2025

WEALTH OUTLOOK

growth amid discord: strategies for a "rule-breaking" expansion

citi

where wealth happens

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foreword

Welcome to Wealth Outlook, our semiannual flagship report exploring key economic and market trends for your portfolio in the coming year and beyond. I am grateful to Steven Wieting, our Chief Economist and Chief Investment Strategist, and the colleagues worldwide who have contributed their insights.

We see the global economy as having “broken the rules” in recent years, given its continued growth despite usually reliable recession signals in the U.S. and elsewhere. Considering the pace of innovation, productivity gains and rising global consumer demand, this resilience came as no surprise to us. We have consistently argued for keeping portfolios fully invested and positioned for an ongoing rally.

While market volatility may pick up, we believe economic growth will be sustained globally in 2025 and 2026. The rollout of artificial intelligence may bring increasing benefits to industries beyond technology. Rising capital spending can help support this “rule-breaking” expansion and the markets’ upward path.

Naturally, there remain many challenges. The potential for new U.S. tariffs may intensify trade tensions. Discordant politics and geopolitics may persist, with scope for unpredictable developments in the Middle East, Ukraine and elsewhere. Heavy government borrowing in the U.S. and other nations could yet unnerve the bond markets.

While valuations have risen since 2022's lows, we see potential opportunities across asset classes globally. We believe this calls for a broadening of portfolio horizons, especially for the many investors whose allocations are overly concentrated. We also expect that holding a lot of cash will remain unrewarding.

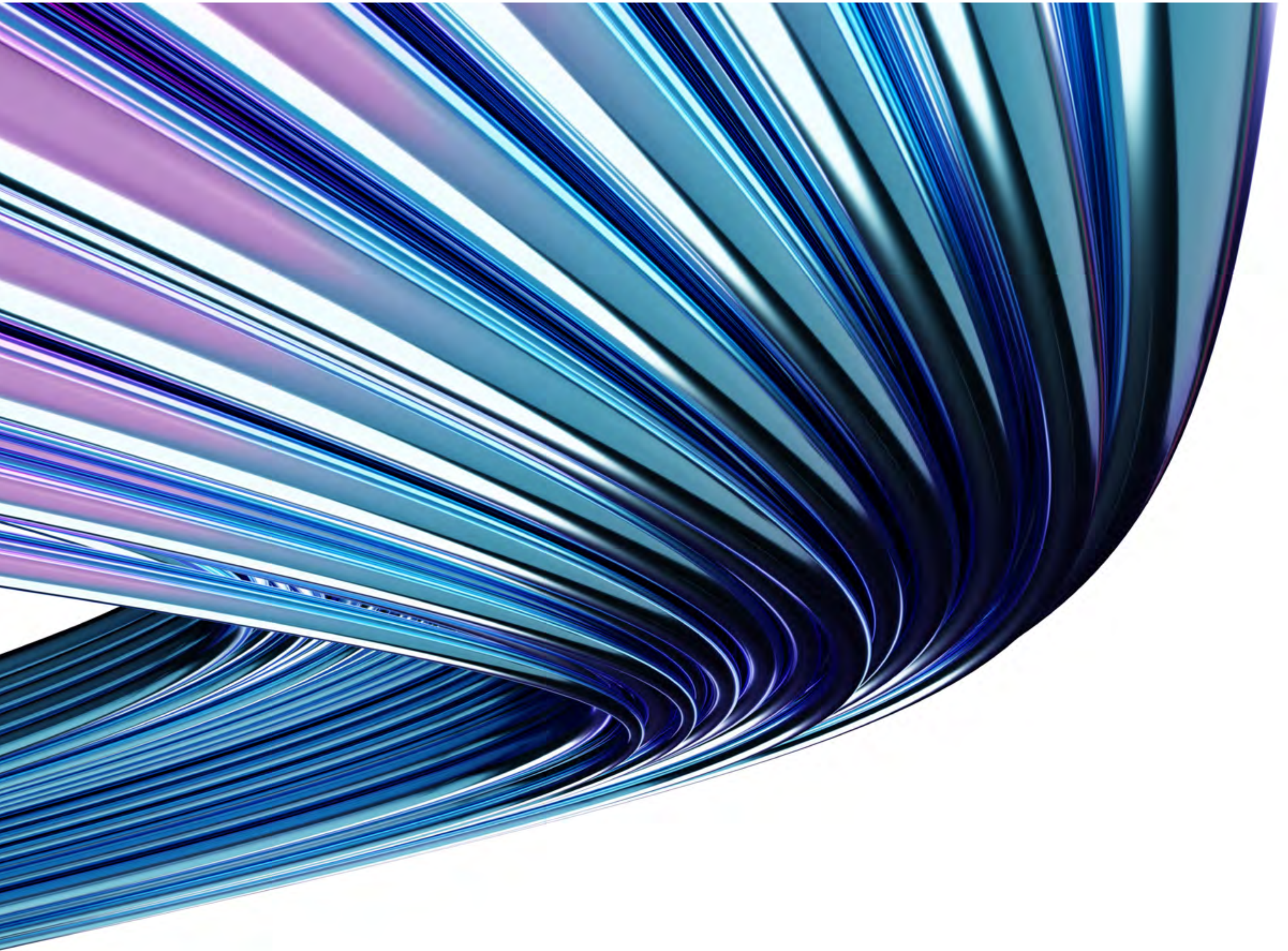
As you explore Wealth Outlook, please ask your relationship team what it may mean for your portfolio. Our global investment platform contains many strategies to help you pursue the potential opportunities we see, while also seeking to mitigate risks.

At Citi Wealth, we recognize you, our clients, as the World's Changemakers, whose ideas, passions and pursuits are reshaping businesses, communities and society as a whole. Our mission is not only to help you manage your wealth, but also to inspire and enable its creation by connecting you to opportunities across Citi's vast global network.

Thank you for choosing Citi Wealth. We look forward to guiding you on your financial journey this year and beyond.

Andy Sieg

HEAD OF WEALTH



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the world in 2025 and beyond

continuing growth

The global economic expansion has defied recessionary signals in recent years. We expect ongoing growth in 2025 and 2026, with potential further gains in global earnings.

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potential for long-term returns

With markets having recovered strongly since their lows of late 2022, valuations have risen somewhat across most asset classes. Nevertheless, our ten-year return forecasts make us moderately optimistic. By contrast, we believe holding cash may prove disappointing.

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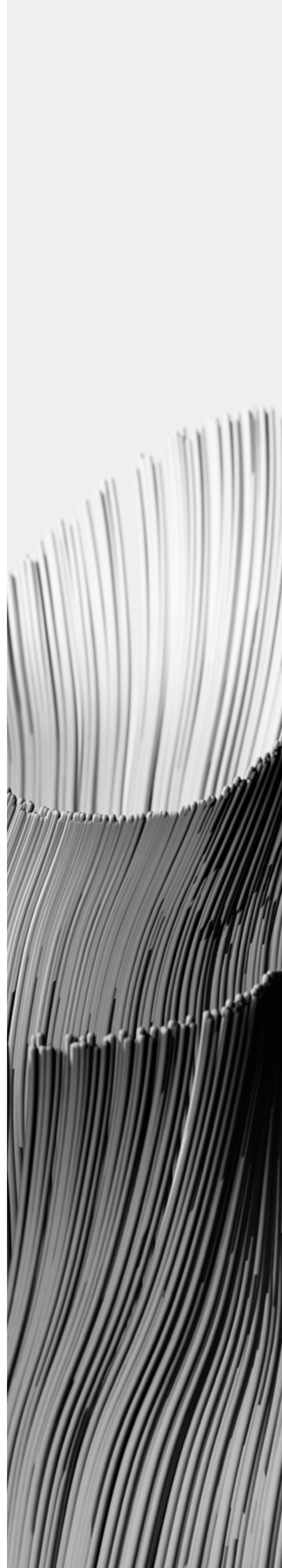
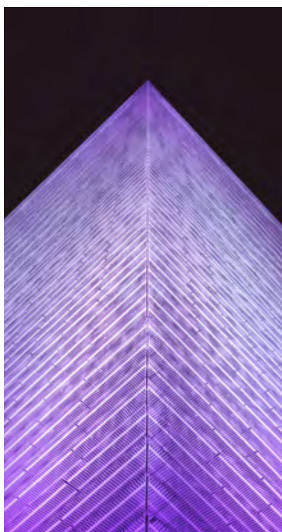
discord and other risks

Trade tensions and other geopolitical discord could trigger higher market volatility ahead. Risks also include U.S. overheating and pockets of high valuation. However, we do not see a case for holding excess cash.



growth amid discord: strategies for a *“rule-breaking”* expansion

With the global economy potentially set for further upside, we make the case for portfolios that are positioned for potential growth but prepared for the risks of a discordant world.



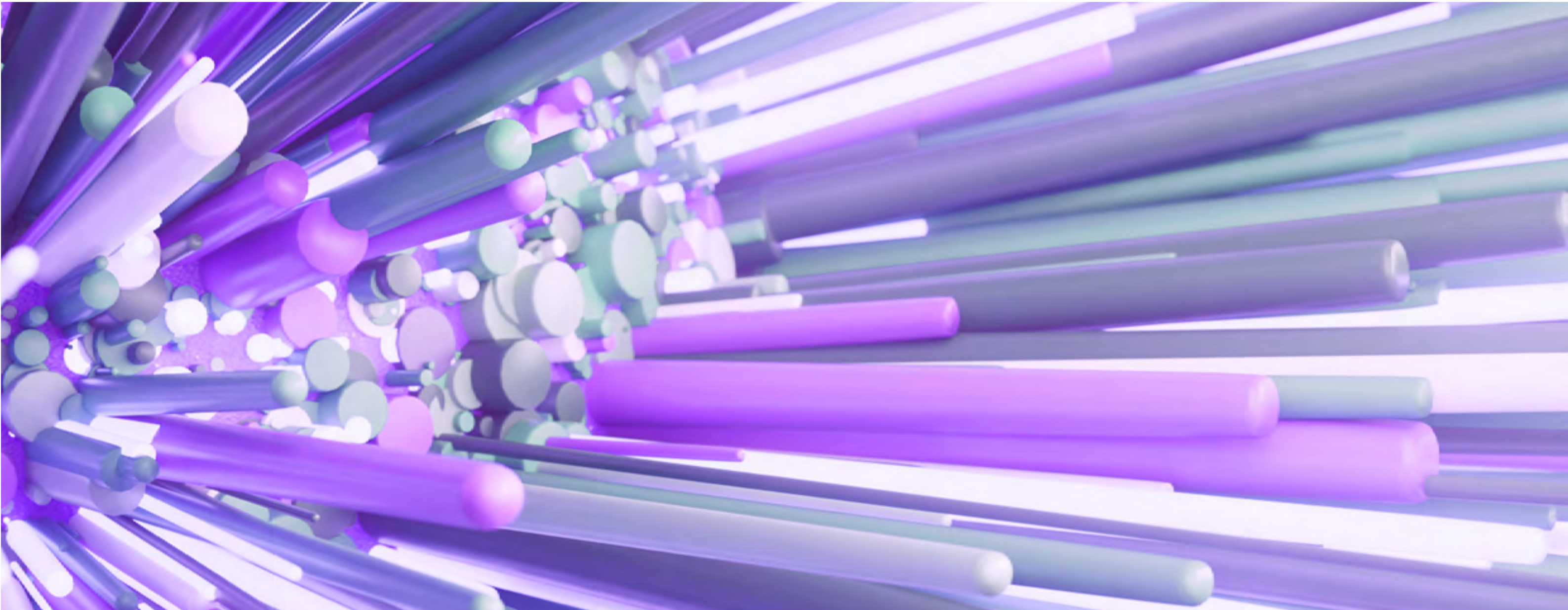
key takeaways

→ We believe in continued global growth and rising profits in 2025

→ Discordant geopolitics may trigger more volatility across markets

→ We make the case for broadening portfolio horizons, with potential in several asset classes

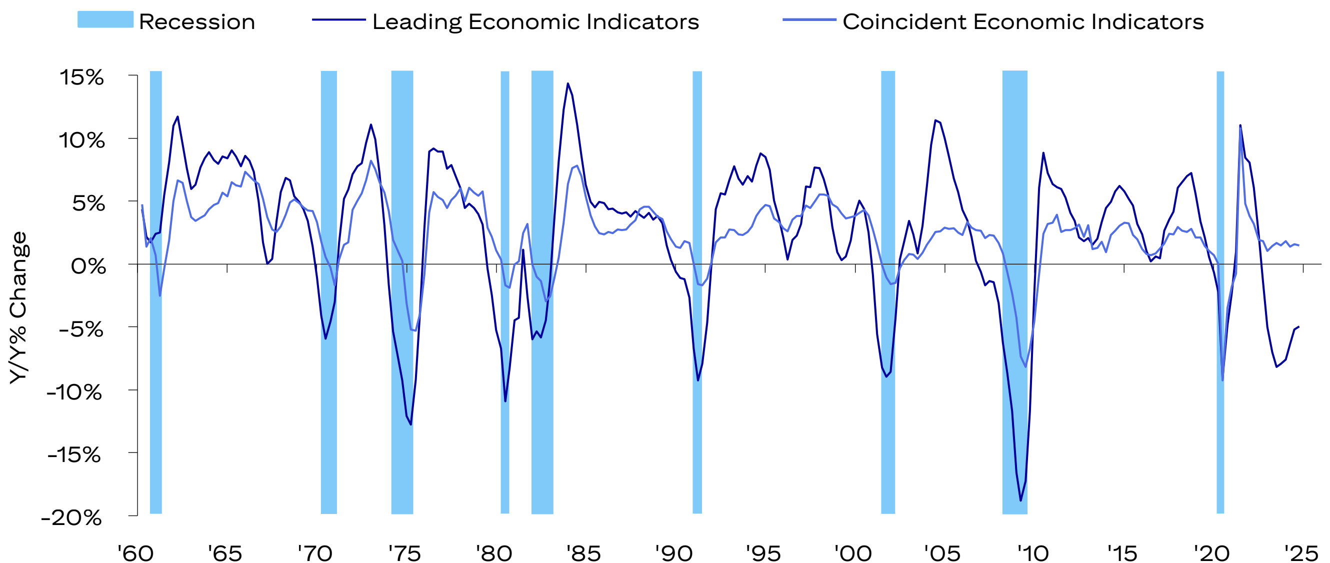
→ Risks include but are not limited to U.S. overheating, a global trade war and pockets of high valuation



The global economy has defied expectations in recent years. Forecasts of recession – backed up by usually reliable indicators – came to nothing. Despite the sharpest and most synchronized interest rate-hiking campaign by global central banks in decades, growth has endured. Corporate profits in the U.S. recently reached new highs, with profits elsewhere closing in on their former peak.

FIGURE 1

U.S. output, employment and income kept growing despite recession signals



Source: Haver, as of Nov 10, 2024. The US Index of Leading Economic Indicators looks at a combination of statistics including manufacturing new orders, money supply and consumer expectations as a guide to potential future activity. The US Index of Coincident Economic Indicators addresses a combination of elements such as labor market activity, personal income, and industrial output to capture the state of current activity. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Past performance is no guarantee of future results. **Real results may vary.**

In 2025 and 2026, we expect this "rule-breaking" expansion to continue. We also expect the growth to be accompanied by further geopolitical and political discord. In the U.S., the incoming Trump administration is poised to pursue policies that seek to accelerate activity domestically, but which may increase tensions externally. Some controversial policies may also lead to fractious domestic politics in the U.S. and elsewhere.

Amid the inevitable noise, we remain focused on the drivers of global growth, both shorter and longer term, while monitoring the evolving risks.

CONTINUING GROWTH, POTENTIAL RISING PROFITS

In our view, global GDP may rise at 2.9% in 2025 and 2026, compared to 2.6% in 2024 – **figure 1.** Among advanced economies, we see the U.S. remaining as the main engine of growth. We recently upgraded our U.S. growth forecast for 2025 to 2.4%.

As in his first administration, President-elect Donald Trump will aim to boost growth while trying to avoid stronger U.S. demand simply "leaking abroad" as the U.S. consumes more imports. Deregulation and tax cuts are key to his growth agenda. We will be watching U.S. small business confidence particularly for signs that the prospect of loosening regulation is enhancing currently depressed sentiment.

FIGURE 1

Citi Wealth Investments forecasts for GDP Growth

GDP FORECASTS (%)	2020	2021	2022	2023	2024E	2025E	2026E
U.S.	-2.2	5.8	1.9	2.5	2.7 ↑	2.4 ↑	2.1
China	2.2	8.5	3.0	5.2	4.9 ↓	5.2 ↑	4.8
E.U.	-6.3	6.2	3.4	0.5	0.7	1.2 ↓	1.6
U.K.	-10.3	8.6	4.8	0.3	1.0 ↑	1.1 ↓	1.5
Global	**-3.2**	**6.0**	**3.3**	**2.6**	**2.6**	**2.9** ↑	**2.9**

	2020	2021	2022	2023	2024E	2025E	2026E
S&P 500	-13.5	46.9	6.0	0.6	9.2	7.6	7.6
EPS Level	122	209	222	223	244	262	280
P/E	27.6	24.4	17.8	22.8	24.0	22.4	20.9

Source: Citi Wealth Investments, as of Nov 16, 2024. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. **Real results may vary.**

Of course, Trump's agenda comes with risks. Any capital spending boom could see misallocation of resources. The U.S. economy might simply "run hotter" without any increase in its growth potential. If enacted, tariffs and tough action on illegal immigration would also likely raise goods prices and squeeze the supply of labor, feeding through into higher inflation, one of the primary issues of the campaign for voters across the country.

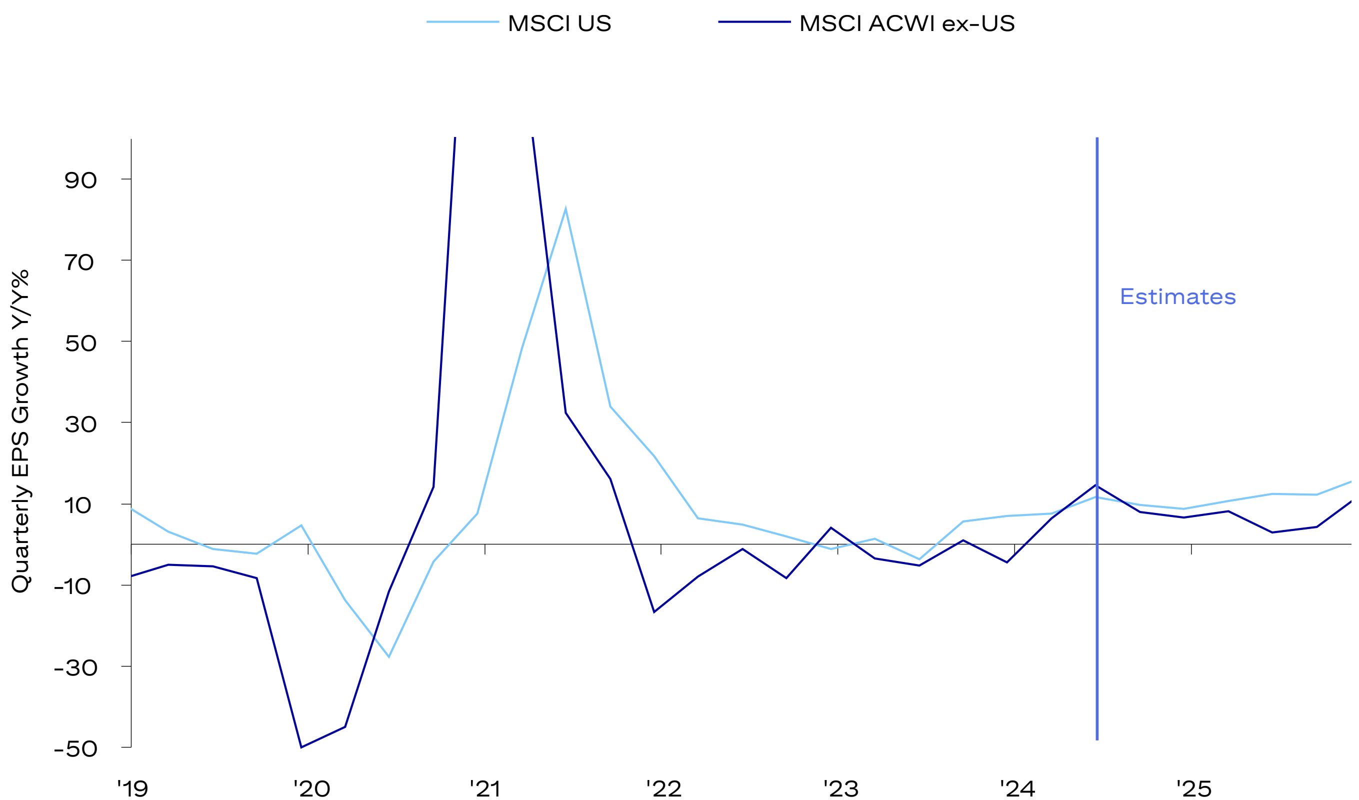
That said, we suspect Trump's domestic and external policies may prove rather different from his campaign speeches.

For now, we expect U.S. core inflation to drop to 2% during the first half of next year thanks partly to the strong dollar and cheaper imports. We think the Fed may be able to cut policy rates, if more gradually, through the first half of 2025. The Fed funds target range may bottom around 3.5–4% in 2025.

Against this backdrop, we look for further growth in corporate profits both in the U.S. and the rest of the world – **figure 2**. Once more, this "breaks the rules." Interest rate cutting cycles have typically occurred at times of falling rather than rising profits.

FIGURE 2

we look for EPS gains beyond the U.S.



Source: Bloomberg, as of Oct 31, 2024. Citi Wealth forecasts are based on historic national accounts and IMF-forward data. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. For illustrative purposes only. Past performance is no guarantee of future results. **Real results may vary.**

GEOPOLITICAL DISCORD

We expect Trump to pursue some version of the swiftly imposed 60%-or-higher tariffs on imports from China that he promised in his election campaign. Only in time will we learn if this is a negotiating gambit to achieve other China-related goals. We are skeptical that much will be achieved other than a shift in production and trade between countries. Some U.S. companies would almost inevitably face harsh retaliatory measures from China.

Heavy, across-the-board U.S. tariffs would represent a clear threat to Chinese exports, which have been a rare bright spot for its economy lately. We are keenly watching to see whether China becomes bolder or more timid in its growth-boosting efforts at home. So far, the size and specifics of its borrowing and spending plans have disappointed. Our forecast for 2025 is for a slight increase in China's GDP to 5.2%.

Geopolitical events have not historically changed the global economy's or markets' direction

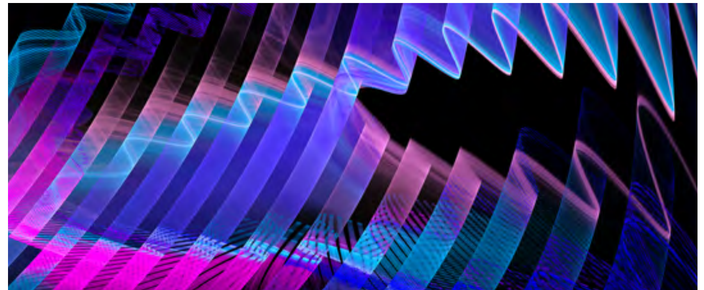
The blanket 10–20% tariffs Trump promised on all other countries' imports may be intended as a bargaining chip to persuade others to lower their tariffs on U.S. goods. The European Union – where we already expect further limp GDP growth in 2025 – looks vulnerable given its export reliance on U.S. trade. We consider trade disputes among the greater risks to U.S. and world equity markets resulting from the U.S. election. Even if a full-blown trade war is avoided, headlines about U.S. policy are likely to cause market volatility, as in 2018.

Much of the bull market in risk assets since late 2022 has occurred amid heightened geopolitical tensions, including the wars in the Middle East and Ukraine. Such events have not historically changed the direction of the global economy or markets, as we have often pointed out.[1] There is now greater uncertainty over how the new U.S. administration will approach these and other geopolitical challenges. Trump prides himself on unpredictability in foreign affairs and believes that rivals and potential foes will be more cautious on his watch. Nevertheless, geopolitical tensions and flashpoints look set to persist in the years ahead – leaving market volatility in their wake.

[1] See, for example, Geopolitics and elections: assessing risk in 2024 in Wealth Outlook 2024.

STRATEGIES FOR A “RULE-BREAKING” EXPANSION

How to position portfolios for growth amid discord? We see potential for decent returns over the coming decade – **the long-term view for asset classes: moderate optimism.** However, we see many investors whose portfolios are highly concentrated, especially in U.S. large-cap equities, which have performed strongly in recent years. Given the latter’s high valuations, we believe such concentration may prove even riskier in the coming decade. Holding large amounts of cash, meanwhile, seems unlikely to be rewarding.



Against this backdrop, we make the case for keeping core portfolios fully invested and exposed to all the asset classes envisaged in each investor’s long-term investment plan – **staying the course: broadening portfolio horizons.**

With equity upside likely to continue in 2025, we think more sectors and countries can help drive markets. We explore potential opportunities and risks in U.S. small- and mid-cap equities, banks, the enablers of manufacturing reshoring, and national markets including Brazil, Japan and India – **equities: shifting leadership in an ongoing bull market.**

In fixed income, we seek yield from credit – i.e., bonds issued by companies. Indeed, we believe that intermediate maturity, investment grade corporate bonds could serve as a core fixed income holding. Suitable investors might also consider differentiated holdings, including structured credit, bank loans and preferred securities – **fixed income: credit at the core.** Likewise, suitable and qualified investors might seek diversification in private equity, private credit and real estate – **complementing core portfolios with private asset classes.**

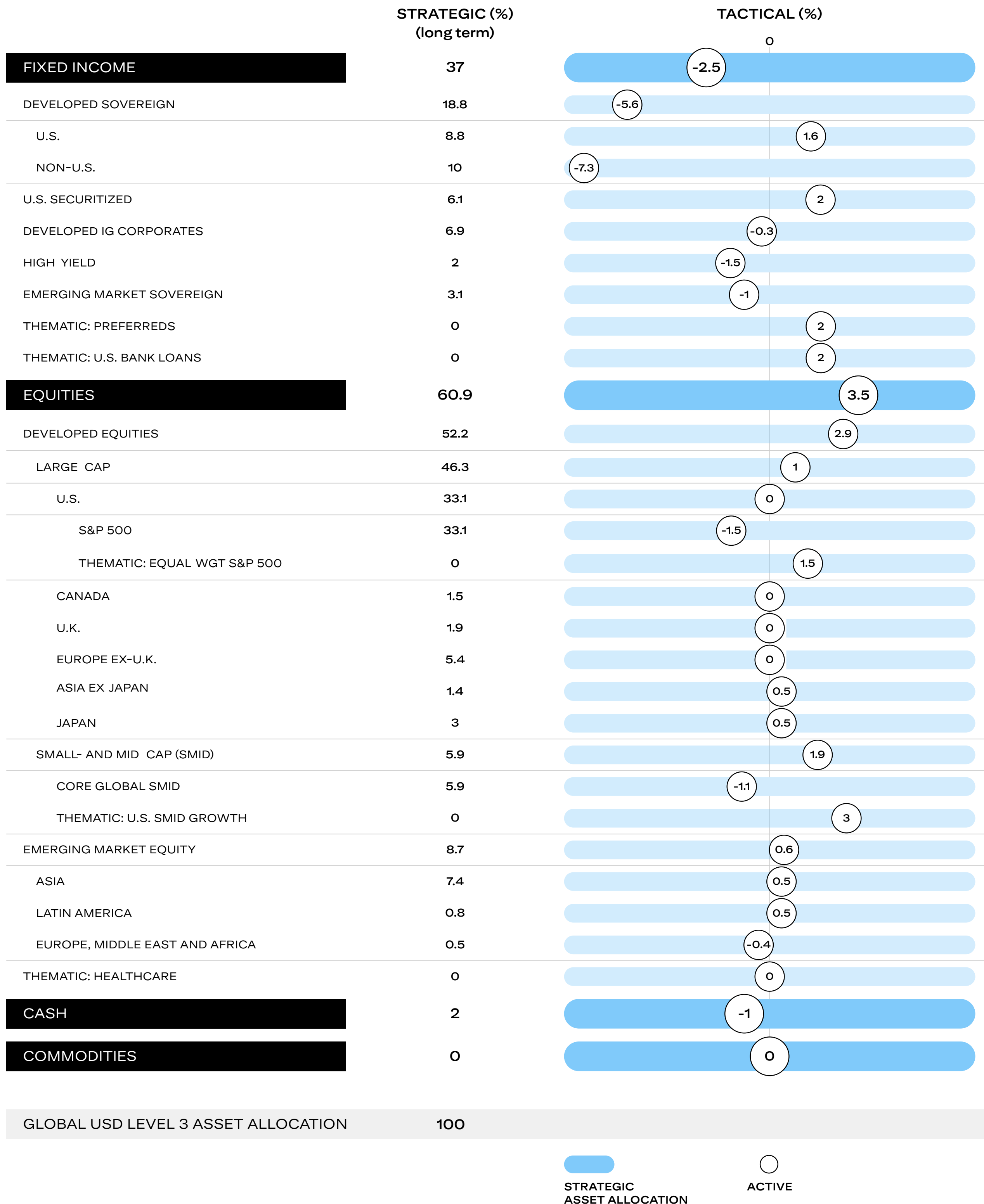
In the face of geopolitical discord, we look to global diversification to help address risks. We believe such allocations are likely to withstand volatility better than portfolios concentrated in a region where a significant geopolitical flashpoint occurs. We also see value in exposure to investments relating to “economic security” – vital aspects of global supply chains and national security. These include supplies of traditional energy, technology such as semiconductors, defense and cybersecurity. Many of these are tied to our **unstoppable trends**, the powerful, long-term forces that may reshape the world around us – see, for example, **positioning portfolios amid U.S.-China polarization.**

Among our unstoppable trends, are the advance of artificial intelligence (AI). We expect AI to enhance human output in coming years, while creating new social and cybersecurity risks. If so, AI could enable the “speed limit” of the global economy’s growth to rise over time. In the meantime, we see the benefits of this game-changing technology spreading to more industries – **AI: getting more real.**

As the global economy’s “rule-breaking” expansion looks poised to continue in 2025 and 2026, we therefore see many ways to position portfolios for what may follow. Our approach stresses discipline, allocating to potential opportunities within the framework of a long-term plan and understanding the risks. While the economy may break the rules from time to time, preserving and growing wealth calls for investors to stay the course.

our positioning

ASSET CLASSES | GLOBAL USD LEVEL 3 ASSET ALLOCATION



	STRATEGIC (%) (long term)	TACTICAL (%)
FIXED INCOME	37	-2.5
DEVELOPED SOVEREIGN	18.8	-5.6
U.S.	8.8	1.6
NON-U.S.	10	-7.3
U.S. SECURITIZED	6.1	2
DEVELOPED IG CORPORATES	6.9	-0.3
HIGH YIELD	2	-1.5
EMERGING MARKET SOVEREIGN	3.1	-1
THEMATIC: PREFERREDS	0	2
THEMATIC: U.S. BANK LOANS	0	2
EQUITIES	60.9	3.5
DEVELOPED EQUITIES	52.2	2.9
LARGE CAP	46.3	1
U.S.	33.1	0
S&P 500	33.1	-1.5
THEMATIC: EQUAL WGT S&P 500	0	1.5
CANADA	1.5	0
U.K.	1.9	0
EUROPE EX-U.K.	5.4	0
ASIA EX JAPAN	1.4	0.5
JAPAN	3	0.5
SMALL- AND MID CAP (SMID)	5.9	1.9
CORE GLOBAL SMID	5.9	-1.1
THEMATIC: U.S. SMID GROWTH	0	3
EMERGING MARKET EQUITY	8.7	0.6
ASIA	7.4	0.5
LATIN AMERICA	0.8	0.5
EUROPE, MIDDLE EAST AND AFRICA	0.5	-0.4
THEMATIC: HEALTHCARE	0	0
CASH	2	-1
COMMODITIES	0	0
GLOBAL USD LEVEL 3 ASSET ALLOCATION	100	

Source: Citi Wealth Investments Global Investment Committee and Citi Wealth Strategic Asset Allocation and Quantitative Research Team, as of Nov 9, 2024. The above table is an example for educational and illustration purposes only and does not constitute a portfolio recommendation. It was generated without taking into account any individual's specific circumstances or requirements. Investors looking to develop their portfolio should contact their Citi representative for further guidance. Risk level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk level 3 may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance. The asset classes used to populate the allocation model may underperform their respective indices and lead to lower performance than the model anticipates.

the long-term view for asset classes: *moderate optimism*

While the next decade will likely see lower returns than the last couple of years, we continue to make the case for global diversification.

To build and maintain a core portfolio, you need a long-term investment plan. This plan – also known as a strategic asset allocation – sets out how much to allocate to each asset class. At Citi Wealth, we create such a plan for each client using our own methodology: Adaptive Valuation Strategies (AVS). AVS takes current valuations to estimate returns over the next decade. Based partly on these estimates, it suggests a suitable mix of asset classes for pursuing each client's goals. So, what is AVS saying about the outlook for returns over the coming decade?

key takeaways

→ Rising markets in 2023 and 2024 have raised valuations across asset classes

→ But our ten-year return forecasts make us moderately optimistic

→ Portfolios concentrated in a single asset class with a lower Strategic Return Estimate (SRE) may prove even riskier

→ Holding too much cash is likely to prove unrewarding

Figure 1 shows our Strategic Return Estimates (SREs) for ten major asset classes. SREs are annualized forecasts over a decade that may not be achieved. After two years of strongly rising markets, valuations are no longer as low as they were. As such, SREs have also come down from where they were this time last year or even in mid-2024. Alongside these forecasts, we share Extreme Downside Risk.

Also displayed in **figure 1** is Extreme Downside Risk (EDR) for each asset class. Based on historical data, EDR addresses the most meaningful risk for investors: that of an allocation suffering severe losses during a crisis. SREs and EDRs are closely related, with higher returns coming with higher risks.

FIGURE 1

our return and risk estimates over a decade

	SRE from 2025 to 2035	SRE from mid-2024 to mid-2034	EDR from 2025 to 2035
EQUITIES	5.6%	6.4%	
Developed Markets	5.2%	6.0%	-55.8%
Emerging Markets	9.2%	10.4%	-63.8%
FIXED INCOME	4.8%	5.3%	
Investment Grade	4.6%	5.1%	-11.9%
High Yield	5.6%	6.3%	-49.8%
Emerging Markets	6.1%	7.1%	-45.5%
CASH	3.2%	3.2%	0.0%
HEDGE FUNDS	8.1%	8.5%	-36.9%
PRIVATE ASSETS	12.6%	14.6%*	-71.6%
Private Equity	13.5%	14.6%	-78.7%
Private Credit	7.6%	n/a*	-25.1%
REAL ESTATE	11.0%	10.8%	-78.9%
COMMODITIES	2.5%	2.6%	-50.5%

Source: Citi Wealth Strategic Asset Allocation and Quantitative Research Team. Strategic Return Estimates (SREs) 2025 (based on data as of Oct 2024), prior Strategic Return Estimates for mid-year 2024 (based on data as of Apr 2024). The Strategic Return Estimates are calculated annually and can be reassessed periodically. Returns estimated in U.S. Dollars. All estimates are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Strategic Return Estimates are no guarantee of future performance. Extreme Downside Risk (EDR) calculates the worst potential loss that a particular allocation may suffer within a rolling twelve-month period over ten years. **Past performance is no guarantee of future returns.**

Strategic Return Estimates based on indices are Citi Wealth's forecast of returns for specific asset classes (to which the index belongs) over a 10-year time horizon. Indices are used to proxy for each asset class. The forecast for each specific asset class is made using a proprietary methodology that is appropriate for that asset class. Equity asset classes utilize a proprietary forecasting methodology based on the assumption that equity valuations revert to their long-term trend over time. The methodology is built around specific valuation measures that require several stages of calculation. Assumptions on the projected growth of earnings and dividends are additionally applied to calculate the SRE of the equity asset class. Fixed Income asset class forecasts use a proprietary forecasting methodology that is based on current yield levels. Other asset classes utilize other specific forecasting methodologies.

*Private Assets at the mid-year stage consisted only of Private Equity; an SRE for Private Credit was not calculated.

SREs do not reflect the deduction of client fees and expenses. Past performance is not indicative of future results. Future rates of return cannot be predicted with certainty. Investments that pay higher rates of return are often subject to higher risk and greater potential loss in an extreme scenario. The actual rate of return on investments can vary widely. This includes the potential loss of principal on your investment. It is not possible to invest directly in an index.

All SRE information shown above is hypothetical, not the actual performance of any client account. Hypothetical information reflects the application of a model methodology and selection of securities in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. See Glossary for definition of asset classes and terms.

EQUITIES AND FIXED INCOME

Shares from advanced economies – including the U.S., Europe and Japan – have an SRE of 5.2%. Midway through 2024, this stood at 6.0%. For Emerging Equities – shares from economies including China, India and Brazil – the SRE is 9.2%.

It's a similar story across Fixed Income, where prices and valuations have also risen. Our forecast for Investment Grade – which includes the highest quality bonds from governments and companies in advanced economies – has an SRE of 4.6%. High Yield – riskier bonds from less creditworthy borrowers – and Emerging Market Fixed Income – bonds from developing economies – have SREs of around 5.6% and 6.1% respectively. Again, these estimates are somewhat lower than in the recent past.

Lower potential estimated returns in Equities and Fixed Income have knock-on effects elsewhere. Private Equity's SRE of 13.5% has been reduced by rising valuations in publicly traded shares. Likewise, Hedge Fund SREs are linked to those in publicly traded shares and bonds. In this asset class, our forecast is 8.1%, while Real Estate has little changed at 11.0%.

PRIVATE CREDIT

Private Credit – non-traditional loans from lenders other than banks – has grown as a major asset class over recent years. We have thus decided to publish Private Credit's own SRE and added it as a sub-asset class under our Private Assets (which includes Private Equity). At 7.6%, it is higher than our estimates for the three fixed income asset classes. Of course, this higher return potential comes with risks, including less liquidity. We consider the potential opportunities and risks in **complementing core portfolios with private asset classes.**

moderate optimism

HOW TO INTERPRET OUR LATEST SRES?

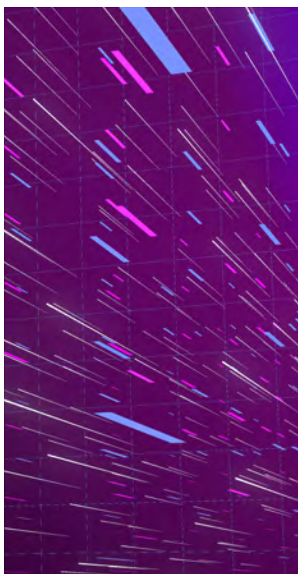
SREs are not meant to forecast returns in the year or two ahead. Instead, they are an average of forecasts over a decade, in which there will be better years and worse years. Over time, most decades have hosted at least one recession and recovery.

We believe our SREs' key message to be about diversification. In recent years, portfolios concentrated in Developed Equities – and specifically in U.S. equities – have typically performed well. But given the decline in Developed Equities' SRE, we think that such concentration is likelier to prove even riskier.

Instead, we believe investors should ask themselves whether their portfolios are following their long-term plan. If there are asset classes in their plan that do not feature enough or at all in their portfolios, it may be a good moment to seek broader diversification.

the dollarization of *cryptocurrencies*

Stablecoins – which account for most of cryptocurrency activity worldwide – could end up reinforcing the U.S. dollar's dominance.

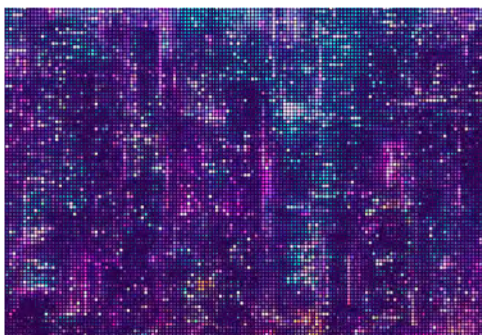


key takeaways

- → Stablecoins are cryptocurrencies whose value is linked to another asset
- → They are widely used in payments, money transfer, saving and lending beyond just the cryptocurrency ecosystem
- → Since most are pegged to the U.S. dollar, further growth could bolster that currency's status
- → Stablecoin risks may include, for example, issuer solvency, custodian problems and "de-pegging"

In the world of digital assets, the likes of Bitcoin and Ethereum dominate headlines. Their volatility – and hence potential to generate rapid gains or losses – have seen them develop a substantial following among investors. Away from the limelight, however, a different kind of cryptocurrency is gaining in popularity: stablecoins.

Stablecoins are cryptocurrencies whose market value is pegged to another asset. Minted and controlled by private companies, the most widely used stablecoins are backed by central bank currencies such as the U.S. dollar or euro. Others are linked to physical commodities like gold or oil. The idea behind this pegging – often at a one-to-one rate – is to provide them with stability, as their name suggests. There is another less popular type called algorithmic stablecoins. These are not backed by any asset but instead use software to automatically adjust demand and supply, seeking to maintain a stable price.



Initially, stablecoins played a supporting role in crypto markets. They enabled traders to keep their funds in a crypto asset before buying into or after selling out of the likes of Bitcoin and Ethereum. So, rather than having to switch back into, say, actual U.S. dollars, traders could keep their liquid reserves in a dollar-pegged cryptocurrency.

The most widely used stablecoins are backed by bank currencies

Subsequently, though, stablecoins have entered much broader daily use. Many people rely on them to send money or make purchases, often being quicker and cheaper than doing bank transfers, especially internationally. Stablecoins can also serve as interest-earning savings and as collateral in peer-to-peer lending. They are especially popular in emerging countries with inflation-dogged currencies,[1] where citizens typically prefer saving and spending in U.S. dollars but may face restrictions on doing so.

Since their inception in 2014, stablecoins have amassed nearly $180bn in market capitalization, much of that in the last five years – **figure 1.**[2] Activity has reached record highs, with $5.5 trillion in value across the first quarter of 2024.[3] By comparison, Visa saw about $3.9 trillion in volume.[4] In response to this challenge, Visa, PayPal and other traditional providers are adapting by offering stablecoins of their own or settling transactions in other firms' coins.

Originally, cryptocurrencies such as Bitcoin were conceived as rivals to central bank–issued currencies. Indeed, some believed – and continue to believe – that Bitcoin might end the U.S. dollar's hegemony. However, stablecoins – which account for more than four-fifths of cryptocurrency trading volume – are challenging that narrative. Around 93% of stablecoins are U.S. dollar denominated.[5] Most of these are issued by companies that maintain reserves of dollars, U.S. Treasuries, repurchase agreements and money market funds as backing.

Despite their backing by government-issued currencies, stablecoins are not without risks. Issuers may not hold sufficient reserves or may become insolvent. Those providing custody to reserves could also experience difficulties. Given concerns over money laundering and fraud, regulators may place restrictions on these cryptocurrencies. Indeed, a couple of stablecoins have even collapsed, while the value of others have temporarily "de-pegged" from their backing assets, declining below one-for-one.

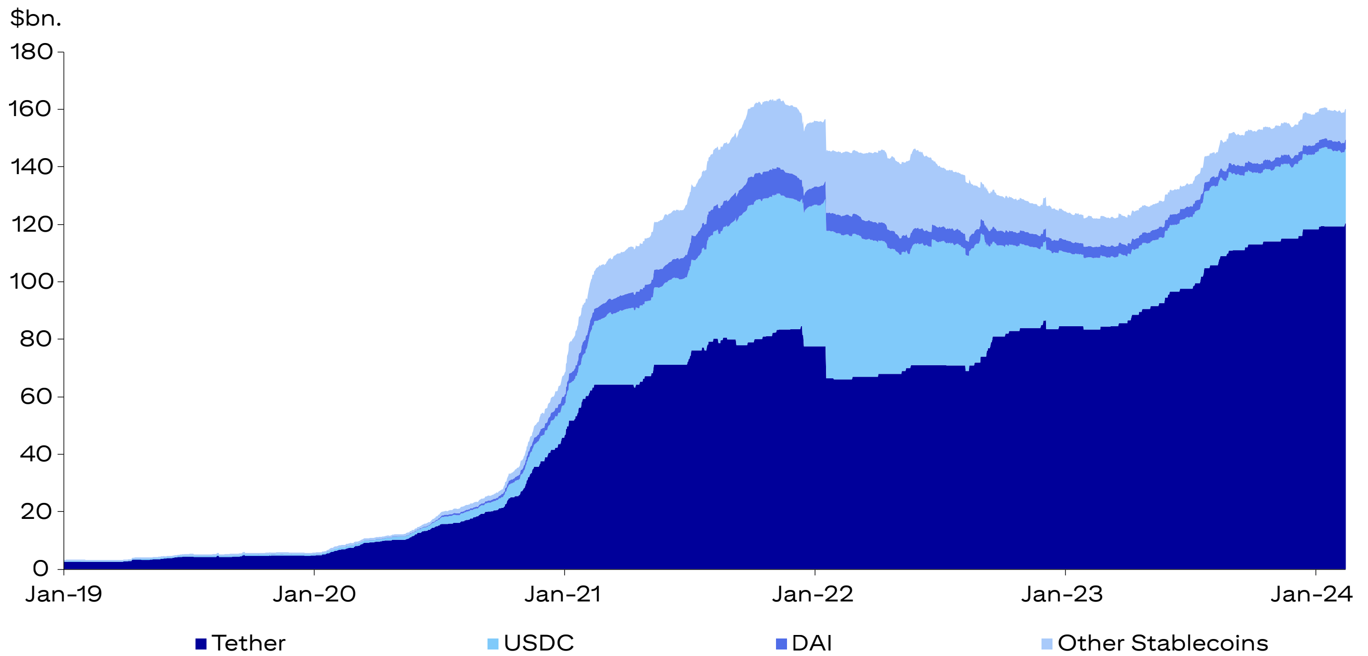
Stablecoins could make dollars more accessible to the world

Nevertheless, demand for stablecoins has kept growing. The potential implications for the broader financial system have attracted the interest of regulators globally. In the European Union, for example, new rules covering stablecoins came into effect in July 2024.[6] The U.S. House of Representatives may vote on an act that aims to introduce a regulatory framework for these assets.[7] While such initiatives aim to protect investors and preserve financial stability, greater regulatory clarity could also potentially further boost their appeal. If so, demand for U.S. Treasury bills from stablecoin issuers might grow from around 1% of purchases today.[8]

Rather than usurping the dollar, therefore, this variety of cryptocurrency could thus make dollars more accessible to the world and reinforce the U.S. currency's longstanding global dominance.

FIGURE 1

total stablecoin market capitalization



Source: Citi Research, Coin Metrics, as of Nov 1, 2024. Stablecoins shown are the top three by market capitalization: Tether (USDT), USD Coin (USDC) and DAI, a coin on the Ethereum blockchain. 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. Past performance is no guarantee of future results. Real results may vary. See Glossary for definitions.

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[1] Citi Research Digital Asset Take: A Framework for Stablecoins, as of Nov 2024

[2] Citi Research Digital Asset Take: A Framework for Stablecoins, as of Nov 2024

[3] Bloomberg, as of May 2024

[4] Citi Research Visa Metrics, as of Oct 2024

[5] Citi Global Insights – Digital Dollarization, as of Feb 2024

[6] Bloomberg, as of Apr 2023

[7] Congress.gov, as of Apr 2024

[8] Bloomberg, as of Aug 2024

core portfolio insights

core portfolios

We believe that establishing a core portfolio – a globally diversified mix of assets kept fully invested across market cycles – is central to seeking wealth preservation and growth over time. Every core portfolio should be based on a long-term plan.

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broaden portfolio horizons

Many portfolios do not have exposure to all the asset classes envisaged in their long-term plan. We see potential to broaden across global equities, fixed income, and for suitable and qualified investors, private equity, private credit, real estate and hedge funds.

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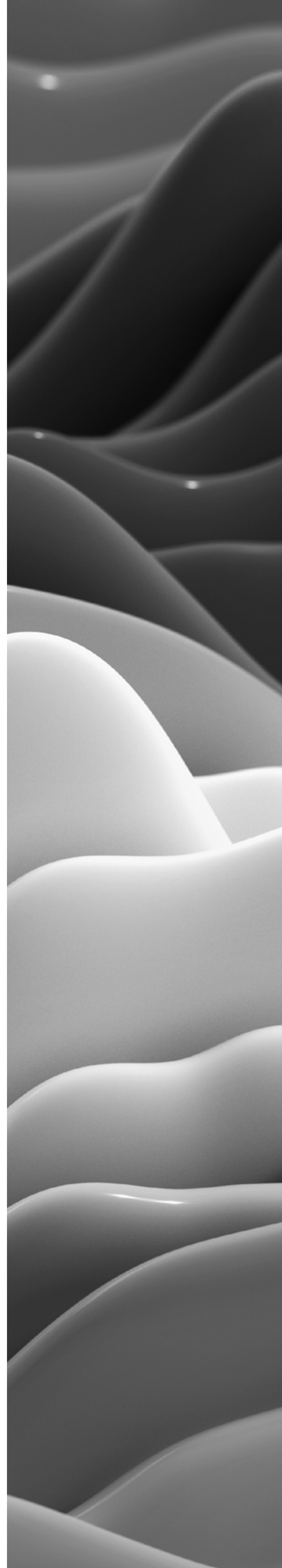
opportunistic investing

A much smaller opportunistic portfolio can potentially complement the returns of a core portfolio. Such positions are often more concentrated, shorter-term and have little or no performance history.



staying the course: *broadening portfolio horizons*

High U.S. large-cap equity valuations argue against concentrating portfolios in that market and in favor of global diversification.

key takeaways

- → Portfolios heavily concentrated in the U.S. have performed strongly in recent years but may not do as well over the next decade
- → We make the case for seeking to broaden portfolios in line with investors' long-term investment plans and investment objectives
- → Alternative asset classes may offer return and diversification potential for suitable and qualified investors' portfolios
- → Global diversification neither guarantees a profit nor ensures against losses amid falling markets

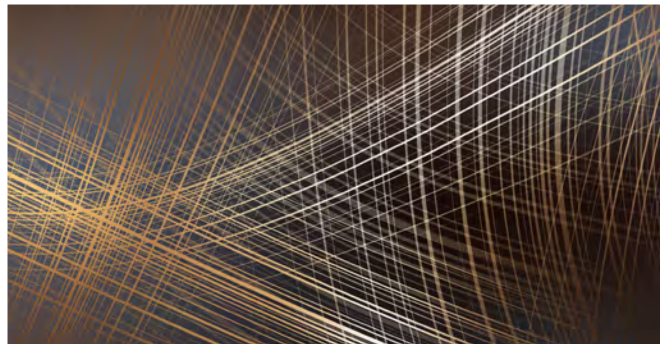
Staying the course is essential in most aspects of life, from business and careers to relationships to education to sports. We believe it also matters deeply in investing. Historically, those who have stayed the course with a core portfolio – a globally diversified mix of assets that is fully invested throughout market cycles – have been likelier to reach their wealth goals than those who have not.

The last three years are a case in point. In 2022, equities and fixed income – the mainstay of most core portfolios – suffered simultaneous double-digit calendar-year losses. Such rare pain panicked some investors into abandoning their long-term investment plan and shifting their portfolios heavily into cash. This has proved a costly mistake. Since the end of 2022, global equities and global fixed income have returned 44.9% and 10.4% respectively. By contrast, cash has returned just 9.5%.[1]

As we enter 2025, we reiterate our case for staying the course in core portfolios. However, this does not mean standing still, as past performance may not be repeated going forward. In recent years, U.S.-focused investors could have achieved strong results. U.S. equities and U.S. bonds would have returned 45.3% and 7.7% respectively since the end of 2022, compared to 28.3% and 12.3% for non-U.S. equities and fixed income.[2] We think this is much less likely to recur over the next decade.

Richly valued U.S. large-cap equities may produce only modest returns

Richly valued large-cap U.S. equities – the main constituent of developed equities – may produce only modest returns averaged between now and 2035, as we discuss in **the long-term view for asset classes: moderate optimism.**



At the same time, equity valuations from other developed markets and emerging markets suggest scope for potentially improving returns.

Of course, our call is not to abandon either U.S. equities or Treasuries. Both are core components of almost any diversified asset allocation and will remain so for the long term. Instead, we argue for not overlooking entire markets and asset classes worldwide. We frequently encounter investors whose portfolios are much narrower than their long-term investment plans envisage. Large cash holdings, exposure to a single equity market, investment grade fixed income only and, among suitable and qualified investors, a complete absence of any alternative asset classes are all too common.

Our message thus concerns broadening portfolio horizons for 2025 and beyond. This begins with comparing your long-term investment plan and investment objective with your portfolio. If there are gaps, overlaps or too much cash, consider strategies to address this. On the pages that follow, we explore some potential ways to broaden portfolios. In the near term, we believe the rally in equities can expand further – see **equities: shifting leadership in an ongoing bull market.** Likewise, we see potential in fixed income beyond U.S. Treasuries – see **fixed income: credit at the core.**

For suitable and qualified investors, there may be scope to broaden outside of equities and fixed income. On a multi-year view, we forecast that some of the higher returns may occur in alternative asset classes.[3] We discuss segments where we see potential across private equity, private credit, real estate and hedge funds – see **the case for hedge funds in suitable and qualified investors' core portfolios.**

Naturally, broadening allocations is not a free lunch. The potential returns to be sought from high-yield fixed income or alternatives entail taking on additional risks, which may be unfamiliar. These may include illiquidity and even a total loss of principal. Diversification doesn't guarantee a profit or protect against loss in falling markets.

Over time, though, we believe that globally diversified portfolios may prove to be equipped to seek growth and endure tougher times. Concentrated and cash-heavy allocations are likely to disappoint. We advocate for staying the course and broadening where appropriate for individual investment objectives.

[1] Bloomberg, as of Nov 5, 2024. Global equities are represented by MSCI ACWI, Global Fixed Income by Bloomberg Global Aggregate Bond Index, and cash by U.S. Treasury 3-month bill money market yields.

[2] Bloomberg, as of Nov 5, 2024. U.S. and non-U.S. equities are represented by MSCI USA and MSCI ACWI ex USA respectively, US Fixed Income by Bloomberg US Aggregate Bond Index and Global Aggregate ex US indices.

[3] See **the long-term view for asset classes: moderate optimism** on page 16

equities: *shifting leadership in an ongoing bull market*

While U.S. technology has dominated much of the upside to date, other parts of the market could outperform in the coming year.

key takeaways

- → We look for the bull market in equities to continue in 2025
- → Some U.S. sectors may do better as its economy faces inwards, such as small- and mid-cap and various large-cap segments
- → India, east Asian AI-exposed markets, Japan and Brazil may offer attractions
- → Risks include inflation, rising trade tensions and valuations

The bull market in global equities is more than two years old. Having hit the lows of its 24% sell-off in September 2022, the MSCI AC World Index – which embraces large- and mid-capitalization shares from developed and emerging economies – had delivered a total return of 20% by Nov 14, 2024. Following a sharp rebound in 2023, we believe that its uptrend can continue in 2025 – albeit at a more modest pace.

Given our forecast of ongoing economic growth, we believe corporate earnings can keep rising over the coming year – see **figure 1** in **strategies for a "rule-breaking" expansion.** More sectors saw earnings progress in 2024 than in 2023, with further potential in 2025. If so, we may see broader participation in the bull market, extending further beyond the U.S. technology giants that have led for much of it.

Naturally, there are risks to our positive view. Valuations in the U.S. are high by past standards. On a ten-year view, we believe this may point to more modest returns for developed equities, of which the U.S. makes up some 70% – see **the long-term view for asset classes: moderate optimism.** High valuations leave equities more exposed when things go wrong.

The incoming Trump administration could widen the already-gaping U.S. fiscal deficit further. In turn, this could stoke inflationary concerns. If the U.S. Federal Reserve then reversed its current interest rate-easing cycle, it might choke off the bull market. Emerging markets – which are sensitive to rising U.S. rates and a stronger U.S. dollar – might be hit. Trade policy is another uncertainty. Were the U.S. to impose sweeping tariffs on imported goods – likely provoking retaliation in kind – companies' supply chains could be disrupted.

Nevertheless, we see potential in various parts of the equity market for 2025 and thereafter, both in the U.S. and well beyond.

FIGURE 1

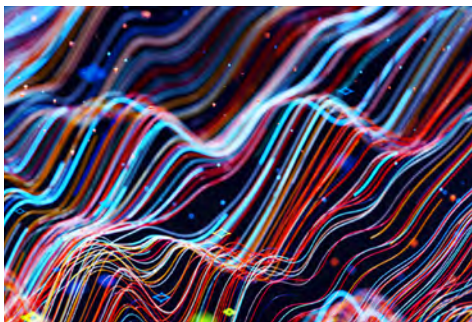
select equity market earnings and valuations

Market	Forward PE	Forecast EPS growth 2025 %	Forecast EPS growth 2026 %
S&P 400 Growth	22.3	10.4	14
S&P 600 Growth	20.9	12.6	16
U.S. Banks	13.3	4.8	12.8
MSCI India	25	16.5	16.1
MSCI China	10.9	9.4	11.9
MSCI Japan	15.2	8.3	9.3
MSCI Brazil	9.3	15.0	10.3
MSCI EM Asia	14.3	14.2	12.9

Source: Bloomberg, FactSet, as of Nov 14, 2024. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. **Real results may vary.**

STRATEGIES FOR A MORE INWARD-FACING U.S.

A return to an "America First" agenda in the U.S. is likely to influence equity market leadership over the next four years. Republicans controlling Washington are set to prioritize deregulation, extending tax cuts and greater use of tariffs. All of this could attract inflows into U.S. dollar assets for a time. However, potential upside may not be evenly spread. These include domestically oriented U.S. large caps, such as banks, industrial real estate, robotics and automation specialists, and defense contractors.



HOW DEREGULATION AND DEMAND COULD BOOST BANKS

Positive forces may be converging for the banking sector. Short-term interest rates have been falling, while longer-term yields have been rising. This means banks can borrow more cheaply and lend out at higher rates. And with loan activity picking up, they seem well placed to do so.

Possible Trump administration deregulation could enable banks to do business more easily and take risks using their balance sheets. An acceleration in mergers & acquisitions and initial public offerings may also follow. This could boost fees for investment banks, which have suffered in recent years from weak deal flow. Meanwhile, should risk asset markets keep rising, banks' wealth management revenues may grow alongside their assets under management.

Of course, these scenarios may not come to pass, as policy implementation under a new administration is always uncertain.

MAKE AMERICA MANUFACTURE AGAIN: THE ENABLERS

A further push to bring manufacturing activity back to the U.S. seems likely, especially in key sectors such as technology. This onshoring is likely to see much activity carried out via robotic technology in state-of-the-art facilities rather than by human workers.

In this event, sectors that support cutting-edge manufacturing may see growth. These could include the makers of robotics and automation technology, constructors specialized in creating warehousing and factories, and the companies that produce heavy machinery needed to build new facilities.

Possible deregulation could enable banks to do business more easily

Aside from the risk that support for reshoring disappoints, supply chain disruption could impact potential beneficiaries of reshoring. High valuations for robotics and automation providers may limit upside potential.

A MATTER OF SIZE

In recent times, the largest U.S. technology equities have been at the forefront of the bull market. In the process, those stocks – which account for a significant proportion of the S&P 500 Index – have driven that index's valuation much higher. By contrast, U.S. large-cap equities have a lower valuation when every company has the same weight in the index. If the corporate earnings recovery continues broadening, we believe equal-weighted U.S. large-cap equities have outperformance potential. The opposite might be true, of course, if the big technology firms experience another strong run, though.

We also see potential in smaller- and mid-capitalization (SMID) equities. If the Trump administration relaxes regulation and cuts taxes, SMID firms may benefit more, as keeping compliant with regulations is especially burdensome for them. Also, SMID companies' businesses are typically more domestically focused. As such, they may be less vulnerable if the new administration's policies trigger a global trade war. We are attracted, for example, to mid-cap technology, which has lower valuations than large-cap technology, despite higher potential growth and greater likelihood of mergers & acquisitions activity. The S&P 400 Growth Index and S&P 600 Growth Index are forecast to deliver 10% and 13% earnings growth in 2025. Quality SMID firms that are not over-leveraged are our preference.

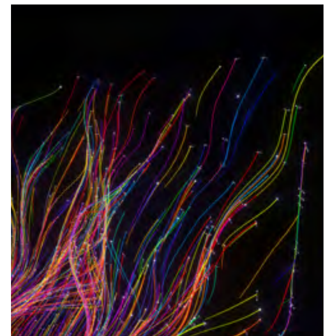
Still, SMID equities have been more volatile than large caps. While not our base case, a U.S. economic downturn would likely hit them harder. During market turbulence, selling out can be more challenging. And we cannot rule out ongoing leadership by large- and mega-cap equities.

SEEKING GLOBAL GAINS

Particularly if widespread tariffs are imposed, economies that trade heavily with the U.S. may suffer. Fears of this have already sparked volatility in equity markets such as China, Mexico and in Europe. However, we do not think that all markets outside the U.S. will underperform.

INDIA: MORE GROWTH, LESS CURRENCY VOLATILITY

India is the fastest growing major economy globally. We expect its real GDP to rise 7% in 2025, with 4–5% inflation. High growth may continue over the next five years, mostly driven by domestic demand. India is industrializing and urbanizing, while becoming more business-friendly. The stock market is well supported by domestic investors, while the central bank's large foreign exchange reserves have brought greater stability to the Indian rupee. In 2025 and 2026, consensus forecasts point to 16.5% and 16.1% in earnings growth for the MSCI India Index.[1]



The market trades on 22 times forecast earnings for 2025, compared to 13 for the MSCI Emerging Markets Index. This valuation leaves limited scope for earnings disappointment. Although not our base case, higher inflation and interest rates could dampen growth.

[1] Haver, as of Nov 15, 2024

AI BENEFICIARIES IN EAST ASIA

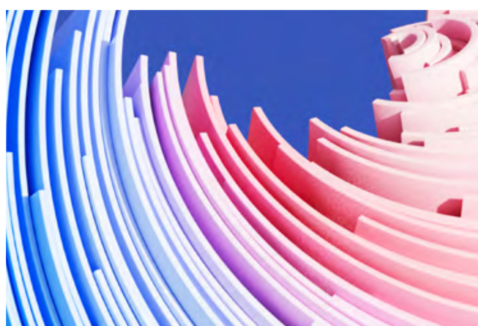
We expect further demand growth for key inputs such as semiconductors

The artificial intelligence (AI) revolution remains in its early stages. As the rollout continues across industries – see **AI: getting more real** – we expect further demand growth for key inputs such as semiconductors. Taiwan and South Korea host the largest semiconductor and fabrication companies. We believe they are well placed to address current infrastructure needs and future upgrade cycles. We believe this may provide momentum to these markets over time.

Korea's equities continue to trade at a discount to other emerging markets on 7.6 times forecast earnings. The authorities have sought to encourage better practices around dividends and corporate governance, albeit with limited success so far. Taiwanese equities, by contrast, trade on a much higher multiple of 16.3, reflecting their stronger performance in recent times. However, this leaves them more vulnerable to disappointments. Both markets face risks from a global trade war, given their reliance on exports. Likewise, a downturn in the world economy might hit both.

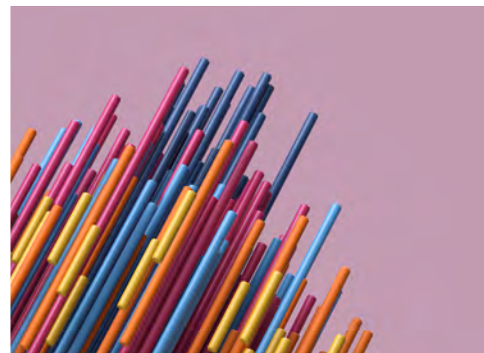
JAPAN: STILL REFLATING AND REFORMING

Japan's efforts to reflate its long stagnant economy are paying off. In 2025, nominal GDP may rise 3.5%, making a third straight year of well-above-trend growth. Tax cuts may help boost consumer spending, while unions are preparing to press for another 5% pay rise in 2025. Against this backdrop, Japanese equities look attractively valued on 15 times 2025's forecast earnings.



The Tokyo Stock Exchange is promoting reform. Listed companies are under pressure to improve governance, transparency, returns on equity and valuations or face delisting or demotion. We expect more consolidation among companies, including in retail, telecoms and financials, which have traditionally been resistant to mergers and takeovers.

As a major exporter, Japan is at risk from a potential trade war. A strengthening of the yen could slow corporate earnings. Corporate reform efforts may fall short, while ongoing interest rate hikes could dampen growth.



BRAZIL: RECOVERY AND DIVERSIFICATION POTENTIAL

Amid contracting Brazilian corporate earnings, local equities have underperformed world equities by 38% over the last two years. In the process, its currency has dipped toward historic lows against the U.S. dollar. However, we believe things may be looking up for Latin America's largest economy and equity market. Brazil's government is working toward a package to shore up public finances, which may help improve investor sentiment. In 2025, consensus forecasts are for a 15% earnings rise.

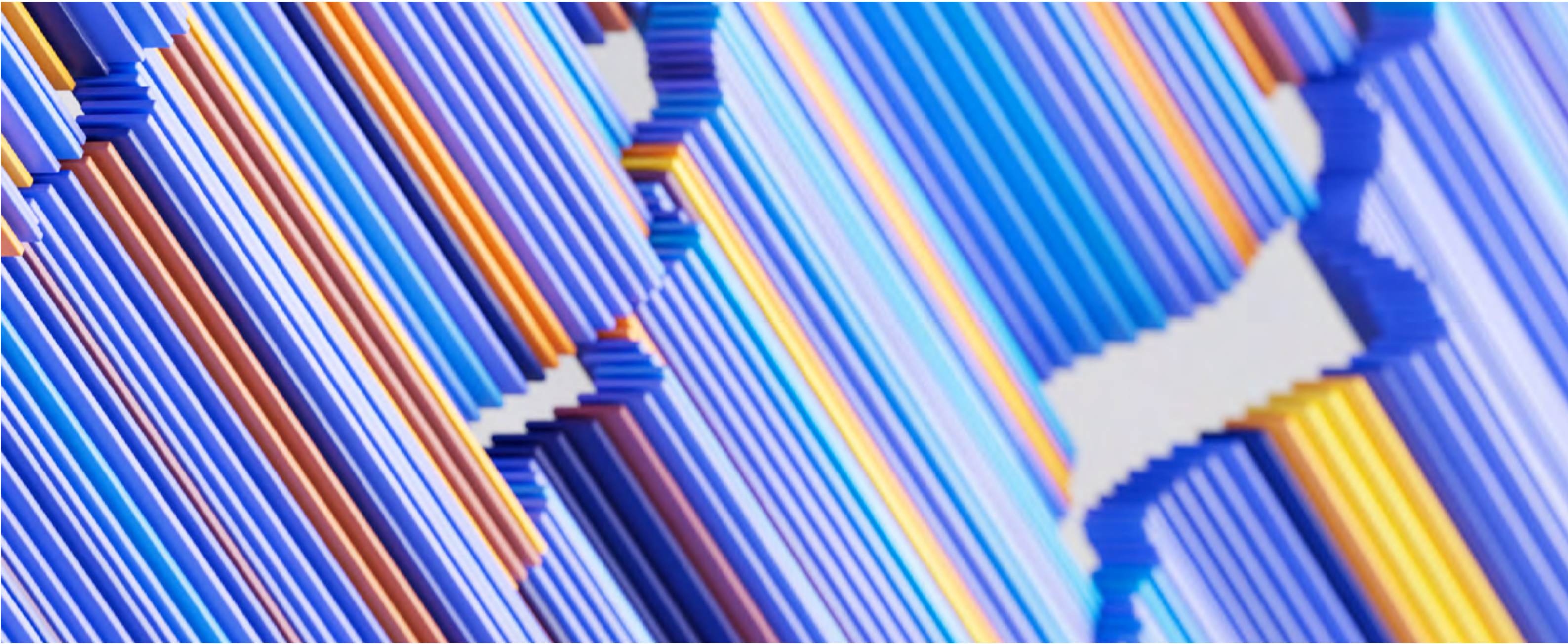
Among the risks to our positive scenario include any weakening of the global economy, further dollar strength and disappointing progress on fiscal consolidation. However, given a multiple of 7 times 2025's forecast earnings and the currency's weakness, we believe these challenges may be largely already priced in. In our view, exposure to Brazil may offer diversification potential for global equity allocations.

fixed income: *credit at the core*

Amid a U.S. rate cutting cycle, we see various potential opportunities for seeking more yield from fixed income.

key takeaways

- As U.S. rates fall, we favor making investment grade (IG) credit a core portfolio holding
- We see potential in certain lower rated IG bonds and sub-IG bonds
- Differentiated credit includes structured credit, bank loans and preferred securities (a hybrid of debt and equity)
- Risks include those relating to repayment, liquidity, interest rates and borrowers repaying early



The U.S. Federal Reserve looks set to continue cutting overnight interest rates cautiously in 2025. The Fed Funds rate could fall from its current 4.75% to about 3.75% by year-end 2025.[1] These declines may be enabled by a slowly declining inflation rate and a weakening yet positive employment picture. The U.S. central bank has repeatedly said that it will keep reducing rates based on improving inflation data, and that it will cut even more aggressively if the labor market unexpectedly weakens.

The Fed's heightened vigilance toward employment marks a departure from the previous few years when it was primarily concerned about the threat of higher inflation. However, if the new Republican administration proposes government budgets for 2025 and subsequent years that risk sharply increasing the deficit, the Fed might cut rates even more slowly – or not at all – to try to head off higher inflation.

WHAT MIGHT THIS MEAN FOR FIXED INCOME INVESTORS?

Rate cuts typically boost bond prices. But we believe that U.S. Treasury yields already priced in most of the expected rate cuts and are now pricing in the possibility of higher government deficits and therefore an increasing supply of bonds. For example, the 5-year U.S. Treasury yield is currently near 4.28%.[2]

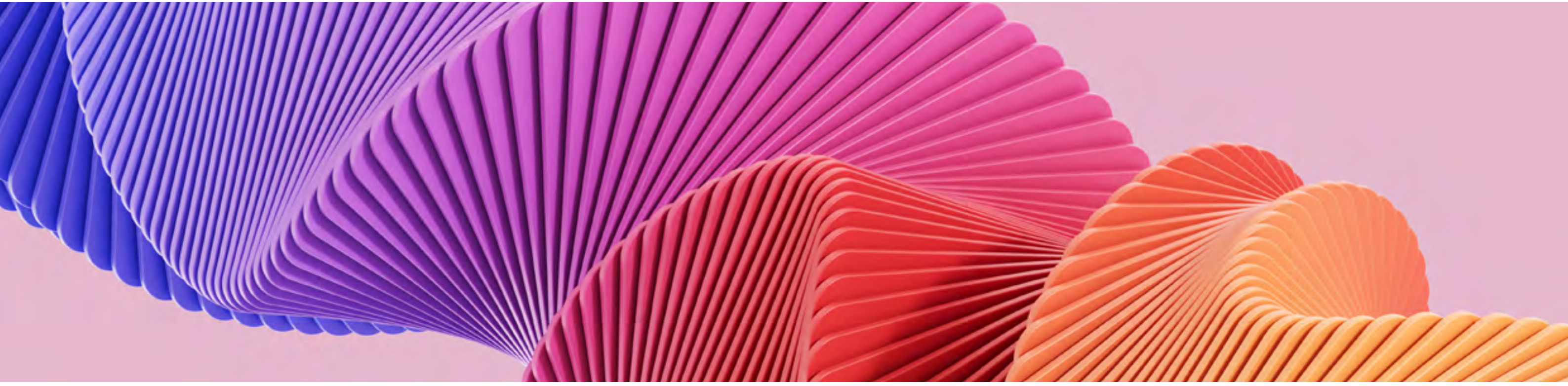
Likewise, we believe the 10-year yield may rise slightly from its current 4.42% to about 4.75% by end-2025.[3] It is likely that only data indicating an increasing possibility of a recession or a geopolitical shock might push yields much lower. In those cases, we could see investors flock to U.S. Treasuries, pushing prices up.

The U.S. central bank has said it will keep reducing rates based on improving inflation data

Given the likelihood of further but limited Fed rate cuts, and uncertainty around the new administration's fiscal plans, investors might focus on a diversified fixed income portfolio with intermediate duration rather than bank deposits and Treasury bills.

Treasury Inflation-Protected Securities ("TIPS") currently yield higher after inflation than they have for most of the last decade. The 5-year TIP, for example, currently yields about 1.85% above annual headline consumer price index (CPI).[4] If inflation increases more than expected, TIPS might offer more return than Treasuries and a potential hedge for a diversified core portfolio.

[1,2,3,4] Bloomberg, as of Nov 13, 2024



WHY WE PREFER CREDIT TO TREASURIES

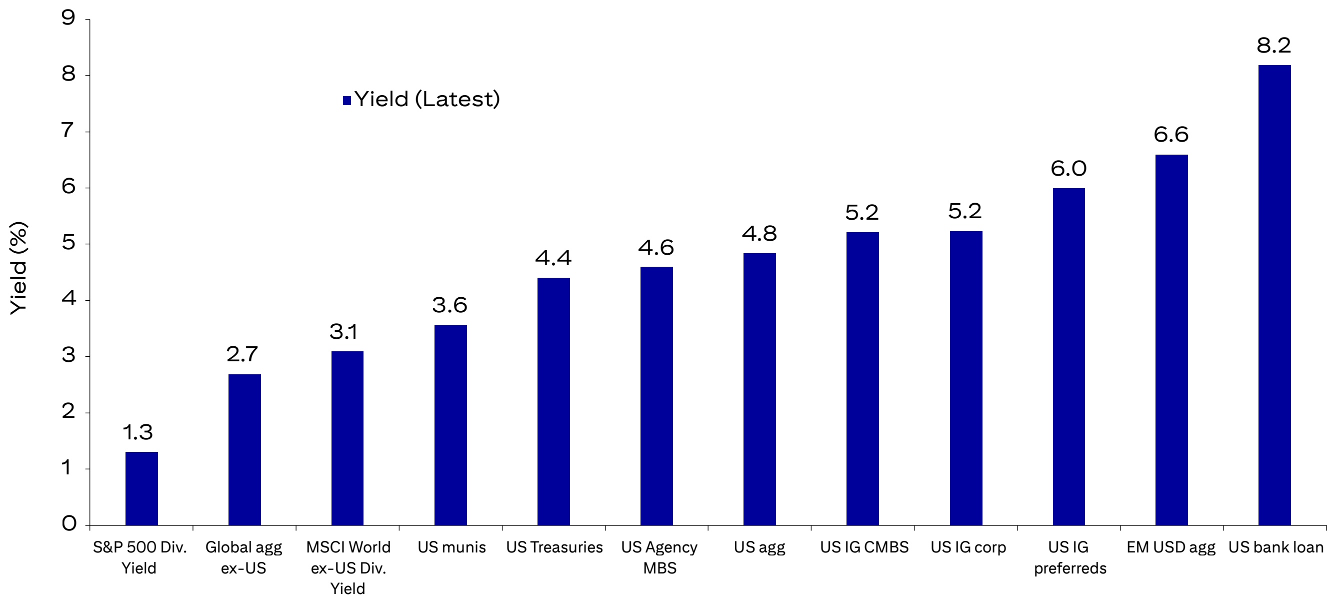
We see greater income potential in credit, i.e., fixed income securities issued by companies. Currently, intermediate U.S. investment grade credit has a yield of 5.04%, compared to 4.29% on equivalent Treasuries.[5] Investors might therefore consider adding intermediate maturity (four-year) investment grade (IG) corporate bonds to their core fixed income holding.

Admittedly, credit's additional yield – or its "spread" over Treasuries – isn't large by past standards. Spreads are about 68 basis points (bps), versus about 150 bps a year ago.[6] But we think the potential additional income makes them worthwhile. In a recession – which we don't expect – credit would likely underperform Treasuries.

In the U.S., selected investment grade-rated municipal bonds (or "munis") may also provide additional yield over Treasuries. Heavy new muni issuance lately has cheapened them relative to Treasuries.

FIGURE 1

yields on various fixed income and equity assets



Source: Bloomberg, as of Nov 20, 2024. Indices cited are: S&P 500 Index, Bloomberg Global Aggregate Fixed Income ex USD Index, MSCI All Country World ex USD, US Munis: Bloomberg US Muni Index, Bloomberg US Treasury Index, Bloomberg US MBS Index, Bloomberg US Agg index, Bloomberg US Investment Grade CMBS Index, Bloomberg U.S. Investment Grade Corporate Index, Ice BofA Investment Grade Institutional Capital Securities Index, Bloomberg Emerging Markets USD Aggregate Index, Morningstar LTSA US Leverage Loan 100 Index. 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. Past performance is no guarantee of future results. Real results may vary. See Glossary for definitions.

LOWERING QUALITY TO SEEK HIGHER RETURNS

BBB-rated[7] corporate bonds have the lowest rating, still qualifying as "investment grade" or "higher quality." And BB-rated corporate bonds are categorized below this as "high yield." Lower-rated bonds come with greater risks, including issuers not meeting coupon payments or repaying what they borrowed. However, for investors who understand and are comfortable with those risks, there may be potential to earn additional spread.

PREFERREDS, STRUCTURED CREDIT AND BANK LOANS

Also for suitable investors who understand and are comfortable with the risks, we see further higher-yielding possibilities among differentiated credit. Investment grade–rated preferred securities' ("preferreds") average yield is around 6.0%. Blending features of equity and debt, preferreds rank below bonds for repayment if the company is liquidated.

Structured credit includes new Agency AA-rated mortgage-backed securities (MBS). Diversified structured credit funds often own lots of MBS in their portfolios, alongside other types of structured credit.

Strategies owning high-yield syndicated bank loans – with an average single-B rating – yield around 8.2%. Their floating rate coupons fall alongside Fed rates. Even so, we still see potential for seeking additional yield.

The flipside of these assets' potentially higher yields are the likes of repayment risk, liquidity risk, interest rate risk, prepayment risk, extension risk on the ultimate maturity date (for preferreds), and the suspension of preferreds' dividends.

Bonds are affected by a number of risks, including fluctuations in interest rates, credit risk and prepayment risk. In general, as prevailing interest rates rise, fixed income securities prices will fall. Bonds face credit risk if a decline in an issuer's credit rating, or creditworthiness, causes a bond's price to decline. High-yield bonds are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issues. Finally, bonds can be subject to prepayment risk. When interest rates fall, an issuer may choose to borrow money at a lower interest rate, while paying off its previously issued bonds. As a consequence, underlying bonds will lose the interest payments from the investment and will be forced to reinvest in a market where prevailing interest rates are lower than when the initial investment was made.

Tax-Exempt Securities: A national municipal portfolio would be tax-exempt from federal taxes for U.S. taxpayers. However, investors are generally required to pay state taxes on any bonds that are issued by states other than the one they reside in. Prior to investing, please check with your own local tax or accounting professional to confirm whether you will be required to pay state taxes on municipal bonds issued by other states.

Tax-Policy Risk: The potential for changes in the code or tax rules that may adversely affect a company's results as well as taxable income to investors.

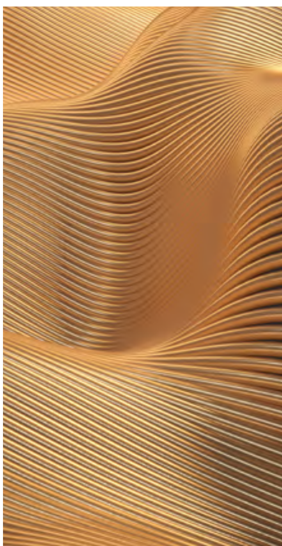
[5,6] Bloomberg, as of Nov 13, 2024

[7] See the Bond rating equivalence table in the disclosures at the end of this publication

[8,9] Bloomberg, as of Oct 16, 2024

complementing core portfolios with *private asset classes*

With higher forecast returns than equities and fixed income, private asset classes may offer potential portfolio benefits for suitable and qualified investors prepared to accept the risks involved.



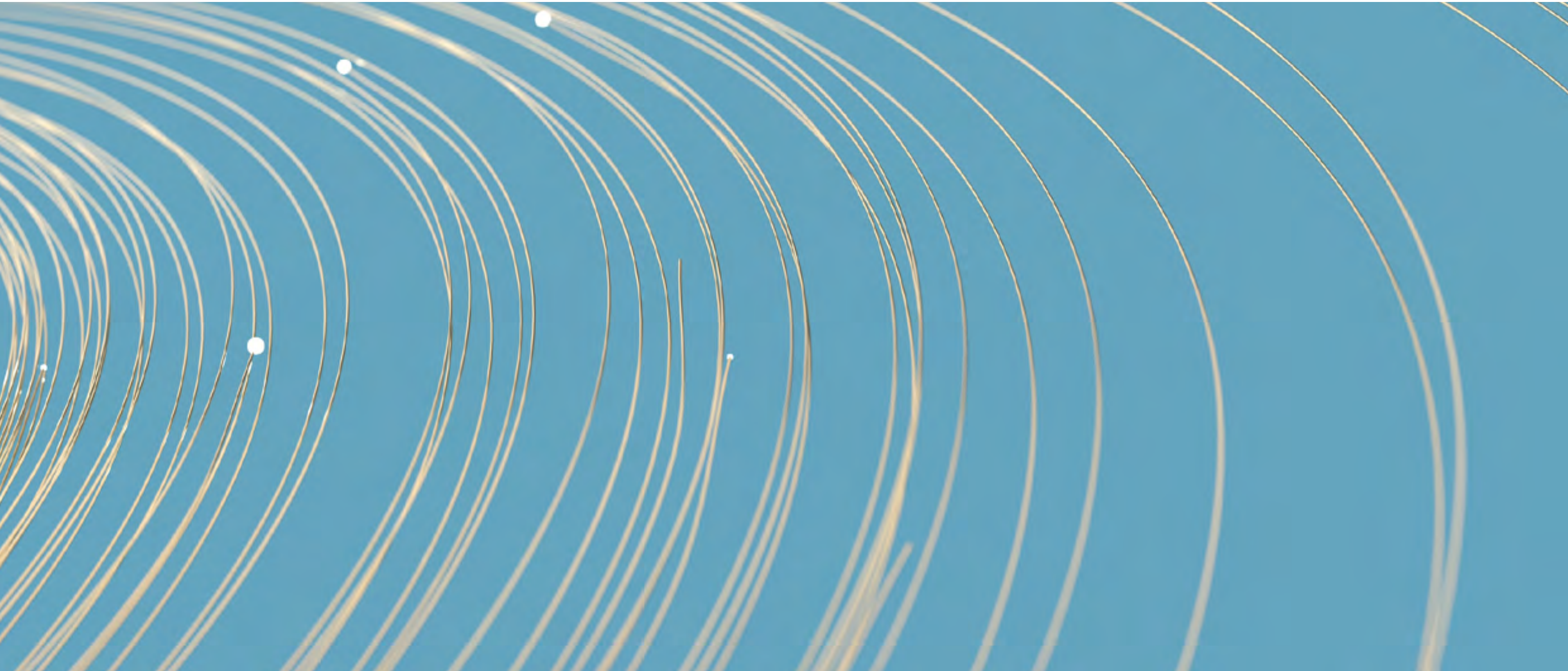
key takeaways

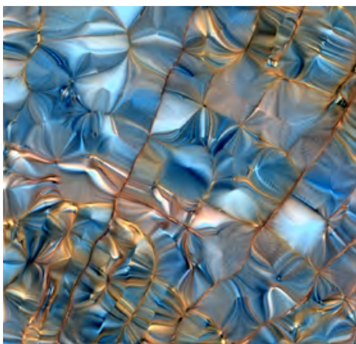
→ We see potential for seeking diversification and returns from private markets

→ Evergreen funds are broadening access to private equity, private credit and real estate

→ We favor the likes of secondary private equity strategies, private credit, and industrial and hospitality real estate

→ Risks include leverage, less transparency and operational issues





Alternative asset classes have attracted increasing amounts of capital over many years. Between 2000 and 2023, assets under management for six categories of alternatives grew at a compound annual rate of 12.4% to over $18 trillion – **figure 1**. We believe alternatives' popularity could gain further as suitable and qualified investors seek returns and portfolio diversification.

Within alternatives, our multi-year outlook for private asset classes is positive. Our strategic return estimates are 13.1% for private equity, 7.6% for private credit and 10.8% for real estate, compared to 5.5% for publicly traded equity and 4.4% for fixed income. While these represent our forecasts of annualized performance averaged over the coming decade, there is no guarantee they will be met. Large year-to-year variations are likely, including scope for deep declines – see **the long-term outlook for asset classes: moderate optimism.**

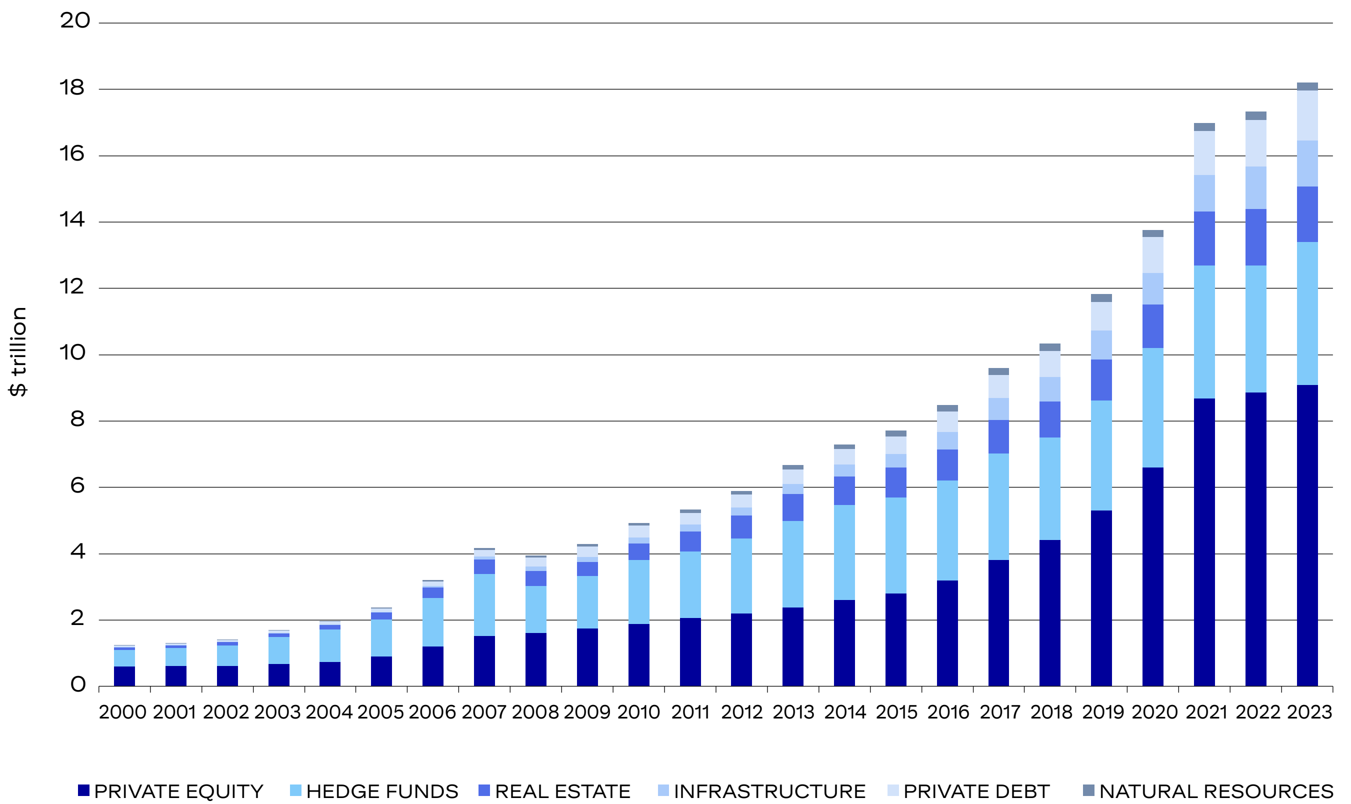
Aside from the potential for returns and diversification, access to private assets is expanding. Managers are offering innovative structures that seek to improve liquidity and flexibility – see **expanding private markets access: evergreen funds.** Nevertheless, we observe that many suitable and qualified investors still do not follow their long-term investment plan when it comes to alternatives, allocating either too little or not at all.

Within alternatives, our multi-year outlook for private asset classes is positive

Here, we set out some private market strategies for broadening portfolio horizons.

FIGURE 1

the long-term rise of alternatives AUM



Source: Preqin and HFRI, as of Dec 31, 2023.

LEVERAGING MARKET INEFFICIENCIES VIA PRIVATE EQUITY

Following a freeze-up since 2021, dealmaking involving privately owned companies has started recovering. However, with a backlog of 11,567 U.S. private equity–held companies having accumulated, more paths to liquidity are being utilized by managers.[1]

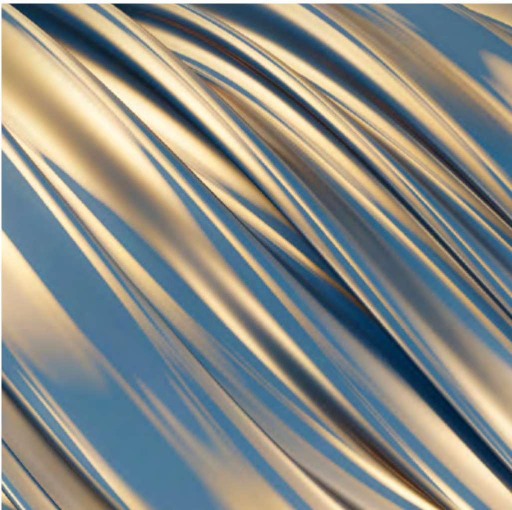
The secondary private equity (PE) market may help here. General partner (GP)–led secondaries are initiated by the manager of an existing PE fund. The manager either sells part of a single company or several fund assets in a transaction led by a secondaries manager by rolling them into a new investment entity, enabling them to continue managing them ("continuation funds"). The secondary fund acquires an interest in the asset while ensuring continuity of management. Secondaries' deal volume hit $115 billion as of September 30, 2024, a near-record performance. GP-led transactions – where we see potential – accounted for roughly half of that.[2]

One challenge with secondaries is that they are passive strategies, where the secondary managers do not control the ultimate disposal of the underlying assets. However, the terms of continuation vehicles tend to be significantly shorter than typical PE funds.

ADDRESSING UNSTOPPABLE TRENDS VIA PRIVATE EQUITY

Private equity can also provide exposure to unstoppable trends, the powerful long-term forces transforming the world around us. Many highly innovative, young firms involved in digitization and healthcare, for example, are not accessible via public markets. The next generation of potential AI leaders is being incubated and developed in the well-established technology venture capital, growth and private equity ecosystem.

We see potential for private market strategies targeting early-stage and growth-stage companies working on innovative solutions in software and computing. While large-cap publicly traded technology companies have performed strongly, their valuations are already quite elevated. Private strategies can seek technology and AI-driven returns at much smaller scale and lower valuations, albeit with potentially greater risks of technology development failures and disappointing adoption – see **AI: getting more real.**



There is also potential in strategies targeting biotechnology. Many small, PE-owned biotechnology companies are at the cutting edge of developing new healthcare treatments – **healthcare's prescription for longevity**. They often end up being bought by pharmaceutical giants, whose strength is in marketing and distribution rather than innovation. High failure rates in drug development, regulatory approval uncertainty, heavy capital requirements and concentrated portfolios are among the risks here.

1 Pitchbook, as of Jun 30, 2024

2 PJT Partners Q3 2024 Secondary Market Insight, as of Sep 30, 2024

As well as investment risks relating to these industries, private equity strategies tend to be highly illiquid, requiring investors to commit capital for several years. There may be operational risks, which arise from managers' processes, policies and people. Adverse scenarios may include complete loss of capital. For a further discussion of risks, please see **Important Information.**

THE EXPANSION OF PRIVATE CREDIT

Private credit – loans from the likes of private equity firms, hedge funds and specialist credit funds – can enable borrowers to negotiate more customized terms than they would get from a bank. This market has grown from $621 billion in 2017 to $1.5 trillion in 2024. By 2029, it may expand to $2.6 trillion.[3]

The higher interest rates that private credit borrowers pay could mean higher yields for investors. In the third quarter of 2024, the average yield on newly issued loans was 10.3%. On average, private credit has offered a premium over leveraged loans of 150–200 basis points (bps).[4] The flipside is higher risks, including borrowers failing to make interest and principal payments, and illiquidity, meaning cash distributions only occur as the loans mature or are refinanced.

OUR FAVORED SECTORS IN REAL ESTATE

After several tough years, better times may lie ahead for real estate. Alongside continuing economic growth, falling interest rates could be helpful. Lower borrowing costs may boost new developments and dealmaking. They would also support higher real estate valuations.

We believe there are potential opportunities in industrial real estate, which includes the likes of manufacturing, storage and distribution. Supply of certain property types is lacking in many mature markets. Industrial vacancy rates overall are 4.8% in the U.S. and 3.6% in Europe, near record lows.

Demand for many industrial properties is strong and could remain so for the time being. One driver is the effort to move supply chain facilities away from China and into the U.S. and Europe. There is also a need for new development and repositioning of existing logistics and distribution centers to incorporate technologies such as robotics-enabled warehousing and AI-powered supply chains – see **unstoppable trends.**

Aside from weakening growth, higher interest rates and resurgent inflation – which are not our base case – risks to industrial properties come from downturns in particular industries they serve and future disruption if reshoring patterns and other sources of demand change.

We think there are attractive possibilities in hospitality real estate. This segment is benefiting as leisure and business travelers make up for missing out during COVID. Globally, hotels' revenue per available room (RevPAR) – which measures how full they are and how much guests pay - was up 12.8% in the third quarter of 2024 over the equivalent period in 2019.[5]

As well as cost overruns and delays, refitted and repositioned hotels can fail to live up to performance expectations if consumer and business travel weakens due to shifting consumer sentiment on travel or renewed corporate cost cutting.

Overall, real estate strategies are illiquid and often utilize significant borrowed money or "leverage" which can amplify risks during economic downturns.

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[3] Preqin, "The Future of Alternatives," published Sep 2024

[4] Pitchbook, as of Sep 30, 2024

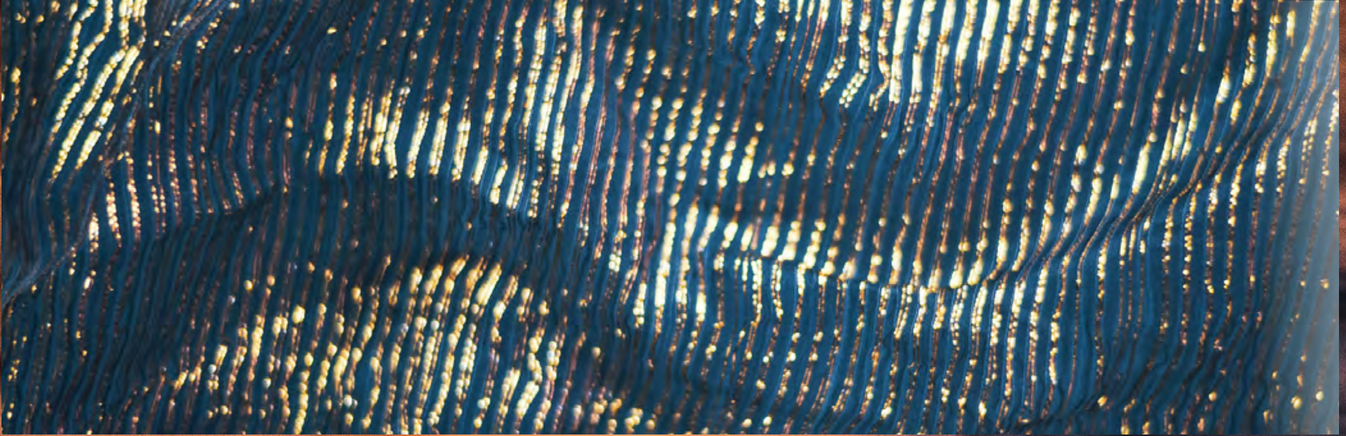
[5] JLL Global Real Estate Perspective, Nov 2024

Private asset classes have often proved inaccessible to or challenging to manage for many suitable and qualified investors. High minimum investment levels, strict qualification requirements and having to lock up capital for long periods have been among the barriers. However, new structures called “evergreen funds” are emerging to help expand access to private equity, private credit, infrastructure and real estate.

With conventional private asset funds, investors generally only commit capital at the outset and lock up their capital for several years, after which the fund exits all its investments and expires. By contrast, the evergreen structure has no expiration date, reinvests proceeds and enables new investors to buy in continuously. It also provides periodic windows for existing investors to sell out. That said, there are still restrictions on exiting, which means evergreen funds are not like liquid public securities or mutual funds.

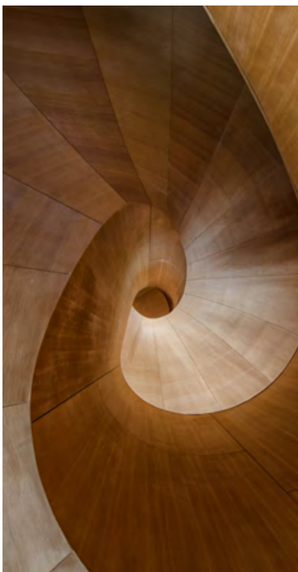
For those buying into an evergreen fund, their capital is usually fully at work in private assets from day one. Again, this is different from conventional private funds, where there is usually a three- to five-year period where investors’ capital gets deployed. Being fully invested simplifies portfolio management and rebalancing and means investors are fully exposed to potential gains or losses throughout.

One of the main ways that evergreen funds are “democratizing” access to private assets is through lower minimum investments. Sometimes, these can be as low as $10,000 to $25,000. Also, some evergreen funds are meeting regulatory requirements for availability to retail investors, which can lower the minimum legal eligibility requirements. However, it is important not to confuse eligibility with suitability. Each investor should seek professional guidance as to whether these funds may be suitable for them.



the case for hedge funds in suitable and qualified investors' *core portfolios*

We believe exposure to a mix of hedge fund strategy types can potentially strengthen suitable and qualified portfolios.



key takeaways

- → Various kinds of hedge fund strategies have historically done better or worse under certain market conditions
- → Suitable and qualified investors might consider combining varieties of these strategies in portfolios
- → We see potential in some diversifying and directional hedge fund strategies
- → Risks include but are not limited to losses from the use of leverage, concentrated portfolios and limited transparency

We see upside potential for various asset classes in 2025 – see **strategies for a "rule-breaking" expansion.** Nevertheless, the risk of economic, geopolitical and market turbulence is always present. Recessions, market downturns, supply chain disruptions and flashpoints between nations may all strike unpredictably during the coming decade, as they often have over time.

Having exposure to different varieties of hedge funds may potentially strengthen portfolios amid better and worse times. In the tough year of 2022 – when both equities and bonds struggled – global macro and relative value hedge fund strategies collectively held up well – **figure 1**. By contrast, in 2023 when markets recovered, long/short equity and event-driven hedge fund strategies performed strongly, whereas global macro saw negative returns.

Averaged over the next ten years, we believe this broad asset class may produce strong annualized returns – see **the long-term view for asset classes: moderate optimism.** According to their investment objectives, we believe suitable and qualified investors should consider adding a mix of hedge fund strategies to diversified portfolios for the long term. Among these are certain diversifying and directional strategies.

Exposure to different varieties of hedge funds may potentially strengthen portfolios amid better and worse times

FIGURE 1

how broad hedge funds strategies have performed

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 YTD
1.0%	10.6%	24.6%	1.8%	27.3%	17.9%	19.0%	9.0%	22.8%	20.0%
-0.3%	8.5%	13.3%	-0.4%	13.7%	16.8%	12.4%	-0.7%	11.4%	11.6%
-1.0%	7.7%	7.6%	-2.1%	8.2%	9.3%	11.7%	-4.8%	10.4%	8.6%
-1.3%	5.5%	5.1%	-4.1%	7.5%	5.6%	7.7%	-10.1%	7.1%	8.8%
-1.8%	3.9%	3.0%	-7.1%	7.4%	5.4%	7.6%	-11.2%	7.0%	3.2%
-3.6%	1.0%	2.2%	-8.9%	6.5%	3.4%	-1.4%	-18.0%	-0.3%	3.6%

MSCI ACWI TR Index (USD)	HFRI Relative Value (Total) Index	HFRI Event-Driven (Total) Index
HFRI Equity Hedge (Total) Index	HFRI Macro (Total) Index	Global Agg Index (USD Hedged)

Source: Bloomberg, Hedge Fund Research (HFR) and PackHedge, as of Sep 30, 2024. The index returns shown do not represent the results of actual trading of investor assets. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is not necessarily indicative of future returns. **Real results may vary.**

HFRI Macro: A broad range of strategies seeking to exploit movements in underlying economic variables and their impact on equity, fixed income, hard currency and commodity markets.

HFRI Relative Value: Strategies that trade on valuation discrepancies between multiple securities.

HFRI Event-Driven: Strategies taking positions in companies currently or prospectively involved in corporate transactions spanning the likes of mergers, restructurings and financial distress.

HFRI Equity Hedge: Strategies taking both long and short positions in primarily equity and equity derivatives.

MSCI ACWI TR Index (USD) captures total returns of a broad-based equity index covering developed and emerging markets.

The Bloomberg Global Aggregate Index (USD Hedged) is a benchmark for the global fixed income market.

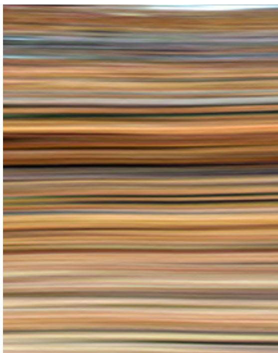
DIVERSIFYING HEDGE FUND STRATEGIES

Diversifying hedge funds encompass various distinct strategies. In times of upheaval, they have often done better than equities. The flipside is that they have frequently done worse during strong equity bull markets. Diversifying strategies are not necessarily designed to eliminate all market risk but seek to reduce specific risks through investment selection and portfolio construction.

In the past, such strategies' returns have often been lowly or moderately correlated with equities and fixed income, i.e., they have often performed well and badly at different times. So, suitable and qualified investors should consider various types of exposures when constructing a diversifying hedge fund allocation.

One way to seek exposure to a range of diversifying strategies is available through a multi-strategy fund, which can shift capital around according to the market environment. A multi-strategy fund can potentially offer diversification and a ready-made allocation to diversifying strategies.

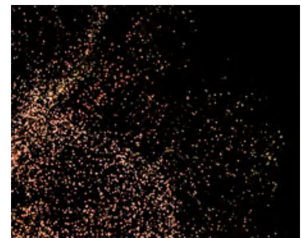
We believe larger multi-strategy funds could present opportunities. Among the reasons for this are that they tend to more easily attract and retain talented managers and have historically performed better than their smaller counterparts. Multi-strategy funds seek consistent returns and portfolio diversification across cycles given their low correlations to traditional assets. For example, the HFRI RV: Multi-Strategy Index had a correlation of 0.2 or less to both the MSCI World Index and Bloomberg Global Aggregate Index from February 1990 to September 2024.[1] However, they also come with higher fees and are less liquid. Like other hedge funds, there are also risks including the use of leverage, limited transparency and operational issues relating to people, processes and systems. Like other hedge funds, there are also risks including the use of leverage, limited transparency and operational issues relating to people, processes and systems.



DIRECTIONAL STRATEGIES: SEEKING DIFFERENTIATED FIXED INCOME AND EQUITY RETURNS

With short-term rates coming down, investors may seek differentiated yields in credit. Hedge fund credit strategies target the likes of high-yield, syndicated bank loans and structured credit products. The options can get quite complex. We therefore think flexible hedge fund credit strategies that can look across asset classes to build a portfolio of high-conviction ideas may be a viable choice. They often focus on more complex, less liquid credits where they see potentially higher yields and total returns.

Among directional strategies is equity long/short, where managers seek to buy companies they believe may perform better and shorting those they see doing worse. Specialists in a particular global region, market or sector may be better at managing these strategies. Away from U.S. large caps, active management via hedge funds has the potential to exploit market dispersion and volatility to potentially benefit portfolios. Examples might include hedge funds focusing on small- and mid-cap equities or elements of our unstoppable trends such as G2 Polarization, healthcare or digitization – see **unstoppable trends**. Market-wide downturns, magnified losses from the use of leverage and concentrated portfolios are among the risks of such directional strategies.



Please see Important Information for further discussion of Alternative Investments.

[1] Correlation is a statistical measure of how two prices move in relation to each other. Measured on a scale of 1 to -1, a correlation of 1 implies perfect positive correlation, where two prices move in the same direction all the time. A correlation of -1 implies perfect negative correlation, such that two assets or asset classes move in the opposite direction to each other all the time. A correlation of 0 implies zero correlation, such that there is no relationship between the two over time.

An opportunistic portfolio may potentially help seek returns and mitigate risk in coordination with a core portfolio.

- → We make the case for suitable clients establishing a smaller opportunistic portfolio alongside a core portfolio
- → We believe disciplined opportunistic investing may help complement core portfolios
- → The suitability of each position needs to be assessed in light of individual objectives
- → Opportunistic portfolios can be riskier owing to the likes of concentrated positions, reduced certainty and greater volatility

We believe that building a core portfolio is critical when seeking to preserve and grow wealth over time. In our view, such a portfolio should be fully invested for the long term and diversified across asset classes from around the world. However, we also recognize that many clients also wish to invest in ways that do not necessarily fit within a core portfolio. This is where opportunistic investing may help.

An opportunistic portfolio is an additional, much smaller portfolio for pursuing investments that may fall outside the scope of a suitable investor's long-term plan. The investments held may be shorter-term and have little or no track record of risks and returns. An opportunistic portfolio is often concentrated. It may also be held in cash until a potential opportunity arises, enabling a quick response in what may be a brief window.

Despite its flexibility, opportunistic investing calls for a disciplined approach. We believe the aim should be to complement a core portfolio, potentially enhancing returns or risk-adjusted returns. **Figure 1** lists our new and ongoing opportunistic ideas as well as some where we have moved to the sidelines since we published them last December.[1] We provide a benchmark index in each case. Before considering an idea, investors should ascertain its suitability in light of investment objectives and then discuss the appropriate allocation with their financial professional.

We recognize that many clients also wish to invest in ways that do not necessarily fit within a core portfolio

Of those that we no longer see as offering opportunistic potential, some are still relevant to core portfolios. Copper mining and cyber security, for example, are key ingredients to the unstoppable trends of the energy transition and digitization respectively. Our suggested opportunistic timeframe is up to two years or so.

1. SEMICONDUCTOR EQUIPMENT MAKERS

The AI buildout has created massive demand for semiconductors, even while demand for chips from cyclical industries such as autos has disappointed. Against this backdrop, U.S.-led restrictions on exports of advanced chips and equipment to China have hit some semiconductor equipment maker equities. This is despite the U.S. government and others offering subsidies to producers to reshore the Taiwan-centered semiconductor supply chain.

Many semiconductor companies have delivered only modest performance since the start of 2023, even as the equities in the leading firms have climbed sharply. Ultimately, the penetration of semiconductors in everyday products, innovation and obsolescence drive industry growth. Global semiconductor market revenue could grow from $607.4 billion in 2024 to $980.8 billion by 2029.[2] Despite semiconductors returning 34.4%[3] since we identified its opportunistic potential last year, we see more scope for upside in 2025. Disruptions to supplies of essential materials, market access restrictions and an economic downturn are among the risks.

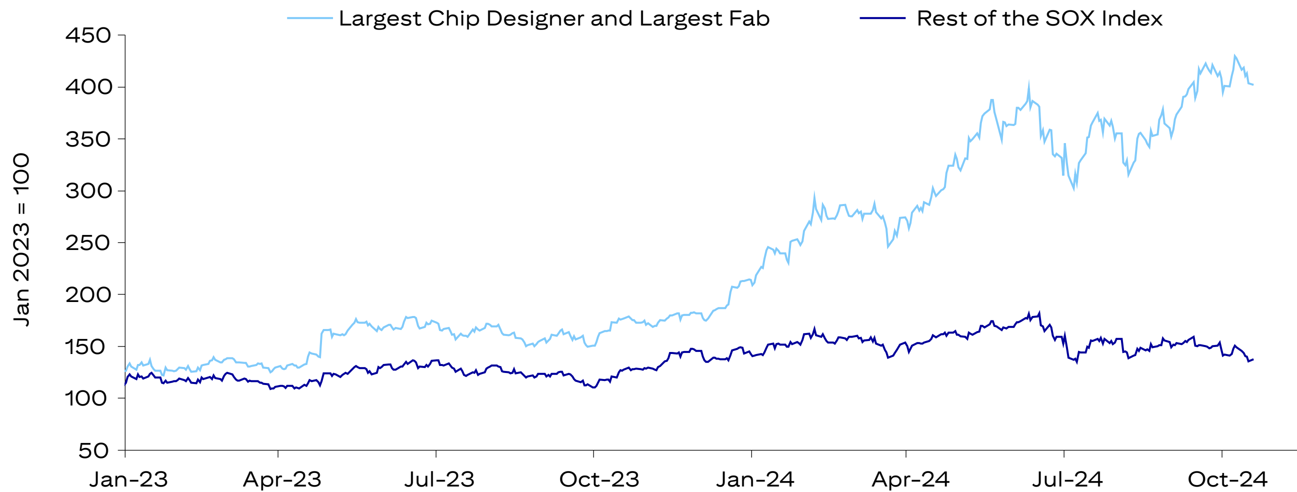
[1] Wealth Outlook 2024

[2] Statista, as of Aug 2024

[3] Bloomberg, as of Nov 15, 2024

FIGURE 1

semiconductor leadership has been concentrated



Source: Haver Analytics, as of Nov 14, 2024. SOX is the Philadelphia Semiconductor Index. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. **Real results may vary.**

2. MEDICAL EQUIPMENT: IMPROVING VITAL SIGNS

In a rapidly aging world and with wealth levels rising, we see healthcare as a long-term focus for core portfolios – see **healthcare's prescription for longevity.** We also see ongoing opportunistic potential among one of its subsectors: the companies that conceive and create innovative diagnostics and instruments, such as laboratory testing equipment, imaging systems, surgical tools, and wearable or implanted devices for those with chronic conditions. AI may increasingly augment some of the sector's products and services.

Having rallied in 2024 – albeit by less than U.S. equities overall – medical equipment may have further to go, in our view. Forecast earnings per share may increase 9.5% in 2025, giving a forward price/earnings multiple of 20.4. While the subsector is less exposed to political risks than some other areas within healthcare, it may still encounter supply chain issues and shortages, technological reversals, and patient privacy issues arising from AI deployment.

3. DEFENSE CONTRACTORS IN AN UNSETTLED WORLD

In recent decades, business was often seen to drive geopolitics. Governments prioritized commercial interests in their external policies on trade and energy, for example. But in today's often polarized world, geopolitics is driving business. As nations focus on bolstering their strategic and defensive needs, we see potential opportunities for some sectors. Among them are the providers of weaponry, aircraft, advanced defense technologies and the like.

In 2024, some 23 NATO members are likely to meet their commitment to spend 2% or more on GDP on defense, up from just six members in 2021.[4] Even if the Ukraine and Middle East conflicts are resolved swiftly, we would expect continued spending in Europe and elsewhere, especially given reduced certainty over U.S. intervention in future conflicts. High government indebtedness, competing spending priorities, supply chain issues and technological disruption are among the challenges facing defense firms.

FIGURE 1

potential opportunistic positions

ONGOING	Return since Dec 7, 2023 (Publication of Wealth Outlook 2024)
1. Philadelphia Stock Exchange Semiconductor Index	34.4%
2. Dow Jones U.S. Medical Equipment Index	19.6%
3. S&P Aerospace & Defense Index	19.6%
WEALTH OUTLOOK 2025 ADDITIONS	
4. S&P Biotechnology Select Industry Index	
5. S&P 500 Banks Index	
6. Alerian Midstream Energy Index	
7. MVIS Global Uranium and Nuclear Energy Index	
8. CBOE VIX (1-month implied volatility) Index	
9. Bitwise Crypto Innovators 30 Index	
10. MSCI Brazil USD Index	
WHERE WE MOVED TO THE SIDELINES	
Return from OL24 (Dec 7) to Jul GIC (Jul 17)	
1. Solactive Global Copper Miners Index	41.6%
2. Red Rocks Global Listed Private Equity Index	17.6%
3. Nasdaq CTA Cybersecurity Index	10.5%
Return from OL24 (Dec 7) to Jul GIC (Jul 17)	
4. S&P 500 Energy Sector Index	17.8%
Return from OL24 (Dec 7) to Aug GIC (Aug 7)	
5. Yen Rebound	-1.7%
Return from OL24 (Dec 7) to Nov GIC (Nov 19)	
6. MSCI Japan USD Index	9.1%
7. Shift of the 10s1s UST yield spread	+100.7 bps
8. ICE BofA US ABC & CMBS Index	6.7%

Source: Citi Wealth Investments, Haver Analytics, as of Nov 14, 2024. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. **Real results may vary.**

4. BIOTECHNOLOGY: HEALTHCARE'S CUTTING EDGE

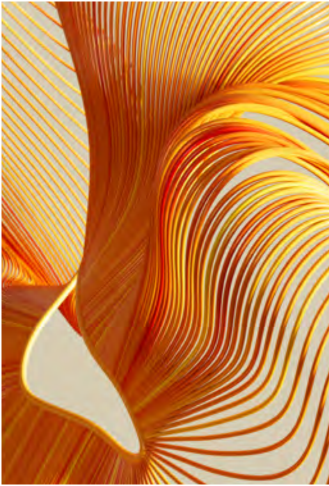
When it comes to healthcare innovation, the biotechnology sector is at the cutting edge. Firms in this space have made important progress in recent years in the likes of therapies that seek to disrupt the environment that tumors need to grow, personalized treatments based on genetics, weaponizing the body's immune system to fight disease, and advanced vaccines that address cancer and rare conditions. We believe the AI revolution could accelerate biotech innovation on various levels, from drug discovery and development to advanced diagnostics to enhanced manufacturing.

Having rallied for much of 2024, we believe that biotech equities may offer outperformance potential. Decent valuations and lower interest rates could encourage renewed mergers & acquisitions activity, involving both private equity and large pharmaceutical firms seeking to replenish their product pipelines. Political risks, regulatory obstacles and rising interest rates are among the pitfalls facing the sector.

[4] Citi Research - Money and Might: Financing the Future of Defense, Oct 2024

5. DEREGULATION POTENTIAL: U.S. BANKS

Could deregulation boost U.S. banks during Trump's second administration? An overall tightening of rules since the financial crisis of 2007–09 has made for tougher operating conditions for the sector. But having eased some rules during his first term, Trump may go further this time, especially following his campaign commitment to overseeing the "largest regulatory reduction in the history of this country." Since the election, U.S. financials have rallied from near-record relative lows against the wider stock market.



Possible deregulation measures include looser rules on how much capital banks must hold and a more permissive mergers & acquisitions regime. This could see consolidation among smaller and midsized banks, as well as more dealmaking activity among companies in general, feeding through into more fees for bigger banks. If Trump's pro-growth agenda succeeds, this could also generate a better business environment for the sector. Of course, such changes may not come to pass, while deregulation can ultimately increase the sector's riskiness. An overheated economy followed by a bust is another risk. For now, though, we see the recent rally continuing in 2025.

6. GOING WITH THE FLOW: MIDSTREAM ENERGY TRANSPORTATION

The incoming U.S. administration is a friend of traditional energy sources. Even as U.S. oil output reaches record levels, potentially sinking prices and profits for the industry worldwide, Trump has vowed to boost production further. With easing regulations, rising demand and more gas export, we are attracted to master limited partnerships and corporations owning the pipelines, storage facilities and processing plants that make up the "midstream" between production and consumption.

Master limited partnerships seek to pay out more of their cash flows to investors. The Alerian Midstream Energy Index recently had a dividend yield of 4.5%.[5] Its total return since 2020 has exceeded that of the S&P 500 Index – **figure 2** – and we believe its momentum may persist for now. Risks include falls in energy demand and prices as well as the substantial debts that many MLPs have.

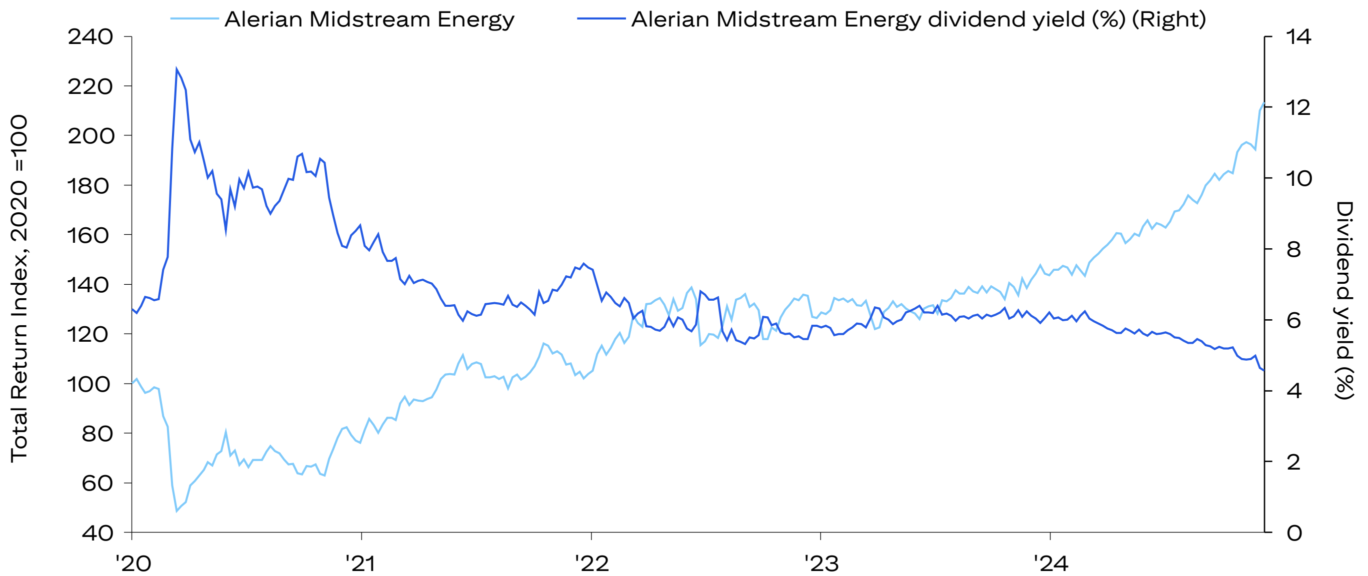
7. NUCLEAR ENERGY'S ONGOING ROLE

Power demand is on the rise worldwide, with artificial intelligence and cryptocurrency mining among the drivers. Electricity generation may increase from 28,000 terawatt hours in 2023 to 36,000 terawatt hours by 2030.[6] We expect this to come from a variety of sources, both traditional and alternative. Nuclear seems likely to play an ongoing role here, given that supply is not intermittent and does not emit carbon directly. Over the past year, equities relating to such areas as uranium mining, nuclear power facilities and generation, nuclear-sourced electricity, and providers of hardware and services have rallied. We believe there may be more to come. Risks to the sector come from shifting political agendas – such as nuclear phaseouts and subsidy withdrawal in certain countries – safety incidents and concerns and legal challenges.

8. POSITIONING FOR RENEWED VOLATILITY

Market volatility seems likelier in 2025. The risk of escalating trade tensions, in particular, is likely to keep uncertainty at more elevated levels. However, as of mid-November 2024, implied U.S. equity market volatility – as measured by the VIX Index – was around record lows. In our view, this creates potential to enter into hedging strategies at a reasonable cost. But once the index surges again, as we expect it to do, another possibility would be to enter positions that seek to convert demand for hedging strategies into an income. Adverse volatility developments, illiquidity of positions during times of market stress, and counterparties defaulting all pose risks here.

FIGURE 2
midstream's recent performance



Source: Haver Analytics, as of Nov 14, 2024. 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. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. **Real results may vary.**

9. ENABLERS OF CRYPTOCURRENCIES' GROWTH

The global market for digital assets continues to expand. In November 2024, the combined capitalization of cryptocurrencies alone reached an estimated $3.2 trillion.[7] The new U.S. administration is crypto-friendly, with Trump having spoken of establishing a national strategic bitcoin reserve, wanting to see more crypto mining domestically and perhaps creating a more accommodative regulatory environment.

To maintain its growth, the crypto market will need greater infrastructure. Among the providers of this are crypto mining companies, mining equipment makers, brokerages and trading firms. Equities across this space – as represented by the Bitwise Crypto Innovators 30 Index – have recovered strongly from their late-2022 lows. We believe they may remain on this path in the coming year. We also consider crypto industry equities as having the highest risk of the opportunistic positions discussed here, particularly given their rapid recent appreciation. Price volatility, technological failures, cyberbreaches and unfavorable regulatory developments could challenge our positive case.

10. BRAZILIAN EQUITIES' SNAPBACK POTENTIAL

Brazilian equities have fallen hard in 2024, as has the nation's currency. This may partly reflect concern over government finances, where reform progress has disappointed. Latin America's largest market trades at just 7.8 times forecast earnings for 2025 – near historic lows – but with consensus estimates pointing to a 17% EPS rebound in the coming year.[8] As such, we believe the pessimism to be overdone and see scope for a potential bounce back in this market.

Of course, emerging markets tend to be more volatile and come with other risks, including sensitivity to slowing global growth. Further setbacks to the government's efforts to get the public finances on a more sustainable footing as well, deteriorating inflation and more currency weakness could dent Brazil's performance, on the other hand.

[5] Bloomberg, as of Nov 15, 2024

[6] Statista, as of Aug 2024

[7] Bloomberg, as of Nov 2024

[8] Haver, as of Nov 24

unstopppable trends

powerful long-term forces

Unstoppable trends are transformative, multiyear forces at work in the world around us. They include technological, economic, demographic and geopolitical trends. And they may impact investment portfolios over time.

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disruption's investment potential

Artificial intelligence, healthcare innovation, climate-related technologies and a reconfiguration of global supply chains are poised to disrupt long-established ways of doing business. We seek portfolio exposure to these unstoppable trends.

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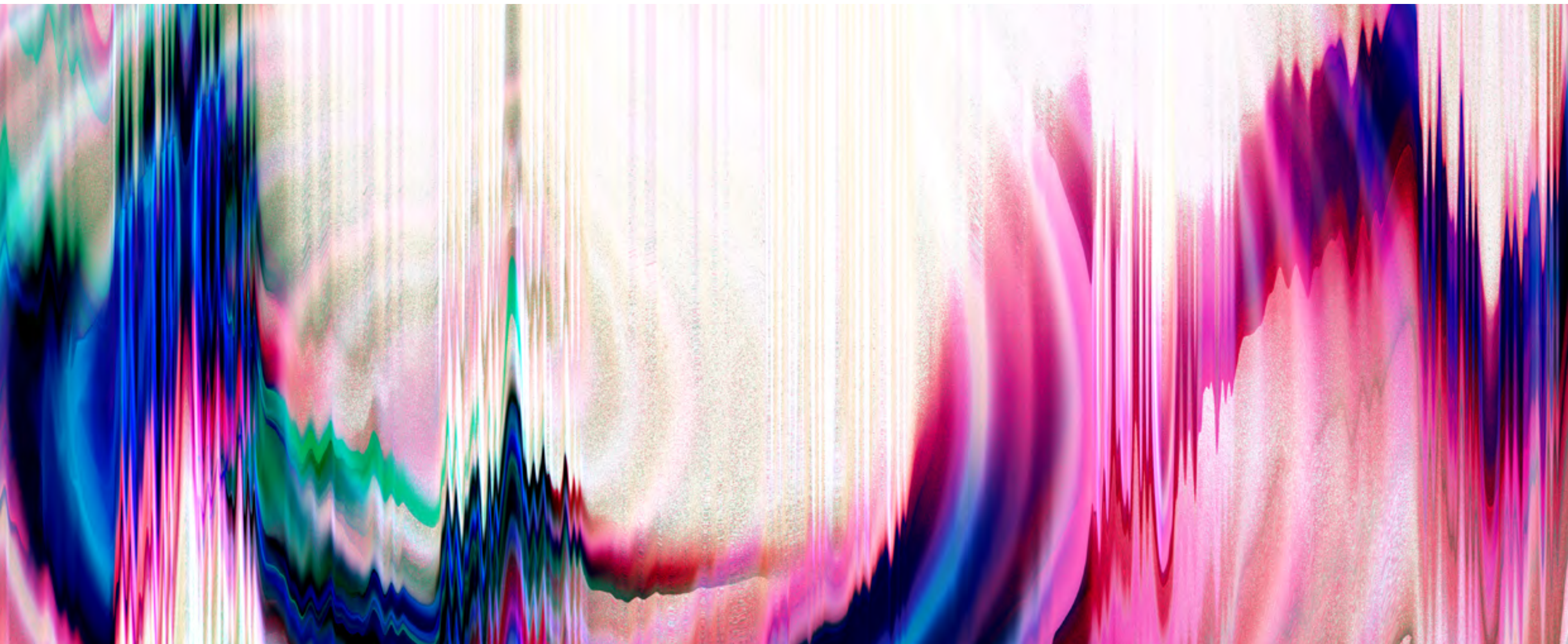
the risks of unstoppable trends

Investing in unstoppable trends comes with many risks, such as technological setbacks, tough competition, regulation and valuations. We also identify risks in having too much exposure to assets disrupted by unstoppable trends.



AI: *getting more real*

We believe AI adoption will spread across sectors, impacting more non-technology investments.

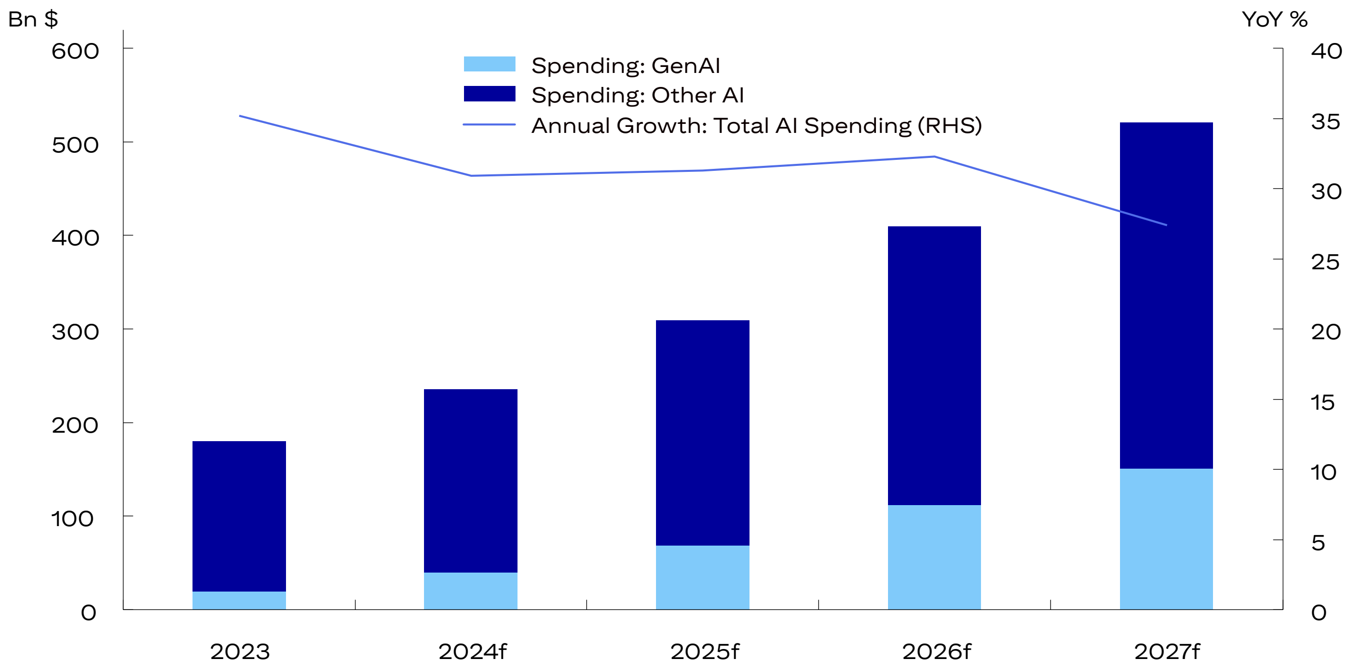
Artificial intelligence (AI) infrastructure leaped ahead in 2024. Billions of dollars have been invested in related technology, which is set to continue. The International Data Corporation forecasts AI-related spending on hardware, software and services to rise from $232 billion in 2023 to over $500 billion by 2027 – **figure 1**. This has boosted profits and the share prices of those that design and make AI chips, servers and related equipment. In 2025 and thereafter, we see AI adoption spreading. We highlight six areas in tech and beyond where AI may create investment potential.

key takeaways

- → Spending on AI capacity continues to grow globally
- → So far, the main investment impacts have been in technology sector asset prices
- → We see healthcare, finance, robotics, education and agriculture as potential beneficiaries of AI adoption
- → Risks include slower-than-expected business outcomes and some firms getting left behind.

FIGURE 1

companies' heavy AI investment



Source: Citi Research, Gartner, as of Aug 2024. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

REINVENTING SOFTWARE

While chips and hardware are the engines that power AI, software companies are at the forefront of building programs and services that integrate AI with legacy applications. AI-assisted coding has helped dramatically reduce the cost of developing applications. Lately, though, many software customers have allocated limited technology budgets to building AI capabilities, often at the expense of traditional software. We see a risk that some leading software as a service (SaaS) firms may be displaced by public AI cloud services. Tough competition and rapid obsolescence also need to be taken into account. Nevertheless, we believe other software companies that can effectively integrate AI to improve outcomes for their customers are poised to outperform.

We believe other software companies that can effectively integrate AI are poised to outperform

SMARTER HEALTHCARE

New possibilities for diagnostics, treatment planning and patient care are emerging. In many cases, AI analyzes X-rays, MRIs and CT scans faster and more accurately than humans. Predictive analytics are identifying patients at greatest risk of chronic conditions, enabling preventative interventions, and thus reducing hospitalizations. By analyzing large genetic, medical and lifestyle datasets, AI can help create even better personalized treatments.

Chatbots and virtual assistants are making healthcare access cheaper and more efficient, providing support in routine inquiries, appointment scheduling and medication reminders.

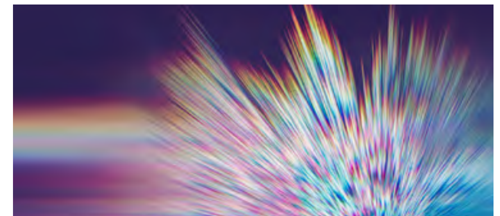
Risks include diagnostic errors, hurdles from regulatory and practitioners' organizations, patient distrust, and technological disappointments.

FINANCIAL SERVICES' NEW FRONTIERS

Financial institutions are using AI to improve operations, data analytics and customer care. For example, machine learning models are identifying fraudulent customer transactions and cyberattacks against banks. Data-entry and back-office tasks are steadily being automated, along with compliance monitoring and data collection. And complex dataset monitoring is helping banks to monitor lending and other risks.

On the investment side, trading activities are being refined by processing market data at scale, enabling better execution techniques. Robo-advisors are offering affordable, data-driven financial advice to a broader audience. Asset managers are relying more and more on AI to summarize market trends, corporate announcements and macroeconomic data to inform decisions.

Implementation setbacks, regulatory obstacles, breaches of customer data and privacy laws, and reputational issues from biased algorithmic decision-making are among the risks.



RISE OF ROBOTICS

Thanks to AI, robots across many industries are performing more complex tasks. AI-enhanced robots can increasingly adapt to new environments without human intervention. In manufacturing, for example, they are performing high-precision work such as assembling microelectronics.

Robots are also assisting in surgeries, physical therapy and elderly care. AI-powered robotic arms provide increased precision and dexterity during surgical procedures, reducing recovery time for patients. The integration of AI with robotics has the potential to improve productivity, safety and quality of work across many sectors.

Cybersecurity and hacking risks, poor integration into existing factory settings and compliance with medical ethics and regulations could lead to disappointments for investors.

EMPOWERING EDUCATION

Language translation tools and AI tutoring systems are boosting education access. Students in remote areas, for example, can now learn more easily in their native languages. Virtual classrooms offer adaptive learning experiences, tailored to individual needs. Meanwhile, reduced administration will enable teachers to focus on student engagement.

Exam grading biases, lack of transparency in EdTech AI models, unequal access to technology, and students becoming over-reliant on technology are some of the risks.

ENHANCED AGRICULTURE

AI is making agriculture more sustainable and efficient. Precision agriculture uses real-time data from sensors, drones and satellites to monitor crop health, soil and weather. This informs decisions about irrigation, fertilization and pest control, ultimately optimizing resource usage and minimizing waste.

Another key use is predicting crop yields and potential issues such as disease outbreaks, enabling proactive intervention. Automated machinery, such as self-driving tractors and harvesters, is further helping to streamline labor-intensive processes. By enhancing productivity and reducing environmental impact, AI can help bolster food security.

Software and data flaws, crop yield forecast errors, overly expensive capital equipment and supply chain disruptions are among the challenges for users, makers and investors.

POTENTIAL AI OPPORTUNITIES AND RISKS

We believe the AI revolution has far to go, creating ongoing demand for many of the chips and other AI infrastructure and services. Leading chipmakers and cloud providers may still thus have scope to grow sales and profit margins. In software, we would focus on specialty companies with distinct advantages over rivals.

At the same time, we anticipate both the potential business benefits and investment performance of AI to spread out. AI may make healthcare, industrials (including suppliers of AI-enhanced agriculture) and financial services firms more productive, boosting earnings over the medium term. We also see potential in education technology and robotics makers.

We expect AI's potential business benefits and investment performance to spread out

Not all potential future AI leaders and beneficiaries may be accessible via public markets. Instead, suitable and qualified investors may consider seeking exposure to innovative technologies via venture capital and growth equity strategies – see **complementing core portfolios with private asset classes.**

Naturally, we expect losers as well as winners. One risk is that investors grow impatient with AI investment, penalizing firms that cannot convert capital expenditures into earnings quickly. As AI models are deployed by some, stragglers may face disruption. Ultimately, advances in technologies like quantum computing – which can perform complex calculations much faster than traditional computers – could also significantly disrupt the current AI landscape.

climate: investing in *innovative technologies*

Lowering greenhouse gas emissions, carbon capture and adapting to climate change's effects are key to a better existence for all. We make the case for investing in sectors that enable the fightback.

key takeaways

- Extreme weather events have underlined the need for more action on climate change
- Key areas include emissions reduction, carbon capture and climate change adaptation
- We seek exposure to the makers, installers and users of innovative technologies in these areas
- Risks include technology setbacks, insufficient support from governments and supply chain disruption

We consider efforts to tackle greenhouse gases to be an unstoppable trend

The global climate crisis passed further grim milestones in 2024. Greenhouse gas (GHG) emissions – such as carbon and methane – have reached new record highs. GHGs – which trap heat in the Earth's atmosphere – are stoking more extreme weather events. The summer of 2024 was the hottest on record, while droughts, forest fires and heavy rains have blighted many parts of the planet during the year. Insured catastrophe losses worldwide had reached $62 billion at the half-year stage, well above 10-year average levels.[1]

At the same time, we see positive action to address the climate crisis driven by citizens, their governments, companies and activist groups. These include the deployment of many innovative technologies fostered by a generation of research and development.

We believe that fossil fuels will continue to coexist with renewables for a long time yet. However, investment in transitioning away from carbon fuels to cleaner alternatives grew from US$212 billion in 2013 to more than $1.7 trillion in 2023.[2] While much more is needed, we believe the willpower and resources exist. As such, we consider efforts to tackle GHGs and climate change's consequences to be an unstoppable trend.

Here, we consider three broad areas of climate-related action and examine the long-term portfolio potential of related technologies and services.

[1] Bloomberg, as of Sep 30, 2024

[2] Hard to Abate Sectors & Emissions II - The Road to Decarbonization, Citi GPS: Global Perspectives & Solutions, Jul 2024

REDUCING EMISSIONS

Reversing the ongoing rise in GHG emissions is crucial to addressing the climate crisis. Most of these emissions come from power generation, industry, buildings and transport – **figure 1**. Despite its leading role as an emitter, the power sector is also assisting in the drive toward net zero emissions. Record generation from low-emission sources including solar, wind, hydro and nuclear is on track to meet rising global electricity demand over the next three years.[3]

Enhancing energy use efficiency is another key front in this battle. Buildings, industrial processes and vehicles all need to use less energy, thereby reducing GHG emissions. Smarter designs, retrofitting existing buildings, streamlining industrial activities through greater automation, incentivizing more economical behaviors, and storing energy at times of low demand are among the many initiatives here. We believe that artificial intelligence (AI) may play an increasing role in related tasks, perhaps even coming up with new approaches.

For investors, we see potential opportunities in companies involved in the likes of solar and wind technology, electrical vehicles and charging, battery storage, providers of smart energy grid and buildings technology, and sustainable building materials suppliers. Technological setbacks, insufficient or retreating legislative support – particularly with the coming change of U.S. administration – and supply chain disruption are among the risks.

CAPTURING EMISSIONS

As well as reducing new emissions, removing carbon dioxide from the atmosphere is a further strategy to combat climate change. Nature itself is critical here. Forests, mangroves, seagrasses and oceans absorb and store GHGs.

Philanthropy is already directing capital to projects that preserve and promote these precious resources. While investible opportunities are developing quickly, much remains to be done to foster appropriate transparency, governance and liquidity.

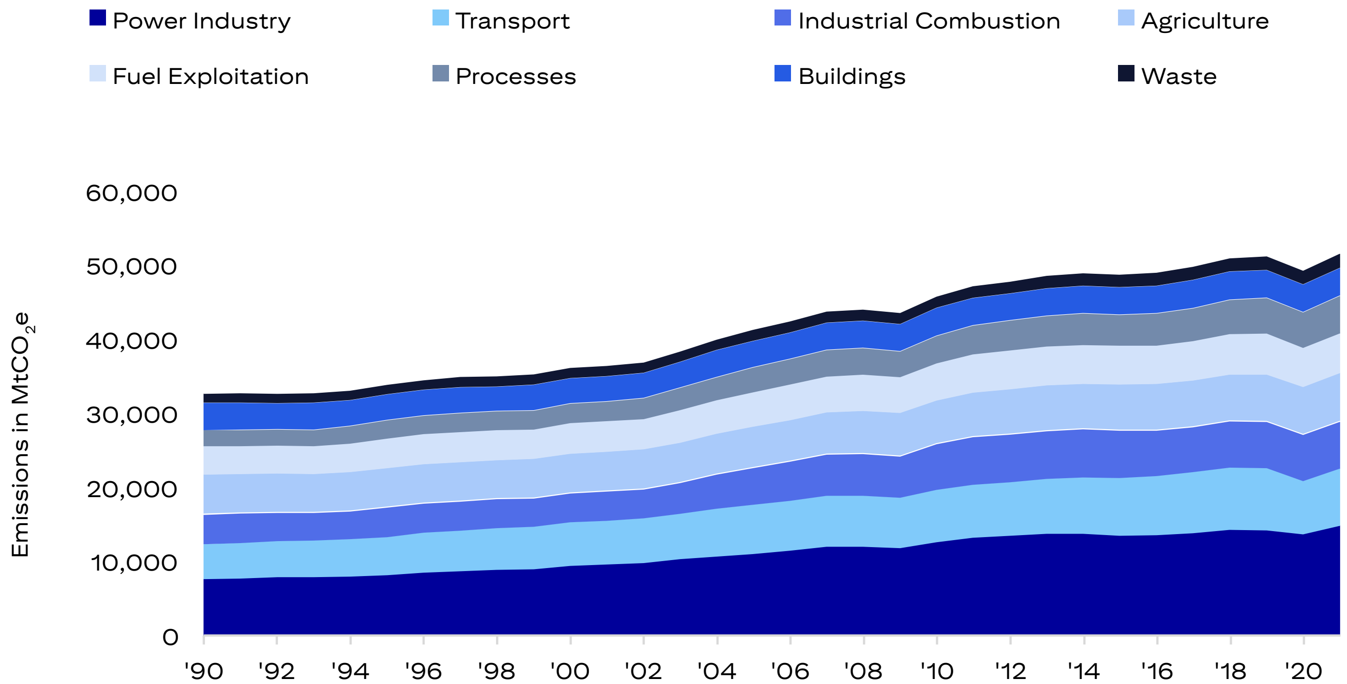
Another dimension is through technology, such as carbon capture, use and storage (CCUS). These include many sectors where reducing emissions is challenging, such as producing iron and steel, chemicals and hydrogen, as well as the likes of natural gas processing. After separation, compressed CO_2 can be transported away via pipelines, rail, road or ship, either to be buried deep below the Earth's surface or reused. Reuse possibilities span building materials, plastics, oil recovery and synthetic fuels.

Humanity needs to prepare and adapt

For seeking exposure to emissions capture, investors might consider firms that specialize in developing and installing CCUS technologies as well as those that deploy them to make their businesses more sustainable. Some such companies are publicly traded while many early-stage operators may only be available to suitable and qualified investors via private equity and venture capital strategies. Adverse changes in regulations and policies represent a threat to the viability of CCUS projects. The expense and complexity of adoption and inefficiency of operation may also slow uptake. Delays, cost overshoots and project failures are not uncommon.

FIGURE 1

the greenhouse gases challenge



Annual greenhouse gas (GHG) emissions worldwide from 1990 to 2023, by sector (in million metric tons of carbon dioxide equivalent). Sources: European Commission; EDGAR/JRC; Expert(s) (Crippa et al. [2024]); Statista; IEA, as of Sep 2024.

ADAPTING TO CLIMATE CHANGE

Even if efforts to reduce and capture emissions succeed, climate change will continue far into the future owing to the lasting impact of GHGs already released and ongoing emissions. Humanity needs to prepare and adapt for consequences such as heatwaves, droughts, rising sea levels and storms. Developing more resilient infrastructure such as roads, bridges and seawalls is vital. So too is better irrigation, desalination and dealing with stormwater. More innovative agriculture could help bolster food supplies in the face of extreme weather. Disaster preparedness is a further priority.

While governments will need to coordinate and finance much of what is required, companies and their investors are also key stakeholders. Infrastructure firms and projects, agricultural technology specialists – such as precision farming enablers – controlled environment agriculture firms, and weather data analytics and water technology developers could offer portfolio exposure to adaptation. Funding scarcity – especially in an age of stretched public finances – shortcomings in innovation, inability to cope with the most extreme events and increasing competition are risks for consideration.

SEEKING PORTFOLIO EXPOSURE TO KEY TECHNOLOGIES

Excessive emissions and insufficient readiness for their consequences are the result of a long-term failure to plan, coordinate and invest collectively. If humanity is to turn the tide in the climate crisis, this needs to change. While it will not be easy, we believe the process is underway. We stand ready to help you align portfolios to the powerful forces at work.

[3] IEA (2024), Electricity 2024, IEA, Paris, https://www.iea.org/reports/electricity-2024

healthcare's prescription *for longevity*

The intersection of increasing longevity and innovation may create potential for healthcare investors.

key takeaways

- → Aging societies are straining healthcare resources worldwide
- → We see the drive to keep more people healthier for longer as vital
- → Portfolio exposure could come via specialist healthcare managers
- → Risks include developmental setbacks, regulatory issues and data privacy breaches

We are living in an era of many distinguished anniversaries. In 2024, the number of people turning 65 in the U.S. hit a record high.[1] Over 10% of Asia's population have attained this milestone, with the region set to see the fastest growth in seniors over the coming decades.[2] Those reaching 65 globally are projected to live to over 83 on average.[3] Meanwhile, over 700,000 people on the planet may have celebrated a three-digit birthday.[4]

Adding many years to life surely ranks as one of humanity's greatest achievements. However, with advancing age come more frailties and ailments. According to the National Council on Aging, nearly 80% of adults of 60 and older have two or more chronic conditions.[5] The prevalence of dementia may almost triple in China and Brazil between 2021 and 2050, with substantial increases across much of the developed world.[6]

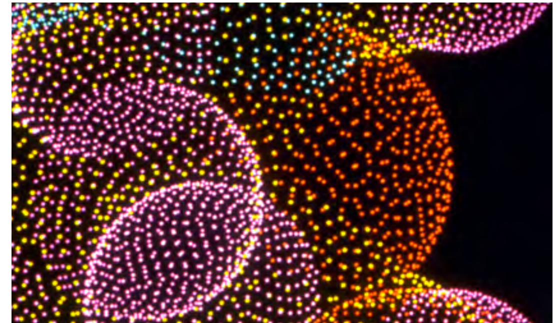
As the world's senior cohort continues expanding, the strain on healthcare systems, government finances and individual resources is likely to intensify. In the next five years alone, global spending per capita on healthcare may increase by some 18.4%.[7]

The next challenge for humanity is to enable people to remain healthier for more of their extended years. We believe healthcare innovation can help. Indeed, advances in therapeutics and treatments, devices and diagnostics, and long-term care will be essential. Rather than simply treating people who have fallen ill, the focus needs to shift to preventing illness before it even strikes. The goal is better health outcomes at lower cost of care.

To encourage a shift toward prevention and early intervention, we see an increasing role for value-based care (VBC). Whereas traditional healthcare has tended to reward providers based on activity – such as how many scans and procedures they perform – VBC incentivizes providers to seek better outcomes for patients. Better monitoring of elderly people's condition – for example, via smart wearable devices – more home and community-based care, and a more proactive approach to managing chronic disease form part of this approach.

Attempts to prevent and reduce later-life illnesses should not wait until seniority is reached, however. For example, glucagon-like peptide-1 (GLP-1) drugs are already helping to transform how obesity is treated. Trials suggest they may also help to reduce the risk of cardiovascular disease, chronic kidney disease, fatty liver disease and perhaps even dementia. So, GLP-1 drugs could help keep people healthier as they approach old age. That said, manufacturing capacity and access, including cost considerations, may be the next obstacle to even wider adoption. Meanwhile, next-generation treatments promising even greater benefits, such as more weight loss, higher tolerability and improvements in body composition, will need to complete clinical trials. Historically, this has proved risky, time-consuming and expensive, albeit with high potential rewards.

For all the efforts to keep people healthy for longer, old age illness will nonetheless remain a fact of life. Further clinical innovations are therefore vital. Research into areas such as chronic inflammation, action to eliminate cells that contribute to aging and disease, potential regenerative measures, and tailored treatments for neurogenerative diseases are just some of what cutting-edge biotechnology and other firms are working on. Of course, any progress will demand continued heavy expenditure and will encounter development failures along the way.

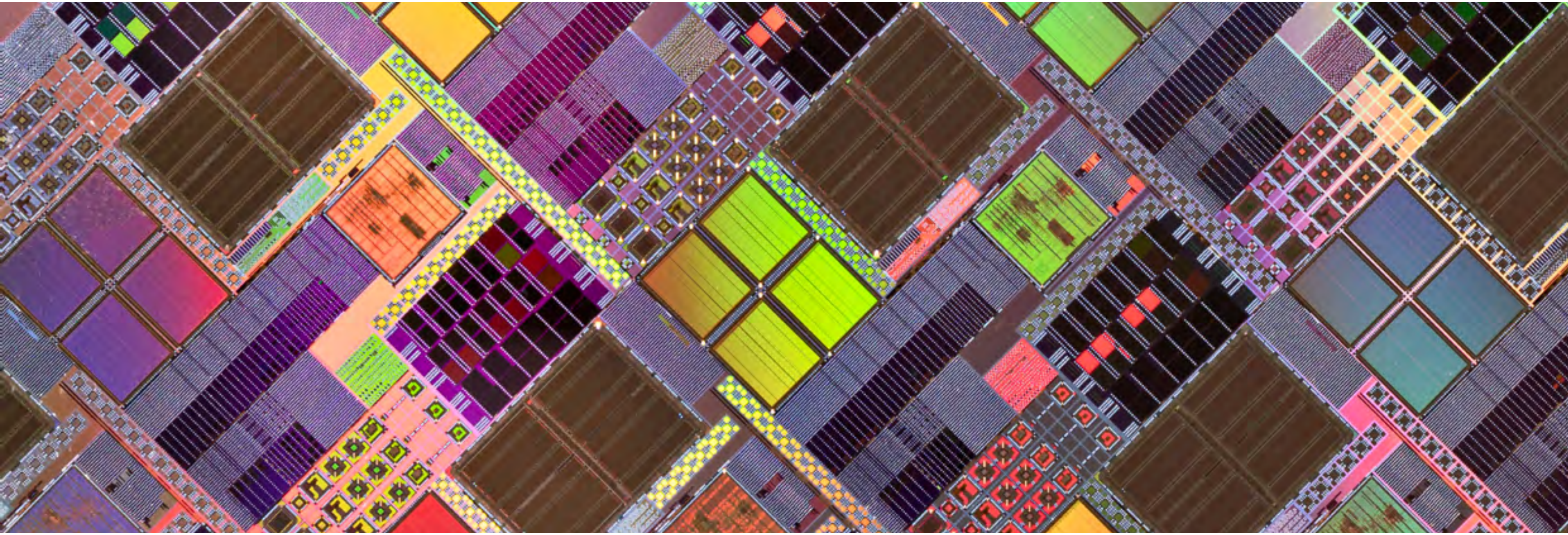


We look for artificial intelligence (AI) to shape almost every aspect of healthcare innovation in the years ahead. Within value-based care, for example, AI could increasingly assist in prevention by identifying older people most at risk of illnesses, developing personalized treatment plans, enabling remote monitoring and enhancing providers' administration. Likewise, AI is already enhancing drug development, helping in the search for new treatments. Significant technical challenges and the need to study therapies in human clinical studies, along with data protection, algorithmic biases and regulatory compliance, are among the hurdles faced.

Given the intersection of the forces of aging and innovation, we regard longevity-driven healthcare demand as an unstoppable trend. We therefore favor long-term portfolio exposure to this sector, with its potential to deliver ongoing earnings growth and withstand economic downturns. Naturally, the businesses involved are typically complex. Clinical trial outcomes, regulatory intervention and drug price negotiations pose ongoing risks for investors. For these reasons, we prefer exposure via specialist active managers with an established record. Having lagged in recent times, we also believe the sector could potentially outperform in 2025 – see **equities: shifting leadership in an ongoing bull market.**

All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

[1] Bloomberg, as of Sep 2024
[2,3,4,7] Statista, as of Oct 2024
[5] The National Council on Aging, as of Oct 2023
[6] Citi GPS – Future of Healthcare, as of May 2024



positioning portfolios amid *U.S.–China polarization*

As the strategic friction between the U.S. and China persists, we favor exposure to potential beneficiaries of this dynamic relationship.

The U.S. and China – the “G2 nations” – remain locked in an intense standoff. However, there is nothing stationary about their strategic rivalry. Instead, we expect its constant shifts to continue having far-reaching economic, technological, geopolitical and other effects. In turn, this may produce potential opportunities and risks for investors, both shorter and longer term. We therefore see “G2 polarization” as an unstoppable trend, with potential implications for every portfolio. Here, we consider some key developments in this rivalry and what they may mean for investors.

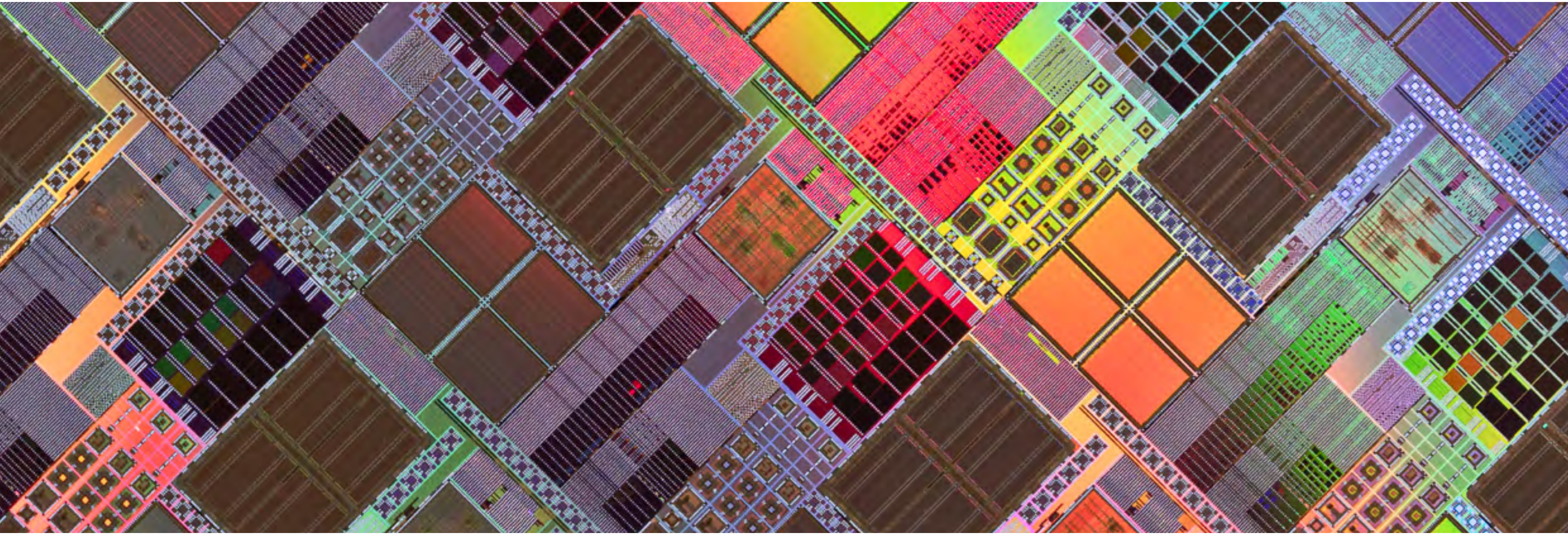
key takeaways

→ Competitive tensions between the U.S. and China are set to continue under President Trump

→ Both the U.S. and China – the G2 powers – are seeking to strengthen their supply chains

→ Potential beneficiaries span various industries in Southeast Asia, Latin America and the U.S.

→ Supply disruptions, volatility, governance and currency issues are among the risks



TRUMP TO PICK UP WHERE HE LEFT OFF

We expect President-elect Donald Trump to hike tariffs on Chinese goods and toughen other trade restrictions. Rather than his mooted 60%+ tariffs on all Chinese imports, however, we look for significant hikes in many product groups. Chinese retaliatory tariffs – especially in agriculture – as well as rare earth export caps and tougher regulations on U.S. companies operating in China may follow. Such moves may only have limited impact on companies and sectors outside the directly affected areas. China may also try to strengthen trade relations with other emerging markets and with Europe if the latter are also hit with tariffs.

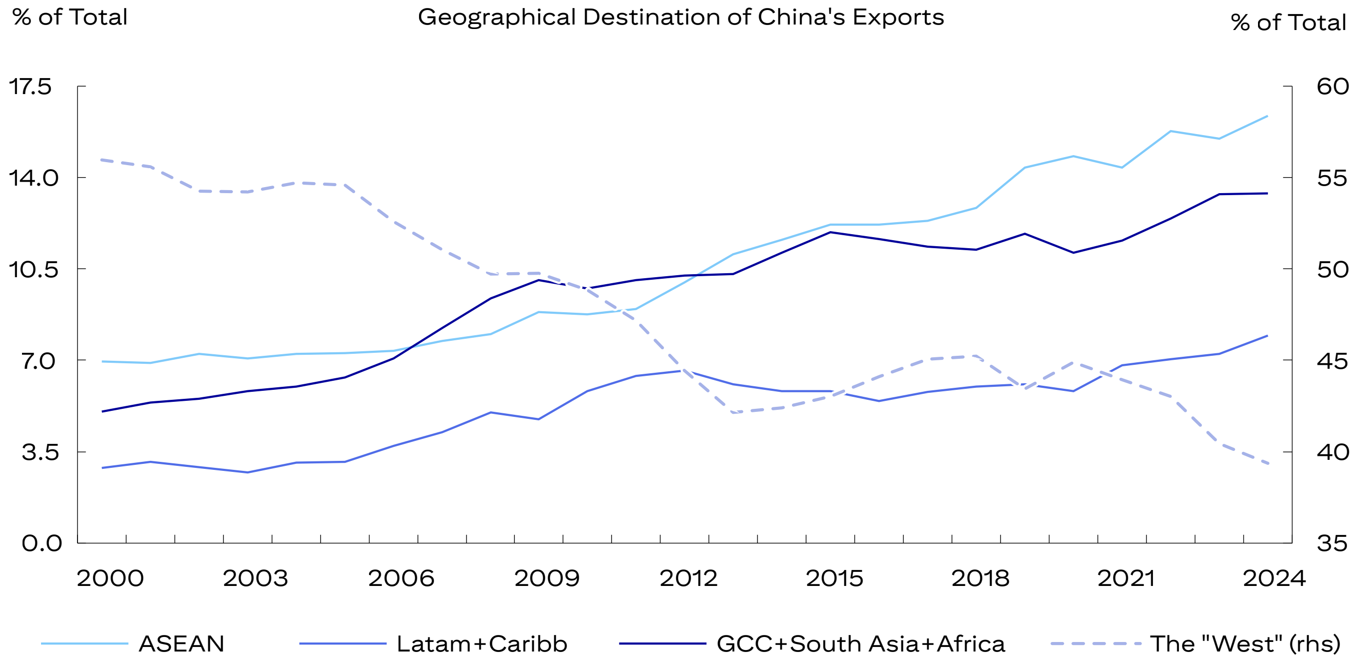
If tougher tariffs on China coincided with broad-based tariffs on U.S. imports from other nations, it could negatively affect global growth, disrupting financial markets too. This could push up the U.S. currency and Treasury yields. Sharp depreciation of China's currency could hurt economies that directly compete with or export to China, such as South Korea, Taiwan and others in Southeast Asia.

Beyond the short-term shock if major new tariffs are imposed, we would look for China and indeed other targets to adapt over time. China continues to deepen its economic ties away from the Western powers – **figure 1.** Chinese companies are trying both to develop new business and find alternative routes into the U.S. and other markets. At the same time, they are seeking to source more raw materials from developing nations and less from the U.S. and Australia. China's customers likewise are sourcing more from China and less from the West. The new Trump administration could accelerate these trends.

We expect continued protectionism on both sides in key areas

FIGURE 1

more chinese exports to other emerging markets, less to the West



Source: South–South Linkages and Its Implications – Citi Research, as of Oct 2024. Note: The West – U.S., Canada, U.K., European Union, Norway, Japan, Australia and New Zealand. ASEAN (Association of Southeast Asian Nations) – Indonesia, Vietnam, Laos, Brunei, Thailand, Myanmar, the Philippines, Cambodia, Singapore and Malaysia. GCC (Gulf Cooperation Council) countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

INTENSIFYING RIVALRY IN TECH AND BEYOND

We look for intensified U.S.–China competition in many areas of the technology race including quantum sensors, high-performance computing and advanced integrated circuit design. In the first half of 2024, China may have spent $25bn on chip-making equipment, exceeding the combined total spending of South Korea, Taiwan and the U.S.

Increased U.S. government support may follow, protecting intellectual properties and incentivizing domestic innovation to be strategically and competitively positioned in key technology sectors. The U.S. recently hiked tariffs on Chinese electric vehicles (EVs) from 25% to 100% and battery parts up to 25%.[1] The global EV market is set to keep splitting into two rival blocs, forcing U.S. consumers to pay more while also slowing the EV uptake in its early stages.

In healthcare, the U.S. may enact a law that seeks to cut certain China-based life science suppliers from the drug development supply chain. If so, it would hurt some onshore Chinese biotechnology companies, while boosting some in the U.S. and Europe.

We expect continued protectionism on both sides for areas such as semiconductors, data centers and critical minerals. In addition to greater investment, China's response has included recent export restrictions on strategic minerals such as antimony, a critical input to semiconductor production.

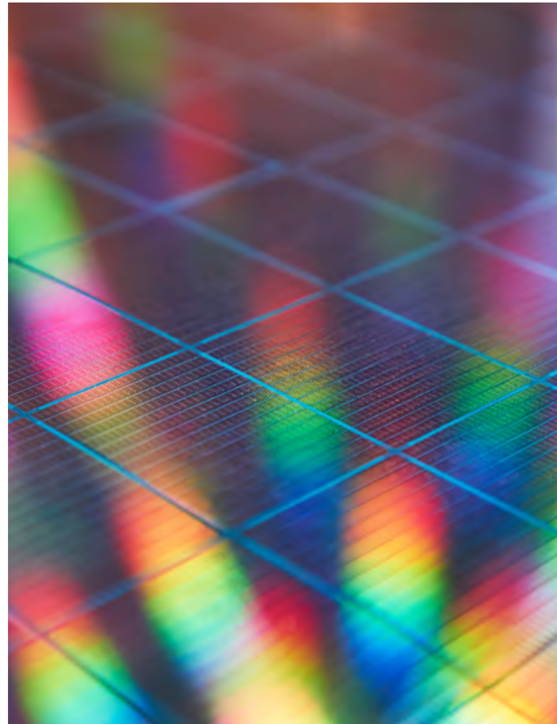
CHINA'S STIMULUS AND G2 RELATIONS

China's long-awaited and comprehensive package of economic stimulus policies – announced in September and October 2024 – include unprecedented measures to refinance local governments and boost domestic demand. If successful, the country's growth could ultimately depend less on exports, potentially reducing its vulnerability to tariffs and trade tensions with the U.S. The potential for larger imports might give China additional leverage over some of its trading partners, potentially drawing them closer to China and away from the U.S. sphere of influence.

POSITIONING PORTFOLIOS FOR POLARIZATION

Just as G2 polarization is multifaceted, we favor multifaceted investment exposure to this unstoppable trend.

These include potential beneficiaries of U.S. and Chinese supply chain shakeups. Further trade friction is likely to encourage more firms – including U.S. and Chinese companies – to strengthen their operations in neutral third countries. Countries such as Malaysia and Indonesia in Southeast Asia, Mexico and others in Latin America could get a boost. Investors might also consider markets such as Japan and India to seek exposure to economic growth in Asia – see **equities: shifting leadership in an ongoing bull market.** Industries such as motor vehicles and parts, consumer and capital goods may be at the forefront. Within the U.S., we are attracted to providers of the technology and basic materials for reshoring semiconductor production.



Amid the unpredictability of G2 relations, investing in this theme comes with various risks. Unstable trade policies could end up hitting neutral countries, for example, such that their access to U.S. and Chinese markets is more constrained. Emerging market investments are typically more volatile and subject to greater currency and governance risks. And even if our big picture view of events proves correct, evolving dynamics could adversely impact our selection of potential beneficiaries.

Nevertheless, we see many clients whose portfolios have little or no exposure to emerging markets and are therefore not adequately aligned with their long-term investment plans. We believe that suitable exposure to elements of the unstoppable trend of G2 polarization could be a way to address this.

[1] https://www.whitehouse.gov/briefing-room/statements-releases/2024/05/14/fact-sheet-president-biden-takes-action-to-protect-american-workers-and-businesses-from-chinas-unfair-trade-practices/

GLOSSARY

Adaptive Valuation Strategies is Citi Wealth's strategic asset allocation methodology. Strategic asset allocation seeks to define an appropriate mix of asset classes to pursue an investor's long-term goals.

Assets under management (AUM) are the total market value of the investments that a person or entity handles on behalf of investors.

Bank loans refers to commercial or real estate loans underwritten and sourced by banks and other regulated depository institutions. Banks may either retain the loans on their own balance sheets or, as often occurs, package a portfolio of loans to securitize to institutional investors while retaining the servicing of the loan for a fee.

BB-Rated Sub-Investment Grade Corporate Debt refers to bonds or credit instruments issued by companies or businesses that are below investment grade, also known as "junk bonds." These bonds have a relatively high credit risk and suggest that the borrower's ability to meet its financial obligations is considered speculative.

Bitcoin is a digital currency in which a record of transactions is maintained, and new units of currency are generated by the computational solution of mathematical problems, and which operates independently of a central bank.

Blockchain is a decentralized ledger of all transactions across a peer-to-peer network. Using this technology, participants can confirm transactions without a need for a central clearing authority.

Bloomberg Emerging Markets USD Aggregate Index measures the performance of hard currency emerging markets (EM) debt, including fixed and floating-rate U.S. dollar-denominated debt issued from sovereign, quasi-sovereign and corporate EM issuers.

Bloomberg Global Aggregate Index is a benchmark for the global fixed income market, incorporating global investment grade debt from 24 local currency developed and emerging markets. This multi-currency benchmark includes Treasury, government-related, corporate and securitized fixed-rate bonds.

Bloomberg Global Aggregate Fixed Income ex USD Index measures the performance of global investment grade bonds. This index does not include bonds from the U.S. This characteristic allows this index to serve well for tracking international bond exposure.

Bloomberg US Aggregate Index is a broad base, market capitalization–weighted bond market index representing intermediate term investment grade bonds traded in the United States.

Bloomberg US Investment Grade CMBS Index measures the market of Agency and non-Agency conduit and fusion CMBS deals with a minimum current deal size of $300 million.

Bloomberg US Investment Grade Corporate Index is a benchmark of investment grade, fixed-rate, taxable corporate bonds. It includes U.S. dollar-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers.

Bloomberg US MBS Index tracks fixed-rate agency mortgage-backed pass-through securities guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA) and Freddie Mac (FHLMC).

Bloomberg US Muni Index measures the performance of the Bloomberg U.S. Municipal bond market, which covers the USD-denominated long-term tax-exempt bond market across state and local general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds.

Bloomberg US Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury.

Cash also includes "cash equivalents" such as money market funds, CDs, and short-term Treasury bills beyond fully fungible cash sitting in a savings or checking account. Cash in the U.S. is represented by the three-month government bond Treasury rate, measuring the U.S. dollar (USD)-denominated active three-month fixed-rate, nominal (i.e., non-inflation-adjusted) debt issued by the U.S. Treasury.

Commodities are an asset class containing the index composites – GSCI Precious Metals Index, GSCI Energy Index, GSCI Industrial Metals Index and GSCI Agricultural Index – measuring investment performance in different markets, namely precious metals (e.g., gold, silver), energy (e.g., oil, coal), industrial metals (e.g., copper, iron ore) and agricultural (i.e., soy, coffee), respectively. The Reuters/Jeffries CRB Spot Price Index and the TR/CC CRB Excess Return Index, an arithmetic average of commodity futures prices with monthly rebalancing, are used for supplemental historical data.

Consumer Price Index (CPI) measures inflation by tracking the changes in prices paid by consumers for a basket of goods and services over time. A second CPI measured monthly called "core CPI" excludes specific items like food and energy due to their volatility.

Cryptocurrency is a digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority.

DAI is an Ethereum-based cryptocurrency asset pegged to the U.S. dollar by locking other crypto assets in contracts.

Developed Market Equities are composed of MSCI indices capturing large-, mid- and small-cap representation across 9 individual developed markets countries, as weighted by the market capitalization of these countries. The composite covers approximately 95% of the free float-adjusted market capitalization in each country.

Directional funds are alternatives funds expected to display moderate to high positive correlation and/or beta to traditional risk asset classes such as equities over an investment cycle (though some funds in this category may display variable levels of correlation at certain points of the cycle). Such funds often invest with a (sometimes significant) net-long bias, and because of this may also carry a higher level of risk. This internal classification is based on the analysis and subjective views of CGW-Alternatives. The internal classification is subject to change without notice to investors and there is no guarantee that the funds will perform as described above. It is important to note that the market strategy described above will not completely eliminate market risk. There is no guarantee that alternatives funds classified as "Directional" will perform as described above. Alternatives funds should not be invested in based on their classifications as "Directional" and other assets in a client's overall portfolio should be taken into consideration before an investment is made.

Diversifying funds are alternatives funds that are typically expected to display low and often negative correlation and/or beta to traditional risk asset classes such as equities over an investment cycle (though some funds in this category may display variable degrees of market correlation at certain points of the cycle). Such funds are designed to perform better during periods of high market volatility and generally may provide attractive diversification benefits to a client's portfolio, although returns may vary between gains and losses and can be volatile during any given period. This internal classification is based on the analysis and subjective views of CGW Alternatives. The internal classification is subject to change without notice to investors and there is no guarantee that the funds will perform as described above. It is important to note that the market strategy described above will not completely eliminate market risk. There is no guarantee that alternatives funds classified as "Diversifying" will perform as described above. Alternatives funds should not be invested in based on their classification as "Diversifying" and other assets in a client's overall portfolio should be taken into consideration before an investment is made.

Dollarization is the process by which a country decides to adopt the U.S. dollar as its currency or use it in parallel with its own domestic currency.

Earnings per share (EPS) is a metric of company or many companies' profitability, calculated by taking net income and dividing it by the number of shares in issue.

Emerging Market Equities are composed of MSCI indices capturing large- and mid-cap representation across 20 individual emerging-market countries. The composite covers approximately 85% of the free float-adjusted market capitalization in each country. For the purposes of supplemental long-term historical data, local-market country indices are used, wherever applicable.

Emerging Markets Fixed Income is composed of Bloomberg indices measuring performance of fixed and floating-rate U.S. dollar- denominated emerging markets sovereign debt for 3 different regions including Latin America, EMEA and Asia.

Ethereum is a decentralized blockchain platform that establishes a peer-to-peer network that securely executes and verifies application code, called smart contracts.

Evergreen funds are investment vehicles without a fixed end date, which enables them to reinvest continuously and accept new capital from investors.

General partner (GP)–led secondaries are initiated by the manager of an existing private equity fund. The manager either sells part of a single company or several fund assets in a transaction led by a secondaries manager by rolling them into a new investment entity.

Hedge funds are composed of alternative investment managers employing different investment styles as characterized by different subcategories. Some tend to involve the use of leverage (and therefore also the potential for asymmetric losses) and lower liquidity, along with some combination of greater diversification and the potential for enhanced returns.

High Yield Fixed Income is composed of Bloomberg indices measuring the non-investment grade, fixed-rate corporate bonds denominated in USD, GBP and EUR. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below, excluding emerging market debt. Ibbotson High Yield Index, a broad high yield index including bonds across the maturity spectrum, within the BB-B rated credit quality spectrum, included in the below-investment-grade universe, is used for supplemental historical data.

Ice BofA Investment Grade Institutional Capital Securities Index tracks the performance of U.S. dollar-denominated investment grade hybrid capital corporate and preferred securities publicly issued in the U.S. domestic market.

Investment Grade Fixed Income is composed of Bloomberg indices capturing investment-grade debt from 7 different local currency markets. The composite includes fixed-rate treasury, government-related, and investment grade rated corporate and securitized bonds, and mortgage-backed securities from the developed-market issuers. Local market indices for U.S., U.K. and Japan are used for supplemental historical data.

Large-cap equities are shares from firms with a market capitalization value of more than $10 billion.

Morningstar LSTA US Leveraged Loan 100 Index measures the performance, activity and key characteristics of the most tradeable loans in the U.S. leveraged loan market (see "Bank loans, also known as leveraged loans," above). Index constituents include the 100 largest facilities (i.e., outstanding loans) at any given time in the U.S., weighted by market value, subject to a single loan facility weight cap of 2%.

MSCI All-Country World Index (ACWI) represents performance of large- and mid-cap stocks across 23 developed and 24 emerging markets.

MSCI All Country World ex USA measures large- and mid-cap equity representation across 22 of 23 developed markets (DM) countries*– excluding the U.S..

MSCI ACWI Total Return Index captures total returns of a broad-based equity index covering developed and emerging markets.

MSCI Brazil measures the performance of the large- and mid-cap segments of the Brazilian equity market. With 52 constituents, the index covers about 85% of the Brazilian equity universe.

MSCI China Index measures large- and mid-cap performance across China A shares, H shares, B shares, red chips, P chips and foreign listings (e.g., ADRs).

MSCI Emerging Market Asia is designed to measure large- and mid-cap equity performance across emerging markets countries, covering around 85% of the free float-adjusted market capitalization in each country.

MSCI India Index measures the performance of the large- and mid-cap segments of the Indian equity market.

MSCI Japan measures the performance of the large- and mid-cap segments of the Japanese equity market.

MSCI USA measures the performance of the large- and mid-cap segments of the U.S. equity market.

Municipal bonds or "munis" is debt issued by state and local governments to help fund capital projects. From a U.S. taxpayer's perspective, munis' yields are exempt from federal and (in some cases) state income taxes.

Preferred securities, or "preferreds," are a form of stock that act almost like a bond. Investors who buy them are usually offered a fixed dividend payout on a set schedule for as long as they own those shares, which offers some more predictability than standard dividend-paying common shares. But there are also downsides: dividend payments can be deferred if the company has a financial hardship; the shares come with no voting rights; and while the shares trade on an exchange as common shares do, most companies don't issue preferred stock so the total market for them is small, and liquidity can be limited.

Private credit investing, a subset of private equity, is an asset class defined by non-bank lending where the debt is not issued or traded on the public markets. Private credit can also sometimes be referred to as "direct lending" or "private lending." Private credit covers a wide variety of strategies that span the capital structure and borrower types – from senior secured loans for blue-chip corporate borrowers to special and distressed situations. Different private credit carries different risk/reward based on the seniority of the loans.

Private Equity's characteristics are driven by those for Developed Market Small-Cap Equities, adjusted for illiquidity, sector concentration, and greater leverage.

Real Estate index contains all Equity REITs (US REITs and publicly traded real estate companies) not designated as Timber REITs or Infrastructure REITs: NAREIT US REIT Index, NAREIT Canada REIT Index, NAREIT UK REIT Index, NAREIT Switzerland REIT Index, NAREIT Eurozone REIT Index, NAREIT Japan REIT Index, NAREIT Hong Kong REIT Index, NAREIT Singapore REIT Index, NAREIT Australia REIT Index.

Small- and mid-cap (SMID) equities are publicly traded equities from smaller and middle-sized companies. In the U.S., the most-used SMID-cap benchmark is the Russell 2000 Index.

Spread is the difference between the yields on two related assets, such as Treasuries and an equivalent corporate bond. It measures how much additional yield an investor might seek on a particular asset. When the difference between two yields decreases, the spread is said to "tighten." The opposite phenomenon is known as "widening."

Stablecoin and Algorithmic Stablecoin are stablecoins whose value is maintained through algorithmic mechanisms rather than being pegged to external assets. An "algorithmic stablecoin" is a type of cryptocurrency designed to maintain its value stability through the implementation of algorithmic mechanisms.

Strategic Return Estimates (SREs) are Citi Wealth Investments' annualized forecasts of returns for asset classes over a 10-year time horizon. The forecast for each specific asset class is made using a proprietary methodology that we believe is appropriate for that asset class.

Structured credit is a type of investment in which an issuer utilizes securitization to pool similar debt obligations, creating novel financial instruments to enable better use of available capital or serve as a cheaper source of funding, especially for lower-rated originators.

S&P 400 Growth measures performance of S&P Midcap 400 constituents that are classified as growth stocks based on their sales growth, the ratio of earnings change to price, and momentum.

S&P 500 is a capitalization-weighted index measuring the performance of 500 leading U.S. companies.

S&P 600 Growth measures the performance of S&P SmallCap 600 constituents classified as growth stocks based on three factors: sales growth, the ratio of earnings change to price, and momentum.

Tether (USDT) is the symbol for Tether, a cryptocurrency that is pegged to the U.S. dollar. This means USDT is a stablecoin, fluctuating in value with the U.S. dollar and backed by Tether's dollar reserves.

Treasury Inflation-Protected Securities (TIPS) are a type of Treasury bond indexed to an inflationary gauge. TIPS can help preserve against a decline in investors' purchasing power.

USD Coin (USDC) is a stablecoin pegged to the United States dollar.

Volatility is a statistical measurement of the variability of return, commonly defined as either the variance or standard deviation of returns. The higher an asset or asset class's volatility, the riskier it is seen as being.

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Structured products can be highly illiquid and are not suitable for all investors. Additional information can be found in the disclosure documents of the issuer for each respective structured product described herein. Investing in structured products is intended only for experienced and sophisticated investors who are willing and able to bear the high economic risks of such an investment. Investors should carefully review and consider potential risks before investing.

OTC derivative transactions involve risk and are not suitable for all investors. Investment products are not insured, carry no bank or government guarantee, and may lose value. Before entering into these transactions, you should: (i) ensure that you have obtained and considered relevant information from independent reliable sources concerning the financial, economic and political conditions of the relevant markets; (ii) determine that you have the necessary knowledge, sophistication and experience in financial, business and investment matters to be able to evaluate the risks involved, and that you are financially able to bear such risks; and (iii) determine, having considered the foregoing points, that capital markets transactions are suitable and appropriate for your financial, tax, business and investment objectives.

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If you buy options, the maximum loss is the premium. If you sell put options, the risk is the entire notional below the strike. If you sell call options, the risk is unlimited. The actual

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Bonds are affected by a number of risks, including fluctuations in interest rates, credit risk and prepayment risk. In general, as prevailing interest rates rise, fixed income securities prices will fall. Bonds face credit risk if a decline in an issuer's credit rating, or creditworthiness, causes a bond's price to decline. High yield bonds are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issues. Finally, bonds can be subject to prepayment risk. When interest rates fall, an issuer may choose to borrow money at a lower interest rate, while paying off its previously issued bonds. As a consequence, underlying bonds will lose the interest payments from the investment and will be forced to reinvest in a market where prevailing interest rates are lower than when the initial investment was made.

Bond rating equivalence

Alpha and/or numeric symbols used to give indications of relative credit quality. In the municipal market, these designations are published by the rating services. Internal rating are also used by other market participants to indicate credit quality.

Bond credit quality ratings	Rating agencies		
Credit risk	**Moody's[1]**	**Standard and Poor's[2]**	**Fitch Rating[2]**
Investment			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (Strong)	A	A	A
Medium grade	Baa	BBB	BBB
Not Investment Grade			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

[1] The ratings from Aa to Ca by Moody's may be modified by the addition of a 1, 2, or 3, to show relative standing within the category.

[2] The rating from AA to CC by Standard and Poor's and Fitch Ratings may be modified by the addition of a plus or a minus to show relative standings within the category.

(MLP's) - Energy Related MLPs May Exhibit High Volatility. While not historically very volatile, in certain market environments Energy Related MLPS may exhibit high volatility.

Changes in Regulatory or Tax Treatment of Energy Related MLPs. If the IRS changes the current tax treatment of the master limited partnerships included in the Basket of Energy Related MLPs thereby subjecting them to higher rates of taxation, or if other regulatory authorities enact regulations which negatively affect the ability of the master limited

partnerships to generate income or distribute dividends to holders of common units, the return on the Notes, if any, could be dramatically reduced. Investment in a basket of Energy Related MLPs may expose the investor to concentration risk due to industry, geographical, political, and regulatory concentration.

Mortgage-backed securities ("MBS"), which include collateralized mortgage obligations ("CMOs"), also referred to as real estate mortgage investment conduits ("REMICs"), may not be suitable for all investors. There is the possibility of early return of principal due to mortgage prepayments, which can reduce expected yield and result in reinvestment risk. Conversely, return of principal may be slower than initial prepayment speed assumptions, extending the average life of the security up to its listed maturity date (also referred to as extension risk).

Additionally, the underlying collateral supporting non-Agency MBS may default on principal and interest payments. In certain cases, this could cause the income stream of the security to decline and result in loss of principal. Further, an insufficient level of credit support may result in a downgrade of a mortgage bond's credit rating and lead to a higher probability of principal loss and increased price volatility. Investments in subordinated MBS involve greater credit risk of default than the senior classes of the same issue. Default risk may be pronounced in cases where the MBS security is secured by, or evidencing an interest in, a relatively small or less diverse pool of underlying mortgage loans.

MBS are also sensitive to interest rate changes which can negatively impact the market value of the security. During times of heightened volatility, MBS can experience greater levels of illiquidity and larger price movements. Price volatility may also occur from other factors including, but not limited to, prepayments, future prepayment expectations, credit concerns, underlying collateral performance and technical changes in the market.

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

- loss of all or a substantial portion of the investment due to leveraging, short-selling, or other speculative practices;
- lack of liquidity in that there may be no secondary market for the fund and none is expected to develop;
- volatility of returns;
- restrictions on transferring interests in the 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
- manager risk.

Individual funds will have specific risks related to their investment programs that will vary from fund to fund.

Asset allocation does not assure a profit or protect against a loss in declining financial markets.

Diversification does not guarantee a profit or protect against loss. Different asset classes present different risks.

The indexes 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. Index returns do not include any expenses, fees or sales charges, which would lower performance.

Past performance is no guarantee of future results.

International investing entails greater risk, as well as greater potential rewards compared to US 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 economics.

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.

Factors affecting commodities generally, index components composed of futures contracts on nickel or copper, which are industrial metals, may be subject to a number of additional factors specific to industrial metals that might cause price volatility. These include changes in the level of industrial activity using industrial metals (including the availability of substitutes such as manmade or synthetic substitutes); disruptions in the supply chain, from mining to storage to smelting or refining; adjustments to inventory; variations in production costs, including storage, labor and energy costs; costs associated with regulatory compliance, including environmental regulations; and changes in industrial, government and consumer demand, both in individual consuming nations and internationally. Index components concentrated in futures contracts on agricultural products, including grains, may be subject to a number of additional factors specific to agricultural products that might cause price volatility. These include weather conditions, including floods, drought and freezing conditions; changes in government policies; planting decisions; and changes in demand for agricultural products, both with end users and as inputs into various industries.

The information contained herein is not intended to be an exhaustive discussion of the risks, strategies or concepts mentioned herein or tax or legal advice. Readers interested in the strategies or concepts should consult their tax, legal, or other advisors, as appropriate.

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There is currently no globally accepted framework or definition (legal, regulatory or otherwise) nor market consensus as to what constitutes, an "ESG", "sustainable", "impact" or an equivalently labelled product, or regarding what precise attributes are required for a particular investment, product or asset to be defined as such. Different persons may arrive at varied conclusions when evaluating the sustainability attributes of a product or any of its underlying investments. Certain jurisdictional laws and regulations require classifications of investment products against their own sustainability definitions and as such there is likely to be a degree of divergence as to the meaning of such terms. For example, the term "sustainable investing" where used in this disclosure is by reference to CWI's internal framework rather than any defined meaning under jurisdictional laws and regulations. There is no guarantee that investing in these products will have a sustainability impact.

There are numerous ESG data providers that evaluate companies on their ESG performance and provide reports, ratings, and benchmarks. Report, rating and benchmark methodology, scope, and coverage, vary greatly among providers. ESG data may not be available for all companies, securities, or geographies and as such, may not necessarily be reliable or complete. Such data will also be subject to various limitations, including (inter alia): i) limitations in the third-party data provider's methodologies; ii) data lags, data coverage gaps or other issues impacting the quality of the data; iii) the fact that there are divergent views, approaches, methodologies and disclosure standards in the market, including among data providers, with respect to the identification, assessment,

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