Graystone Consulting
from Morgan Stanley

INVESTMENT STRATEGY

MIDYEAR OUTLOOK

Global Investment Committee | June 2024

On the Markets

The Path of Least Resistance

Several factors suggest that the path of least resistance for equities in the quarter ahead is likely upward. Among these are decent growth, driven by an attempted recovery in globally leveraged manufacturing amid partial cooling in consumer-linked services activity, along with inflation that's no longer reaccelerating and fiscal investment that remains a tailwind. Accommodative financial conditions still underpin markets, and US Treasuries are likely to be flattered by the switch back to "bills only" financing, suggesting that the highs for the year in rates may now be in. That said, given rising macro and policy uncertainty, elevated complacency and rich valuations, we have been focused on the need for vigilance.

Consider that incoming data has been trendless, with equal odds of a "hard-landing" outcome featuring concerns around the mid-to-low-end consumer who has exhausted savings and a "no-landing" scenario paced by spending on generative artificial intelligence, data centers, energy grid infrastructure and deglobalized supply chains. Investors have already radically repriced expectations for Federal Reserve policy—from seven rate cuts in 2024 to roughly two—without equity risk premiums or credit spreads, which are near cycle lows, budging. The implication is that the dispersion across potential macroeconomic scenarios is especially wide, while investors exhibit little stress and their risk appetites are above the 90th percentile historically. While this is curious, we believe that visibility will deteriorate even more as we push into the first half of 2025, in light of uncertainties about both domestic and international politics.

Given our admission that we are entering the part of the cycle when "nobody knows nothin'," we are calling for maximum active management in the form of stock picking and diversification. Happily, the recent concentration of US returns in the "Magnificent Seven" stocks leaves many opportunities for fresh funds. Morgan Stanley & Co. Research's midyear outlooks suggest a particular focus on European and Japanese stocks, investment grade bonds, agency mortgages and international fixed income. ■

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GLOBAL ECONOMICS

Global Economics: Are We There Yet?

Seth B. Carpenter, Chief Global Economist, Morgan Stanley & Co. LLC

Since we published our 2024 outlook last November, economic data has proved volatile to say the least. In the US, there have been a few months of downside inflation and upside growth surprises, followed by renewed inflationary pressures. In China, real growth surprised to the upside, but deflation deepened. In contrast, our two strongest-conviction bullish views—India and Japan—have played out well.

A POTENTIALLY BUMPY RIDE. We believe 2024 will continue to be volatile, as the global economy struggles to shift to a slower gear, reminiscent of the last time the Federal Reserve engineered a soft landing in the mid-1990s. Because there are shared global impulses but also many idiosyncratic forces around the world, we are likely to have a bumpy ride as we decelerate.

DIVERGENCE: A RETURNING THEME. We anticipate some slowing in the US as the rest of the world, on balance, starts to pick up. Export-led economies are seeing improvement, with European and Asian purchasing managers' indexes signaling a bottom turning toward a moderate recovery. Indeed, we have upgraded our view of European growth in the second half of 2024. In China, we expect supply-boosting policy to support 2024 activity even though policy is not likely to drive domestic reflation. In emerging markets (EM) ex China, while our view is more mixed in the Central & Eastern Europe, Middle East and Africa (CEEMEA) countries and Latin America, we forecast generally stable growth.

THE NARRATIVE IN NUMBERS. We see global growth steady at just over 3% per year in 2024 and 2025, similar to 2023 (see table). The mix, however, is different: The US has some lingering fiscal impetus and a clear supply boost from additional immigration, allowing inflation to decelerate from 4.1% per year in 2023 to 3.2% in 2024 and 2.2% in 2025, while growth slows but does not crash. We forecast EM growth to slow slightly in 2024 and 2025, but to remain above 4% for the year.

Among developed market central banks, we anticipate that both the European Central Bank (ECB) and the Bank of England will cut short-term rates in June and August, respectively, on the back of soft inflation that approaches their targets by the end of the year. We expect the Fed to follow with a rate cut in September, lagging because of noisy inflation data. Notably, market expectations for Fed cuts this year have swung widely—from a first quarter start leading to almost seven cuts, to expecting fewer than two cuts, to somewhere in between. All of this echoes the mid-1990s cycle. We see 75 basis points of Fed cuts in 2024 followed by 100 in 2025, but the path is likely to depend almost entirely on the inflation outcome.

We expect 75 basis points of cuts this year and 100 next year for the ECB as well, as the central bank almost reaches neutral. In contrast, our forecast calls for the Bank of Japan to hike as inflation becomes entrenched. Across EM, we think that the degree of easing will be limited by the level of the Fed's policy rate. Brazil's central bank is a prime example of the requisite balancing of domestic need for easing against foreign exchange implications. EM Asian central banks should generally wait for the Fed to cut and can be patient because the smaller magnitude of their inflation and hiking cycles means that they have smaller imbalances to manage.

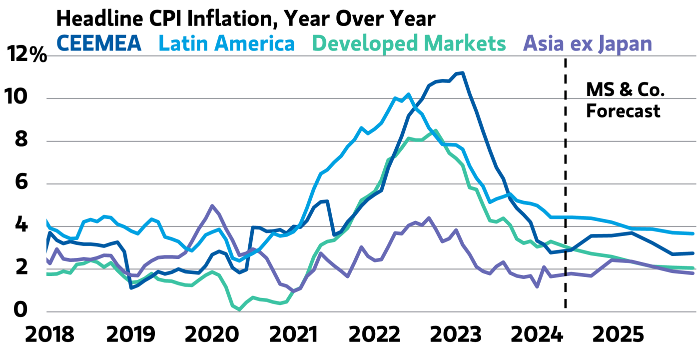
Morgan Stanley & Co. Global GDP Forecasts

	2023	2024E			2025E			2026-2028E
GDP (% Year Over Year)	Base	Downside	Base	Upside	Downside	Base	Upside	Base
Global	**3.2**	**2.7**	**3.1**	**3.5**	**2.3**	**3.1**	**3.7**	**2.9**
G10	**1.6**	**1.4**	**1.5**	**1.6**	**0.9**	**1.6**	**1.9**	**1.5**
US	2.5	2.6	2.6	2.6	1.2	2.1	1.9	2.0
Eurozone	0.5	0.5	0.7	0.8	0.6	1.2	1.7	1.0
Japan	1.9	0.2	0.5	0.9	0.5	1.1	2.3	0.8
UK	0.1	0.5	0.7	1.1	0.7	1.2	1.4	1.3
Emerging Markets	**4.5**	**3.7**	**4.4**	**4.9**	**3.3**	**4.3**	**5.1**	**4.0**
China	5.2	4.0	4.8	5.3	3.2	4.5	5.5	3.7
India	7.7	6.1	6.8	7.4	5.9	6.5	7.1	6.5
Brazil	2.9	2.0	2.3	2.5	1.3	1.6	1.8	2.2

Note: Aggregates are PPP-based GDP-weighted averages.
Source: Haver Analytics, IMF, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 19, 2024

DECELERATING INFLATION. We believe inflation will continue to decelerate globally and that low inflation is likely to be sustained even in the context of resilient growth (see chart). Overall, while lower energy prices should help headline inflation ease toward 2% per year in developed economies, core inflation is a bit more inertial. We see core personal consumption expenditures (PCE) in the US effectively at the Fed's 2% target at the end of 2025. In Japan, we anticipate inflation rising over the next two quarters before easing to just below 2% in 2025.

Inflation Is Decelerating Around the World



Source: National statistics agencies, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 29, 2024

Our EM inflation outlook varies considerably across regions. We expect EM Asia to continue to see a disinflationary drag from China, where we forecast annual inflation of less than 1% through year-end 2025; this brings regional inflation close to 2% per year over the same horizon, with India the exception. We project that Eastern Europe's inflation will be near target by the middle of 2025. Our high-inflation economies in the region, Turkey and Egypt, are both set to normalize substantially over the course of 2025. In Latin America, excluding Argentina, we expect disinflation to continue but at a slowing pace and for inflation to ease gradually toward central bank targets over the next four to six quarters. ■

This article was excerpted from the May 19 Morgan Stanley & Co. report, "Are We There Yet?" For a copy of the full report, please contact your Financial Advisor.

US ECONOMICS

US Economics: Fast Growth, More Slack

Ellen Zentner, Chief US Economist, Morgan Stanley & Co. LLC

In our base case, we expect faster immigration and population growth to continue to support economic activity, even as tight monetary policy leads to more labor market slack. With that in mind, we forecast that GDP growth will slow from 3.1% in 2023 to 2.1% in 2024 on a fourth-quarter-over-fourth-quarter basis (see table) while moving from 2.5% in 2023 to 2.6% in 2024 on a full-year basis. In 2025, growth holds in at 2.1% on a fourth-quarter-over-fourth-quarter basis, moving down to 2.1% on a full-year basis. We see core inflation declining through our forecast horizon and the Federal Reserve holding the policy rate steady until September 2024, when it delivers its first 25-basis-point cut.

Morgan Stanley & Co. US Economic Forecast

	2022	2023	2024E	2025E
Real GDP (% Q4/Q4)	**0.7**	**3.1**	**2.1**	**2.1**
Private Consumption	1.2	2.7	2.2	2.2
Gross Fixed Investment	5.6	4.6	3.5	3.8
Government Consumption	0.8	4.6	1.0	0.5
GDP Contribution (percentage points)				
Final Domestic Demand	0.7	3.3	2.4	2.2
Net Exports	0.2	0.2	-0.2	-0.1
Inventories	-0.3	-0.4	-0.1	0.0
CPI (% Q4/Q4)	**7.1**	**3.2**	**2.9**	**2.2**
Core PCE* (% Q4/Q4)	**5.1**	**3.2**	**2.7**	**2.1**
Policy Rate (%)**	**4.375**	**5.375**	**4.625**	**3.625**
Unemployment Rate (% Labor Force)**	3.6	3.7	4.2	4.5
Labor Force Participation Rate (%)**	62.2	62.7	62.8	62.9
General Govt. Balance (% of GDP)	-5.5	-6.5	-5.9	-6.0
Gross Govt. Debt (% of GDP)	122.0	124.3	124.0	125.1
Current Account Balance (% of GDP)	-3.8	-3.0	-3.0	-3.0

*Personal Consumption Expenditures Index **End of Period
Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 19, 2024

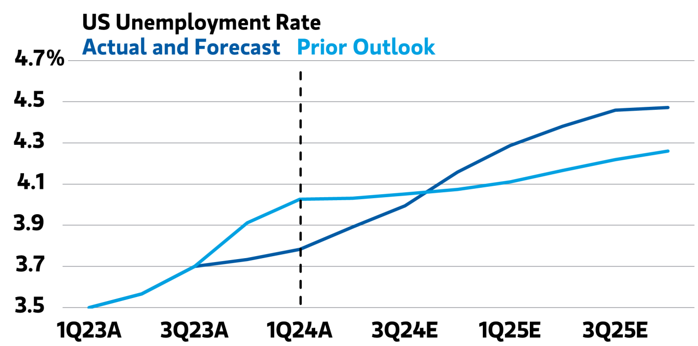
CONSUMPTION. In our view, consumption is likely to continue to slow in 2024 and into 2025 as a cooling labor market weighs on real disposable income, elevated rates further pressure debt service costs and tight lending standards limit credit availability. We see lower interest rates spurring a pickup in housing demand and goods spending by mid-2025. Following a 2.7% fourth-quarter-over-fourth-quarter increase in 2023, the real personal consumption expenditures (PCE) rate slows to 2.2% in 2024 and to 2.2% in 2025.

BUSINESS INVESTMENT. We expect somewhat slower business investment in 2024 than last year, followed by some reacceleration amid strong crosscurrents. These include an eventual upturn in equipment spending after last year's decline and slower structures investment than last year, though growing more broadly. Bank lending conditions have continued to tighten, but there was less incremental tightening for commercial real estate at the start of 2024 than last year. The basic boost to our forecasts comes from faster employment growth, which puts pressure on the existing capital stock. We see business investment slowing from 4.6% to 3.5% in 2024 on a fourth-quarter-over-fourth-quarter basis before picking up in 2025 to 3.8%.

HOUSING. Residential investment is likely to continue to increase through 2025, with a rapid rise in housing starts, solid new home sales and a bit more turnover in existing home sales as mortgage rates fall. Homebuilding and increased brokerage commissions (more volume, still-high prices) keep residential investment on the boil, resulting in a 5.5% fourth-quarter-over-fourth-quarter gain this year and a 3.5% gain in 2025.

LABOR MARKET. We believe the labor market will turn the corner as faster immigration expands labor supply. The mid-pandemic labor market was characterized by shortage. Now, however, supply has surged, and demand for labor is likely to moderate. Fast immigration has delivered a positive supply shock, allowing rapid employment and income growth, while adding some slack to a tight labor market. Our forecasts for payroll growth are much higher than last November, as is our outlook for the unemployment rate (see chart). We expect payroll gains to average 225,000 this year and 186,000 next year, with the unemployment rate ending this year at 4.2% and rising to 4.5% in 2025.

As Immigration Expands Labor Supply, We Expect the Unemployment Rate to Rise More Quickly



Source: Bureau of Labor Statistics, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 19, 2024

INFLATION. The first quarter of 2024 saw substantial reflation, but weaker prints are coming, especially in the second half of this year. Rents, goods and other services should lead the descent. In recent research, we found that residual seasonality also played a role in the recent upswing, suggesting payback in the second half of 2024. We forecast core fourth-quarter-over-fourth-quarter PCE inflation of 2.7% in 2024 and 2.1% in 2025.

MONETARY POLICY. We expect the Fed to hold policy at a 5.375% peak for this cycle until September 2024, when we anticipate rate cuts to start. Faster and volatile first quarter 2024 inflation data has delayed Fed easing, but after renewed evidence of disinflation, we expect the first rate cut in September. The four additional Consumer Price Index (CPI) reports before the September Federal Open Market Committee meeting are enough to give the Fed confidence to lower rates. Thereafter, inflation indicators at or below target on a sequential basis, slower GDP growth and a rising unemployment rate are likely to spur the Fed to continue cutting at every meeting through June 2025. Three 25-basis-point cuts this year and four next year leave the fed funds rate at 3.625% in mid-2025. The Fed, as anticipated, has announced it will begin to phase out quantitative tightening (QT) in June; we expect it to end by March 2025.

FISCAL POLICY. We think federal fiscal expansion has peaked for now. Tax revenues have rebounded, and we have moved past the ramp-up in spending from key bills. The post-election deficit is uncertain, though both parties have achieved most of their policy priorities that had a large impact on the deficit. Tariffs, immigration and taxes will be important post-election policies with the potential to impact the deficit and economic activity. We forecast the government spending contribution to fourth-quarter-over-fourth-quarter real GDP growth to slow from 0.8 percentage points in 2023 to 0.2 percentage points in 2024 and 0.1 percentage points in 2025.

UPSIDE SCENARIO. A more resilient Chinese economy feeds into higher import prices in the US, keeping the Fed higher for longer on rates and weighing on domestic demand. Higher energy prices boost headline CPI through 2025. The pass-through to core goods prices raises core inflation by 0.2% this year and next relative to our baseline. Given slower disinflation, some demand destruction occurs, and consumption moderates while higher import prices offset a light tailwind to exports. Faster core inflation this year and next pushes the first Fed rate cut out to late 2024, when we expect one cut at the end of 2024 and 100 basis points in cuts next year. In our upside scenario, we forecast GDP growth of 2.0% on a fourth-quarter-over-fourth-quarter basis in 2024 and 1.7% in 2025.

DOWNSIDE SCENARIO. Persistent services inflation in the US leads the Fed to stay higher on rates for even longer, slowing the economy more significantly. Growth is slightly lower in 2024 as financial conditions remain restrictive, but 2025 sees much weaker growth, below 1%, as restrictive policy bites deeper. Growth falling below 1% in the first half of 2025 raises recession fears, and inflation begins to descend toward 2.5%. This prompts the Fed to start cutting in June 2025 to lower real rates, delivering 150 basis points in cuts over the remainder of the year. In our downside scenario, we forecast GDP growth of 1.9% on a fourth-quarter-over-fourth-quarter basis in 2024 and 0.8% in 2025. ■

This article was excerpted from the May 19 Morgan Stanley & Co. reports, "Are We There Yet?" and "Fast Growth, More Slack." For copies of the full reports, please contact your Financial Advisor.

GLOBAL EQUITIES

Global Equities: An Earnings Recovery Takes Hold

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After a challenging year for global earnings-per-share (EPS) growth in 2023, we see an earnings rebound in 2024 and beyond, driven by a combination of cyclical and structural forces. Notably, we forecast 8%-plus EPS growth across the US, Europe, Japan and the emerging markets in both 2024 and 2025 (see table). Earnings revisions breadth for the MSCI All Country World Index has inflected higher over the past several months, which is supportive of performance (see chart). Japan is showing the strongest revisions, followed by Europe, the US and the emerging markets. Interestingly, within the US, there is a notable divergence, with resilient EPS revisions for large caps and weak revisions for small caps. As such, our US strategists have a relative preference for large caps over small caps.

Global Equity Index Forecast Summary

Index	June 2025 Base Case Index Target (% upside from May 16, 2024)	MS Base Case EPS Forecast Year-Over-Year Growth 2024	2025	June 2026	2026
S&P 500	5,400	239	269	283	297
	2%	8%	13%	12%	10%
MSCI Europe	2,500	151	164	169	174
	18%	8%	9%	7%	6%
TOPIX	3,200	185	205	215	225
	17%	15%	11%	10%	10%
MSCI Emerging Markets	1,090	80	90	95	100
	-1%	21%	13%	12%	11%

Note: Upside priced as of May 16, 2024.
Source: FactSet, IBES, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office

Our strategists see a robust US earnings backdrop out to 2026 (8% growth in 2024, 13% in 2025 and 10% in 2026), but valuations are more extended in the US than in Europe, Japan and the emerging markets. The MSCI All Country World ex US Index trades at a seven-turn discount to the S&P 500 Index, close to the widest gap since 2010. We expect a strong earnings and return-on-equity (ROE) backdrop to support outperformance of Japan equities. In Europe, we see 18% upside potential from mid last month through June 2025, driven by a combination of expanding multiples and an earnings recovery. Risk/reward is more balanced in the US and emerging markets. In the US, we forecast robust EPS growth alongside modest compression of multiples. We expect more limited upside in the emerging markets.

Global Earnings Revisions Are Inflecting Higher

Source: FactSet, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 24, 2024

US: A Wider Range of Potential Outcomes

Since the beginning of 2023, the consensus view on the economy has bounced between hard landing, soft landing and no landing. Rotations under the surface of the market have reflected this frequently shifting view, with defensives, growth stocks and cyclicals all seeing episodes of outperformance. The past few months have been a microcosm in this respect as economic-growth data has again cooled after a period of strength and inflation data has been bumpy. In short, macro outcomes have become increasingly hard to predict as data has become more volatile. We see this environment persisting—a view that's reflected in both our wider-than-normal bull versus bear skew and our sector and style recommendations.

In our base case, we forecast a 19 price/earnings (P/E) multiple on 12-month forward EPS (June 2026) of $283, which equates to a 5,400 forward 12-month price target. Our earnings growth forecasts of 8% in 2024 and 13% in 2025, respectively, assume healthy, top-line growth in the mid-single digits in addition to margin expansion in both years as positive operating leverage resumes, particularly in 2025. Modest valuation compression is typical as earnings adjust. Normalization in the market multiple is also a function of a higher risk premium, which reflects uncertainty around a wider range of potential outcomes. On this front, our 6,350 bull case and 4,200 bear case represent roughly 20% upside and downside potential, respectively, for the S&P 500 from mid-May. Our bull case reflects strong 11%-to-15% EPS growth out to 2026 alongside multiples expansion to 21. Our bear case incorporates a hard landing next year.

In our view, the uncertain backdrop we face warrants an investment approach that can work as market pricing and sector/factor leadership bounce between potential outcomes. On this front, we recommend a barbell of quality cyclicals for the no-landing scenario and quality growth for the soft-landing possibility. We upgrade the industrials sector to overweight given improving earnings revisions and structural drivers. We also maintain long exposure to certain defensive areas to hedge against the risk of slowing growth—consumer staples and utilities, in particular. Finally, large caps should continue to outperform small caps given stronger earnings revisions, more durable margin profiles and healthier balance sheets.

Europe: In the Sweet Spot

We remain bullish on European equities, raising our June 2025 MSCI Europe Index price target to 2,500 from 2,230 previously. We believe that European equities are in the sweet spot over the remainder of 2024, as a continued rerating in line with a soft landing meets the early stages of an earnings growth recovery. We expect further rerating to a 14.8 P/E by the end of the year versus the recent 13.8.

Meanwhile, Europe's earnings revision breadth has turned sharply higher into positive territory, in line with our earnings model. Our model projects 7.5% EPS growth by year-end versus consensus at 4%. By the turn of the year, we expect the rerating to run out of steam and the baton to fully pass to earnings to sustain European equities' momentum. We are only 2.5% above consensus for 2025 earnings, but we see upside front-loaded in the year.

European equities should benefit from rising corporate confidence; a recovery in mergers and acquisitions activity; improving economic growth; the start to a rate-cutting cycle ahead of the Federal Reserve; high and rising capital distributions including an increasing share of buybacks; and underappreciated artificial intelligence (AI) diffusion. We note that over 60% of the MSCI Europe's market-cap-weighted revenues are from outside Europe, with the US accounting for the largest exposure.

As for sectors and styles, we believe a recovery in yield-sensitive stocks has begun. We recently upgraded building and construction to overweight to play this rotation. Otherwise, we continue to prefer Europe's quality growth sectors, including software, aerospace and defense, pharma, semiconductors and banks.

The significant risks to our views, which we incorporate in our bear case, include geopolitics and lower-than-expected economic growth. A US election outcome that changes the status quo is also a risk for European equities, but far more idiosyncratic than broad-based, according to our analysis.

Asia/Emerging Markets: Secular Bull Markets in Japan and India, but China Is Challenging

Among markets across our coverage, Japan equities remain our top pick, and we lift our TOPIX target to 3,200 from 2,800. Earnings revisions and EPS growth are likely to remain best in class, with our new base case forecast for TOPIX EPS of ¥185, up 15% in 2024, followed by two more years of double-digit percentage increases. This is likely to drive ROE to our target of 12% by year-end 2025.

The factors supporting this bullish view include higher trend growth in the US, which accounts for more than 20% of revenues for Japan equities, sustained growth in domestic nominal GDP, a weaker Japanese yen than previously expected; and positive leverage to the multipolar world and AI. Our base case target P/E multiple remains 15.0, driven by our expectation for additional increased weightings from foreign investors as well as inflows from Japan's revised Nippon Individual Savings Account scheme, which got off to a strong start earlier this year.

As for the emerging markets, we see substantially less upside to our new MSCI Emerging Markets Index target of 1,090. Therefore, we are focused on strength in earnings growth over the forecast horizon in India and semiconductors and technology hardware in Korea and Taiwan. For India, we expect this to be driven by sustained nominal GDP growth in the low teens and a substantially more stable currency outlook than in the past; for Korea and Taiwan tech, we expect AI integration and a CPU/memory-intensive upgrade cycle to be drivers.

In contrast, we think that consensus mid-teens EPS growth expectations for China this year and next are likely to be disappointed given our forecast of nominal GDP growth at less than 5%. What's more, the forward P/E multiple has recently receded to 10, close to the 10-year average. We also highlight that stocks in Mexico, Brazil, Southeast Asia and the United Arab Emirates look cheap versus history on a forward P/E basis and offer some diversification benefits. ■

This article was excerpted from the May 19 Morgan Stanley & Co. report, "Sunny with a Chance of Rain." For a copy of the full report, please contact your Financial Advisor.

GLOBAL CREDIT

Global Credit: In the (GDP) Zone

Andrew Sheets, Global Head of Corporate Credit Research, Morgan Stanley & Co., International plc+

Credit is an asset class vulnerable to extremes. Weak growth raises the risk of default to which lenders are exposed. Strong growth can lead to aggressive behavior by borrowers, which rarely works in lenders' favor. For credit, moderation is ideal. Looking at US credit excess returns from 1948 to the present —that is, returns versus US Treasuries—credit has done best when growth is between 1% and 2% a year. It has done worse when growth is much weaker or much stronger.

Moderation is exactly what Morgan Stanley & Co. economists expect: They forecast roughly 1% growth in Europe and 2% in the US, right in that credit-optimal zone. They see moderating inflation and policy rates. For credit, the fact that central banks can ease if needed during the next 12 months matters more than exactly when they start or how far they go.

THE IMPORTANCE OF INFLATION. To that end, inflation remains the most important macro variable for credit because it gives central banks the ability to act if needed. Our economists are more confident than consensus that core inflation can moderate. This remains central to our constructive view, despite tight credit spreads. Important too, is the view that while investor sentiment is elevated, corporate sentiment is not. Relative to the past decade, US CEO confidence is only average. Last year's global mergers and acquisitions (M&A) volume (see chart) was the lowest in 30-plus years when adjusted for the size of the economy. While we expect a significant pickup in global M&A, the modest starting point matters. Corporate boardrooms in aggregate are not yet showing signs of credit-negative behavior.

Global M&A Volumes: A Lack of Hubris May Help Extend the Cycle

Note: Trailing last 12 months volume of global announced M&A, excluding withdrawn transactions.
Source: Dealogic, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of April 1, 2024

This squares with what we see on a bottom-up basis from balance sheets. Despite the lowest rates in more than 100 years, issuers in aggregate didn't leverage relative to 2019. This means interest coverage is still close to average levels despite the large rise in yields, and it is showing important signs of stabilization.

TECHNICALLY SOUND. We expect demand for credit to remain strong, especially for investment grade (IG) and leveraged loans. IG yields are still some 150 basis points above the 20-year average in the US and about 100 basis points in Europe, which should continue to drive demand from pension and annuity buyers. For loans, high yields (9%-plus), narrowing AAA spreads on collateralized loan obligations and ongoing growth in private credit should strengthen demand versus supply. Technicals in high yield bonds look less favorable.

And this is before considering cash on the sidelines. Some $1.2 trillion has flowed into US money market funds since January 2023, as investors flocked to the high yields and low volatility of cash. As long as central banks are hiking or on hold, we don't see an urgency to redeploy these funds. Once cuts begin—June in Europe and September in the US, according to our forecasts—the desire to lock in yield could grow. We think that short-dated IG credit is a natural home for this cash, given a similar yield for low volatility.

WILDCARD. Supply is the wildcard. Asia IG supply has been quite low due to US dollar-based funding being expensive versus onshore funding, and we think that this will continue, supporting China IG bonds. In contrast, issuance in the US and Europe has been strong. We think that issuers have been front-loading, given inflation uncertainty and impending US elections, and we expect moderation in the second half. In Europe, we think that financial supply could drop versus nonfinancial borrowers, a factor driving our preference for financial credit.

All told, if we're right, we will see above-average excess returns in US and Europe IG despite low spreads. We project the lowest excess return in Asia IG, partly due to shorter duration and extremely tight spreads. In leveraged credit, we see healthy total and excess returns, especially among leveraged loans, as rate cuts are expected later this year.

PERIOD OF MODERATION. Reasonable growth. Moderating inflation. Lower policy rates. Improving but not extreme corporate confidence. The backdrop in our central scenario continues to share notable similarities with the mid-1990s, the best period for credit spreads in the modern era. Coupled with still-positive technicals, we think that this supports spreads at below-average levels, especially in IG, where we see the strongest technicals (see chart).

Q2 2025 Corporate Credit Spread Forecasts

	Q2 2025 Spread Forecast		
	Bull	Base	Bear
US Investment Grade	65	80	120
US High Yield	225	300	475
US Leveraged Loans	350	400	525
Europe Investment Grade	70	90	160
Europe High Yield	275	325	500
Asia Investment Grade	75	88	115

Source: Morgan Stanley & Co. Research , Morgan Stanley Wealth Management Global Investment Office as of May 19, 2024

However, the benign headline spreads of this base case are misleading. Under the surface, we expect continued high dispersion. Equities and credit have been moving with unusual independence, exhibiting some of the lowest pair-wise correlations in the past 15-plus years. We think that this will continue, as higher-for-longer rates, technological disruption and increasing corporate activity create winners and losers, even under our moderate base case.

RISKS. The risks for credit come from falling outside the moderate zone of economic activity. An inverted yield curve, a low and stalling unemployment rate and weak loan growth are all present in the US and Europe and have historically suggested a higher risk of lower growth. In Asia, growth in China has recently improved, but a scenario in which inflation remains too low is an ongoing risk.

Meanwhile, there's also the risk that things are too hot. Sticky inflation would dash the mid-1990s analogy, and so needs to be watched closely. Furthermore, our belief in the return of M&A could mean that corporate aggression arrives sooner than expected. We think that there is some cushion here, as global M&A could rise 50% versus 2023 and still only be at the seven-year average. But this will be key to watch. In the late 1990s, increasing aggression meant spreads and stock prices both moved higher. ■

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INTEREST RATES

G10 Rates: Back to the Grindstone

Matthew Hornbach, Global Head of Macro Strategy, Morgan Stanley & Co. LLC

Investors need to view the outlook for rates markets over the next 12 months as a story of two parts: the months leading to the US general election; and the six months thereafter. Uncertainty over the election and its implications for the global economy should encourage investors to pare back risk-taking as the election nears.

With eight of the G10 central banks expected to have started lowering policy rates ahead of the US election, we think that most government bond investors will close underweight-duration positions after Labor Day, provided that the global economy remains in good shape. However, any signs of growth weakness or softer inflation—particularly in the US—would encourage investors to close positions over the summer, a less liquid time. As such, we see a downside skew of risks to our baseline yield forecasts.

US. We expect US Treasury yields to move lower over the forecast horizon, with the 10-year yield trading around 4.1% by the end of 2024 and 3.75% by the first half of 2025 (see table). Our economists expect the Federal Reserve to cut the policy rate by 25 basis points in September, followed by two more such cuts before the end of the year and another four through the first half of next year. We see this setup as conducive to driving both lower rate expectations and term premiums. We do not assume any further impetus from fiscal policy.

We see a wide range within our bull and bear case scenarios, given the broad range of possibilities. In the bear case for Treasuries, inflation stays sticky, driving the Fed to hike four more times this year, taking the fed funds rate close to 6.5% and holding it through the first half of 2025. In this case, the two-year yield rises to 6.0% and the 10-year to 5.3% by the end of this year. Yields retrace modestly in the first half of next year, with the two-year at 5.85% and the 10-year at 5.2%.

In our bull case for Treasuries, we see inflation cooling faster, while at the same time the unemployment rate ticks up closer to 4.5%. The Fed delivers four cuts by the end of 2024 and picks up the pace sharply in the first half of 2025, delivering four cuts of 50 basis points each.

EUROZONE. We expect the European Central Bank (ECB) to make the first 25-basis-point cut in its policy rate this month. In our central scenario, we expect a total of 75 basis points of cuts this year and 100 in 2025. We forecast the policy rate at 2.25% by the end of 2025. On inflation, we see a continuation of the disinflationary process already in place, with the headline level converging toward a rate broadly in line with the ECB's 2.0% annual inflation target from next year's first quarter onward.

Despite the recent mild rebound, growth is apt to remain weak. We expect real GDP of 0.7% per year in 2024 with a modest acceleration in 2025, but still below the current consensus. We envision a cautious approach by the ECB in the early stages of policy normalization. We see the 10-year Bund yield at 2.0% by the end of this year, stabilizing toward 1.9% by the second quarter of 2025.

UK. As inflation moves toward its target, we expect a normalization of the monetary policy stance. In our base case, we forecast the Bank of England to deliver 75 basis points of cuts this year and an additional 125 in 2025, bringing the policy rate to 3.25%. With this in mind, we see the 10-year gilt at 3.7% by year-end and 3.5% at the end of the forecast horizon.

The demand/supply backdrop should remain in the spotlight as demand from historical buyers of long-end gilts remains subdued. While supply should continue to shift toward shorter maturities, gross supply is expected to remain at historical highs for the foreseeable future.

Morgan Stanley & Co. Base Case Government Bond Yield Forecasts

	Two-Year		Five-Year		10-Year		30-Year	
	Q4 '24	Q2 '25	Q4 '24	Q2 '25	Q4 '24	Q2 '25	Q4 '24	Q2 '25
US	4.40	3.60	3.90	3.30	4.10	3.75	4.40	4.25
Germany	2.00	1.70	1.90	1.85	2.00	1.90	2.30	2.15
Japan	0.35	0.50	0.65	0.80	1.00	1.10	2.00	2.05
UK	3.70	3.25	3.50	3.30	3.70	3.50	4.20	4.00
Australia	3.85	3.65	3.90	3.75	4.15	4.00	4.55	4.45
New Zealand	4.50	4.00	4.40	4.10	4.55	4.40	4.85	4.70
Canada	3.80	2.95	3.30	2.60	3.35	2.95	3.35	3.20

Source: Morgan Stanley & Co. Research, Morgan Stanley Wealth Management Global Investment Office as of May 19, 2024

JAPAN. We expect Japanese government bond (JGB) yields to grind higher. Our economists expect the Bank of Japan to conduct another hike to 25 basis points next month as it confirms broad wage increases. They see another 25-basis-point hike to 50 basis points in January but don't expect additional hikes after that since they expect underlying inflation to be anchored slightly below the 2.0% annual rate.

DOLLAR BLOC. We expect New Zealand's and Canada's yield curves to exhibit bull steepening (a faster decline in short-term than long-term rates). Both curves should become "disinverted" amid a deceleration of domestic price pressures both in absolute terms and relative to Australia and the US, respectively. In contrast, we believe a cautious Reserve Bank of Australia and resilient domestic Australian growth will limit front-end yield declines and keep the shape of the domestic curve unchanged through mid-2025. ■

This article was excerpted from the May 19 Morgan Stanley & Co. report, "Sunny with a Chance of Rain." For a copy of the full report, please contact your Financial Advisor.

COMMODITIES

Commodities: Enduring Strength in Copper, Seasonal Upside in Oil

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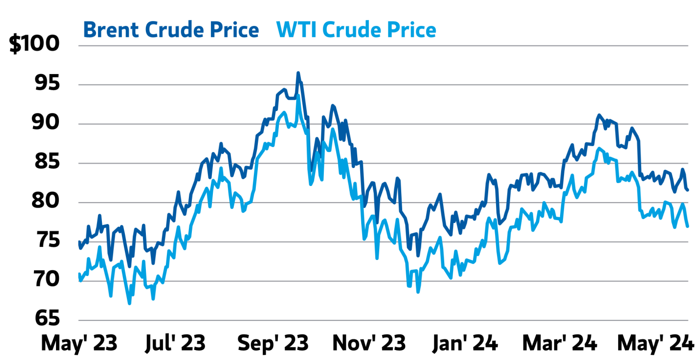
In many respects, 2024 has been one of surprises for commodities. Oil was expected to weaken due to lower demand, but instead prices have been on a roller coaster. Gold surged to an all-time high even in the face of higher real yields. And in base metals, copper has surged faster than we expected.

ENERGY. At the start of the year, the consensus expectation was for oil demand growth to slow severely. With the post-COVID recovery essentially complete, demand growth would revert back to its long-term trend rate, which implied a slowdown. In addition, there were good reasons to expect that the future trend rate would be lower than the historical one.

With lower demand growth, and non-OPEC supply growth surprisingly strong, OPEC would need to keep production restrained. OPEC cuts can balance the market, but this also means that OPEC loses market share and builds up spare capacity. At the start of the year, the market's fear was that OPEC members would either be unwilling or unable to coordinate the required cuts. Expecting a looming surplus, oil prices fell steadily late last year; this only came to a halt when West Texas Intermediate (WTI) crude reached $70 per barrel—a level at which roughly 25% of US shale wells are no longer profitable (see chart).

Oil Prices Have Been on a Roller Coaster



Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office as of May 31, 2024

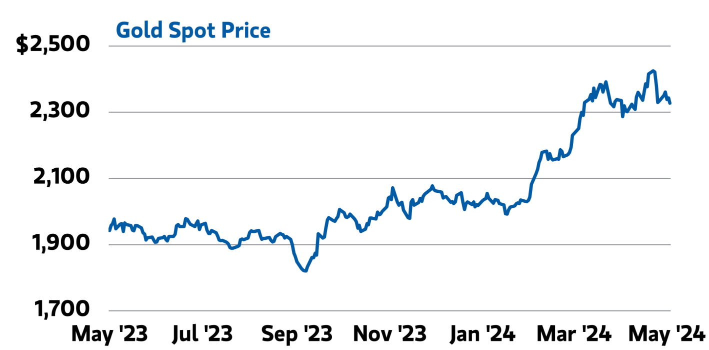
Since then, two things have surprised: First, demand has come in stronger than expected. Most forecasters have raised estimates for full-year demand growth by about 300,000 barrels per day, with most estimates now clustered around 1.5 million. Intriguingly, this is actually above the historical trend rate of 1.3 million to 1.4 million barrels per day. Second, OPEC extended its production agreement and continued to restrain output. Compliance with production quotas by individual members has not been perfect, but it never is.

Further noting the seasonal rebound in demand, which is typical between April and September, we see hints of a period of tightness in the oil market during the summer. From June onward, we expect global oil inventories to draw down, possibly quite significantly. That, in turn, should put upward pressure on prices, with a return of Brent crude prices to $90 a barrel likely by late in the third quarter, in our view.

That implies meaningful upside from here, although we do not expect those prices to hold over the medium term. Our preliminary balances for 2025 again show non-OPEC supply meeting all global demand growth, leaving little room for OPEC to unwind production cuts. Later this year and into 2025, we expect Brent to revert back steadily to its long-term anchor, which we estimate around $80.

PRECIOUS METALS. Gold recently touched an all-time high of $2,450 an ounce, even though the 10-year US Treasury real yield has been rising since December (see chart). This is unusual, since gold typically exhibits an inverse correlation with real yields. Gold has been performing better than real yields would imply since mid-2022 as central bank purchases accelerated. However, the recent move seems to have been driven by a pickup in physical and financial demand from China, as well as demand for inflation/geopolitical-risk hedging.

Despite Increasing Real Yields, Gold Recently Hit an All-Time Hight

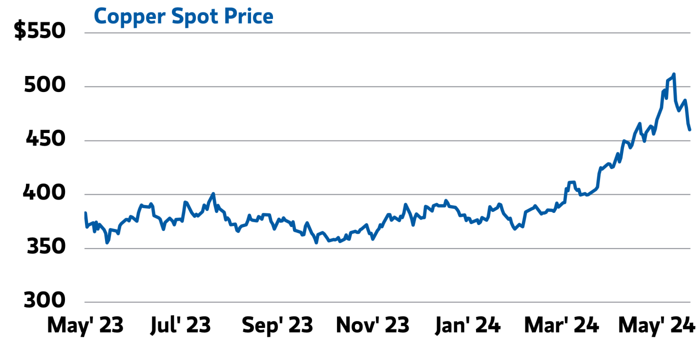


Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office as of May 31, 2024

On COMEX, net long positioning has rebounded but does not look overstretched. The price is close to our third quarter base case of $2,350 per ounce. From here, pricing is likely to remain choppy as investors weigh inflation risks, incoming data and the Federal Reserve's easing path. The first rate cut of a cycle tends to be positive for gold, and we see risks more skewed to our bull case forecast of $2,700 in the fourth quarter.

BASE METALS. Copper has been our top pick for price appreciation, with our year-end 2024 price forecast of $10,500 per ton in line with current levels as prices have moved faster than we expected (see chart). We model a market deficit of 700 kilotons for 2024, with tightening mine supply starting to feed through to smelter utilization rates. We use relatively modest demand expectations, anticipating slower demand growth from China from a high base in 2023. That said, demand is looking better than expected so far. Emerging drivers such as data centers and artificial intelligence are also bringing new investors to the space and acting as additional tailwinds for copper demand. ■

Copper Demand Has Been Stronger Than Expected in 2024



Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office as of May 31, 2024

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THEMATIC INVESTING

Longevity Longshots

Edward Stanley, Equity Strategist, Morgan Stanley & Co. International plc+

Since 2000, 1% of companies have generated approximately 40% of shareholder returns. In our view, all investors should spend some time considering the potential exponential technologies of the next decade, many of which sit at the intersection of longevity and tech diffusion.

Leveraging Morgan Stanley & Co. Research's global health care, technological and scientific expertise, we collaborated with colleagues to analyze some of the most promising technologies, ranking 10 "longevity longshots" to assess their maturity and what we refer to as investibility (see exhibit). Among them, obesity medications, artificial intelligence (AI)-assisted drug discovery and smart chemotherapy are better understood and look more investible. AI-assisted fertility technology, DNA synthesis, biosecurity technologies and psilocybin (a psychedelic agent that could have potential uses for depressive disorders) are seeing material outcomes and cost improvements but remain earlier-stage and more speculative.

There is no catch-all metric for spotting emerging longshot potential. That said, there are leading indicators:

- **Academic publications.** The first movers in the longshot development curve tend to be found in academia. This takes the form not only of original thought-pieces but of subsequent citations of research, which often reinforce the value of the original piece.

Longshot Maturity Dashboard

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

- **Patent quantity and quality.** Patents have long been a helpful proxy for corporate and startup innovation spending. They also tend to follow academia because companies begin to build on those papers or because the research is sponsored by the patenting company. We prefer not to rely purely on patent quantity, which can be inflated by applicants; in the same way that academic publication quality can be inferred from citations, so can patents.
- **Venture funding.** Either concurrently or typically just after patent application quantity and quality start to grow exponentially, the startups behind those innovation blueprints will raise capital to develop prototypes and a go-to-market strategy.
- **Public and crossover capital.** Only once product market fit has been achieved—and ideally scalability indicated—will later-stage growth equity capital start to lead funding rounds prior to an initial public offering. As a starting point, we only include longshot technologies that have five years of growth data in academic research and early-stage funding. These hurdles should make investibility more tangible. We then assess the academia and research and development (R&D) five-year compound annual growth rate (CAGR) versus venture capital funding's five-year CAGR. The 10 longshots stand out from an array of other candidates due to an inflection in their funding levels, implying an inflection in the technology's maturity.

All the longshot candidates we discuss are at (or have passed) their inflection point in early venture funding—$35 billion has been deployed in startups seeking to solve these challenges during the past decade. The question then becomes time to scale and potential total addressable market (TAM) by technology. While Morgan Stanley & Co. Research has calculated TAM estimates for some of the longshots, the majority are still too speculative to provide quantitative TAM or timing estimates.

Moore's Law Versus Eroom's Law

The health care industry sits at the intersection of two competing structural forces. The first is Moore's law, made famous in the semiconductor industry with the doubling of the number of transistors on a microchip every two years. However, it can also be applied to the doubling speed of cost reduction in sequencing a human genome. This cost was greater than $1 million two decades ago, and sequencing was a time-consuming process. It can now be done for about $600 and stored in three gigabytes of data. Genome sequencing is critical to understanding gene function, expression and ultimately bespoke medication.

The second is Eroom's law; less well known, it is simply the inverse of Moore's law. However, it applies not to the cost decline of certain technologies, but to value achieved per unit of input. Simply put, the number of new drugs coming to market per $1 billion spent has been falling logarithmically—and in real terms. That's because of the complexity of biological systems, rising regulatory burdens and diminishing returns after lower-hanging-fruit therapies have been developed. The question we have is not only whether machine learning can alter the path of Eroom's law for pharmaceuticals, but whether it can lead to longevity breakthroughs elsewhere in health care. To be sure, there is growing evidence that AI has the potential to reduce the time required for key stages of preclinical development by 75% as well as the potential to reduce early-stage preclinical development costs by 50%-plus. At scale, these improvements in efficiency could prove to be transformative for the biopharmaceutical industry.

Longevity: 80% Lifestyle

Longevity, loosely, can be considered to be the question of whether someone's phenotype (lifestyle and environment) can be supplemented to the point where it trumps their genotype. Whether the problem is to understand the process of aging or to extend the natural limits of human life, the trouble is that we know too little about what is really going on. What we do know, however, is that a remarkable amount of longevity can be attributed to lifestyle rather than genetics. Consequently, aggregate longevity is likely to be impacted by a greater degree if we focus on cheaper, quicker, preventative changes to our lifestyle rather than attempting to find silver-bullet treatments for ailments.

By focusing almost exclusively on treating disease rather than preventing it, modern medicine has succeeded in keeping us alive, while sick, for longer and longer. We know the consequences in terms of the cost of health care, but treating disease does not increase our "healthspan,"—the length of time that one is healthy, not just alive. In most cases it only increases the period of morbidity—the state of being symptomatic or unhealthy for a disease or condition.

Preventing disease achieves two key goals: increasing healthspan and reducing morbidity. Most centenarians do not develop any chronic disease until they are over 80, and some never even get one. Can we replicate the successful-aging story of several centenarians for a larger slice of the population? There is no single magic fix that will deliver on all these promises; instead, there are multiple, and we can select the best combination of them for each of us. And contrary to general belief, finding the cure for cancer is not one of them. A University of Chicago study found that eliminating cancer as a disease would give us just three more years of healthspan and two fewer years of morbidity. What we should aim for instead is to delay the onset of all chronic diseases by 10 to 30 years.

Genetics Explains Approximately 20% of Longevity

The main reason centenarians have a much longer than average healthspan and a much shorter period of morbidity is that most avoid one of the four main chronic diseases and causes of death: cancer, cardiovascular disease, neurodegenerative disease and diabetes. One group analyzed the disease history of 424 US and Canadian centenarians: 82% of the male and 68% of the female centenarians had not experienced cardiovascular disease, stroke, diabetes, Parkinson's or cancer before age 80. For most centenarians, the leading cause of death is either a sudden heart attack or an infectious disease, neither of which lasts long.

And how do you avoid those diseases? Genetics helps. Several studies conclude that genetics explain 15% to 30% of people's longevity. A previous study based on the Scandinavian twins database published in 1996, covering 368 pairs of identical twins, suggested that genetics accounts for 22% to 28% of longevity.

We also know that some diseases have a hereditary component. The APO-E gene, for example, has been shown to have a direct influence on longevity and healthspan: If you have the allele 4 (around 30% of the population), you have an increased risk of developing cardiovascular issues and Alzheimer's disease compared to the more common allele 3 (57% of the population). The lucky ones with the allele 2 (13% of the population) have a slightly lower risk for both diseases relative to those without.

Evolving Mortality and Morbidity

The rise in chronic diseases is beginning to dominate in middle income countries and overwhelm in high income countries. More than 50 million people worldwide currently live with dementia. The World Health Organization (WHO) projects that number to reach 152 million by 2050, presenting society with a considerable health care challenge. Alzheimer's disease is the most common form of dementia, accounting for 60% to 70% of all cases. No new treatment for Alzheimer's has been approved since 2003. There is significant impetus, therefore, to find solutions using regenerative medicine to not only extend lives but to improve them while bringing down the overall public sector burden of providing health care.

Dementia is now the leading cause of death in women over 80. With women living longer than men in all countries, it is likely that this will be a gender-biased cause of death for some time to come. However, its emergence presents food for thought for investors. When diseases become leading causes of mortality, history shows convincingly that these can become multidecade trends that require a high research & development (R&D) intensity and capital flows to make them more manageable.

The Nearest Longshots

Diabesity

The Problem: Globally, more than 650 million people suffer from obesity, including more than 100 million in the US. The associated personal, social and economic costs are huge. According to WHO estimates, obesity may be responsible for 5% of all deaths, impacting global GDP by about 3%. Obesity is associated with more than 200 health complications, from osteoarthritis to kidney disease to early loss of sight, so tackling the obesity epidemic would indirectly impact orthopedic surgery, dialysis care, the food industry and the leisure sector. Over the long term, the macro and micro implications are clearly profound.

The Longshot: Glucagon-like peptide-1 (GLP-1) agonists treat Type 2 diabetes by copying the action of a hormone that your stomach naturally releases when you eat. When needed, GLP-1 helps your body make more insulin, which controls the amount of sugar in your blood; it reduces the amount of sugar that your liver makes; it slows digestion so that it takes longer for your body to absorb sugar; and it can reduce your appetite. These drugs have been on the market since 2010, but it has taken until 2023 for the theme to come to life. A number of recent trials have found significant improvements in co-morbidities from taking these drugs. The uptake of obesity medicines in the US over the past 12 months has been stronger than we had anticipated, while indirectly supporting a profound acceleration in the use of GLP-1 in treating diabetes. Our supply-demand model now points to a $105 billion global market for obesity medication by 2030 and over $140 billion in a bull case.

AI Drug Discovery

The Problem: Morgan Stanley & Co. Research estimates that the average novel therapy requires $1 billion-plus of funding and 10 or more years of development to achieve approval. Despite the significant resources required to sustain drug development pipelines, probability of success remains low; only about 10% of programs entering clinical studies eventually obtain Food and Drug Administration approval.

The Tufts Center for the Study of Drug Development estimates this figure to be even higher, at $2.5 billion per marketed therapy when considering the additional costs of abandoned trials and clinical failures. Despite these significant costs, clinical development success rates for novel therapies are low. While estimates of these rates vary, they are consistently less than 10%. Additionally, it takes a novel drug an estimated 10.5 years on average to demonstrate the safety and efficacy necessary to support the submission of regulatory filings.

The Longshot: A key benefit of AI is to increase the potential viability of early-stage drug development. Our biotech team estimates that every 1% improvement in preclinical development success could lead to an incremental $15 billion-plus in value generated over a 10-year period. Early data from AI-enabled drug development platforms is encouraging, with promising data points such as the ability to shorten the timeline to drug candidate identification by 75% versus the industry average. Additionally, initial data on the sector's ability to identify relevant targets early suggests improvements in preclinical development that could be highly meaningful at scale. AI-enabled drug development is at an inflection point: Our teams estimate a $50 billion potential TAM.

Smart Chemo and ADCs

The Problem: Despite its origins in the 1960s and its many shortfalls, traditional chemotherapy still accounts for over 37% of cancer prescriptions for solid tumors. With advances in both chemistry and biology, we think the concept of targeted chemotherapy first envisioned in the early 1900s, could become a reality today. In fact, we are on the cusp of a rich period of clinical data that will focus investor attention on this opportunity.

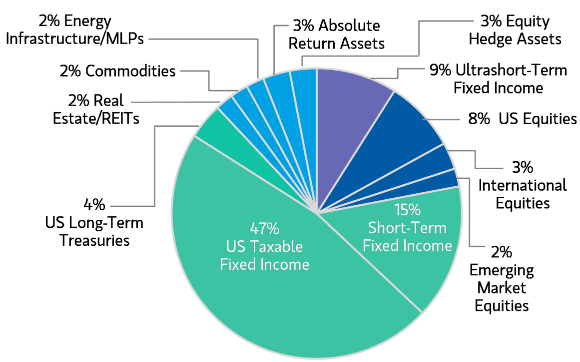
The Longshot: "Smart chemotherapy" is using an antibody to act as a guidance system to find a cancer and attaching chemotherapy molecules to the antibody to destroy the cancer—a concept called an antibody drug conjugate (ADC). These drugs, which home in on cancer like "biological missiles," could open up a market of more than $140 billion over the long term. This would make ADCs one of the biggest growth areas across global biopharma, led by ADCs for colorectal, lung and breast cancers. ■

This article was excerpted from the April 23 Morgan Stanley & Co. report, "Longshots." For a copy of the full report, please contact your Financial Advisor.

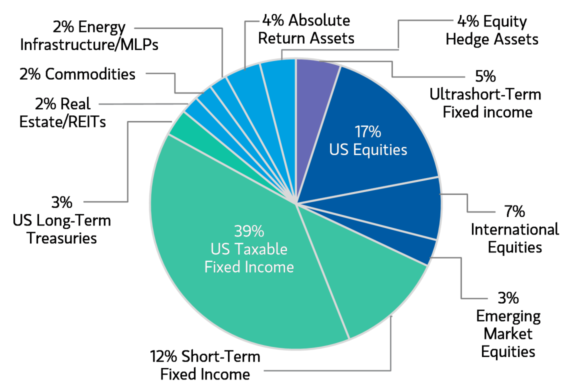
Global Investment Committee Tactical Asset Allocation

The Global Investment Committee provides guidance on asset allocation decisions through its various allocation models. The five models below include allocations to traditional assets, real assets and hedged strategies. They are based on an increasing scale of risk (expected volatility) and expected return.

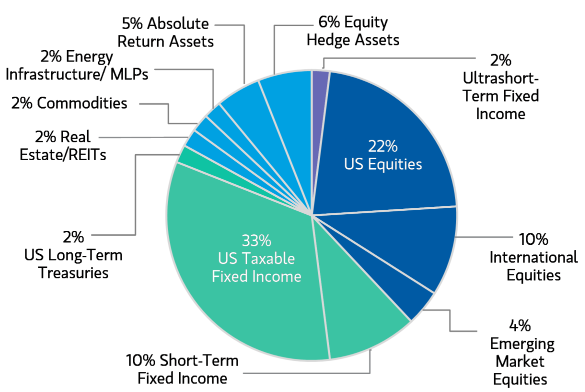
Wealth Conservation



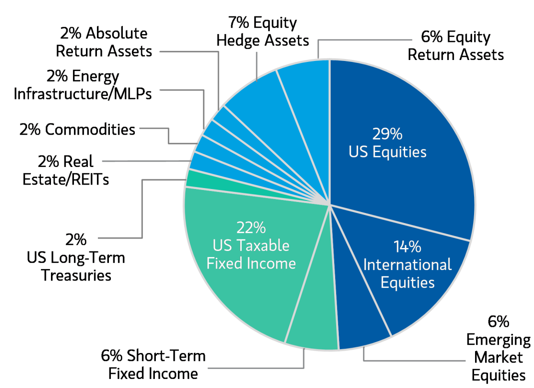
Income



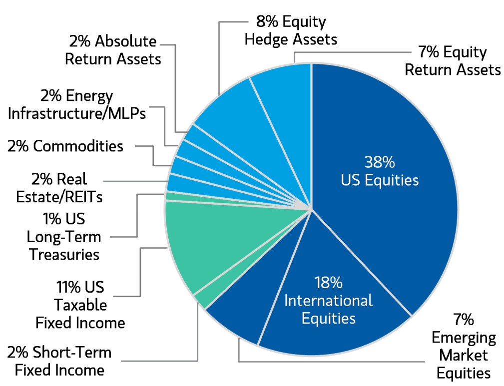
Balanced Growth



Market Growth



Opportunistic Growth



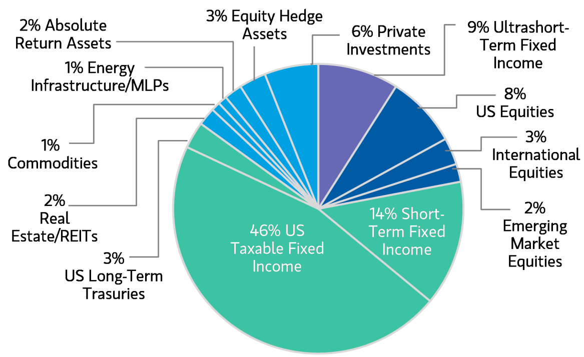
Key

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

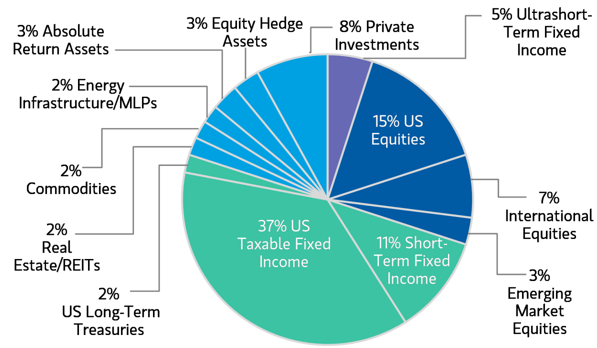
Source: Morgan Stanley Wealth Management GIC as of June 3, 2024

The Global Investment Committee provides guidance on asset allocation decisions through its various allocation models. The five models below include allocations to traditional assets and alternative investments, including privates, and are recommended for investors with over $10 million in investable assets. They are based on an increasing scale of risk (expected volatility) and expected return.

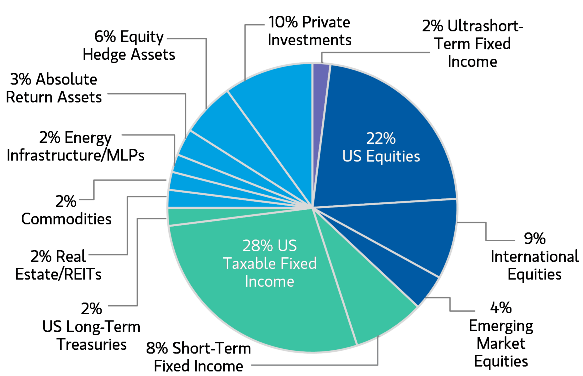
Wealth Conservation



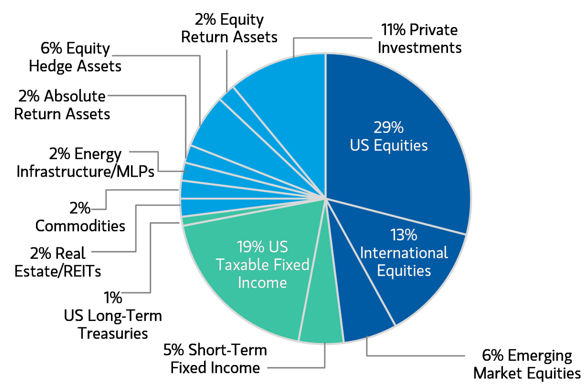
Income



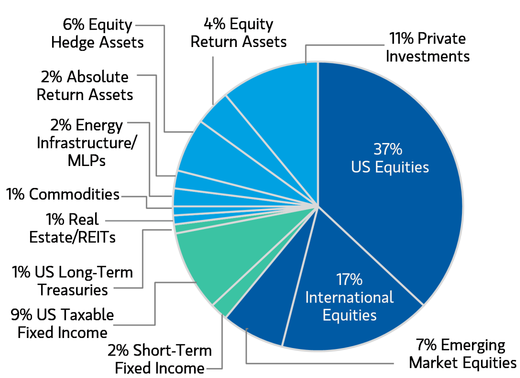
Balanced Growth



Market Growth



Opportunistic Growth



Key

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

Source: Morgan Stanley Wealth Management GIC as of June 3, 2024

Tactical Asset Allocation Reasoning

Global Equities	Weight Relative to Model Benchmark	
US	Underweight	We recently closed our US large-cap equity underweight, which was premised on concerns about achievability of 2023 earnings estimates. While higher inflation should delay Fed rate cuts, more pricing power contributes to confidence that has risen, given GDP strength and visible international growth rebounds. Our preference is for cyclical and secular-growth equities with quality balance sheets.
International Equities (Developed Markets)	Market-Weight	Given weak currencies and dovish central banks—in Japan and soon in Europe, with the ECB likely cutting in June—economic rebound should be at hand in the second half. Developed market exposure should skew toward commodities and materials exporters, especially those in the Asia Pacific region, including Japan.
Emerging Markets	Market-Weight	Peaking US rates and, in turn, the US dollar, likely set up a second half rebound for EM ex China, given improving global growth dynamics. We favor Brazil, India and Mexico.
Global Fixed Income	**Weight Relative to Model Benchmark**	
US Investment Grade	Overweight	Stronger-than-anticipated economic growth is preserving the strength of corporate cash flows. While rates have backed up to reflect "higher-for-longer" expectations, yield spreads have remained well behaved. With geopolitical uncertainty high and equity valuations broadly rich, we like coupons of bonds with index-matching or shorter durations.
International Investment Grade	Market-Weight*	Yields are decent, central banks may soon cut rates and there is room for spread tightening as economic growth improves.
Inflation-Protection Securities	Market-Weight*	Real yields have sold off and are now bordering on cheap relative to the past two years. The securities could be a potential buy in a stagflationary environment.
High Yield	Market-Weight*	We have eliminated our exposure to the equity-like asset class to reduce equity beta of portfolios. High yield bonds rallied aggressively after the unprecedented provision of liquidity from the Fed and fiscal stimulus from Washington. However, there is currently limited upside and much downside to investments in riskier products, given the market environment.
Alternative Investments	**Weight Relative to Model Benchmark**	
REITs	Market-Weight	We expect higher stock-bond correlations, which place a premium on the diversification benefits of investing in real assets. Nevertheless, with real interest rates positive and services inflation remaining quite sticky, we would need to be selective in adding to this asset class.
Commodities	Market-Weight	Global reflation, tense geopolitics, especially in the Middle East, and ongoing fiscal spending suggest decent upside potential for precious metals and industrial-related commodities, including energy.
MLP/Energy Infrastructure	Overweight	We are increasing exposure to real assets, with a preference for energy infrastructure and MLPs. Competitive yields and expectations for continued capital discipline amid stable oil and gas prices over the next six months underpin our decision, as does hedging against geopolitical risks.
Hedged Strategies (Hedge Funds and Managed Futures)	Overweight	The current environment appears constructive for hedge fund managers, who are frequently good stock pickers and can use leverage and risk management to potentially amplify returns. We prefer very active and fundamental strategies, especially high-quality, low beta, low volatility and absolute return hedge funds.

*The GIC asset allocation models' benchmarks do not include any exposure to this asset class.
Source: Morgan Stanley Wealth Management GIC as of June 3, 2024

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.

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

Important note regarding economic sanctions. *This report may involve the discussion of country/ies which are generally the subject of selective sanctions programs administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC"), the European Union and/or by other countries or multi-national bodies. The content of this presentation is for informational purposes and does not represent Morgan Stanley's view as to whether or not any of the Persons, instruments or investments discussed are or may become subject to sanctions.* ***Any references in this report to entities or instruments that may be covered by such sanctions should not be read as recommending or advising on any investment activities involving such entities or instruments.*** *Users of this report are solely responsible for ensuring that your investment activities in relation to any sanctioned country/ies are carried out in compliance with applicable sanctions.*

Glossary

Earnings revisions breadth is defined as the number of positive analyst revisions minus the number of negative analyst revisions divided by the total number of revisions.

Equity risk premium is the excess return that an individual stock or the overall stock market provides over a risk-free rate. The risk-free rate represents the interest an investor would expect from an absolutely risk-free investment over a specified period of time.

Term premium is the excess yield that investors require to commit to holding a long-term bond instead of a series of shorter-term bonds.

Hedged Strategy Definitions

Absolute return: This type of investing describes a category of investment strategies and mutual funds that seek to earn a positive return over time—regardless of whether markets are going up, down, or sideways—and to do so with less volatility than stocks.

Equity Hedge is a hedge fund investment strategy with a typical goal of providing equity-like returns while limiting the impact of downside market movements and volatility on an investor's portfolio. Managers utilize long and short positions, primarily in equity and equity-related instruments, to achieve this goal.

Risk Considerations

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

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

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

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

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

It is important to note that only eligible investors can invest in alternative investment funds and that in order for an FA/PWA to engage a prospective investor in general discussions about Alternative Investments and specifically with regards to Private Funds, the prospective investor will need to be pre-qualified through the Reg D system.

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.

Hedge funds may involve a high degree of risk, often engage in leveraging and other speculative investment practices that may increase the risk of investment loss, can be highly illiquid, are not required to provide periodic pricing or valuation information to investors, may involve complex tax structures and delays in distributing important tax information, are not subject to the same regulatory requirements as mutual funds, often charge high fees which may offset any trading profits, and in many cases the underlying investments are not transparent and are known only to the investment manager.

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.

Private Real Estate: Risks of private real estate include: illiquidity; a long-term investment horizon with a limited or nonexistent secondary market; lack of transparency; volatility (risk of loss); and leverage.

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.

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. MLPs carry interest rate risk and may underperform in a rising interest rate environment.

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.

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.

Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision.

Credit ratings are subject to change.

Duration, the most commonly used measure of bond risk, 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.

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.

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.

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.

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.

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.

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.

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.

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

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.

Stocks of medium-sized companies entail special risks, such as limited product lines, markets, and financial resources, and greater market volatility than securities of larger, more-established companies.

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

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***.
- 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.
- 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.
- 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.

- This material has been prepared for informational purposes only, based on publicly available factual information. It does not provide individually tailored or general investment advice whatsoever. It has been prepared without regard to the individual financial circumstances and objectives of persons who receive it. Investors seeking to evaluate particular investments and strategies in Digital assets must seek the advice of their independent advisors. The appropriateness of a particular investment or strategy will depend on an investor's individual circumstances and objectives.

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.

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. **Health care sector stocks** are subject to government regulation, as well as government approval of products and services, which can significantly impact price and availability, and which can also be significantly affected by rapid obsolescence and patent expirations.

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

Environmental, Social and Governance ("ESG") investments in a portfolio may experience performance that is lower or higher than a portfolio not employing such practices. Portfolios with ESG restrictions and strategies as well as ESG investments may not be able to take advantage of the same opportunities or market trends as portfolios where ESG criteria is not applied. There are inconsistent ESG definitions and criteria within the industry, as well as multiple ESG ratings providers that provide ESG ratings of the same subject companies and/or securities that vary among the providers. Certain issuers of investments may have differing and inconsistent views concerning ESG criteria where the ESG claims made in offering documents or other literature may overstate ESG impact. ESG designations are as of the date of this material, and no assurance is provided that the underlying assets have maintained or will maintain and such designation or any stated ESG compliance. As a result, it is difficult to compare ESG investment products or to evaluate an ESG investment product in comparison to one that does not focus on ESG. Investors should also independently consider whether the ESG investment product meets their own ESG objectives or criteria. There is no assurance that an ESG investing strategy or techniques employed will be successful. Past performance is not a guarantee or a dependable measure of future results.

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.

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 are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Comparing an investment to a particular index may be of limited use.

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.

Disclosures

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The author(s) (if any authors are noted) principally responsible for the preparation of this material receive compensation based upon various factors, including quality and accuracy of their work, firm revenues (including trading and capital markets revenues), client feedback and competitive factors. Morgan Stanley Wealth Management is involved in many businesses that may relate to companies, securities or instruments mentioned in this material.

This material has been prepared for informational purposes only and is not an offer to buy or sell or a solicitation of any offer to buy or sell any security/instrument, or to participate in any trading strategy. Any such offer would be made only after a prospective investor had completed its own independent investigation of the securities, instruments or transactions, and received all information it required to make its own investment decision, including, where applicable, a review of any offering circular or memorandum describing such security or instrument. That information would contain material information not contained herein and to which prospective participants are referred. This material is based on public information as of the specified date, and may be stale thereafter. We have no obligation to tell you when information herein may change. We make no representation or warranty with respect to the accuracy or completeness of this material. Morgan Stanley Wealth Management has no obligation to provide updated information on the securities/instruments mentioned herein.

The summary at the beginning of the report may have been generated with the assistance of artificial intelligence (AI).

The securities/instruments discussed in this material may not be appropriate for all investors. The appropriateness of a particular investment or strategy will depend on an investor's individual circumstances and objectives. Morgan Stanley Wealth Management recommends that investors independently evaluate specific investments and strategies, and encourages investors to seek the advice of a financial advisor. The value of and income from investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies and other issuers or other factors. Estimates of future performance are based on assumptions that may not be realized. Actual events may differ from those assumed and changes to any assumptions may have a material impact on any projections or estimates. Other events not taken into account may occur and may significantly affect the projections or estimates. Certain assumptions may have been made for modeling purposes only to simplify the presentation and/or calculation of any projections or estimates, and Morgan Stanley Wealth Management does not represent that any such assumptions will reflect actual future events. Accordingly, there can be no assurance that estimated returns or projections will be realized or that actual returns or performance results will not materially differ from those estimated herein. This material should not be viewed as advice or recommendations with respect to asset allocation or any particular investment. This information is not intended to, and should not, form a primary basis for any investment decisions that you may make. Morgan Stanley Wealth Management is not acting as a fiduciary under either the Employee Retirement Income Security Act of 1974, as amended or under section 4975 of the Internal Revenue Code of 1986 as amended in providing this material except as otherwise provided in writing by Morgan Stanley and/or as described at www.morganstanley.com/disclosures/dol.

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