgan Stanley & Co.'s banks and consumer finance equity analyst, highlight the impact of regulatory capital-requirement changes this year. These changes not only affect the ability of banks to buy back stock or pay dividends but also are likely to influence credit formation, credit spreads and the demand for high-quality assets on bank balance sheets—issues that are relevant for risk markets in general and fixed income markets in particular. In our view, market participants do not fully appreciate these implications.

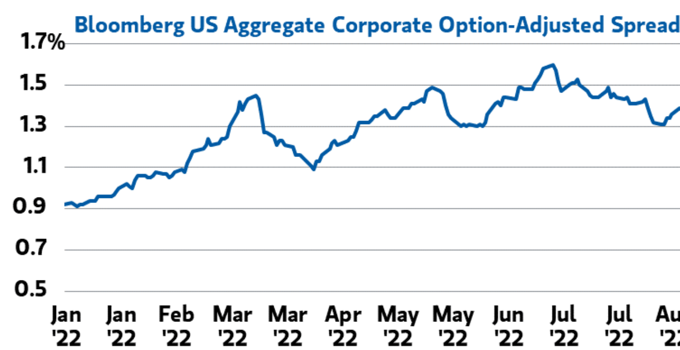
Notably, along with standard capital requirements, which have long been a feature of banks and other depository institutions and determine how much liquid capital they must hold, additional risk-based measures were revised or adopted in the wake of the Great Financial Crisis. One particularly important international accord was Basel III. Among other things, it seeks to enhance banking industry risk management by mandating capital buffers and the assignment of risk levels to bank portfolio holdings.

WHY IT'S A BIG DEAL. Starting in January banks had to adopt a new approach (the Standard Approach to Counterparty Credit Risk or SACCR) to measure the counterparty risk of their off-balance sheet derivatives exposure. Under Basel III rules, banks apply weights to assets based on riskiness, resulting in risk-weighted assets (RWA), against which they are assessed a capital charge. Government-guaranteed assets like cash, Treasuries and mortgage-backed securities (MBS) from Ginnie Mae have a 0% risk weight; hence, there is no capital charge against them for this purpose. MBS issued by government-sponsored entities, such as Fannie Mae and Freddie Mac, and general obligation municipal bonds carry a 20% risk weight, and most residential mortgage loans have a 50% weight.

The new requirements add to the impact of a shift in interest rates. Interest rates have risen sharply since the start of the year, meaning that, like other investors, banks have had to write down the stated value of fixed rate securities in their portfolios. This happens with every sell-off in rates, but this one was larger and faster than most. The move in the five-year US Treasury yield was the second-largest six-month sell-off in the past 30 years. The magnitude of the write-downs, especially combined with spread widening in both mortgage and credit instruments, was large to say the least. Consequently, banks have less generally accepted accounting principles (GAAP) capital than normal, and the biggest banks also have less regulatory capital.

Beyond the capital impairment stemming from the sell-off in rates, spread widening (see chart) and the adoption of SAACR, banks must contend with the annual stress capital buffer (SCB) tests. Results from these tests released at the end of June pointed to higher required regulatory capital than consensus expectations for some of the largest banks in the country—especially the money center banks. Add in several globally systemically important banks (GSIBs) expecting an increase in their GSIB surcharge in the first quarter of 2023 and working to reduce it by the end of 2022, and the largest banks in the US banking system are confronted with a serious challenge. As noted by Betsy Grassick, they will need to keep dividends flat, eliminate buybacks and reduce their RWAs to generate a capital ratio above their new required minimums. She further estimates that the three largest US banks alone will need to lower their RWAs by more than $150 billion in aggregate by the end of the year if they maintain a 100 basis point management buffer on top of their regulatory capital minimums. While managements may choose to flex to a lower 50 basis point buffer, higher volatility, higher equity market valuations and growing loan books add to RWA balances.

Wider Credit Spreads Have Contributed to Bank Capital Impairment



Source: Bloomberg as of Aug. 24, 2022

POTENTIALLY LOWER CREDIT FORMATION. In post-second quarter earnings calls, banks talked about "optimizing RWAs" and "RWA management." So, what could that entail, and what are the potential consequences? For starters, banks could move out of 20% risk assets such as Fannie Mae and Freddie Mac agency MBS and into 0% assets like Ginnie Mae MBS. Banks have been substantial buyers of senior tranches of securitized products—thus playing a crucial role in enabling credit formation across a wide range of assets by providing senior leverage. While such senior tranches are risk-remote by construction, they carry higher risk weights and therefore are capital-intensive. If banks stepped back from such assets, the cost of financing would increase, affecting the cost and availability of credit across the system. Spreads of Fannie Mae and Freddie Mac MBS and collateralized loan obligation (CLO) AAA tranches have recently traded near post-Great Financial Crisis wides, suggesting that pressures from RWA optimization are already at play. Furthermore, banks would need to reduce trading in portfolio assets with higher RWAs, which could impact liquidity for those assets.

Loan portfolios are the biggest item by far among bank RWAs, and regulatory capital pressures mean banks will increasingly have to make tough choices in their lending books. One major bank highlighted that it has been leaning more toward credit card, commercial and industrial, and home equity loans and away from mortgage, auto and education refinancing. Clearly, different banks will react differently to RWA pressures, but in aggregate we will likely see lower overall liquidity, lower credit formation and continued spread pressure on capital-intensive assets.

In our view, market participants have yet to fully appreciate the challenges from the regulatory capital measures on banks, particularly large-cap banks. These challenges are unlikely to dissipate within the next two to three quarters, adding to the other uncertainties markets are facing. If there is a silver lining, over the longer term better holders of RWAs may emerge—entities that do not have the same capital constraints (e.g., sovereign wealth funds, pension funds and certain non-US banks) and that might find these assets attractive portfolio additions. ■

This article was excerpted from the July 31 report from Morgan Stanley & Co. Research, "The Coming Capital Crunch." For a copy of the full report please contact your Financial Advisor.

Q&A

The Good and the Bad Across the Muni Landscape

Recently, the broad municipal bond market hasn't been kind to individual investors, who own more than two-thirds of outstanding issues. Following eight straight calendar years of positive performance, the Bloomberg Municipal Bond Index lost 9.0% in the first six months of 2022. While returns have improved lately, the benchmark remains down 8.6% for the year. "I think when investors saw returns in 2022 erode a lot of what was made over the last three years, they paused and took a step back," says Peter Hayes, CIO and head of the municipal bond group at BlackRock. "But these types of periods create opportunities. For every dollar you put to work, you're receiving more income than you would have before this sell-off." He recently spoke with Mike Delli Paoli, fixed income investment officer for Morgan Stanley Wealth Management's Global Investment Manager Analysis. The following is an edited version of their conversation.

Michael Delli Paoli (MDP): Can you provide an overview of where munis stand today?

Peter Hayes (PH): We have had a prolonged sell-off beginning earlier this year—something we really hadn't experienced in a long time. To some degree, returns having been so negative, the rates-driven sell-off turned investors away from the asset class. We saw a lot of tax-loss selling and fund redemptions.

The sell-off has been broad-based across fixed income. Liquidity in the fixed income market, and among munis specifically, has not been very good. I think those things have exacerbated the negative absolute returns.

Flows really haven't come back: In the first six months of 2022, we saw outflows similar to inflows for all of 2021, which was one of the best years for inflows. Over the beginning of the summer to midsummer, we finally began to see some stabilization, which has helped the market—but flows haven't returned broadly.

I think the market is now focused on what the Fed is going to do over the longer term, which has kept investors on the sidelines. We're still not seeing tremendous demand, and for that reason I think some caution is still warranted.

MDP: How do valuations look?

PH: Valuations have been up and down. They were very rich coming into 2021, then they got very cheap. In May, we probably saw the cheapest point in the market from a relative value standpoint. In July, we had some value buyers come in, and we saw some demand from the seasonal impact. We actually began to get a bit expensive again, partially because Treasury rates were selling off and muni rates were rallying.

More recently, with the backup in Treasury rates, we've seen muni rates rise as well, and that's created better value. I would say the front end is now fairly valued and, as you get out a little longer on the curve, munis are actually fairly cheap on a historical relative value basis. It remains to be seen what rates will do going forward, but the relative value proposition is clearly much better today than it was some time ago.

MDP: Are there specific sectors that look attractive versus others that you are avoiding?

PH: Investment grade munis appear better valued than the high yield parts of the market. Part of the reason for that is when we saw redemptions, mutual funds and investors were able to sell more investment grade than high yield. I still think high yield is vulnerable to a downturn in the economy, and we're still a bit cautious there.

Drilling down into specific sectors, that's going to be an interesting question going forward because when you look at the market from a credit standpoint and translate that into spreads, the fundamental underpinnings have really never been stronger. There's a lot of unspent fiscal stimulus and better revenue collection.

Nonetheless, we are beginning to see some weakening in the US economy, and with that you'll see a bit of a decline in revenues as well. Going forward, we think there's going to be a big bifurcation in credit in terms of where there's value versus where there isn't.

Things like health care and education are likely to do quite well, but areas like mass transportation—particularly in urban areas where ridership is still a fraction of what it was before COVID—are probably somewhat expensive and are still vulnerable to credit spread widening. You've got to be very careful navigating what sectors look good now versus what might look good in six to 12 months.

MDP: Where do you see the greatest risks?

PH: When you look at speculative project finance, you naturally wonder what a weaker US economy may mean. Land deals related to housing, particularly in high-growth areas, have had a big uplift in the last couple years. That's likely to soften. Certain projects within high yield—a big shopping mall and some of the train line projects, for instance—have suffered from a weakening economy and are likely to continue to do so.

On the investment grade side, pension funds, which had previously provided a fiscal boost to many states and cities, have had negative returns. That will be a drag over the next couple of years until they can make up the liabilities gap, and it will be interesting to see how that manifests itself in ratings and spreads.

MDP: What are you seeing from the supply/demand picture at this point?

PH: Supply seems to have tailed off a bit, and I think part of that is normal behavior from issuers. When the markets get volatile, subscription levels drop on new issuance. As borrowing costs go up, issuers tend to pare back some of their anticipated borrowing.

While the calendar has been fairly light lately, there is a seasonal element whereby issuance tends to go up in September and October due to factors like volume caps and the desire to get deals done before the end of the year. On the demand side, we don't anticipate robust flows for the remainder of the year.

MDP: How might the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, which includes a corporate alternative minimum tax, impact the muni market?

PH: Those pieces of legislation are more likely to have indirect and subtle impacts. Some people look at infrastructure and think it immediately translates to the municipal market. While the municipal market is clearly infrastructure-related, it doesn't typically translate into an immediate increase in issuance. All of these projects tend to be long term, and a lot of the spending is over a long period of time.

That said, there are certain elements to consider. Health care, for instance, is likely to see some benefit from components of the Inflation Reduction Act that relate specifically to health care. It's not going to be that intuitive or obvious to investors, however, because any boost will be more from a fundamental credit standpoint. I don't think the minimum corporate tax rate will do much at all. Maybe it will stabilize or protect some revenue for states and cities on the downside, but the reality is that the corporate rate reduction in 2017 took a lot of corporations out of the muni market, and we don't see them coming back anytime soon.

MDP: How do tax-free munis look compared to taxable corporate bonds?

PH: A year ago, a five-year AA-rated muni yield was about 36% of a AA corporate bond—pretty low and not really providing a lot of benefit. Today, that stands at 62%; we've almost doubled the relative valuation of munis versus corporates.

Investors should be aware that the benefit on the front end of the curve is fairly minimal. In some cases, depending on where on the credit spectrum you're investing, there is close to a breakeven between munis and corporates.

MDP: Do you think adding duration is worth the extra risk?

PH: We'll have to take a look at the data, particularly inflation, over the next couple of months to see how far the Fed can go. Until we get a little bit of a drop in inflation and some hint that the Fed may begin to ease on the pace and magnitude of hikes, I think caution is warranted. I certainly would not be taking maximum duration risk at this point.

MDP: What's your bear versus bull case looking ahead?

PH: The macro environment will ultimately drive munis over the next couple of months. If we continue to see very easy financial conditions and inflation not coming down, that would be my bear case. If we see inflation data begin to come down and a little weakness in jobs growth, I think it might indicate that we've probably come close to a peak in rates.

The market has created value, and if you have a dollar to put to work in today's market, you may want to employ some of it just as a hedge. But I would keep some powder dry for that fall seasonality.

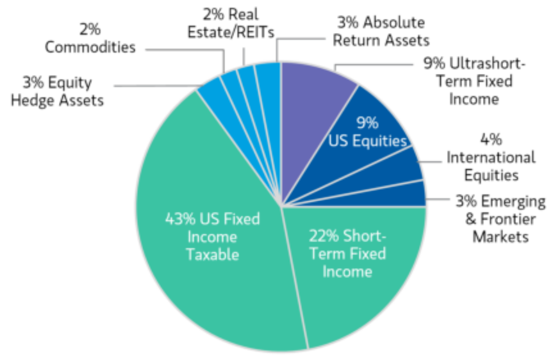
If we can get through the next couple of months, even if we do see a bit of a backup in rates and further price declines, I think that would be a great place to set up for a January effect—when there's almost no issuance and a lot of reinvestment needs to come back into the market. It could be a great entry point for investors if we see some weakness over the next month or two. ■

Peter Hayes is not an employee of Morgan Stanley Wealth Management or its affiliates. Opinions expressed by him are his own and may not necessarily reflect those of Morgan Stanley Wealth Management or its affiliates.

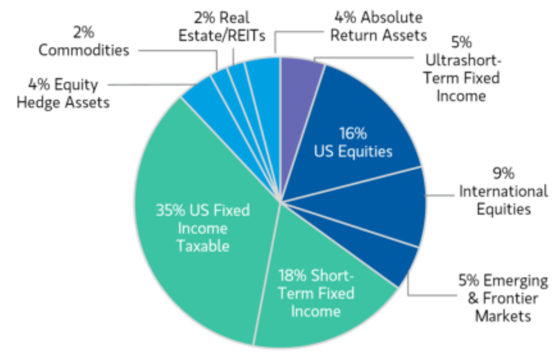
Global Investment Committee Tactical Asset Allocation

The Global Investment Committee provides guidance on asset allocation decisions through its various models. The five models below are recommended for investors with up to $25 million in investable assets. They are based on an increasing scale of risk (expected volatility) and expected return.

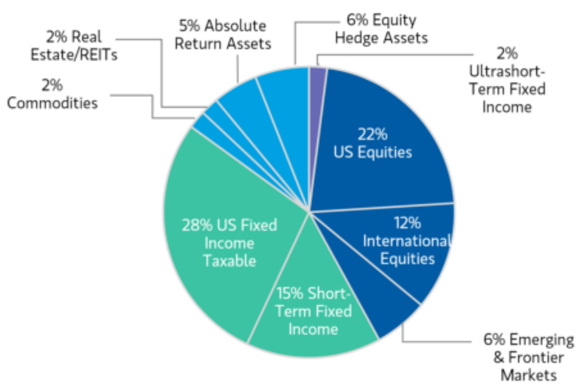
Wealth Conservation



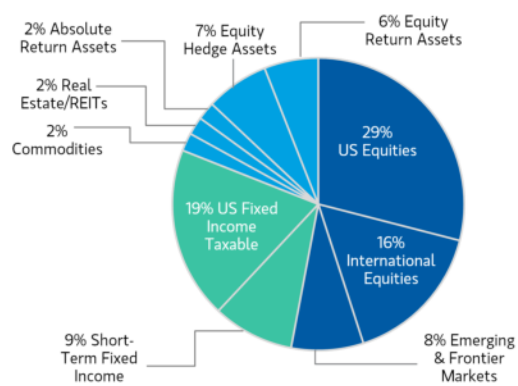
Income



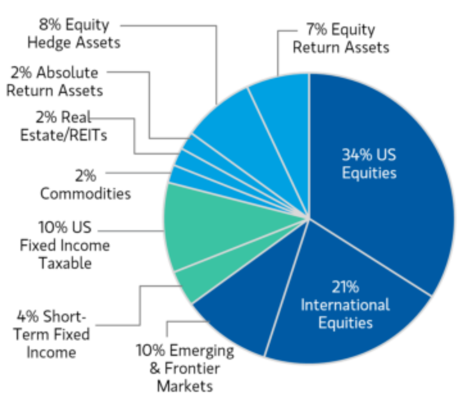
Balanced Growth



Market Growth



Opportunistic Growth



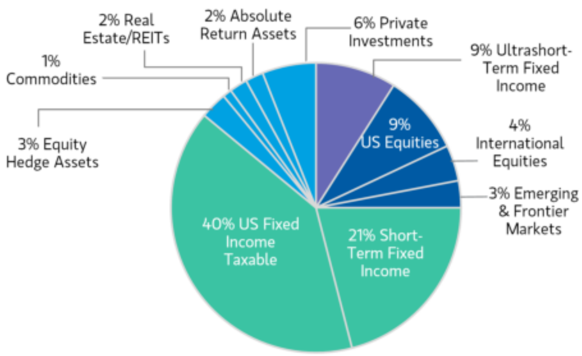
Key

- Ultrashort-Term Fixed Income
- Fixed Income & Preferreds
- Equities
- Alternatives

Source: Morgan Stanley Wealth Management GIC as of Aug. 31, 2022

The Global Investment Committee provides guidance on asset allocation decisions through its various models. The five models below are recommended for investors with over $25 million in investable assets. They are based on an increasing scale of risk (expected volatility) and expected return.

Wealth Conservation



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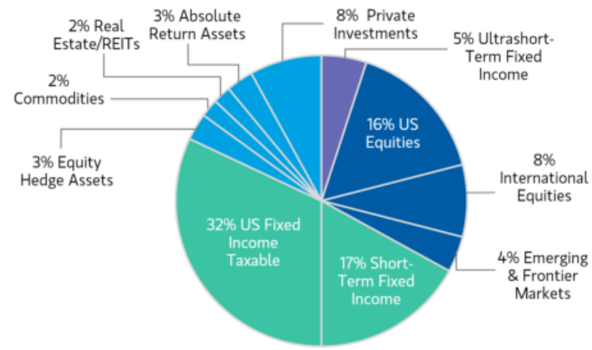

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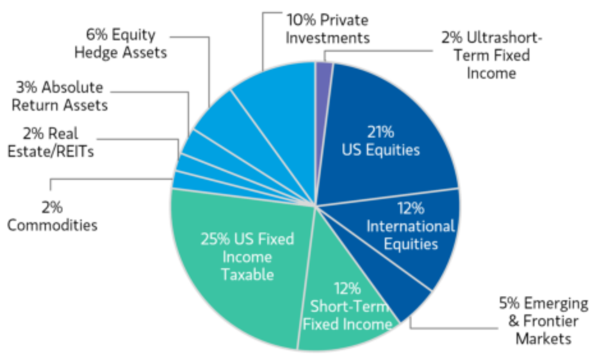
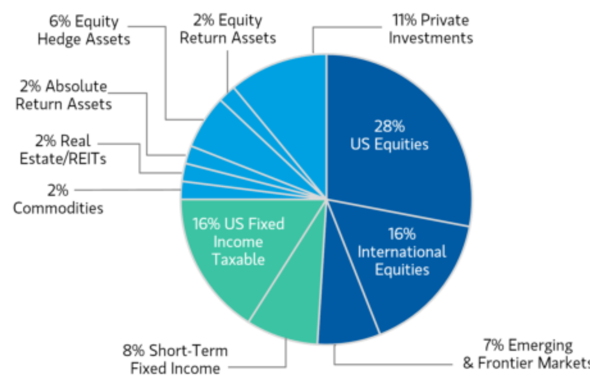
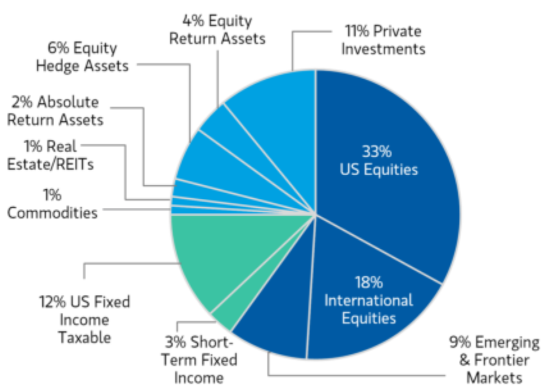


Market Growth



Opportunistic Growth



Key

- Ultrashort-Term Fixed Income
- Fixed Income & Preferreds
- Equities
- Alternatives

Source: Morgan Stanley Wealth Management GIC as of Aug. 31, 2022

Tactical Asset Allocation Reasoning

Global Equities	Relative Weight Within Equities	
US	Market Weight	With the Fed launching aggressive tightening, supply chains improving and global growth slowing on the back of the Russia/Ukraine conflict and China's COVID outbreaks, we see greater chances of stagflation and thus have reduced our overweight. While recession risks for the broad economy remain low, prospects for negative earnings revisions are rising as are headwinds to valuation multiples. We expect volatile but rangebound trading of plus/minus another 5% to 10%.
International Equities (Developed Markets)	Market Weight	The mix of all-time high inflation, existential risks associated with Russia/Ukraine and the European Central Bank's position that it has limited tools to help suggests that the odds of recession are over 50%. Developed market exposure should skew toward commodity and materials exporters, especially those in the Asia/Pacific region.
Emerging Markets	Overweight	China's regulatory crackdown and zero-tolerance for COVID cases have exacerbated the economic slowing that began last year. Odds are rising for China stimulus, and growth linked to supply chains is rebounding in South Asia. We are opportunistically adding to positions there and in Latin America, which benefits from already tight central bank policy and commodity exporter windfalls.
Global Fixed Income	**Relative Weight Within Fixed Income**	
US Investment Grade	Overweight	Markets have aggressively priced the Fed's hawkish rate path and with yield curves apt to face ongoing flattening pressure, risks of a policy mistake rise. We are taking a more balanced risk-reward approach and have added to large underweight positions. With Quantitative Tightening ahead, execution risk remains large as do the risks from even higher inflation. However, with spreads widening and long-term rates reflecting a more reasonable terminal value, bonds are a decent relative portfolio hedge.
International Investment Grade	Underweight	Central banks' hawkish pivots have prompted a material move in global nominal rates. Risk premiums are moving up too, creating opportunity. While timing and catalysts are still hazy, the amount of negative yielding debt is down by more than two-thirds since last summer. Prospects are brightening for fixed income investors, with opportunities to invest in local currencies that are expected to strengthen against the US dollar.
Inflation-Protection Securities	Underweight	TIPS yields have moved up as realized inflation remains near 40-year highs and geopolitical uncertainties add pricing pressures. However, real yields remain deeply negative, which suggests valuation is not compelling.
High Yield	Underweight	We recently halved our exposure to the equity-like asset class to reduce equity beta of portfolios. High yield bonds rallied aggressively with the unprecedented provision of liquidity from the Fed and fiscal stimulus from Washington. Surging commodity prices have also repaired balance sheets of energy-levered companies. Upside is limited.
Alternative Investments	**Relative Weight Within Alternative Investments**	
REITs	Overweight	With the debate between growth and rising rates moving to center stage, we recently added modestly to the asset class, believing it is a diversifying source of income that is also leveraged to reflation. With real interest rates still negative and inflation expectations rising, we expect to be selective, opportunistic investors in the sector this year, with a focus on residential.
Commodities	Market Weight	Global central banks are intensifying their inflation fights with aggressive rate hikes, especially in commodity-based economies like Australia and Canada. Supply chains for goods are starting to clear, relieving some pressures on inflation coming from industrial metals, semiconductors and auto parts. As a result, we anticipate that overall inflation is peaking. That said, structural disruption in energy and global agricultural commodities remains severe and may take multiple quarters to cure.
Hedged Strategies (Hedge Funds and Managed Futures)	Overweight	With broad market valuations rich, a majority of returns will be based on company earnings and managements' ability to navigate rising costs, surging demand and disruptive competition. These factors are constructive for hedge fund managers who are good stock-pickers and can use leverage and risk management to amplify returns. We prefer very active and fundamental strategies, especially low beta, low volatility and absolute return hedge funds.

*For more about the risks to Duration, please see the Risk Considerations section beginning on page 15 of this report.
Source: Morgan Stanley Wealth Management GIC as of Aug. 31, 2022

Disclosure Section

Important Information

The **Global Investment Committee (GIC)** is a group of seasoned investment professionals from Morgan Stanley & Co. and Morgan Stanley Wealth Management 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 asset allocation model weightings, as well as produce a suite of strategy, analysis, commentary, portfolio positioning suggestions and other reports and broadcasts.

Matt Armstrong, Jay Bacow, Yukyung Choi, Michelle Chyr, Michael Delli Paoli, Kevin Demers, Joshua C. Pokrzywinski, Jonah Silverman, Daniel Skelly and Michael Suchanick are not members of the Global Investment Committee and any implementation strategies suggested have not been reviewed or approved by the Global Investment Committee.

Index Definitions

PHILADELPHIA SEMICONDUCTOR INDEX This index is a modified capitalization-weighted index comprised of companies that are involved in the design, distribution, manufacturing and sale of semiconductors.

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

Risk Considerations

Alternative Investments

The sole purpose of this material is to inform, and it in no way is intended to be an offer or solicitation to purchase or sell any security, other investment or service, or to attract any funds or deposits. Investments mentioned may not be appropriate for all clients. Any product discussed herein may be purchased only after a client has carefully reviewed the offering memorandum and executed the subscription documents. Morgan Stanley Wealth Management has not considered the actual or desired investment objectives, goals, strategies, guidelines, or factual circumstances of any investor in any fund(s). Before making any investment, each investor should carefully consider the risks associated with the investment, as discussed in the applicable offering memorandum, and make a determination based upon their own particular circumstances, that the investment is consistent with their investment objectives and risk tolerance.

Alternative investments often are speculative and include a high degree of risk. Investors could lose all or a substantial amount of their investment. Alternative investments are appropriate only for eligible, long-term investors who are willing to forgo liquidity and put capital at risk for an indefinite period of time. They may be highly illiquid and can engage in leverage and other speculative practices that may increase the volatility and risk of loss. Alternative Investments typically have higher fees than traditional investments. Investors should carefully review and consider potential risks before investing.

Certain information contained herein may constitute forward-looking statements. Due to various risks and uncertainties, actual events, results or the performance of a fund may differ materially from those reflected or contemplated in such forward-looking statements. Clients should carefully consider the investment objectives, risks, charges, and expenses of a fund before investing.

Alternative investments involve complex tax structures, tax inefficient investing, and delays in distributing important tax information. Individual funds have specific risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice.

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

Hypothetical Performance

General: Hypothetical performance should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

Hypothetical performance results have inherent limitations. The performance shown here is simulated performance based on benchmark indices, not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results achieved by a particular asset allocation.

Despite the limitations of hypothetical performance, these hypothetical performance results may allow clients and Financial Advisors to obtain a sense of the risk / return trade-off of different asset allocation constructs.

Investing in the market entails the risk of market volatility. The value of all types of securities may increase or decrease over varying time periods.

This analysis does not purport to recommend or implement an investment strategy. Financial forecasts, rates of return, risk, inflation, and other assumptions may be used as the basis for illustrations in this analysis. They should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. No analysis has the ability to accurately predict the future, eliminate risk or guarantee investment results. As investment returns, inflation, taxes, and other economic conditions vary from the assumptions used in this analysis, your actual results will vary (perhaps significantly) from those presented in this analysis.

The assumed return rates in this analysis are not reflective of any specific investment and do not include any fees or expenses that may be incurred by investing in specific products. The actual returns of a specific investment may be more or less than the returns used in this analysis. The return assumptions are based on hypothetical rates of return of securities indices, which serve as proxies for the asset classes. Moreover, different forecasts may choose different indices as a proxy for the same asset class, thus influencing the return of the asset class.

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.

ETF Investing

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. Investing in an international ETF also involves certain risks and considerations not typically associated with investing in an ETF that invests in the securities of U.S. issues, such as political, currency, economic and market risks. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economics. ETFs investing in physical commodities and commodity or currency futures have special tax considerations. Physical commodities may be treated as collectibles subject to a maximum 28% long-term capital gains rates, while futures are marked-to-market and may be subject to a blended 60% long- and 40% short-term capital gains tax rate. Rolling futures positions may create taxable events. For specifics and a greater explanation of possible risks with ETFs¸ along with the ETF's investment objectives, charges and expenses, please consult a copy of the ETF's prospectus. Investing in sectors may be more volatile than diversifying across many industries. The investment return and principal value of ETF investments will fluctuate, so an investor's ETF shares (Creation Units), if or when sold, may be worth more or less than the original cost. ETFs are redeemable only in Creation Unit size through an Authorized Participant and are not individually redeemable from an ETF.

Investors should carefully consider the investment objectives and risks as well as charges and expenses of an exchange-traded fund or mutual fund before investing. The prospectus contains this and other important information about the mutual fund. To obtain a prospectus, contact your Financial Advisor or visit the mutual fund company's website. Please read the prospectus carefully before investing.

MLPs

Master Limited Partnerships (MLPs) are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk.

Individual MLPs are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk.

The potential tax benefits from investing in MLPs depend on their being treated as partnerships for federal income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund's value.

MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is reflected in the daily NAV; and, as a result, the MLP fund's after-tax performance could differ significantly from the underlying assets even if the pre-tax performance is closely tracked.

Duration

Duration, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. Generally, if interest rates rise, bond prices fall and vice versa. Longer-term bonds carry a longer or higher duration than shorter-term bonds; as such, they would be affected by changing interest rates for a greater period of time if interest rates were to increase. Consequently, the price of a long-term bond would drop significantly as compared to the price of a short-term bond.

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

Investing in currency involves additional special risks such as credit, interest rate fluctuations, derivative investment risk, and domestic and foreign inflation rates, which can be volatile and may be less liquid than other securities and more sensitive to the effect of varied economic conditions. In addition, international investing entails greater risk, as well as greater potential rewards compared to U.S. investing. These risks include political and economic uncertainties of foreign countries as well as the risk of currency fluctuations. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economies.

Managed futures investments are speculative, involve a high degree of risk, use significant leverage, have limited liquidity and/or may be generally illiquid, may incur substantial charges, may subject investors to conflicts of interest, and are usually appropriate 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. Managed futures investments are not intended to replace equities or fixed income securities but rather may act as a complement to these asset categories in a diversified portfolio.

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

Physical precious metals are non-regulated products. Precious metals are speculative investments, which may experience short-term and long-term price volatility. The value of precious metals investments may fluctuate and may appreciate or decline, depending on market conditions. If sold in a declining market, the price you receive may be less than your original investment. Unlike bonds and stocks, precious metals do not make interest or dividend payments. Therefore, precious metals may not be appropriate for investors who require current income. Precious metals are commodities that should be safely stored, which may impose additional costs on the investor. The Securities Investor Protection Corporation ("SIPC") provides certain protection for customers' cash and securities in the event of a brokerage firm's bankruptcy, other financial difficulties, or if customers' assets are missing. SIPC insurance does not apply to precious metals or other commodities.

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

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

Interest on municipal bonds is generally exempt from federal income tax; however, some bonds may be subject to the alternative minimum tax (AMT). Typically, state tax-exemption applies if securities are issued within one's state of residence and, if applicable, local tax-exemption applies if securities are issued within one's city of residence.

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.

Ultrashort-term fixed income asset class is comprised of fixed income securities with high quality, very short maturities. They are therefore subject to the risks associated with debt securities such as credit and interest rate risk.

Although they are backed by the full faith and credit of the U.S. Government as to timely payment of principal and interest, **Treasury Bills** are subject to interest rate and inflation risk, as well as the opportunity risk of other more potentially lucrative investment opportunities.

CDs are insured by the FDIC, an independent agency of the U.S. Government, up to a maximum of $250,000 (including principal and accrued interest) for all deposits held in the same insurable capacity (e.g. individual account, joint account, IRA etc.) per CD depository. Investors are responsible for monitoring the total amount held with each CD depository. All deposits at a single depository held in the same insurable capacity will be aggregated for the purposes of the applicable FDIC insurance limit, including deposits (such as bank accounts) maintained directly with the depository and CDs of the depository. For more information visit the FDIC website at www.fdic.gov.

The majority of $25 and $1000 par **preferred securities** are "callable" meaning that the issuer may retire the securities at specific prices and dates prior to maturity. Interest/dividend payments on certain preferred issues may be deferred by the issuer for periods of up to 5 to 10 years, depending on the particular issue. The investor would still have income tax liability even though payments would not have been received. Price quoted is per $25 or $1,000 share, unless otherwise specified. Current yield is calculated by multiplying the coupon by par value divided by the market price.

The initial interest rate on a **floating-rate security** may be lower than that of a fixed-rate security of the same maturity because investors expect to receive additional income due to future increases in the floating security's underlying reference rate. The reference rate could be an index or an interest rate. However, there can be no assurance that the reference rate will increase. Some floating-rate securities may be subject to call risk.

The market value of **convertible bonds** and the underlying common stock(s) will fluctuate and after purchase may be worth more or less than original cost. If sold prior to maturity, investors may receive more or less than their original purchase price or maturity value, depending on market conditions. Callable bonds may be redeemed by the issuer prior to maturity. Additional call features may exist that could affect yield.

Some $25 or $1000 par **preferred securities** are QDI (Qualified Dividend Income) eligible. Information on QDI eligibility is obtained from third party sources. The dividend income on QDI eligible preferreds qualifies for a reduced tax rate. Many traditional 'dividend paying' perpetual preferred securities (traditional preferreds with no maturity date) are QDI eligible. In order to qualify for the preferential tax treatment all qualifying preferred securities must be held by investors for a minimum period – 91 days during a 180 day window period, beginning 90 days before the ex-dividend date.

Principal is returned on a monthly basis over the life of a **mortgage-backed security.** Principal prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. Yields and average lives are estimated based on prepayment assumptions and are subject to change based on actual prepayment of the mortgages in the underlying pools. The level of predictability of an MBS/CMO's average life, and its market price, depends on the type of MBS/CMO class purchased and interest rate movements. In general, as interest rates fall, prepayment speeds are likely to increase, thus shortening the MBS/CMO's average life and likely causing its market price to rise. Conversely, as interest rates rise, prepayment speeds are likely to decrease, thus lengthening average life and likely causing the MBS/CMO's market price to fall. Some MBS/CMOs may have "original issue discount" (OID). OID occurs if the MBS/CMO's original issue price is below its stated redemption price at maturity, and results in "imputed interest" that must be reported annually for tax purposes, resulting in a tax liability even though interest was not received. Investors are urged to consult their tax advisors for more information.

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

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

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

Value investing does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected.

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

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

REITs investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions.

Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies. **Technology stocks** may be especially volatile. Risks applicable to companies in the **energy and natural resources** sectors include commodity pricing risk, supply and demand risk, depletion risk and exploration risk.

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.

The **indices** are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

The **indices selected by Morgan Stanley Wealth Management** to measure performance are representative of broad asset classes. Morgan Stanley Smith Barney LLC retains the right to change representative indices at any time.

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.

Important Information and Risk Considerations

Virtual Currency Products (Cryptocurrencies)

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

- Digital Assets have only been in existence for a short period of time and historical trading prices for Digital Assets have been highly volatile. The price of Digital Assets could decline rapidly, and ***investors could lose their entire investment***.
- Certain Digital Asset funds and products, allow investors to invest on a more frequent basis than investors may withdraw from the fund or product, and interests in such funds or products are generally not freely transferrable. This means that, particularly given the volatility of Digital Assets, an investor will have to bear any losses with respect to its investment for an extended period of time and will not be able to react to changes in the price of the Digital Asset once invested (for example, by seeking to withdraw) as quickly as when making the decision to invest. Such Digital Asset funds and products, are intended only for persons who are able to bear the economic risk of investment and who do not need liquidity with respect to their investments.
- Given the volatility in the price of Digital Assets, the net asset value of a fund or product that invests in such assets at the time an investor's subscription for interests in the fund or product is accepted may be significantly below or above the net asset value of the product or fund at the time the investor submitted subscription materials.
- Certain Digital Assets are not intended to function as currencies but are intended to have other use cases. These other Digital Assets may be subject to some or all of the risks and considerations set forth herein, as well as additional risks applicable to such Digital Assets. Buyers, sellers and users of such Digital Assets should thoroughly familiarize themselves with such risks and considerations before transacting in such Digital Assets.

- The value of Digital Assets may be negatively impacted by future legal and regulatory developments, including but not limited to increased regulation of such Digital Assets. Any such developments may make such Digital Assets less valuable, impose additional burdens and expenses on a fund or product investing in such assets or impact the ability of such a fund or product to continue to operate, which may materially decrease the value of an investment therein.
- Due to the new and evolving nature of digital currencies and the absence of comprehensive guidance, many significant aspects of the tax treatment of Digital Assets are uncertain. Prospective investors should consult their own tax advisors concerning the tax consequences to them of the purchase, ownership and disposition of Digital Assets, directly or indirectly through a fund or product, under U.S. federal income tax law, as well as the tax law of any relevant state, local or other jurisdiction.
- Over the past several years, certain Digital Asset exchanges have experienced failures or interruptions in service due to fraud, security breaches, operational problems or business failure. Such events in the future could impact any fund's or product's ability to transact in Digital Assets if the fund or product relies on an impacted exchange and may also materially decrease the price of Digital Assets, thereby impacting the value of your investment, regardless of whether the fund or product relies on such an impacted exchange.
- Although any Digital Asset product and its service providers have in place significant safeguards against loss, theft, destruction and inaccessibility, there is nonetheless a risk that some or all of a product's Digital Asset could be permanently lost, stolen, destroyed or inaccessible by virtue of, among other things, the loss or theft of the "private keys" necessary to access a product's Digital Asset.
- Investors in funds or products investing or transacting in Digital Assets may not benefit to the same extent (or at all) from "airdrops" with respect to, or "forks" in, a Digital Asset's blockchain, compared to investors who hold Digital Assets directly instead of through a fund or product. Additionally, a "fork" in the Digital Asset blockchain could materially decrease the price of such Digital Asset.
- Digital Assets are not legal tender, and are not backed by any government, corporation or other identified body, other than with respect to certain digital currencies that certain governments are or may be developing now or in the future. No law requires companies or individuals to accept digital currency as a form of payment (except, potentially, with respect to digital currencies developed by certain governments where such acceptance may be mandated). Instead, other than as described in the preceding sentences, Digital Asset products' use is limited to businesses and individuals that are willing to accept them. If no one were to accept digital currencies, virtual currency products would very likely become worthless.
- Platforms that buy and sell Digital Assets can be hacked, and some have failed. In addition, like the platforms themselves, digital wallets can be hacked, and are subject to theft and fraud. As a result, like other investors have, you can lose some or all of your holdings of Digital Assets.
- Unlike US banks and credit unions that provide certain guarantees of safety to depositors, there are no such safeguards provided to Digital Assets held in digital wallets by their providers or by regulators.
- Due to the anonymity Digital Assets offer, they have known use in illegal activity, including drug dealing, money laundering, human trafficking, sanction evasion and other forms of illegal commerce. Abuses could impact legitimate consumers and speculators; for instance, law enforcement agencies could shut down or restrict the use of platforms and exchanges, limiting or shutting off entirely the ability to use or trade Digital Asset products.
- Digital Assets may not have an established track record of credibility and trust. Further, any performance data relating to Digital Asset products may not be verifiable as pricing models are not uniform.
- Investors should be aware of the potentially increased risks of transacting in Digital Assets relating to the risks and considerations, including fraud, theft, and lack of legitimacy, and other aspects and qualities of Digital Assets, before transacting in such assets.
- The exchange rate of virtual currency products versus the USD historically has been very volatile and the exchange rate could drastically decline. For example, the exchange rate of certain Digital Assets versus the USD has in the past dropped more than 50% in a single day. Other Digital Assets may be affected by such volatility as well.
- Digital Asset exchanges have limited operating and performance histories and are not regulated with the same controls or customer protections available to more traditional exchanges transacting equity, debt, and other assets and securities. There is no assurance that a person/exchange who currently accepts a Digital Asset as payment will continue to do so in the future.
- The regulatory framework of Digital Assets is evolving, and in some cases is uncertain, and Digital Assets themselves may not be governed and protected by applicable securities regulators and securities laws, including, but not limited to, Securities Investor Protection Corporation coverage, or other regulatory regimes.
- Morgan Stanley Smith Barney LLC or its affiliates (collectively, "Morgan Stanley") may currently, or in the future, offer or invest in Digital Asset products, services or platforms. The proprietary interests of Morgan Stanley may conflict with your interests.
- The foregoing list of considerations and risks are not and do not purport to be a complete enumeration or explanation of the risks involved in an investment in any product or fund investing or trading in Digital Assets.

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