2025

The year of

Outlook

Building on strength

Easing global policy
Normalizing policy rates
U.S. & Japan over EM
Continued U.S. housing shortage
Productivity gains
Increased dealmaking

Capital investments
AI: Boom or bust?
Healthcare disruption
Automation & robotics
Building power infrastructure
Redefining security

Election impacts
Defining Trump 2.0
Sunsetting tax policy
Managing rate volatility
Anti-trust risk
Anti-establishment surge

Portfolio resilience
The wealth check
Finding value in income
Defending against inflation
Reconfigured returns
The gold rush

Investment landscapes
Evergreen alternatives
Sports & streaming
The 21st century space race
Liability management
Reimagined cities

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Foreword

As year-end approaches and we look forward to 2025, the economic landscape presents a mix of opportunities and challenges.

The global economy has been striking a constructive balance between solid growth and easing inflation. At the same time, several geopolitical factors merit consideration, including globally rising government debt. In the United States, an election has concluded; markets will analyze the incoming government's expected policy initiatives in the months ahead. Our early read: We could see increased volatility in fixed income markets and a rebound in dealmaking.

Reflecting on 2024, an impressive year for risk asset returns, we found that our market calls were generally rewarded. With clients well positioned to benefit from the past year's strong performance, we look to focus on helping them build on that strength.

Our 2025 Outlook, developed by our Global Investment Strategy Group, highlights how advancements in artificial intelligence and innovation, as well as easing monetary policy globally and increasing capital investment, can continue to drive economies and markets forward. By adding diversification and income, we believe clients can fortify portfolios to respond to an evolving economic environment.

Our ultimate goal is to build resilient portfolios that not only align with our core market views, but can also withstand various risk scenarios.

As your trusted partner, we are committed to leveraging our strong relationships and expertise to deliver the best outcomes to help you achieve your goals. We are honored to stand by your side.

Sincerely,

David Frame
CEO, U.S. Private Bank

Adam Tejpaul
CEO, International Private Bank

Key takeaways

We believe 2025 will be the year of:

01 **Easing global policy**
We believe policy rates will normalize and economies will expand.

02 **Accelerating capital investment**
We see continued spending on AI, power, infrastructure and security.

03 **Understanding election impacts**
In the U.S., we expect less regulation, wider deficits and more tariffs.

04 **Renewing portfolio resilience**
We are emphasizing income and real assets within portfolios.

05 **Evolving investment landscapes**
We anticipate opportunities in evergreen alternatives, sports and cities.

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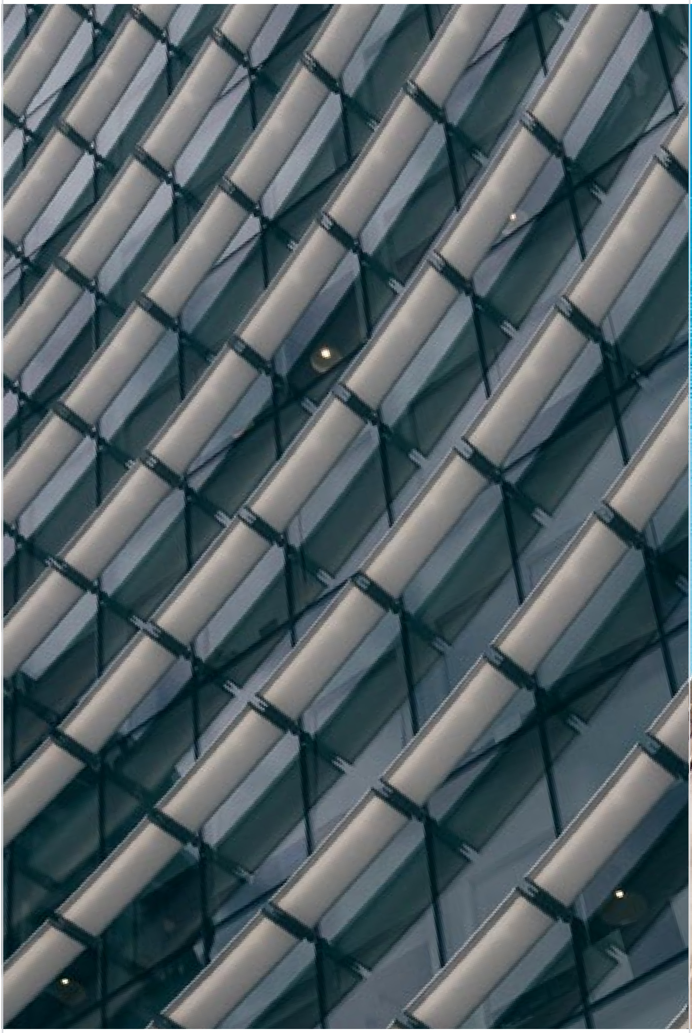
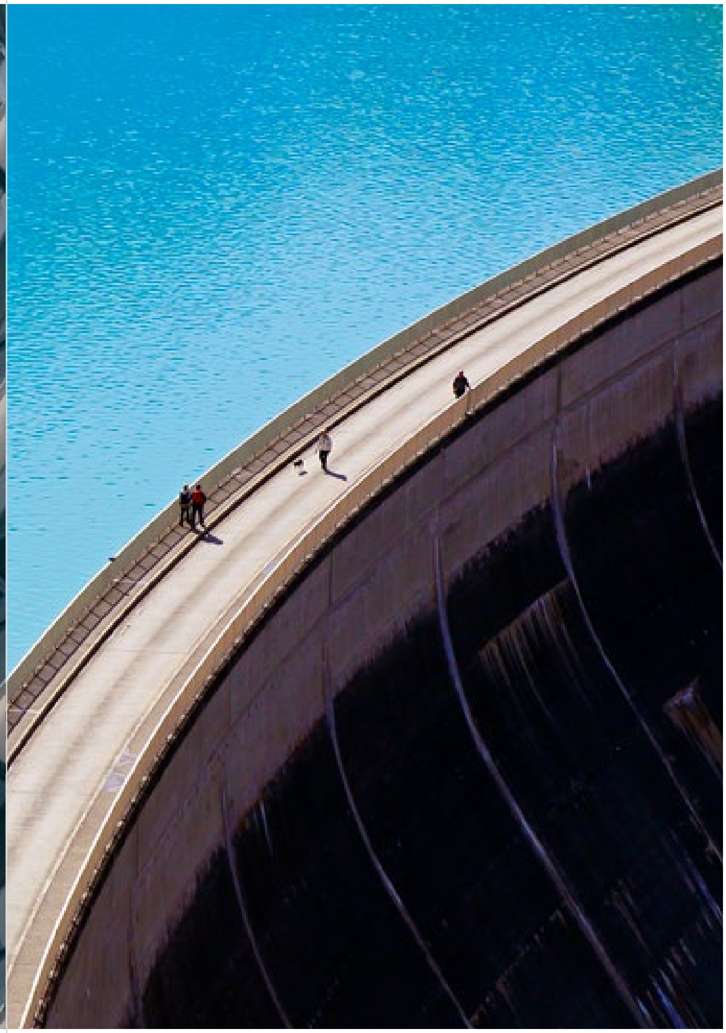
Introduction

In 2024, the macroeconomic stars aligned to deliver exceptional market performance. Inflation fell to palatable rates, GDP growth proved strong, corporate profit growth accelerated, and central banks cut policy rates. Global stocks returned 20%-plus, while bonds gained. Global multi-asset portfolios built on their 16.5% gain from 2023 with a total return of 12.5%.

Here's the good news as you consider an action plan for 2025: You're poised to build on strength. The past year's market gains provide a solid foundation, and just as important, the flexibility to weigh different approaches and fresh perspectives.





In our 2025 Outlook, we present a range of ideas—our top 25 for '25—to help you prepare for the coming year. We believe five key themes will drive markets in 2025:

- **Easing global policy**
  The global economy is in a better state of balance, allowing global central banks to cut rates and support economic growth. Falling policy rates could impact everything from U.S. housing to European productivity. Among the questions we consider: Should investors follow past "easing cycle" playbooks and buy cyclical assets such as emerging markets? Will dealmaking rebound?

- **Accelerating capital investment**
  Policymakers are focused on bolstering growth, profit-flush companies have money to spend, and three powerful trends require enormous capital infusions: artificial intelligence (AI), power and energy, and security. How close are robots to becoming a part of daily life? What sector is most exposed to AI disruption?

- **Understanding election impacts**
  In the wake of the November U.S. elections, investors are pondering the trajectory for sovereign debt and deficits, and considering what election results around the world tell us about the power of anti-establishment movements. What is the outlook for tax policy? Will anti-trust sentiment continue?

- **Renewing portfolio resilience**
  To protect the recent surge in household wealth and manage increased macroeconomic volatility, clients need resilient portfolios. This could mean a greater focus on income, returns that are less correlated to stocks and bonds, and strategies that provide downside protection without foregoing potential returns. Where should investors focus?

- **Evolving investment landscapes**
  2025 will be characterized by new frontiers in an evolving investing landscape. Among them: evergreen alternatives (investment funds with no fixed date of maturity) and sports investing. Who wins in the 21st century space race? How is the "new normal" work-life balance changing cityscapes?

Outlook 2025 explores the dimensions and implications of these themes, and how they might inform your own planning, both through the end of 2024 and throughout 2025.

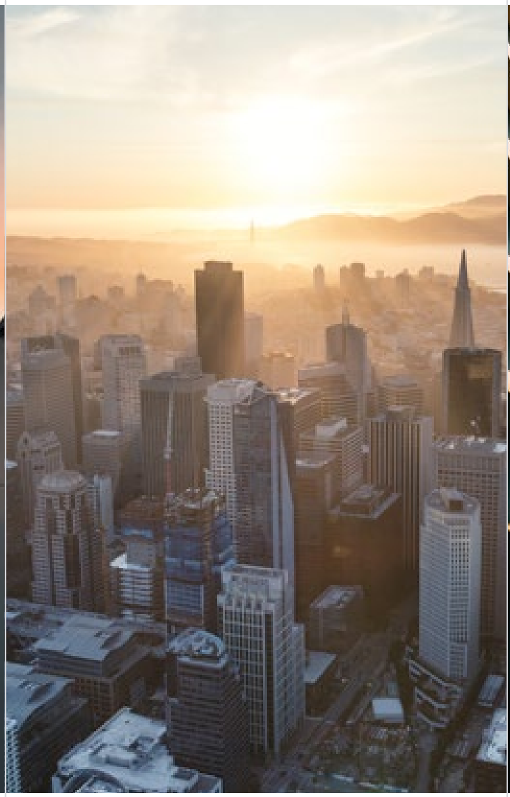
A note of caution: We don't forecast a reprise of the past year's handsome public market gains. Valuations already reflect the economic conditions that we thought would drive strong returns in 2024. The economy looks to have managed a soft landing (the recession obsession, as we called it, has faded), and inflation has cooled. In 2025, the balance between tailwinds (continued global economic expansion, falling interest rates, healthy earnings growth) and headwinds (elevated valuations, especially in U.S. large-cap stocks, tight spreads in investment grade and high yield bonds, increased macroeconomic volatility and ongoing geopolitical risks) suggest that portfolio returns are likely to outpace cash, but also revert to trend-like rates.

We suggest that investors consider maintaining balanced positioning between offense and defense, stocks and bonds, and income and capital appreciation. Private equity could benefit from growing capital investment and revived dealmaking, while infrastructure, real estate and other real assets could potentially insulate against both geopolitical and inflation risks. We believe investors should consider keeping some capital available to potentially take advantage of opportunities that may arise.

We identify some of those potential opportunities on the following pages.

Part 01— Easing global policy

- Normalizing policy rates
- U.S. & Japan over Emerging Markets & China
- Continued U.S. housing shortage
- Productivity gains
- Increased dealmaking


We believe 2025 will be the year of the global easing cycle, which underpins our first five ideas. Falling policy rates will support trend-like economic growth in the United States and the Eurozone, but not boost demand so much that it reignites inflation. In China, policymakers seem set on ensuring that growth stabilizes, especially in response to the increased likelihood of higher U.S. tariff rates.

01 Normalizing policy rates

If 2024 answered the question: "When will policy rates start to fall?," 2025 will answer the question, "How low could rates go?"

Of the 37 global central banks that we track, 27 are cutting policy rates, including every G10 central bank outside of Japan. We believe policymakers will continue to nudge rates lower. In the United States, bond market pricing implies an easing cycle that ends in the first quarter of 2026 with the policy rate near 3.5%. In Europe, investors anticipate policy rates falling below 2% by the end of 2025. We don't see many reasons to disagree with the market's view.

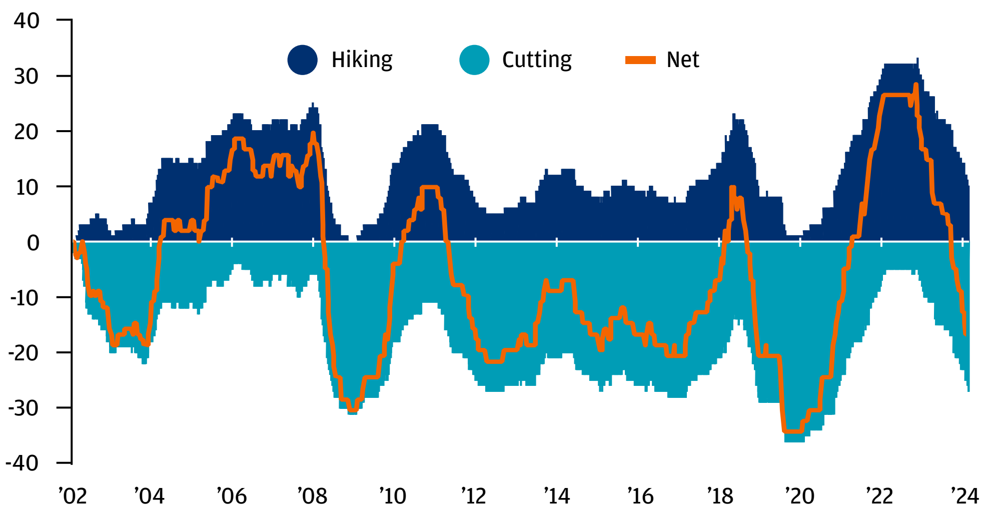
Despite the pivot in central bank policy, longer-term bond yields have fallen only marginally over the last year. There is still value in fixed income—significant value if weaker growth were to materialize. This could be especially important in European markets, where the growth outlook is worse than it is in the United States. And current yields provide income. In U.S. corporate credit and municipal markets, all-in yields still trade well above 5% on a tax-equivalent basis.

How might lower policy interest rates affect the economy? In the most recent cycle, rate hikes had a surprisingly limited impact on the broad economy. Rate cuts may have a similarly muted impact. **The global easing cycle will likely support economic growth and risk assets such as stocks and high yield bonds, but we don't think it will spark a surge in borrowing that pushes growth and inflation to an above-trend rate.**

Commercial real estate could be at a turning point, and we see potential opportunities for net operating income growth in residential housing, industrial and power-related property, and specialized workspaces (e.g., life sciences, healthcare and media).

27 OF THE 37 CENTRAL BANKS THAT WE TRACK ARE NOW LOWERING INTEREST RATES

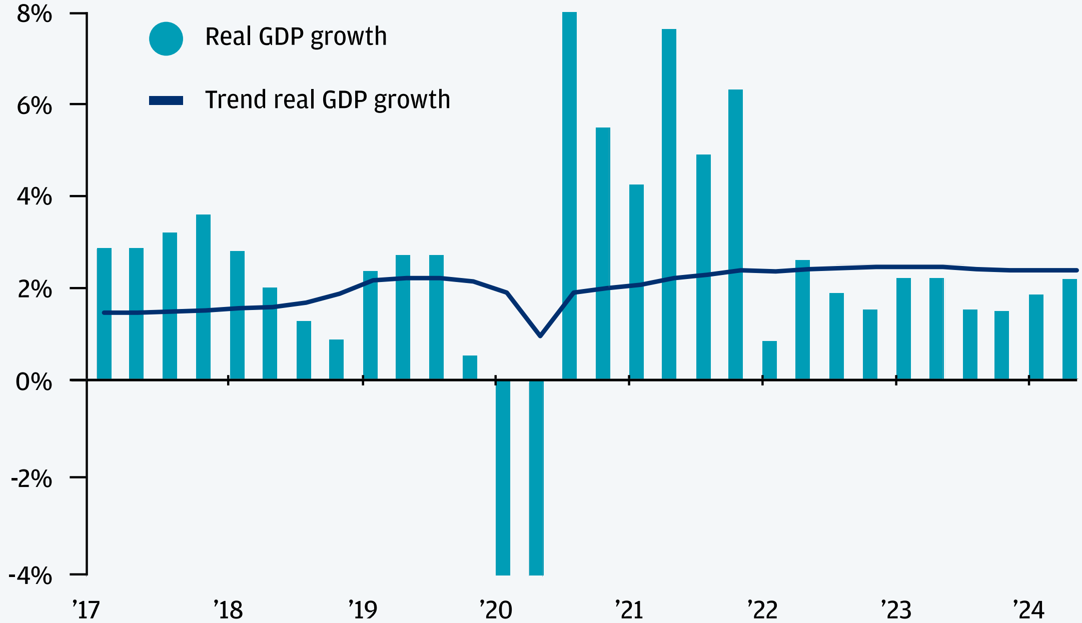
Number of central banks with last move as a hike vs. a cut



Sources: Individual central banks, FactSet. Data as of October 25, 2024.
Note: this analysis includes 37 central banks.

OECD ECONOMIES ARE ONCE AGAIN GROWING AT A TREND-LIKE PACE

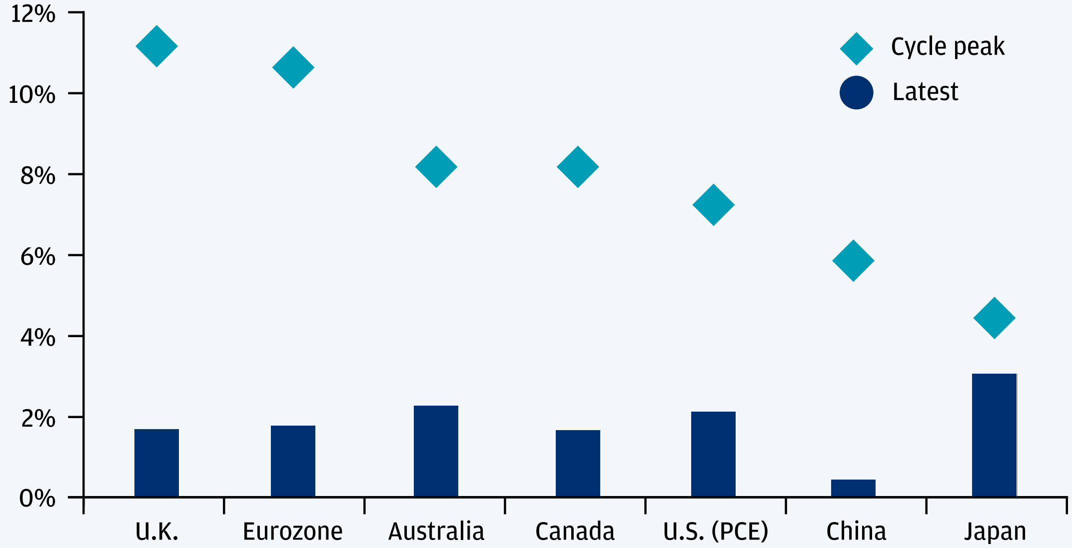
Real GDP growth & trend, quarterly SAAR, %



Sources: OECD, Haver Analytics. Data as of June 30, 2024.

INFLATION HAS RETURNED TO TARGET

Headline inflation YoY, % change



Sources: Bank for International Settlements, Australian Bureau of Statistics, Bureau of Economic Analysis, China National Bureau of Statistics, Haver Analytics. Data as of September 30, 2024.

02
U.S. & Japan over emerging markets & China

Amid global central bank easing, some investors will be tempted to increase their exposures to emerging markets. In past rate-cutting cycles, falling rates have supported emerging market (EM) assets through higher growth, increased capital flows and weaker currencies that boost exports. But we take a more cautious view. We expect developed market (DM) equities to outperform their EM counterparts in 2025, as they have for eight of the past 10 years.

EM economies face a host of challenges. Most importantly, China confronts a crisis of consumer confidence (only slightly eased by the government's recently announced stimulus package). Deflating the country's property bubble has proven very painful for households and businesses. A stark sign of wariness: Chinese retail sales are 16% below their pre-pandemic trend.[1] China also faces the prospect of a renewed trade war with the United States.

More broadly, even when EM companies do deliver strong revenue and profits, shareholder dilution means that GDP growth does not translate into earnings per share growth or market returns. Volatility in earnings and currency valuations also disrupts compounding.

The outlook for developed world equities, especially in the United States and Japan, looks much more compelling.

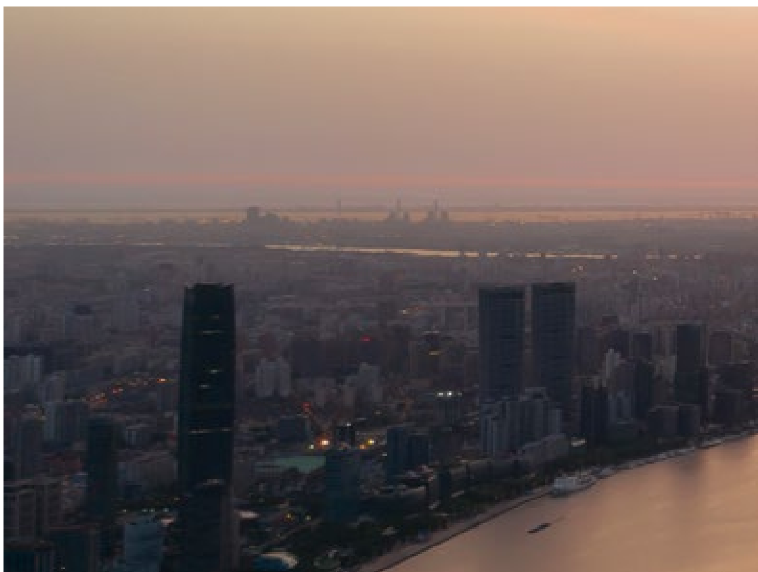
U.S. profit margins appear stable at all-time highs. This decade, S&P 500 companies have returned nearly 75% of annual earnings to shareholders through dividends and net buybacks. In the 2000s that share was only 50%.[2] While index concentration in big tech firms remains a concern (the top 10 companies account for 36% of S&P 500 market capitalization, the highest on record), every sector in the S&P 500 is expected to deliver positive earnings growth in 2025. This hasn't happened since 2018.[3]

The combination of strong earnings growth and elevated valuations in U.S. large-cap markets could potentially generate favorable returns.

Meanwhile, Japanese corporations have in recent years made major strides toward improved corporate governance and more shareholder-friendly practices. Corporate buyback announcements in 2024 doubled the previous record.[4] This trend should benefit private equity investors in Japan as well.

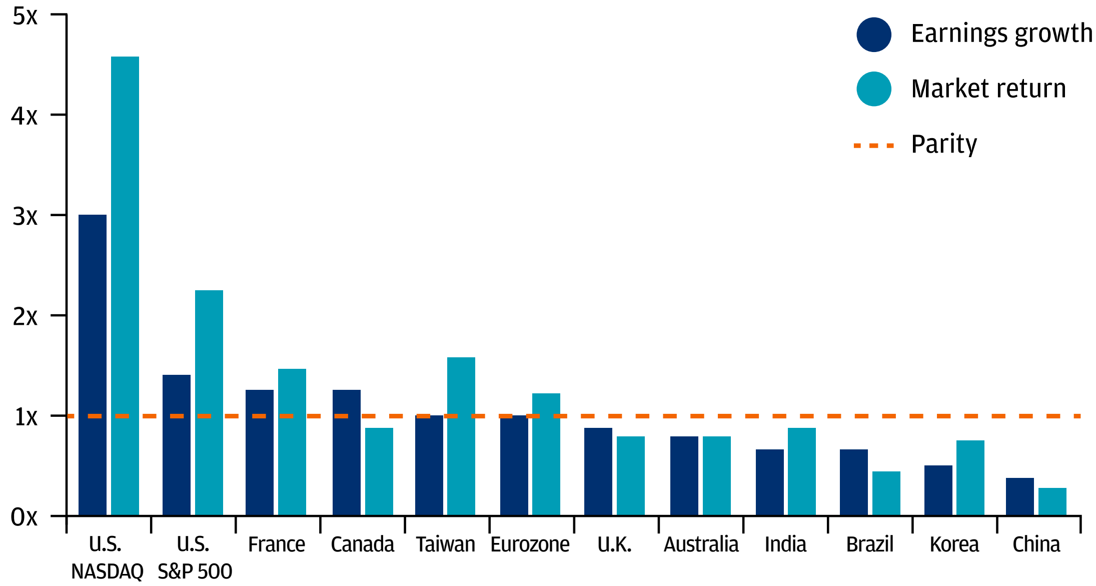
While we believe DM equities will outperform EM equities next year, Taiwan, India, Indonesia and Mexico stand out to us as regions that could deliver solid returns to shareholders in both public and private markets.

[1] Klein, M. C. (2024). Deeper Inside the Chinese Consumer Spending Data. The Overshoot.
[2] Goldstein, M. L., & Zhao, L. (2024). Market Valuation: A Deal Breaker? Empirical Research Partners.
[3] Kostin, D. J., Chavez, D., Snider, B., Hammond, R., & Ma, J. (2024). Updating our long-term return forecast for U.S. equities to incorporate the current high level of market concentration. Goldman Sachs.
[4] Goldman Sachs. Data as of August 19, 2024.



EARNINGS AND RETURNS LAG GDP GROWTH IN MANY MAJOR EMERGING MARKETS

Earnings growth and market return, multiple of GDP growth from 2010 to 2024



Sources: Bloomberg Finance L.P., Michael Cembalest, J.P. Morgan Asset Management. Data as of 2024.
Note: Japan excluded due to declining GDP.

03

Continued U.S. housing shortage

Lower mortgage rates could nudge housing sales higher, but they won't make homeownership affordable for enough new buyers.

Demand for housing far exceeds available supply. We estimate that the shortage of new homes relative to trend household demand is between 2 million and 2.5 million units. Existing home sales—currently running 25% below the 2017-2019 average pace—won't surge anytime soon. **Moreover, increasing damages from more frequent and extreme weather, combined with inadequate and unaffordable flood and fire insurance, are becoming a growing concern for homebuyers.**

To restore affordability to 2019 levels, mortgage rates would need to plummet from around 7% to 3%, or wages would have to rise at their current pace for almost nine consecutive years. Restoring housing affordability to levels before the global financial crisis could take until the end of the decade in places such as San Diego and Denver, and even longer in Las Vegas and Miami.

Home prices may continue to rise, though at a subdued pace. The dynamic of constrained existing home turnover and secular demand for housing bodes well for homebuilder operating margins, which have increased from 21% pre-pandemic to 26% (over the same period, earnings per share have nearly tripled). The largest players have an opportunity to gain market share. In 2025, we expect continued profit growth for both large-cap homebuilders and real estate investors who own single-family homes.

IT COULD TAKE MANY YEARS TO RESTORE HOME AFFORDABILITY

Expected restoration of housing affordability based on median from 1991 to 2006

Metro name	When affordability is restored assuming no change in mortgage rate	When affordability is restored assuming a 1% drop in mortgage rate
Cleveland	Already restored	Already restored
Detroit	Already restored	Already restored
Minneapolis	Q4 2026	Q3 2025
Austin	Q1 2027	Q1 2026
Washington D.C.	Q2 2027	Q1 2026
National	**Q3 2027**	**Q1 2026**
Charlotte	Q4 2027	Q4 2026
San Francisco	Q4 2027	Q4 2026
Boston	Q2 2028	Q1 2027
Portland	Q3 2028	Q2 2027
Atlanta	Q1 2029	Q1 2028
San Diego	Q1 2029	Q1 2028
Dallas	Q2 2029	Q1 2028
New York	Q2 2029	Q2 2028
Phoenix	Q1 2030	Q1 2029
Seattle	Q1 2030	Q1 2029
Denver	Q2 2030	Q1 2029
Tampa	Q4 2030	Q4 2029
Las Vegas	Q3 2031	Q1 2030
Los Angeles	Q4 2032	Q4 2031
Miami	Q1 2035	Q1 2034

Sources: Federal Home Loan Mortgage Corporation, National Association of Home Builders, National Association of Realtors, Haver Analytics. Data as of December 2023.

Note: Regional affordability calculated using the median home price of the region with a 20% down payment at the prevailing Freddie Mac 30-year fixed mortgage rate. The median family income is divided by the annualized mortgage payment to determine the housing affordability index. The projection of median family income is grown at the prevailing YoY HP (Hodrick-Prescott Lambda = 500) adjusted income growth. The 1% decrease in mortgage rate is assumed at 0.25% per quarter. Analysis assumes stable home prices.

04 Productivity gains

Policy easing by the European Central Bank (ECB) will likely support economic growth, but it probably can't help Europe's weak productivity. Labor productivity in Europe is around four percentage points behind where forecasters estimated it would be before the pandemic. That gap results in about EUR 2.2 trillion in lost cumulative output since 2019. This is in stark contrast to the United States, which has slightly exceeded pre-pandemic expectations.[5]

What explains Europe's lagging productivity? We'd point to several causes: Europe's reliance on external energy sources (natural gas prices in Europe are nearly 30x higher than they are in the United States); its less dynamic technology sector; and its less flexible labor markets.

Perhaps the greatest potential boon for global productivity over the coming decade will come from AI, where U.S. companies now enjoy a commanding lead in research and investment. Private investment in AI in the United States totaled nearly USD 70 billion in 2023. By contrast, Germany, France and Sweden each invested less than USD 2 billion.[6]

If AI-driven productivity gains are sustained, it could propel GDP growth without stoking inflation (and helpfully offset pressure from aging populations). This could support equity returns by boosting revenue and margins. Politically, too, increased productivity could make deficits more manageable, as higher economic growth increases tax income.

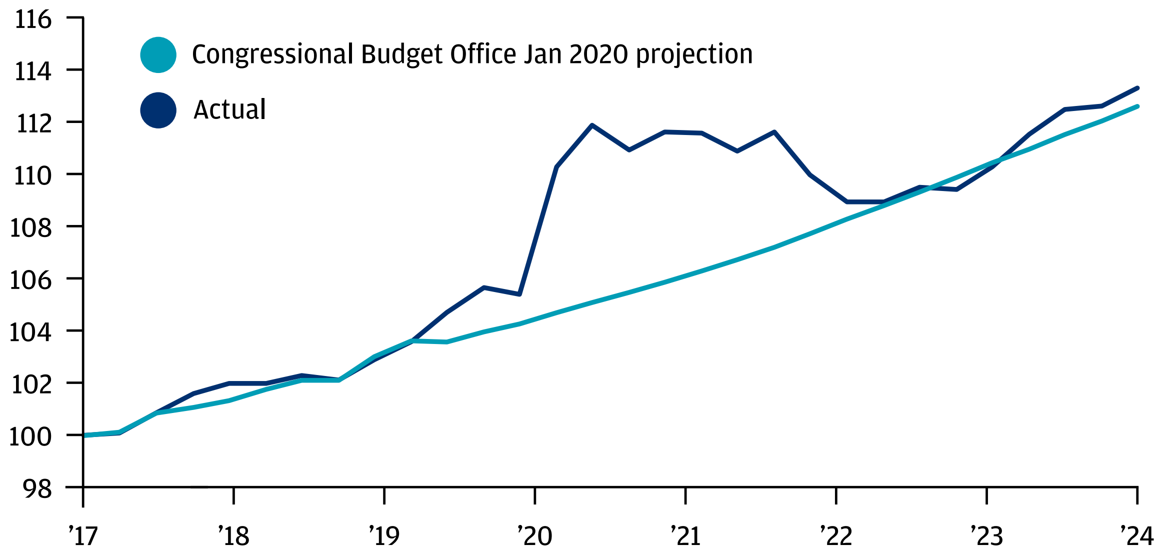
Europe's domestic productivity woes do not mean that investors should ignore the top European companies. The 50 largest European companies derive only ~40% of their revenues from Europe, and the "national champions" within this cohort are dominant global players and best-in-class operators. That said, we prefer U.S. equities to European equities in 2025.

[5] Relatively strong U.S. productivity growth has probably not been spurred by AI, at least not yet. Rather, the labor market churn from 2021 and 2022 may have resulted in more optimal matching between employee skills and employer tasks. It seems reasonable to assume that integrating AI technology could lead to a 17% cumulative boost to productivity over the next 20 years. Read more

[6] Meeker, M. (2024). AI + Universities. BOND.

PLEASANT SURPRISE: U.S. PRODUCTIVITY HAS EXCEEDED EXPECTATIONS

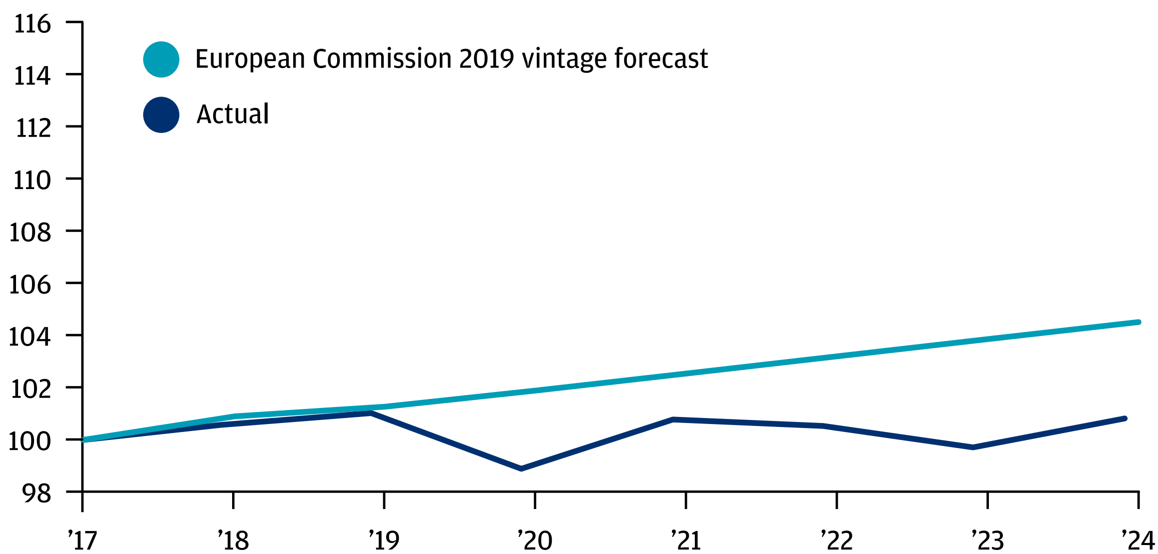
U.S. Labor Productivity Index, 100 = 2017



Sources: Congressional Budget Office (CBO) and the Bureau of Labor Statistics (BLS). Data as of June 30, 2024.

EU PRODUCTIVITY HAS FAILED TO MEET LOW EXPECTATIONS

European Union Labor Productivity Index, 100 = 2017

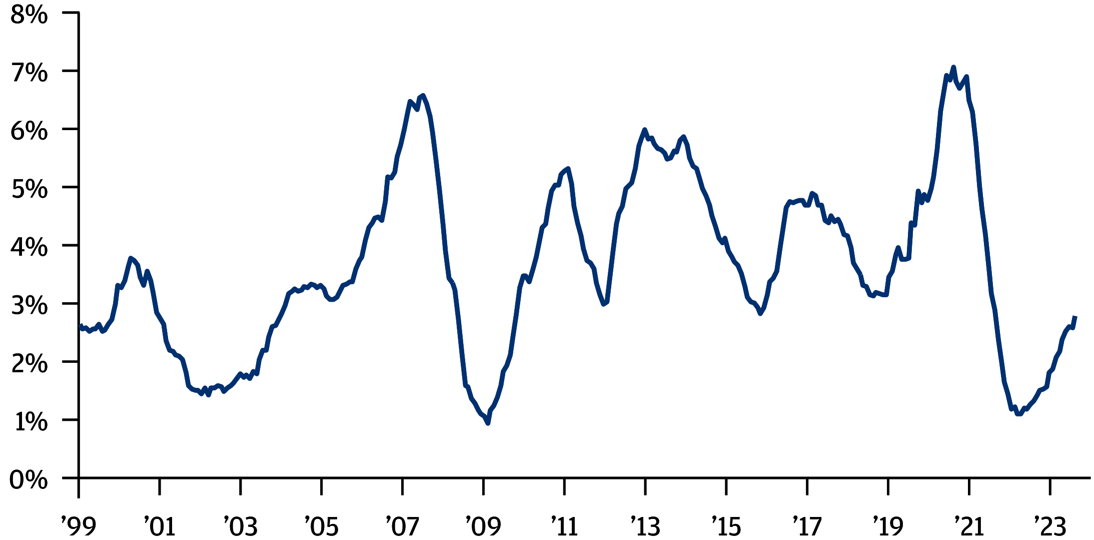


Source: European Commission. Data as of January 1, 2024.

05
Increased dealmaking

CAPITAL MARKET LIQUIDITY IS JUST STARTING TO RECOVER

Trailing 12-month high yield, leveraged loan & IPO volume as a % of GDP



Sources: J.P. Morgan, Bank of America, Bloomberg Finance L.P. Data as of September 30, 2024.
Note: Liquidity defined as IPO, HY bonds and leveraged loan issuance.

Falling interest rates and a less onerous regulatory environment could help sustain a nascent revival in dealmaking, which had been essentially frozen since 2021. Rate hikes, recession risks and geopolitical tensions left management teams understandably cautious despite strong corporate earnings. Merger and acquisition activity is at its lowest level since 2013.

Limited capital market liquidity has been both a cause and a symptom of limited deal flow. **In a search for liquidity, private equity investors are increasingly turning to the secondary markets, where volumes have reached record levels.** New liquidity "tools" have also emerged in the private credit space, such as portfolio financings (NAV loans) and single asset recapitalizations.

But dealmakers now feel more hopeful. Policy rates are heading lower, and the regulatory backdrop will likely be more friendly.

As a backlog of deals stands ready to be cleared, increased private lending should help jumpstart transactions. Opportunities exist across the capital structure. Senior secured direct lending will continue to finance private equity sponsor-backed transactions. Companies will apply junior and structured capital solutions to support strategic growth, optimize their debt structures and provide interest payment flexibility.

The likely beneficiaries of a better environment for dealmakers? Wall Street banks, private equity and credit firms, and private business owners.

Part 02— Accelerating capital investment

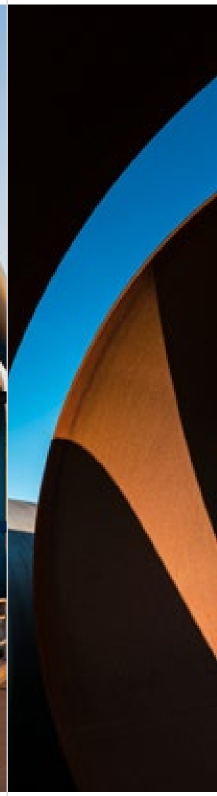
AI: Boom or bust?

Healthcare disruption

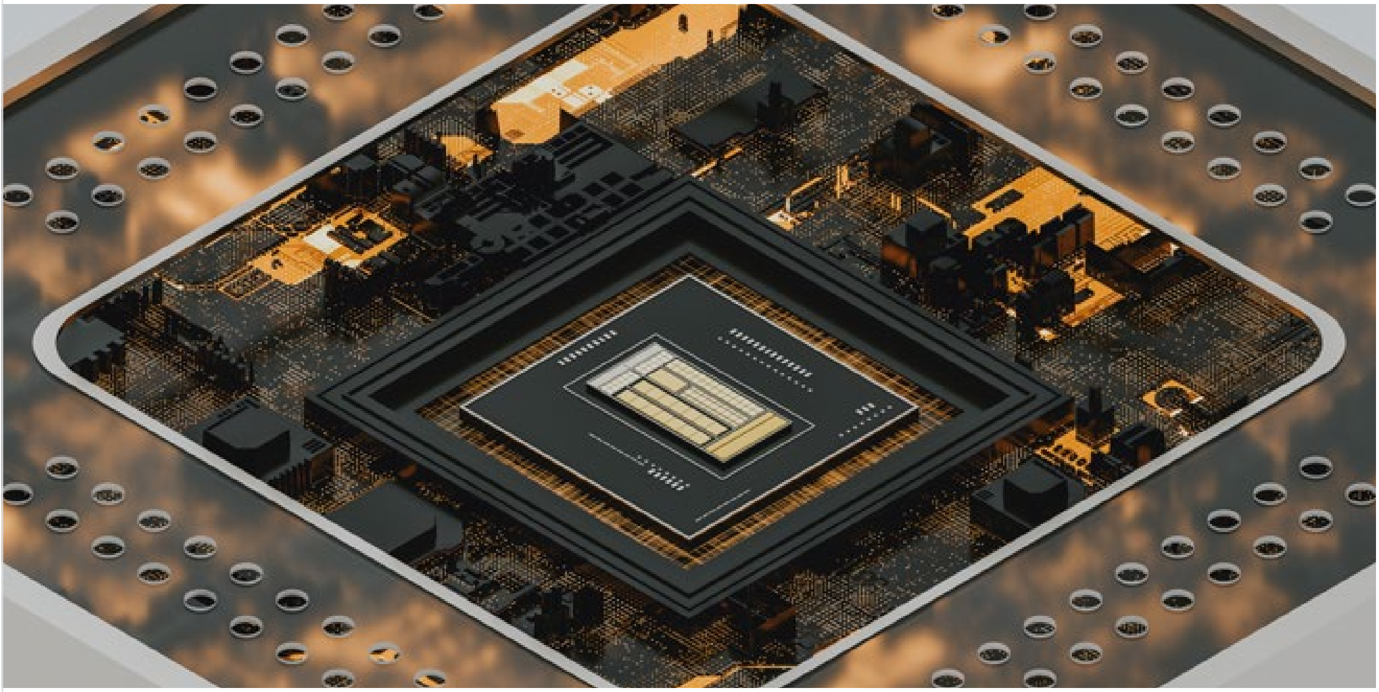
Automation & robotics

Building power infrastructure

Redefining security



Businesses and governments are primed to spend: 2025 will be the year of capital investment. Margins are elevated, profits and C-suite confidence are on the rise, and policymakers are focused on supporting growth. Three global trends require enormous investment: AI, power and energy, and security.



06
AI: Boom or bust?

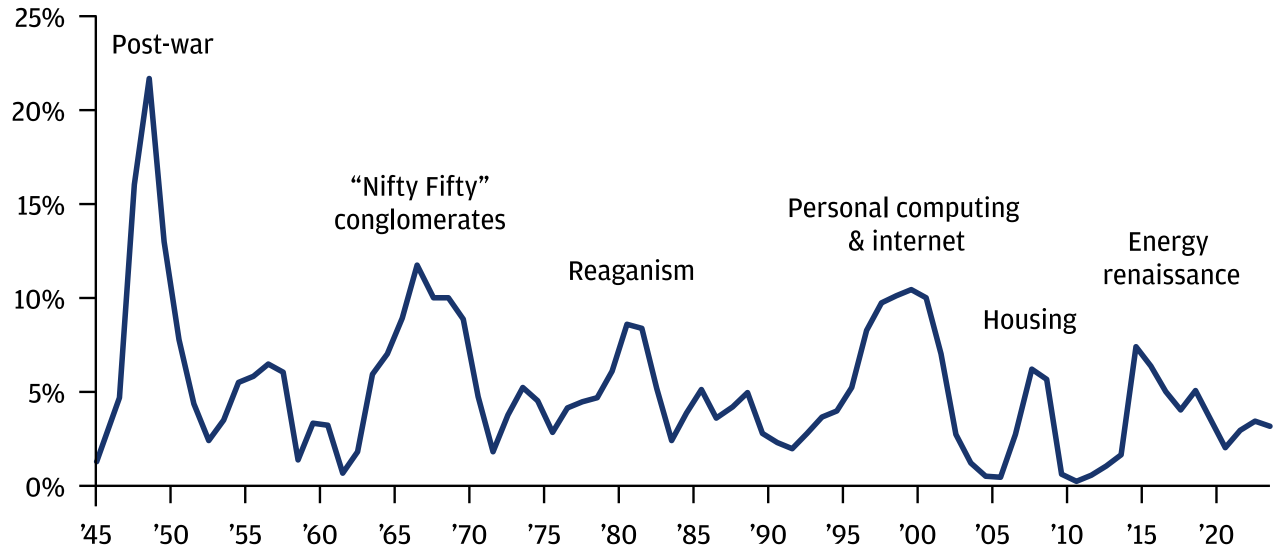
Yes, U.S. big tech companies have opened the spigot for AI spending, but these are still early days. We think capital investment in AI could take off in the coming years, driven by rapid improvements in AI models and corporate adoption.[7] **Consider: AI could potentially impact all services activity in the economy.**

Why are we so optimistic? First, because AI models are improving at a rapid rate. In 2021, large language models (LLMs, a type of AI) could answer less than 10% of competition-level math questions accurately. That share increased to 90% in 2024.[8] The models are also becoming less expensive: The price per token for both OpenAI's higher-performing GPT-4o mini model and Anthropic's Claude 3.5 Haiku model are 90%–98% less expensive than their predecessors.

Second, overall corporate capital investment has been relatively muted, running at a 2.5% annual pace. By contrast, at the end of the dot com boom at the turn of the millennium, corporate capex was running at a 10% annual pace (on a five-year rolling basis). In other words, there is plenty of room for corporations across sectors to increase their AI spending as the use cases become more apparent—and persuasive.

CORPORATE INVESTMENT HAS ROOM TO BOOM

5-year annualized change in corporate capital spending, %



Sources: Bureau of Economic Analysis, Haver Analytics. Data as of December 31, 2023.

Third, we see the potential for AI to "turn labor into software," as Sequoia Capital has put it.[9] As models improve their ability to reason instead of merely generating pre-trained responses, they will help create opportunities to disrupt the services sector. AI lawyers, AI software engineers and—dare we say it?—AI investment strategists could become commonplace.

Public markets and their private partners have established a strong presence in the digital infrastructure of AI. The industrial and utilities companies that provide the physical components and energy needed for AI will also likely continue to benefit. Finally, the companies that most effectively improve their cost structures and increase productivity by incorporating AI tools into their workstreams should outperform.

In private markets, pure-play AI valuations have inflated, but we still see investment opportunities in the startups that can automate tasks and provide cost savings to businesses. Value may also be created in the potential applications that can help harness the technology for consumers. Over 20 major application layer companies (e.g., Salesforce, Meta, Uber) were founded during the cloud and mobile transitions.[10] AI could create a similar ecosystem.

Adoption of AI could falter, of course. Regulation could stifle innovation. Energy sourcing could prove onerous. And the models could run out of the data they use to train. But our analysis—looking past the hype and drawing on the lessons of history—tells us that AI offers significant investment opportunity. We see the potential for a clear bull case for the global economy and equity markets next year and beyond.

[7] Bick, A., Blandin, A., & Deming, D. J. (2024). The Rapid Adoption of Generative AI. National Bureau of Economic Research.

[8] Jensen, G., Narayan, A., Greene, A., & Simon, L. (2024). Is an AI Bubble Ahead of Us or Behind Us? Bridgewater.

[9] While we expect AI productivity gains to coincide with a potential increase in labor disruptions, we think the evidence is compelling for the creation of net new jobs, and we are already seeing corporates take action to fortify talent pipelines through upskilling and reskilling.

[10] Huang, S., & Grady, P. (2024). Generative AI's Act o1: The Agentic Reasoning Era Begins.

07 Healthcare disruption

AI may quickly impact the healthcare sector.

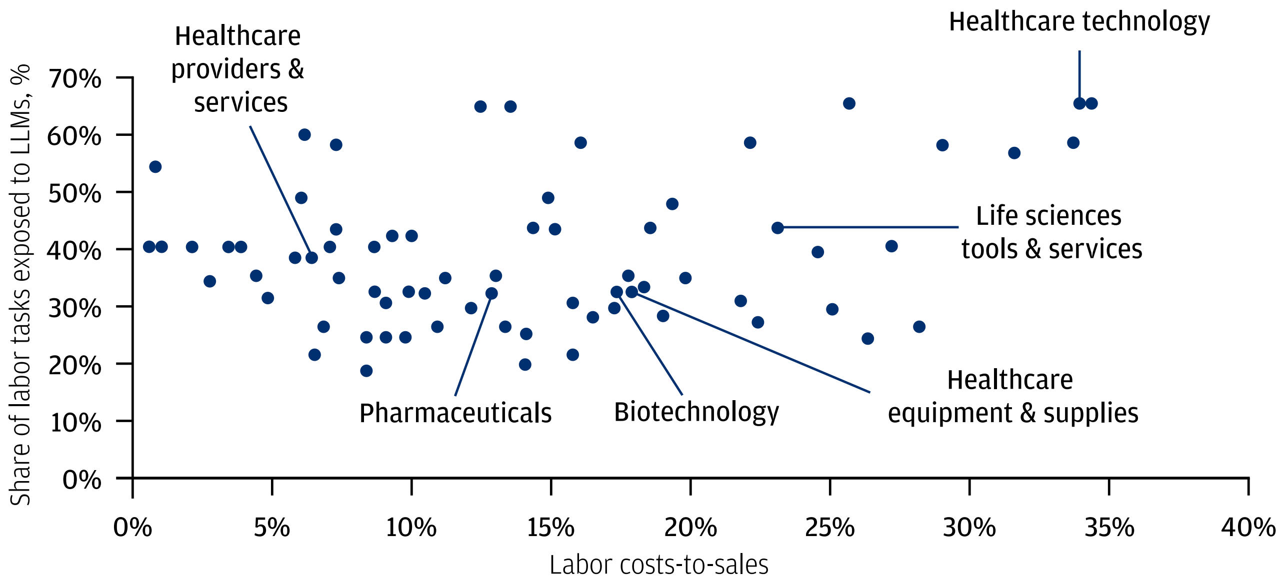
The chart helps to understand why. The industries that could be most impacted by AI have a high share of labor costs in jobs that could be helped or displaced by LLMs. For example, the healthcare technology industry has labor costs equivalent to around 35% of its sales.

At the same time, economists estimate that 65% of the tasks performed by healthcare technology employees are exposed to AI disruption. For example, companies such as Veeva Systems, Teladoc and GoodRx that provide software solutions across the healthcare value chain could both reduce their labor costs and increase their revenues by incorporating AI into their businesses.[11]

In the pharmaceutical and biotech sectors, AI could also potentially improve the quality and quantity of drugs that progress from early-stage trials to market. Right now, only 7% of new drugs make it to market. Just a 5% increase in that success rate could mean 60 new drugs and USD 70 billion in incremental revenue over a 10-year period.[12] In life science services, companies could use AI to design drug trials more optimally: from compound identification to participant selection.

We also believe GLP-1 drugs will continue to drive revenue growth (glucagon-like peptide drugs control blood sugar and suppress appetite). **According to our estimates, we think the total addressable market could grow from 16 million people in the United States and the European Union in 2027 to over 40 million people.** Beyond GLP-1s, we are focused on identifying companies in the healthcare sector that can use AI to modernize their business models to drive earnings growth. The clearest examples right now are in robotic surgery and imaging technologies used for diagnostics.

WHO LOOKS VULNERABLE? HEALTHCARE TECH COULD BE IMPACTED BY AI



Sources: Empirical Research Partners Analysis of 72 GICS industry groups for large- and small-cap stocks. Eloundou, T., Manning, S., Mishkin, P., and Daniel Rock. "GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models." Data as of May 2024.

[11] Data breaches in healthcare are the most costly of any industry, averaging USD 9.8 million per breach—about 60% higher than the second-place financial sector—due to vulnerable legacy technologies and stringent privacy rules. While AI amplifies this threat by enabling cyber criminals to execute more sophisticated attacks, it has also helped firms reduce breach costs by 33% when used defensively.

[12] Morgan Stanley. (2022). Why Artificial Intelligence Could Speed Drug Discovery.

08
Automation & robotics

Capital investment in AI will also fast-track the adoption of automation and robotics, impacting industrial and consumer sectors. U.S. industrial companies are set to allocate 25%–30% of their capital spending to automation over the next five years, up from 15% to 20% over the last five years.[13]

This theme isn't new. Single-purpose robots have existed for over half a century, and robotics returns for investors have been modest so far. But we think momentum is building for broader applications. As access to training data increases and the cost of hardware declines, general purpose robots may be closer to achieving the ability to reason. **Globally, companies have invested over USD 4 billion in funding more than 20 "humanoid" robots.[14]**

Eventually, robots (humanoid and otherwise) may become a part of our daily lives. Waymo is already providing more than 100,000 autonomous taxi rides per week.[15]

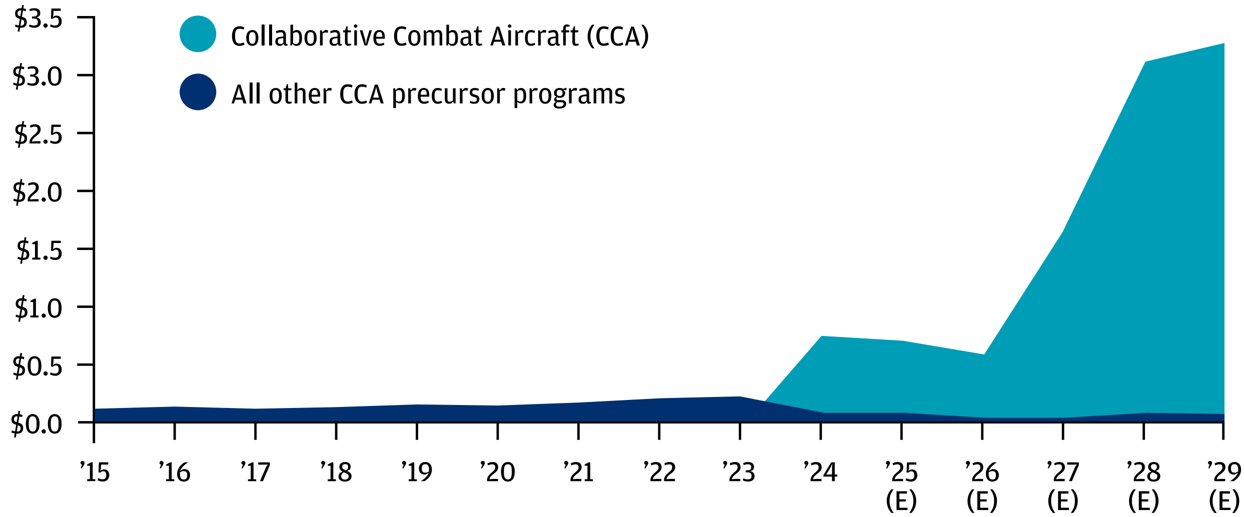
Healthcare and defense are two other areas where robotics will become more prevalent. In October, Intuitive Surgical delivered 110 of its semi-autonomous, AI-enabled Da Vinci 5 robotic surgery systems, trouncing the 70 placements from the previous quarter. Earlier in the year, the U.S. Air Force announced a contract award with Anduril and General Atomics to develop Autonomous Collaborative Combat Aircraft. The Department of Defense expects to spend nearly USD 3 billion per year on the program by 2029.

We see investment opportunities in both public and private markets, in the semiconductor companies that provide the computing power, the software companies that harness that computing power, the industrial companies that capitalize on higher efficiency, and the consumer companies that can deliver a game-changing product.

[13] Ajewole, F., Kelkar, A., Moore, D., Shao, E., & Thirtha, M. (2023). Unlocking the industrial potential of robotics and automation. McKinsey & Company.
[14] Viswanath, S., Khanna, V., Liang, Y., Srinivas, A., & Cherian, Z. (2024). Robotics won't have a ChatGPT Moment. Coatue.
[15] Thompson, B. (2024). Taking Waymo, Uber and Waymo.

AUTONOMOUS AIRCRAFT SPENDING IS SET TO SURGE

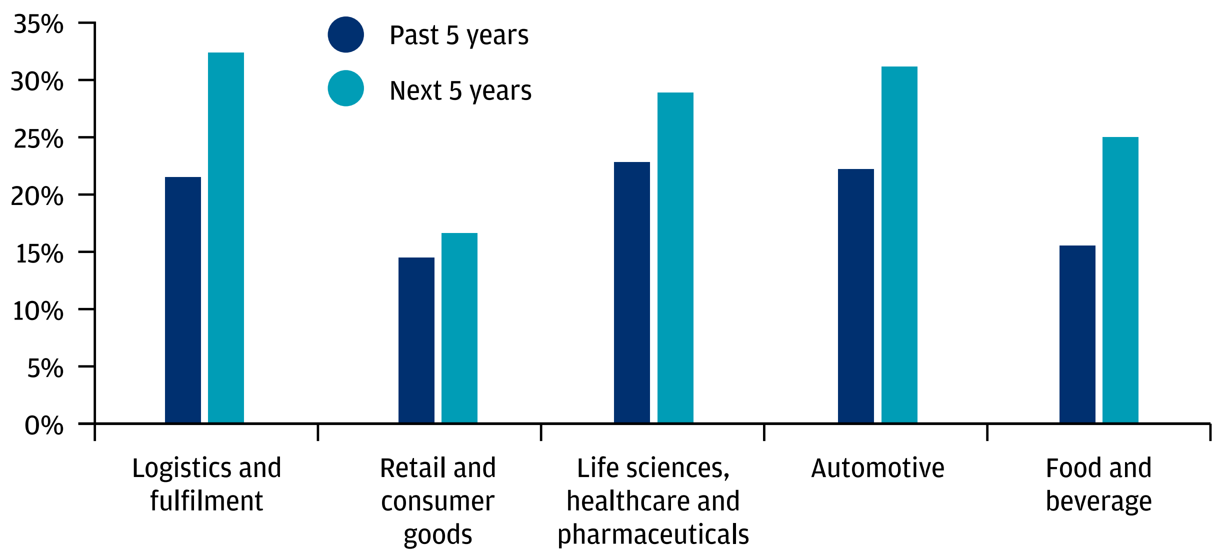
DOD spending on selected autonomous aircraft programs, $ billions



Source: CSIS analysis of DOD FY15-29 RDT&E budget requests. Data as of August 6, 2024.
Note: The FY 2024 CCA figure includes a reported $150 million budget reprogramming request.

AUTOMATION COULD ACCOUNT FOR 25% OF INDUSTRIAL CAPEX OVER THE NEXT 5 YEARS

Average share of investment in automation by sector as a % of capital spending



Source: McKinsey & Company. Data as of 2022.

09 Building power infrastructure

We think capital investment into the power sector is about to ignite for three key reasons: the reindustrialization of U.S. manufacturing, increased use of electrification in clean energy solutions and surging demand from data centers. Overall, we expect power demand growth in the United States to increase by 5x to 7x over the next 3–5 years.

Data center growth is a global phenomenon. The number of U.S. data centers, accounting for 40% of the global market, is growing ~25% per year. In Q1 2024, the European, Latin American and Asia-Pacific data center markets grew inventory by 20%, 15% and 22% year-over-year, respectively.[16]

Increased data center power requires more water for cooling and chip fabrication, often in water-stressed areas. Global data centers are expected to grow their water usage by 6% annually.[17] Large semiconductor fabrication facilities use the same amount of water as 300,000 households.[18] We see opportunities for water infrastructure and efficiency solutions in parallel with growing power usage.

More power will likely come from nuclear energy. We note the equity market's validation of Constellation Energy's and Microsoft's agreement to restart the Three Mile Island nuclear power plant to supply energy to the tech giant's data centers. This should spur further reinvestment in nuclear energy. Indeed, the surge in the Nuclear Renaissance Index (+75% year to date) is based on market speculation that small modular reactors will be successfully deployed in the next few years.

While renewable energy sources will continue to grow (the International Energy Agency believes that for every $1 invested in fossil fuels, $2 are invested in clean energy), latency, transmission and storage costs mean that natural gas will remain a critical energy source.[19]

Investors looking to capitalize on the growing demand for power can focus on broad infrastructure funds, power generation and utility companies.

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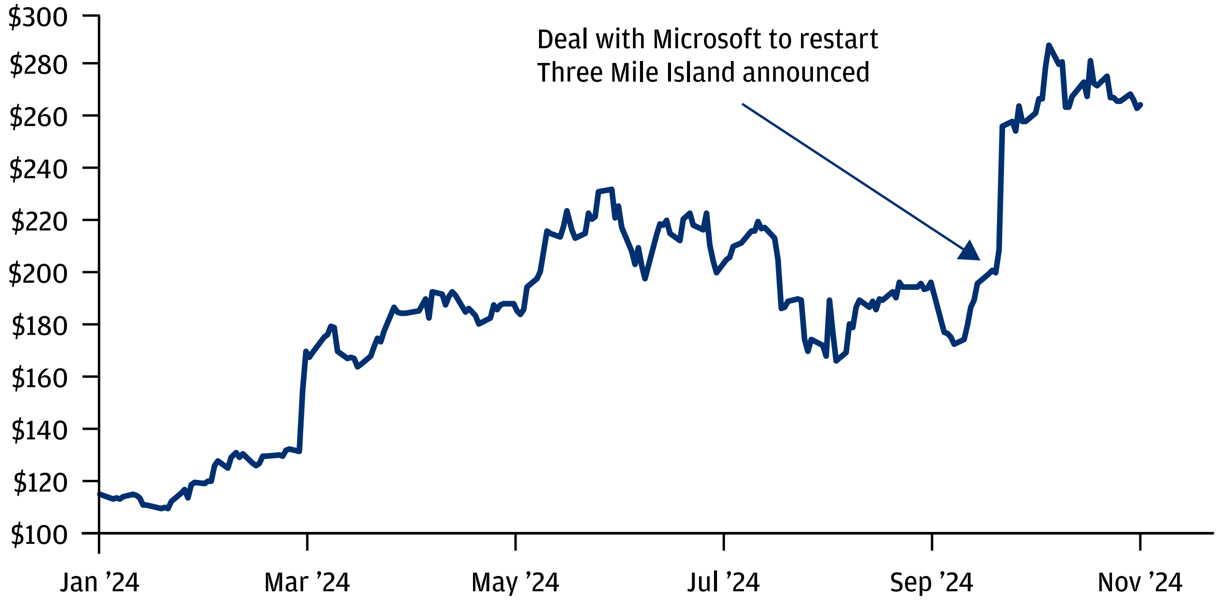
[16] CBRE. (2024). Global Data Center Trends 2024. CBRE. Thompson, B. (2024). Taking Waymo, Uber and Waymo.
[17] Walsh, A. (2023). Behind the Data: Unveiling the Water Footprint of Artificial Intelligence. Bluefield Research.
[18] Hess, J. C. (2024). Chip Production's Ecological Footprint: Mapping Climate and Environmental Impact. Interface.
[19] International Energy Agency. (2024). Investment in clean energy this year is set to be twice the amount going to fossil fuels.

THE MARKET HAS VALIDATED NUCLEAR EXPANSION

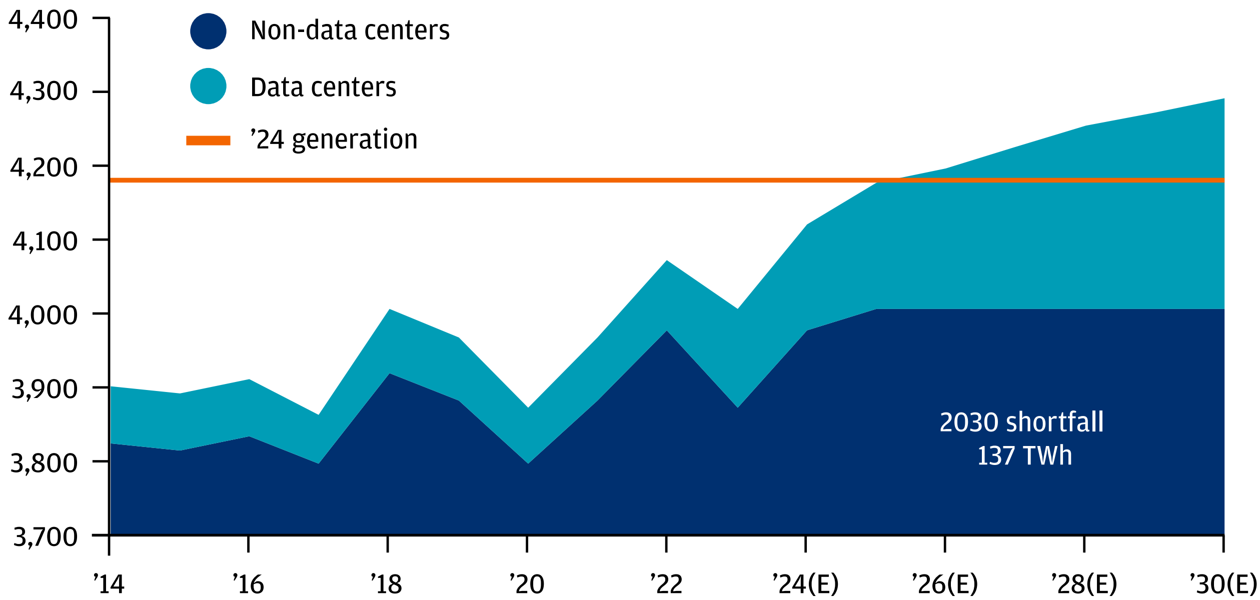
Constellation Energy share price, $



Source: FactSet. Data as of October 31, 2024.

DATA CENTERS COULD IGNITE A SURGE IN POWER DEMAND

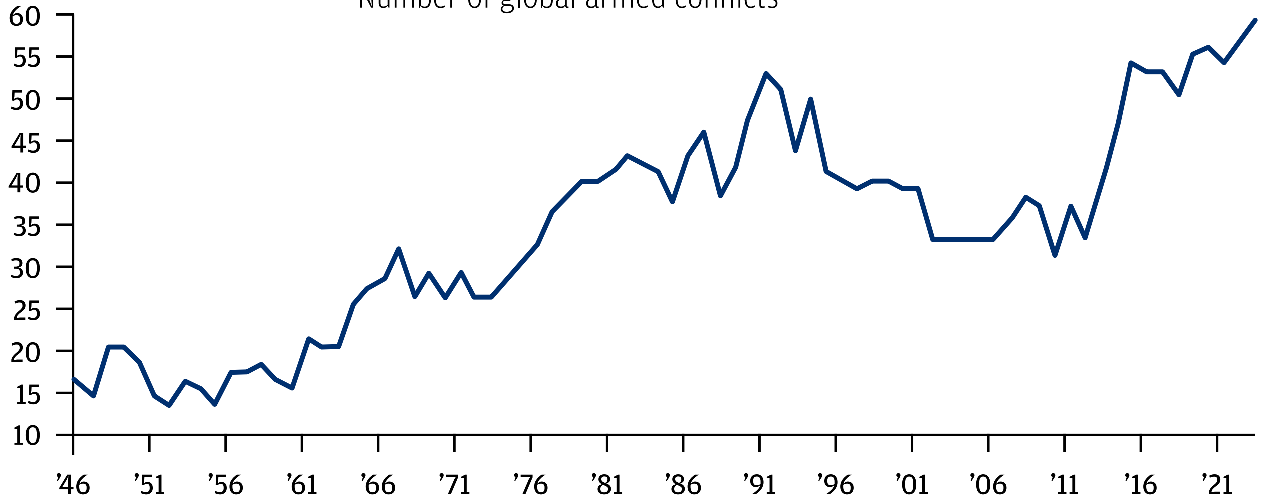
U.S. power demand and 2024 generation capacity, TWh



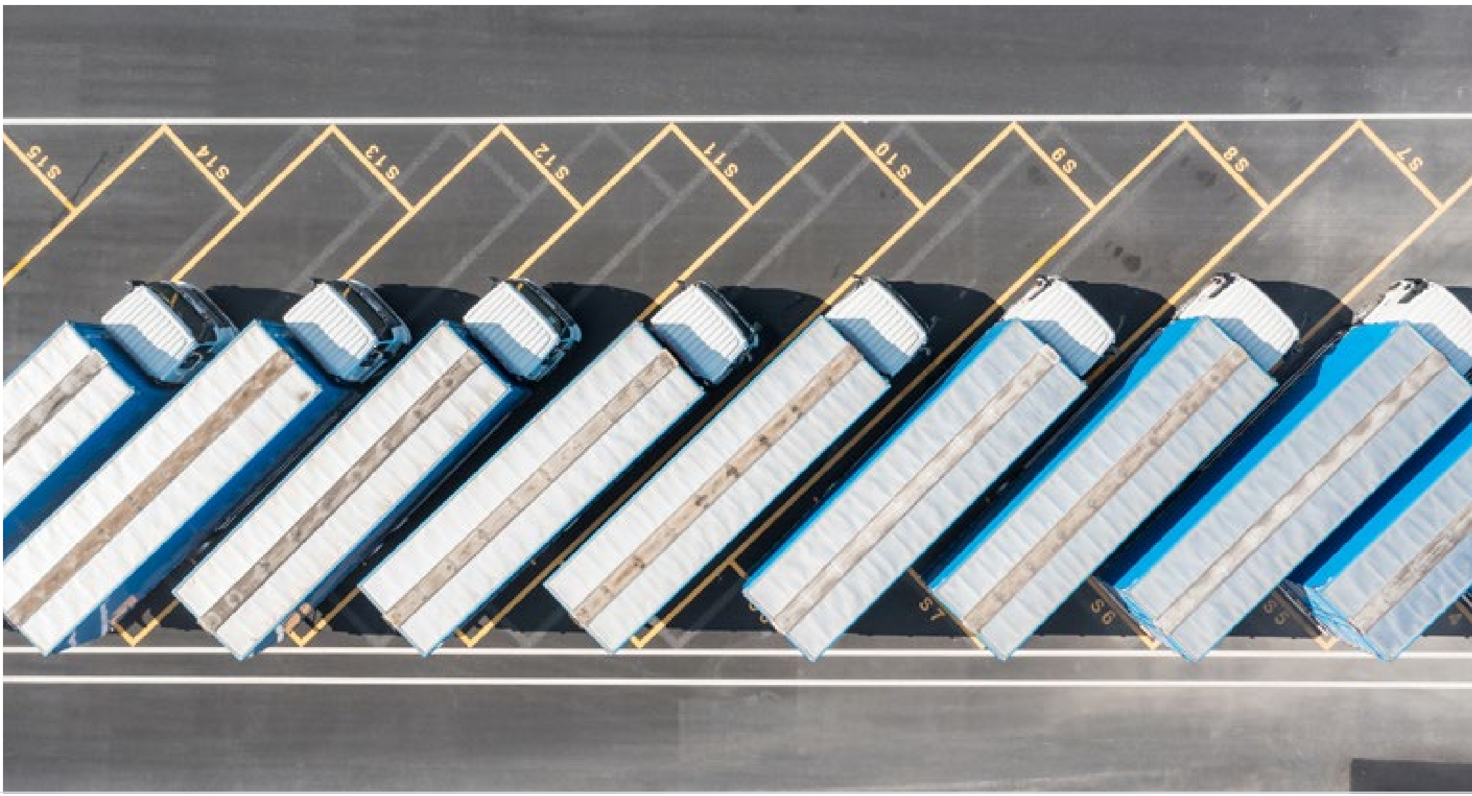
Sources: EIA, McKinsey & Company, Public Power, Bernstein. Data as of December 31, 2023.

ARMED CONFLICTS ARE AT AN 80-YEAR HIGH

Number of global armed conflicts



Sources: UCDP, Davies, Shawn, Therese Pattersson, Magnus Öberg, Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Håvard Strand. Data as of December 31, 2023.



10 Redefining security

As governments reassess their national security, they will likely deliver higher levels of capital investment. Security covers not just traditional military defense, but cybersecurity, supply of critical natural resources, energy production, transportation and infrastructure. We think markets do not yet fully appreciate the investment prospects that this secular shift will create.

In the United States, the government seems likely to continue incentivizing domestic production of critical supplies. Shares in a North Carolina-based chipmaker surged 40% on the news that it secured USD 750 million in CHIPs Act funding to build two new semiconductor plants in the United States.

Further, we highlight a U.S. government goal to diversify its reliance on concentrated aerospace and defense specialists[20] (which today account for 90% of the U.S. weapons production budget),[21] and expand to established commercial companies and startups with expertise in areas such as AI, machine learning and 5G technology. The defense market could potentially generate revenues and market share for companies outside the traditional defense space.

The Department of Defense budget has halved as a share of GDP from the height of the Cold War. Of the European Union members of NATO, 16 of the 23 are currently on track to surpass the targeted 2% of GDP threshold in 2024. Ten years ago, the average member was only at 1.2% of GDP. Global military spending seems to have room to grow, especially in areas such as network-enabled weapons, which could be human-machine partnerships or fully autonomous.

Europe's security concerns reflect its reliance on external sources for critical goods and commodities. The European Union imports over 90% of digital products and services, depends on Asia for 75%–90% of wafer fabrication capacity, and relies on China for up to 70% of key raw materials such as nickel, copper and cobalt.[22]

Meanwhile, the BRICS+[23] economies control 5x the natural gas reserves of the G7, have 3x the active-duty military personnel, and double the oil reserves and uranium production.[24] Last year, Russia boosted its defense budget by 25% to hit a new record.[25]

In all, we believe global spending on security will be comparable to the annual investment in cloud computing and e-commerce during the 2010s. Building out semiconductors, infrastructure and reliable, affordable power are not only pivotal levers for national security, but also for global economic competition.

We are looking for opportunities in the industrial, utilities, materials and energy sectors. All but the industrials sector trade at a discount to the broad market. **Investors don't seem to be giving these companies much credit for future earnings growth, which we believe will be nearly double that of the market over the next few years.**

In private markets, investors can find interesting prospects in smaller companies focused on innovation in technology-enabled defense systems and cybersecurity.

[20] Defined as companies whose only customer is the government, or those whose only commercial exposure is in aerospace.
[21] Allen, G. C., & Berenson, D. (2024). Why Is the U.S. Defense Industrial Base So Isolated from the U.S. Economy? CSIS.
[22] Draghi, M. (2024). The future of European competitiveness. European Commission.
[23] List of BRICS+ countries.
[24] Seydl, J. (2024). How do geopolitical shocks impact markets? J.P. Morgan.
[25] Sauer, P. (2024). Last year, Russia boosted its defense budget by 25% to hit a new record. The Guardian.

Part 03— Understanding election impacts

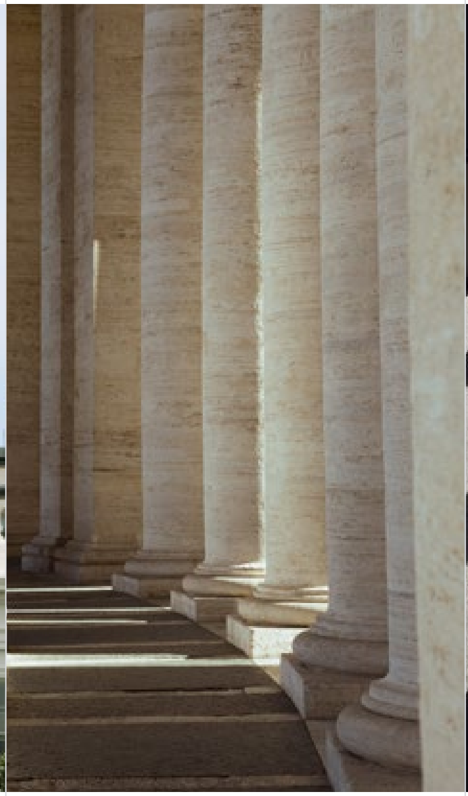
Defining Trump 2.0

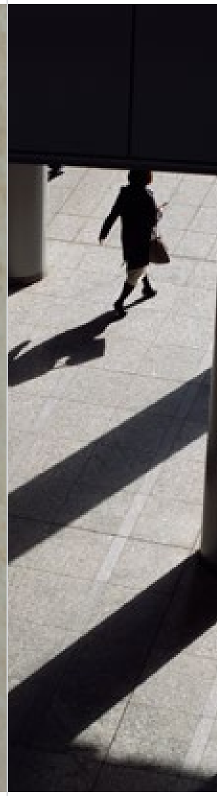
Sunsetting tax policy

Managing rate volatility

Anti-trust risk

Rising anti-establishment movements





In 2025, investors can shift from focusing on election outcomes to weighing election impacts. The results of elections around the world will impact the direction of tax policy, sovereign debt and deficits, trade policy, anti-trust initiatives and the popularity of anti-establishment candidates.

11 Defining Trump 2.0

President Trump and the Republican Party's decisive victory in the 2024 election sets the stage for Trump 2.0. What could this mean for markets and the economy? Deregulation, increased merger and acquisition activity, a focus on domestic economic outcomes, and the slim chance of lower corporate tax rates provide the bull case. Indeed, the immediate market reaction to the election results showed that investors are favoring the U.S. over the rest of the world, along with small-cap stocks and regional banks.

However, pro-growth initiatives could also lead to higher inflation and wider budget deficits. Indeed, U.S. Treasury yields have moved back toward the highs for the year. Elevated mortgage rates may continue to stifle activity in the residential housing market and exacerbate the affordability crisis. Tariff policy presents perhaps the biggest risk to global growth. While we do not believe blanket duties on all imports are likely, tariffs on specific goods or trading partners are. Retaliation from trading partners would exacerbate the negative shock to global trade.

The election results make us marginally less positive on emerging market assets, industrial commodities and energy prices. Indeed, the negotiation around the 2017 Tax Cuts and Jobs Acts (TCJA) looms large in 2025, and the potential economic impacts of fiscal policy are more likely to be felt in 2026.

12 Sunsetting tax policy

Congress will need to focus on tax policy next year. At the end of 2025, many of the provisions from the 2017 TCJA are set to expire (or "sunset"). If Congress does nothing, individual tax rates will revert to 2017 levels, the alternative minimum tax will impact many more high-income individuals, the 20% deduction for pass-through business income will end (affecting many partnerships, S corporations and sole proprietorships), and the lifetime estate, gift and generation-skipping transfer tax exemption will be cut in half (from around USD 28 million to USD 14 million for a married couple). Importantly, the 21% corporate tax rate included in the TCJA was a permanent change.

In all, if the temporary provisions in the TCJA expire, it would result in a 1.8% reduction in after-tax income for all U.S. households, and a 3.1% reduction for the top 1% of earners.[26] The Tax Foundation estimates that about 62% of filers would see an increase in taxes.

Now that the Republican party controls both chambers of Congress, we expect most, if not all, of the temporary provisions affecting individuals to be extended for some time. That said, given the tight margins in the House and the Senate, it may require some compromise around areas such as the state and local tax deduction cap. Further, the reconciliation process requires legislation to be deficit neutral over a 10-year period. This means that still lower corporate tax rates could face headwinds even with a Republican president and Republican-controlled Congress. The economic and personal impact of any tax changes are not likely to be felt before 2026.

We are also watching how tax policy is impacting migration. Analysis by our Chairman of Market and Investment Strategy Michael Cembalest shows that in the United States, almost all of the top 20 interstate migrations are from high-tax states such as New York, California and Illinois to low- or no-tax states such as Florida, Texas, Arizona and Nevada. Indeed, outside the United States, we are seeing similar patterns. Families are increasingly moving to places such as Italy, Switzerland, Dubai, Greece and Spain. Key drivers include the attractiveness of tax policies and concerns about geopolitical turbulence and safety.

[26] Oshagbemi, C., & Sheiner, L. (2024). Which provisions of the Tax Cuts and Jobs Act expire in 2025? Brookings.

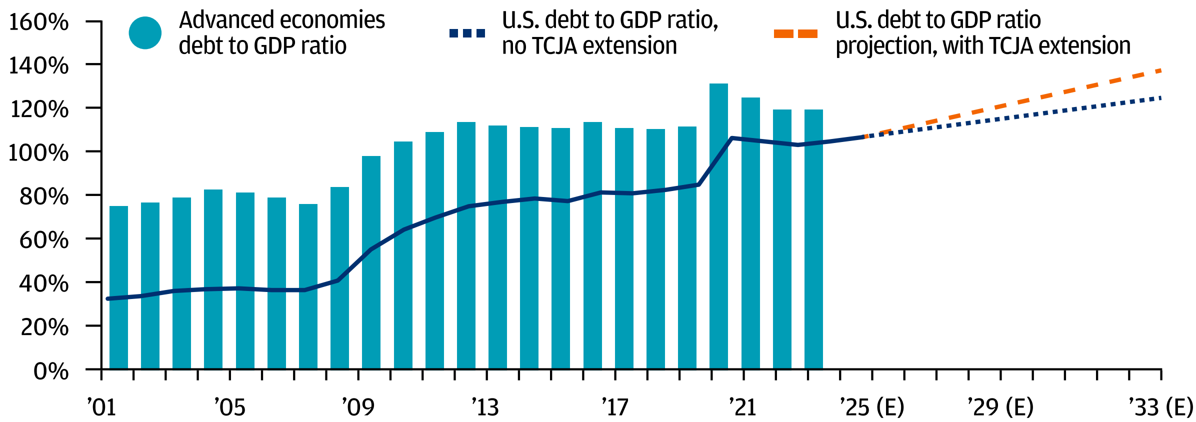
SEVERAL IMPORTANT PROVISIONS FROM THE TCJA WILL EXPIRE AT THE END OF 2025

Income tax brackets	For most individual taxpayers, the tax brackets would increase (the top rate will go from 37% to 39.6%).
Alternative minimum tax (AMT)	TCJA raised the AMT exemption from $54,300 to $70,300 for individuals and $84,500 to $109,400 for married couples. It also suspended the deductibility of many expenses, such as those for some investment management fees. Sunset would restore the deductibility of those expenses, thereby indirectly subjecting many more taxpayers subject to the AMT, which would disallow those deductions.
State and local tax (SALT) deduction	Under TCJA, a taxpayer may claim an itemized deduction of up to only $10,000 ($5,000 for married filing separately) for the aggregate of state and local income taxes paid. Sunset would remove this cap, though, as noted above, with the reduction of the AMT exemption—under which SALT payments are not deductible—many taxpayers may not be able to take advantage of this deduction.
Mortgage interest deduction	The deduction for interest on "acquisition indebtedness" is limited to the interest attributable to debt principal of up to $750,000 ($375,000 for married filing separately). Sunset would restore the $1 million/$500,000 limitations on debt principal. Also, there may be greater freedom to deduct interest paid on home equity loans, such as HELOCs.
Qualified business income (QBI) deduction	The QBI deduction was introduced by the TCJA. The provision allows non-corporate taxpayers to take a deduction of up to 20% of their "qualified business income" (QBI) from a partnership, S corporation or sole proprietorship. Sunset would eliminate this deduction.
Charitable giving	From 2018 to 2025, the annual deduction limit for contributions to public charities was increased to 60% of adjusted gross income. The limit is scheduled to revert to 50%.
Estate and gift tax	Under the TCJA, the base lifetime exclusion amount for gift and estate tax was doubled to $10 million, adjusted annually for inflation. In 2024, the lifetime exclusion amount is $13.61 million for individuals and $27.22 million for couples. Sunset could drastically limit the ability to gift and/or transfer at death by resetting this amount to probably a little over $7 million for individuals (about $14 million for married couples) before maximizing the exclusion and incurring a 40% flat tax on the excess.

Source: "A Look Ahead at Expiring Tax Provisions," Tax Foundation. Accessed December 12, 2023.

BORROWING BINGE: GLOBAL SOVEREIGN DEBT CONTINUES TO RISE, ESPECIALLY IN THE U.S.

Debt as a % of GDP for advanced economies



Sources: International Monetary Fund. Data as of December 31, 2023.
Congressional Budget Office, Haver Analytics. Data as of June 18, 2024.

13 Managing rate volatility

2025 could be another year when active management in fixed income plays a significant role in investment portfolios. In 2024, our clients added over USD 20 billion to fixed income ladders. While we believe starting yields in fixed income provide value, especially in the context of an easing cycle, we urge investors to consider adding active fixed income strategies to complement passive strategies.

First, investors need to consider the outlook for sovereign debt and deficits across many developed markets. Global sovereign debt is currently 110% of GDP for advanced economies, and the Congressional Budget Office (CBO) projects that the U.S. federal debt held by the public will reach 122% of GDP by 2034. **Markets could view any type of expansionary fiscal policy and increased government spending as a reason to demand higher yields for holding long-duration sovereign debt.**

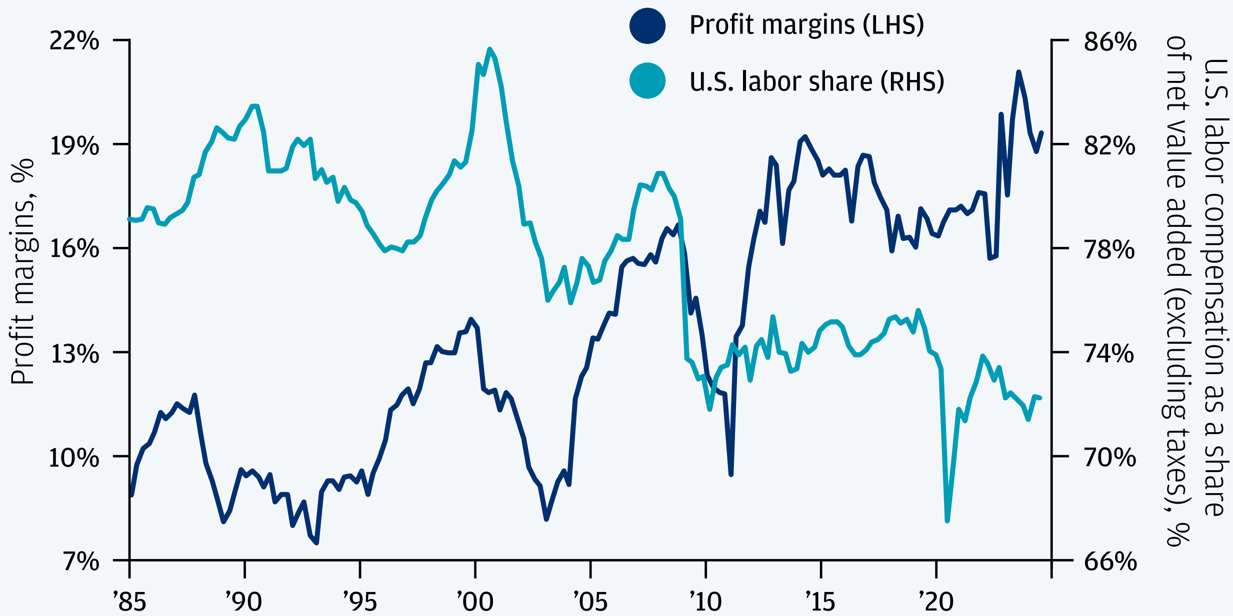
While it has settled, inflation is still higher than it was in the previous cycle, and it could take just a small fiscal impulse to ignite accelerating price pressures. Bond market implied volatility is double what it was before the global rate-hiking cycle began at the end of 2021.

Passive fixed income investing can be an efficient way to buy and hold bonds to maturity, but we believe active management of interest rate risk (duration) and credit risk may offer opportunities for enhanced returns. Owning active fixed income funds also enables access to more sub-sectors within fixed income (such as securitized credit and high yield municipal bonds) that are not well represented in indices. In fact, the median active fixed income manager has historically outperformed its benchmark by between 20 basis points and 60 basis points over the last five years.[27]

Whatever approach you take, step back and see the big picture: Owning bonds is an essential strategy for diversifying against equity risk within a portfolio. Our clients still have over USD 600 billion (26% of their assets under supervision) invested in securities that mature within one year. We believe in owning bonds over cash, and think using both active and passive strategies is prudent.

[27] SimFund, using Morningstar categories for classification. (June 30, 2024).

AS PROFIT MARGINS GROW, LABOR'S SHARE OF REVENUE SHRINKS



Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Haver Analytics. Data as of June 30, 2024.

14 Anti-trust risk

Although we anticipate a rebound in dealmaking and a reduction in anti-trust action under a Trump administration, anti-trust policies are still a longer-term risk for markets. Rising U.S. corporate profit margins (now 2.5 percentage points above pre-pandemic levels) and a declining labor share of corporate incomes could intensify that government resistance. We may well see continued action by both the U.S. Department of Justice and the European Commission.

Policymakers and the electorate seem to sense that the secular decline in labor's share of business output—left undisturbed—could lead to more corporate concentration, less labor bargaining power, and a shift to a tax system that favors capital and corporations over labor income. In other words, both the electorate and policymakers could look to diminish, if not reverse, that secular decline by restraining big corporate mergers and acquisitions.

We do note one important caveat here: As governments are increasingly viewing data and technology as strategic assets, some large technology firms have effectively functioned as tolerated monopolies. This may not change even if overall anti-trust activity picks up.

15
Rising anti-establishment movements

The U.S. election may have dominated investor focus in the second half of 2024, but the impacts of the global election super-cycle will be felt in 2025. Around the world, a clear trend emerged. For the first time since the data were recorded in 1905, every single incumbent governing political party in developed economies that faced re-election in 2024 lost vote share.

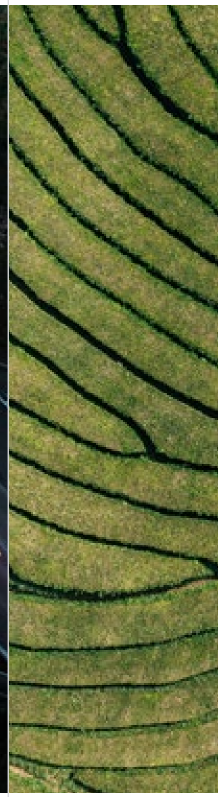
The past year's elections include:

- **European Union Parliament**
  European Commission President Ursula von der Leyen will serve another term, but several anti-immigration and euro-skeptic parties made gains.
- **France**
  President Emmanuel Macron salvaged a coalition, but Marine Le Pen's National Rally continues to threaten the establishment.
- **United Kingdom**
  The Conservatives suffered a landslide defeat.
- **Japan**
  The Liberal Democratic party lost.
- **Sweden, Finland and New Zealand**
  Center-left governments lost.
- **Australia and Belgium**
  Center-right governments lost.
- **India**
  Prime Minister Narendra Modi's BJP lost its majority.

Elsewhere, Russia's President Vladimir Putin secured a six-year term in an election with no viable opposition. In Mexico, President Claudia Sheinbaum won in a landslide victory that allowed for a controversial judicial reform and a new law mandating that wages outpace inflation.

While investors navigate the implications of changes in governing power globally, they should also monitor the risk that anti-establishment politicians continue to pose to markets. Going forward, investors should not only think about political risk in terms of right and left, but also establishment and anti-establishment. In our view, the threat of anti-establishment parties could lead to increased political and economic volatility. That in turn underscores the need to craft resilient investment portfolios.

Part 04— Renewing portfolio resilience



To safeguard the recent surge in household wealth and defend against increased macroeconomic volatility (due to higher inflation, more-active policymakers and less globalization, to name a few causal factors) investors need resilient portfolios. In our view, three approaches—relying more on income; adding assets that may help mitigate the threat of inflation; and using options and derivatives strategies to shift risk and reward profiles—can help portfolios withstand unexpected shocks.

16
The wealth check

Over the past year, U.S. household net worth has climbed to a record of nearly USD 160 trillion.[28] European Central Bank data suggests that household wealth in the Eurozone has grown to 60 trillion euros from less than 50 trillion before the pandemic. Since 2019, millennials (born 1981–1996) have nearly doubled their net worth, which is now higher than that of Gen Xers (1965–1980) or baby boomers (1946–1964) at similar ages.

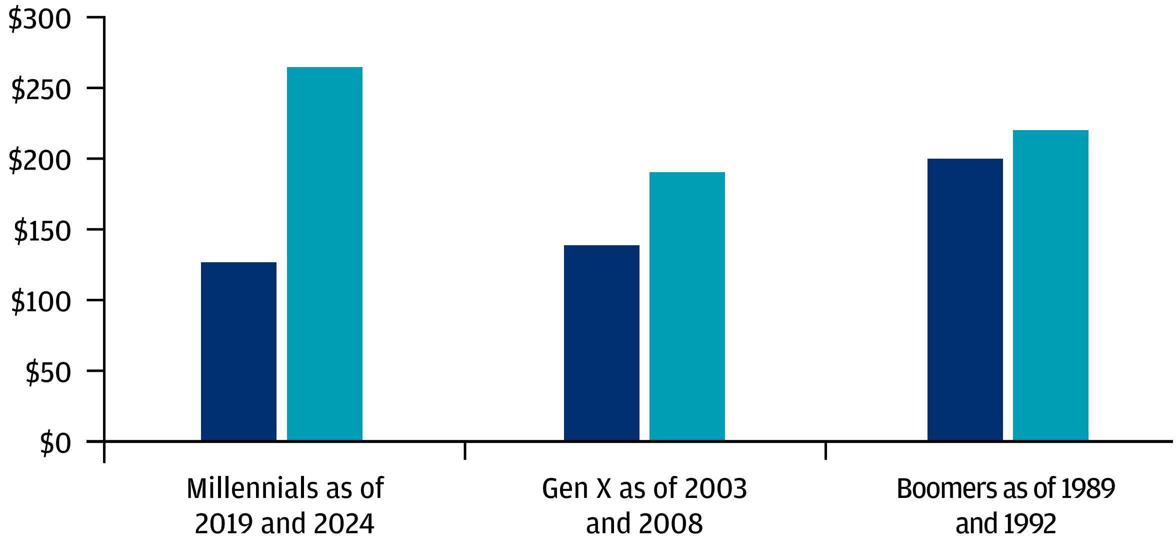
That's good news, clearly. But the gains also offer an opportunity for a strategic reassessment of your portfolio, which you can conduct from a position of strength. For some, the opportunity may be an urgent necessity. Consider: If an investor allocated to a 60/40 stock-bond portfolio at the beginning of 2020 and didn't rebalance, they would now have an 80/20 allocation. For many others, major changes may not be necessary.

Managing concentrated positions is also critical for portfolio resilience. **Our research has found that nearly half of all publicly traded companies at some point suffer a catastrophic loss in value, and nearly two-thirds underperform the index.**[29] Further, a concentrated position in cash can also be detrimental to reaching long-term goals or even maintaining purchasing power.

Now is a good time for investors to reassess their objectives and risk tolerances, and to consider how their various assets align to those goals. Many may find it prudent to lock in gains and reduce exposure to fully valued indices, achieving their primary lifestyle goals with less risk. There are several ways to do this tax efficiently, including gifting the longest-term appreciated positions to charity, or using strategies such as variable prepaid forwards to monetize and diversify concentrated positions.

MILLENNIALS HAVE HIGHER NET WEALTH THAN BOOMERS AND GEN X AT THE SAME AGE

Inflation-adjusted net worth by generation at similar ages, $ thousands



Sources: Federal Reserve, Bureau of Labor Statistics, Rubinson Research. Data as of June 30, 2024.
Note: Real worth per household measured in 2017 dollars, adjusting using CPI. The dark bars measure wealth when each generation was 23-38 years old. The light bars reflect wealth when each generation was 28-43 years old.

[28] Board of Governors of the Federal Reserve System (U.S.), Households; Net Worth, Level, Federal Reserve Bank of St. Louis, November 8, 2024.

[29] Cembalest, M., Manoukian, J., & Datta, K. (2024). The Agony & The Ecstasy: The risks and rewards of a concentrated stock position, part IV. J.P. Morgan.

17
Finding value in income

One way to increase portfolio resilience is to increase the share of total return that is driven by income. Many investors will be looking for new sources of income as cash and Treasury bill yields decline. If history is any guide, somewhere between USD 600 billion and USD 2.2 trillion of money market fund assets will move to find a new home.

Core fixed income (investment grade sovereign, municipal and corporate debt) is the first place to look for yield. Investment grade corporate bonds still yield over 5%. Credit spreads are tight, but are supported by low downgrade risk and high credit quality.

While returns are subject to market fluctuations, high yield investors may find opportunities for attractive returns, potentially exceeding 5%, even with some spread widening. Additionally, U.S. taxpayers might consider preferred equities, which can provide tax-efficient income of around 6%–7%.

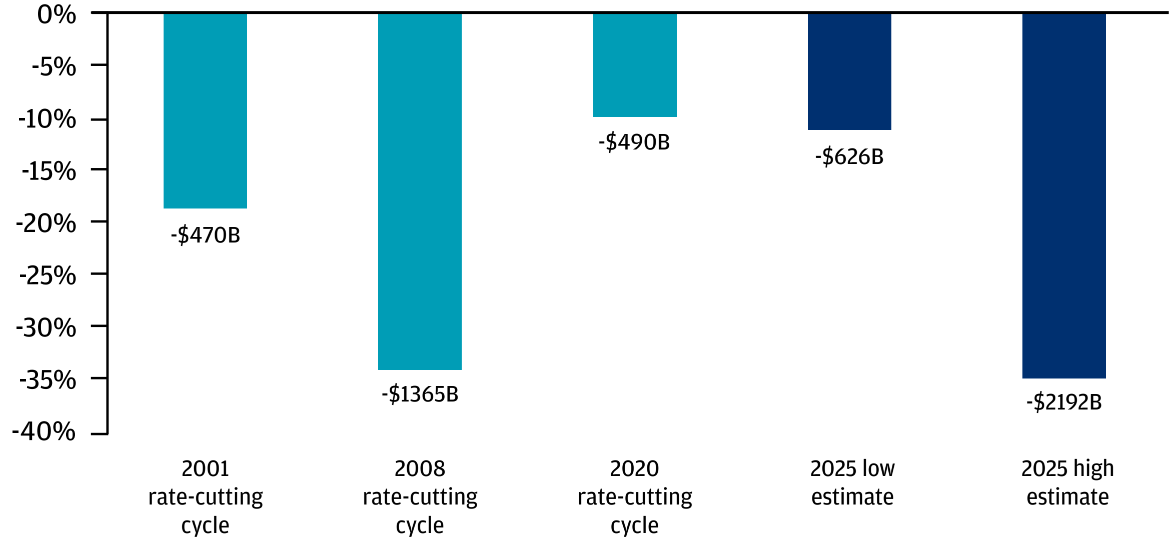
And don't forget about dividend-paying equities, which trade at a substantial discount relative to the market. In addition, quality dividend stocks tend to exhibit only 80% of the volatility of the broad market. In other words, they may provide a less volatile investment experience at a potentially lower valuation.

Finally, illiquid investments in sectors such as direct lending, infrastructure, real estate and asset-backed finance can offer potential income opportunities in the mid to high single digits, often exhibiting low correlations to stocks and bonds.

As the global easing cycle continues and risk-free rates decline, riskier sources of income may become more attractive as we move through 2025.

UP TO $2 TRILLION IN CASH COULD FIND A NEW HOME

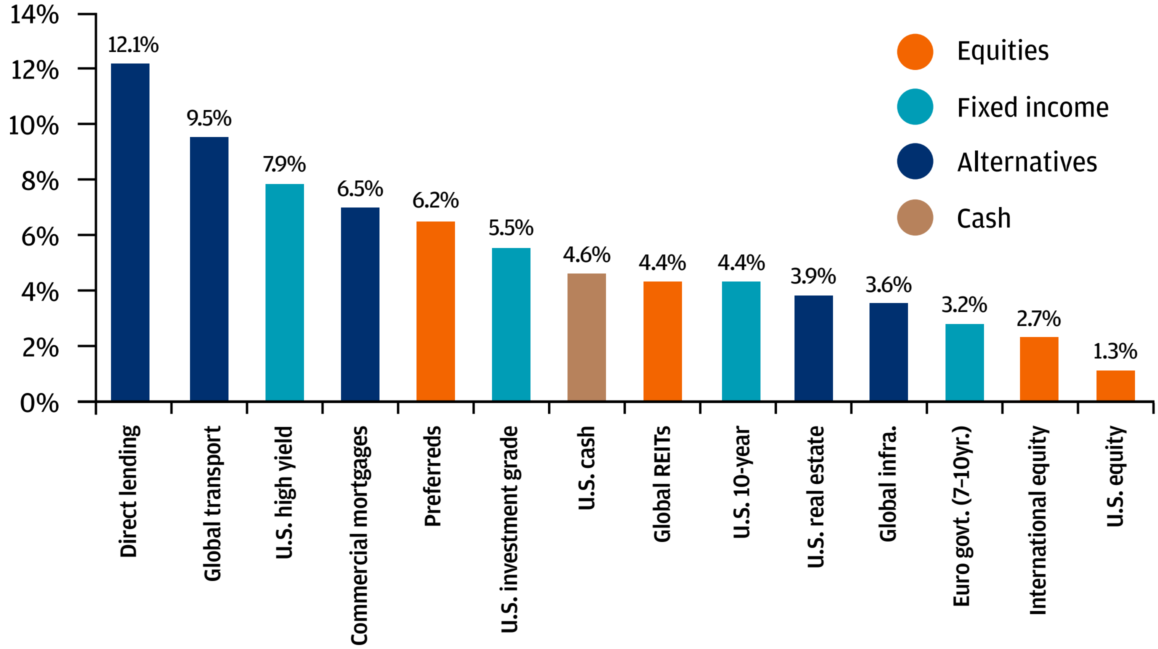
Cumulative fall in money market fund assets in previous rate-cutting cycles, %



Source: Bloomberg Finance L.P. Data as of September 30, 2024.

YIELD WILL BECOME MORE VALUABLE AS POLICY RATES FALL

Pre-tax yields across asset classes, %



Sources: BAML, Bloomberg Finance L.P., Clarkson, Cliffwater, Drewry Maritime Consultants, Federal Reserve, FTSE, MSCI, NCREIF, FactSet, Wells Fargo, J.P. Morgan Asset Management. Data as of August 31, 2024.

18 Defending against inflation

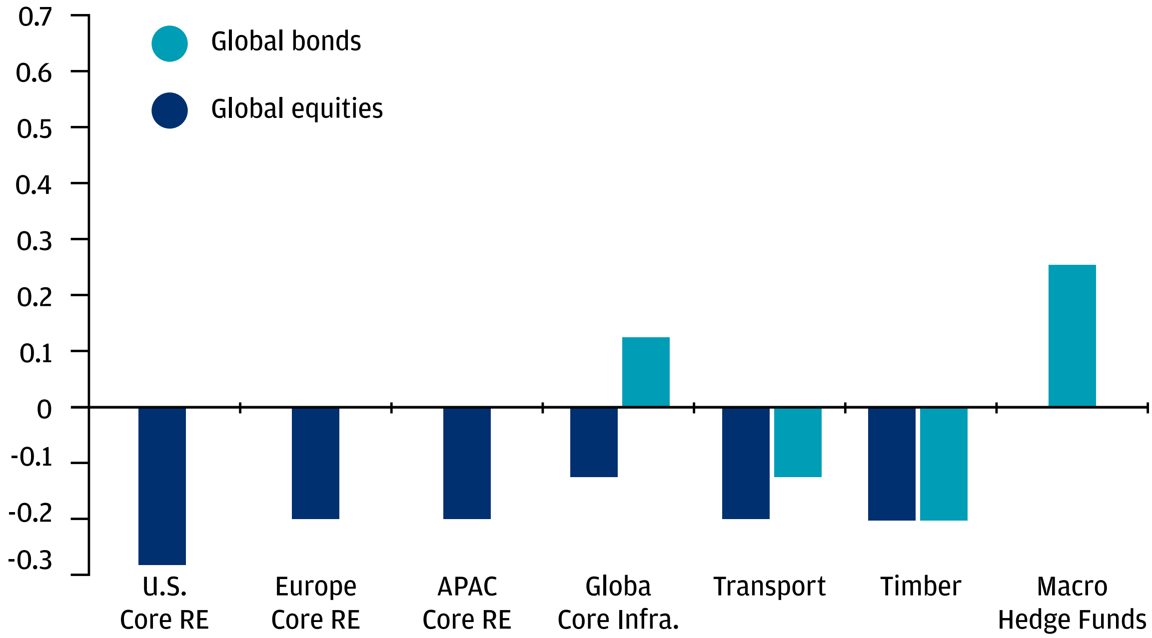
Core fixed income is still a critical diversifier in investment portfolios. But another way to potentially enhance portfolio resilience is to add assets that could mitigate the threat of inflation. Traditionally diversified portfolios faced a serious challenge over the last four years, as stocks and bonds often moved in the same direction—that is, they were positively correlated. In 2022, when inflation spiked, both stocks and bonds fell steeply.

Investors were reminded that while bonds can help diversify against growth shocks, they cannot protect against inflation shocks. **Over the long run, we believe the negative stock-bond correlation will hold.** But we see a strong argument for owning assets that can provide diversification to both equities and fixed income.

What fits the bill? Historically, real estate, commodities and infrastructure have exhibited low correlations to stocks and bonds. At the same time, diversified hedge fund strategies have proved their worth in the post-COVID period. Composite hedge funds have outperformed core fixed income by a remarkable 20% cumulatively since the end of 2020. On a go-forward basis, we anticipate hedge funds can potentially capture over 80% of the upside of a traditional 60/40 portfolio, while experiencing approximately half of the volatility. We are also interested in even more specialized assets (such as royalties) that provide stable cash flows with little to no correlation to traditional markets.

SEVERAL PRIVATE MARKET ASSETS HAVE OFFERED NEGATIVE CORRELATIONS TO STOCKS AND BONDS

Correlation of quarterly returns from Q2 2008 to Q1 2024



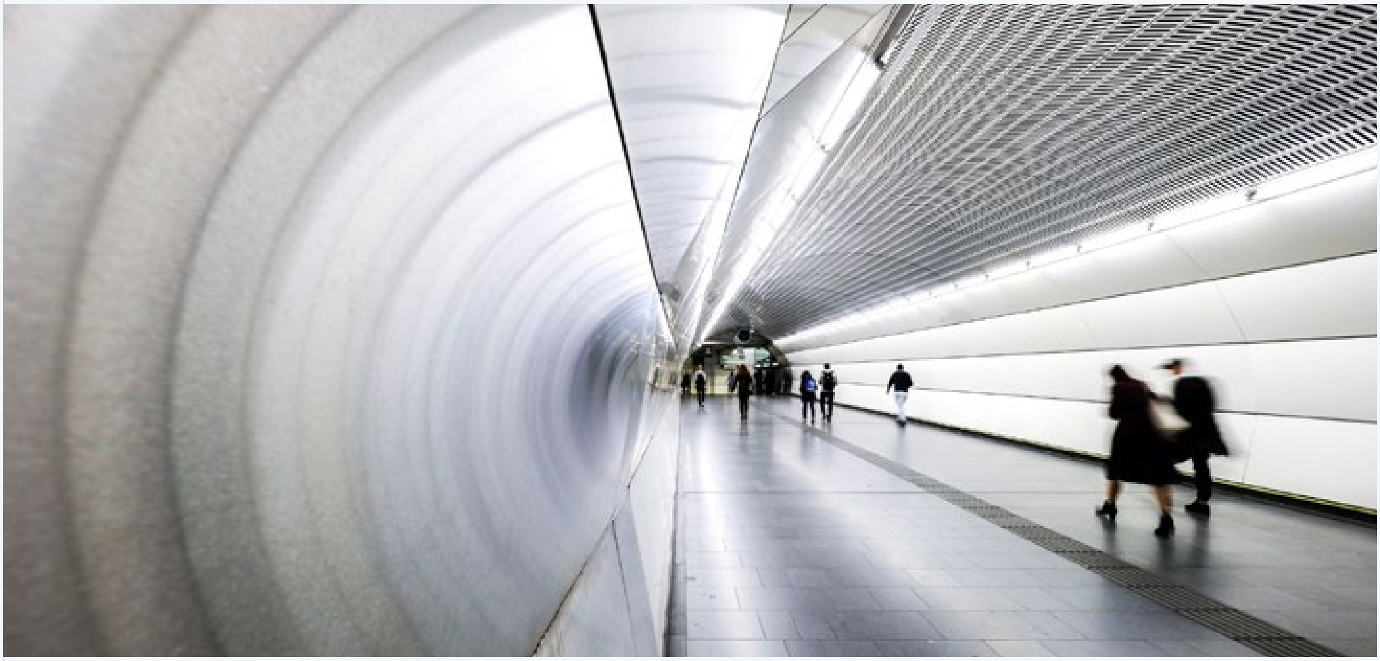
Sources: Bloomberg Finance L.P., Burgiss, Cliffwater, FTSE, HFRI, MSCI, NCREIF, J.P. Morgan Asset Management. Data as of August 31, 2024.

19 Reconfigured returns

Here's a third way to approach portfolio resilience: Consider using tools such as options to change the risk and return profile of underlying assets. This strategy can potentially provide downside preservation while preserving some upside potential.

Options can potentially preserve capital, provide niche exposure and generate income. Similarly, active exchange-traded funds (ETFs) can employ option strategies that seek to generate income from an underlying asset class, or to deliver reduced volatility relative to outright equity exposure.

Structured notes can achieve similar outcomes with greater individual specificity. Historically, we have found that equity-linked structured notes have delivered two-thirds of the return of broad equity markets while also—and this is key—delivering positive returns in down equity markets. Historically, equity-linked structured notes have also outperformed preferred equity and high yield bonds in both up and down markets. We believe investors could consider strategies that reconfigure returns to embed downside protection while maintaining upside exposure in 2025.



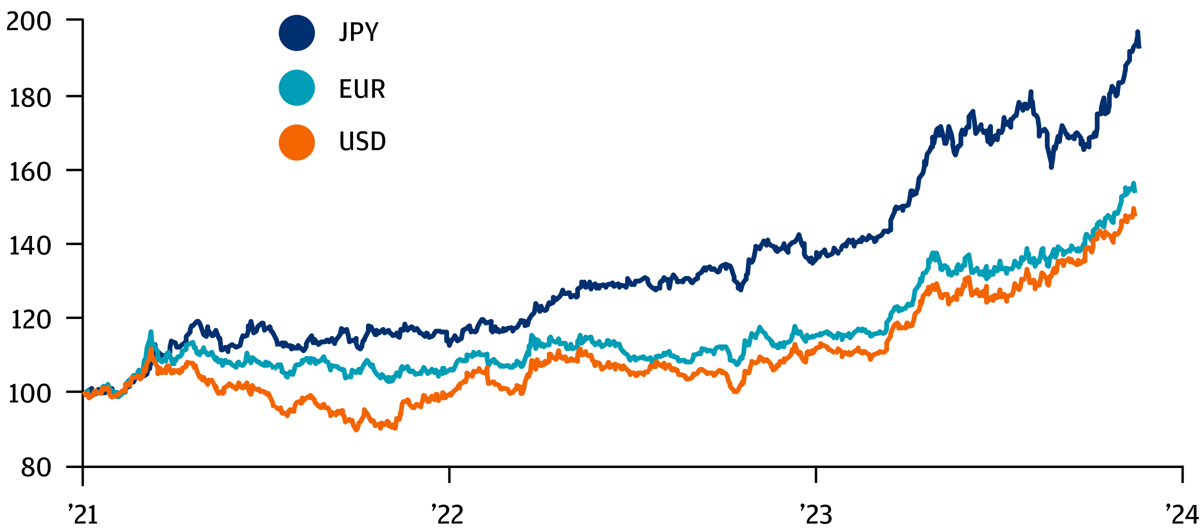
20
The gold rush

Gold rallied to new all-time highs in 2024, and we see a strong case for a continued gold rush in 2025. The commodity can play an important role in building resilient portfolios. We expect that gold prices will find continued support from central banks, particularly in emerging markets, which have been buying 1,500 tons more gold per year than their pace before Russia invaded Ukraine. The People's Bank of China still only holds 5% of its reserves in gold relative to the ECB at 60% and the Federal Reserve (Fed) at 73%.[30] **Gold ETF inflows were nonexistent in 2024, but new demand from retail investors, who face declining risk-free interest rates in 2025, could push prices higher.**

Critically, gold—the original safe-haven asset—can serve as an attractive hedge against both geopolitical risk and uncertainty around sovereign debt and deficits. In a study of roughly 50 geopolitical events since World War II, we found that gold was a reliable near-term hedge against equity market volatility.[31] Finally, we believe the U.S. dollar is structurally overvalued. Gold is an efficient way to diversify currency exposure.

GOLD HAS OUTPACED MAJOR CURRENCIES, ESPECIALLY THE YEN

Gold price index, 100 = 2021



Source: FactSet. Data as of October 31, 2024.

[30] Attar, H., & Ademolu-Odeneye, I. (2024). The Next Shift in the Gold Market. Bridgewater.
[31] Seydl, J. (2024). How do geopolitical shocks impact markets? J.P. Morgan.

Part 05— Evolving investment landscapes

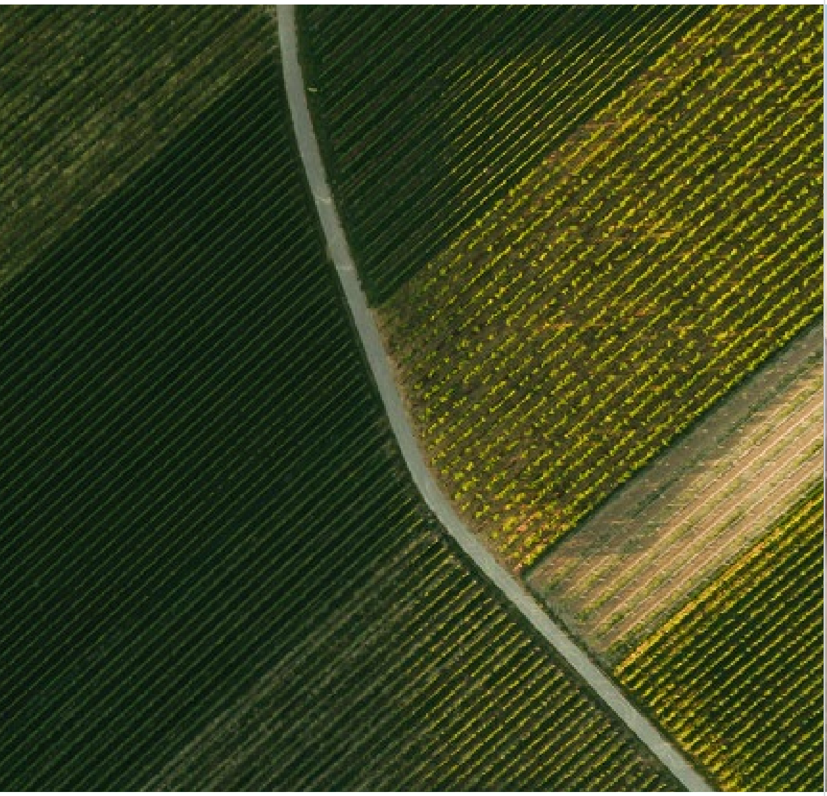
Evergreen alternatives

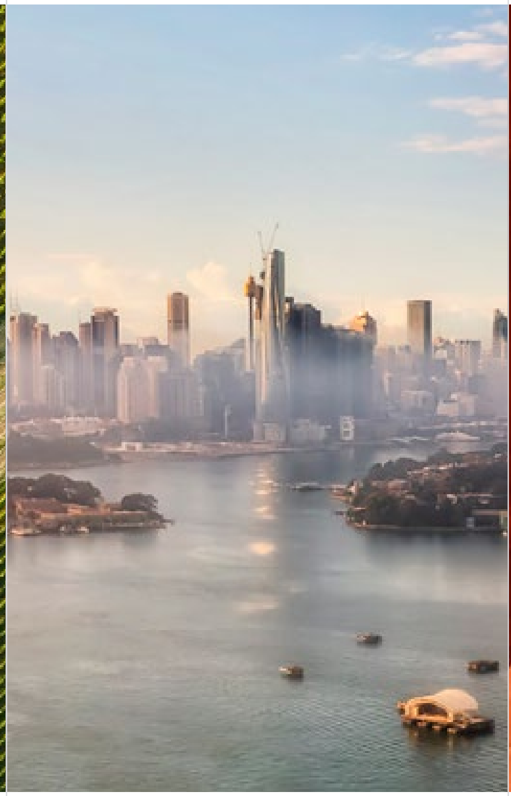
Sports & streaming

The 21st century space race

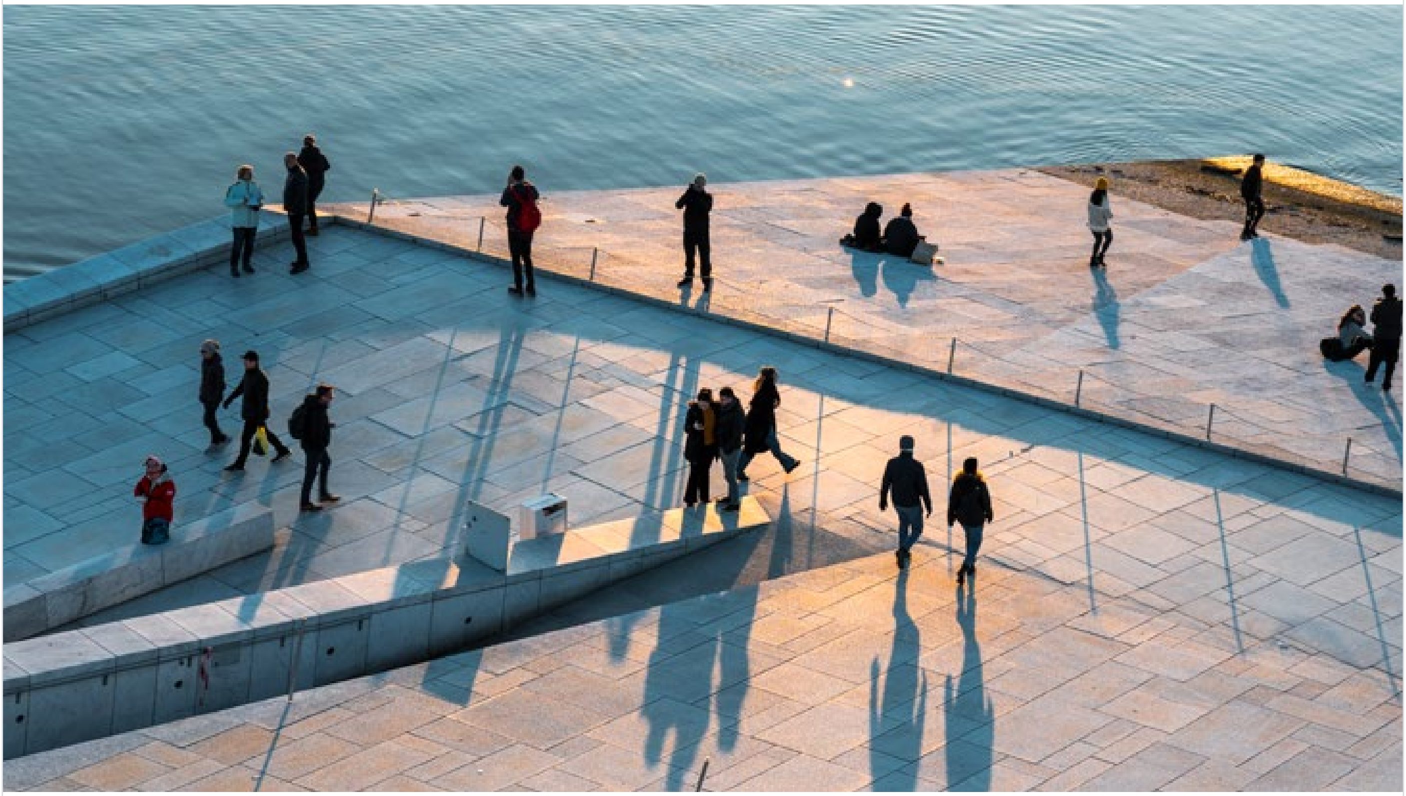
Liability management

Reimagined cities





Investment innovation sometimes comes in waves; 2025 will be a year of innovation, we believe, as the industry explores new frontiers. While these opportunities may not become a core part of your portfolio, you may find small but meaningful additions to your asset holdings.



21 Evergreen alternatives

One new frontier, open-ended evergreen alternative funds, is rising in popularity. In fact, 50% of our alternative commitments in 2024 were in evergreen fund structures, up from 33% in the prior year. While many alternative asset funds have a fixed end date or maturity, open-end evergreen funds (with no fixed end date) have started to take off.

Evergreen private credit funds amassed assets in the early 2020s, in part because regulations constrained banks' ability to extend loans. In 2025, we expect evergreen private equity to experience a similar growth trajectory.

Today, evergreen private equity is concentrated: Around 75% of current assets under management are invested in the top 20 strategies. But in 2025, we will be partnering with several managers to develop strategies we think can deliver differentiated private equity exposure in semi-liquid vehicles. Indeed, there are 50 funds currently in the SEC registration process that are expected to launch in the next several months.[32]

Evergreen alternatives offer a few key benefits: access to private investment strategies at lower minimum investment amounts; the ability to buy into a seasoned investment portfolio; and most importantly, the potential to access liquidity on a periodic (e.g., monthly or quarterly) cadence.

Evergreen funds also offer a simpler approach compared with closed-end funds. Getting fully invested at the right strategic weight requires only a one-time decision, and your capital can be reinvested to compound over time.

At the same time, we note a few caveats. Evergreen strategies tend to have higher fees and lower returns than closed-end funds that "draw down" their capital from investors. Importantly, redemption schedules of evergreen funds may be impacted by the occasional illiquidity of their underlying investments. That could be a challenge: Investors tend to want liquidity most during periods of economic and market stress.

We think open-ended evergreen and closed-end drawdown strategies can be complementary in a diversified investment portfolio. Investors who prioritize simplicity may emphasize evergreen strategies, while those who focus on absolute return might gravitate more toward traditional drawdown funds.

[32] Flynn, K., McCulloch, B., Hagen, J., Gaskill, L., & Becker, L. (2024). XA Investments Non-Listed CEF Q2 2024 Market Update. XA Investments.

22 Sports & streaming

Traditionally, owning a sports team had more in common with owning a Rembrandt or a collection of classic cars than it did with owning public and private equities. But as sports leagues relax their ownership rules, potential sports investors can find new frontiers to explore.

The case for investing in sports is simple. **First, sporting events are one of the few media experiences that reliably attract significant viewership.** No wonder the total value of sports M&A and investment has increased by 8x over the past five years, while all public M&A and investment has declined by 40%.[33]

Second, the barriers to entry remain high for any new sports franchise, a benefit for any existing franchise owner. The number of franchises in the United States is strictly governed by their respective league rules, and the global hierarchy of leagues seems established.[34]

But sports investing comes with challenges. The leagues' most important historical partners, traditional broadcast (terrestrial) television networks, seem to be in inexorable states of decline. We would not be surprised to see the traditional media players consolidate, while the tech-enabled streaming services pay increasing premiums to access sports rights.

Ultimately, the bull case for sports investing seems likely to prevail. The National Football League (NFL) is also loosening its investment rules to allow more institutional capital, and major changes in collegiate athletics will likely necessitate capital solutions. We expect deal activity and equity and credit investment in sports and sports-related assets to outpace other industries.

PLAY BALL: SPORTS INVESTING CAN BENEFIT FROM RELAXED OWNERSHIP RULES

Private equity funds planned investment themes

Teams	Collectables
Majority ownership in sports franchises*	Trading cards, memorabilia, NFTs
Minority ownership in sports franchises	Apparel
Players/Talent	**Real Estate**
Player performance related services**	Sports team and stadium financing
Sports analytics software	Arenas/tracks/golf courses
Sports agencies	Arena-adjacent property developments
Underwriting player contracts	Sports-adjacent fitness franchises
Media	**Operations**
Media rights and streaming	Venue management (tickets, sponsors, concessions, etc.)
Social media/fan engagement	Equipment for arena, event operations and athletes
Media outlets that cater to sports fans	Third-party ticketing apps
Leagues	**Betting**
Emerging sport leagues	Fantasy sports
Youth sport academies	Betting apps/sites
Summer camps	Live sports books
Video games	
E-sports (streaming, competitions)	
Sports video games	

Sources: Michael Cembalest, J.P. Morgan Asset Management. Data as of 2024. *While majority ownership by private equity funds is not currently permitted in the four largest U.S. sport leagues, some emerging and international leagues permit it. **Includes player training, coaching and development; physical rehabilitation, biomechanics, nutrition, mental strategy, etc.

[33] Cembalest, M. (2024). A Piece of the Action. J.P. Morgan Asset Management. For more, see our piece on sports investing here.

[34] National Football League and Premier League, followed by the National Basketball Association, then Major League Baseball, and the National Hockey League, the Women's National Basketball Association, Formula 1 and other European football leagues in some order.

23
The 21st century space race

The global economy is already reliant on space. Satellites and other positioning, navigation and timing technologies are integral to location and communication services that enable industries from television to food delivery. Innovation from companies such as SpaceX has driven down the cost to launch a satellite by 10x over the past 20 years, and we expect that satellite enhancements will support more effective communications and observation technology. This could be crucial for global connectivity, and could enable breakthroughs in data-intensive processes such as automation. Other use cases include imaging to track movements, which could help manage supply chains, predict and respond to natural disasters, and track construction projects.

Space will also continue to be a focus for sovereign security. **The U.S. Department of Defense's budget requests for space-based systems have increased from roughly USD 9 billion in 2019 to more than USD 25 billion in 2025.** India landed a spacecraft on the South Pole of the moon. Japan and the United States are partnering on more accurate positioning technology. Peru, Saudi Arabia and Thailand have all prioritized space in their economic development plans.

Space tourism could grow to be a USD 5 billion per year industry in the next 10 years. Consulting firm McKinsey & Co. predicts that the space economy will grow at more than twice the pace of global GDP for the next decade, becoming a USD 2 trillion industry by 2035.[35]

[35] Acket-Goemaere, A., Brukardt, R., Klempner, J., Sierra, A., & Stokes, B. (2024). Space: The $1.8 trillion opportunity for global economic growth. McKinsey & Company.

24 Liability management

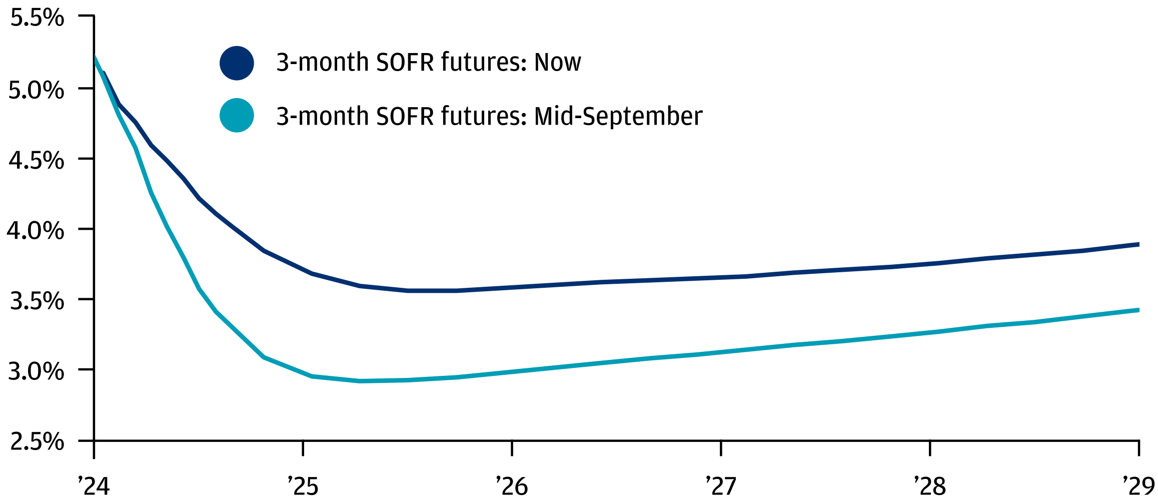
Over the last two years, many borrowers have been carrying interest costs that were based on 5%+ short-term interest rates. **As the market begins to anticipate future policy rate cuts, borrowers can lock in lower rates regardless of whether the rate cuts materialize.** At one point in September, it was possible to fix base SOFR interest costs at 2.90%–3.25% for 2–5 years, given that the markets reflected an aggressive Federal Reserve cutting cycle. Clients can further adjust their borrowing costs using tools such as vanilla and structured interest rate swaps, caps and collars to lock in or manage toward even lower rates than the market is currently offering.

Mortgage activity also reflects dynamic management of market conditions—in particular, interest rate expectations. In September, J.P. Morgan Private Bank mortgage purchase applications were at their highest levels since June 2023, and refinance applications were at their highest since the summer of 2022. Some 70% of our mortgage applications were for adjustable-rate loans, the highest share in at least five years. This suggests that borrowers are doing their best to seek out the lowest possible rates, and they expect rates to fall in the future.

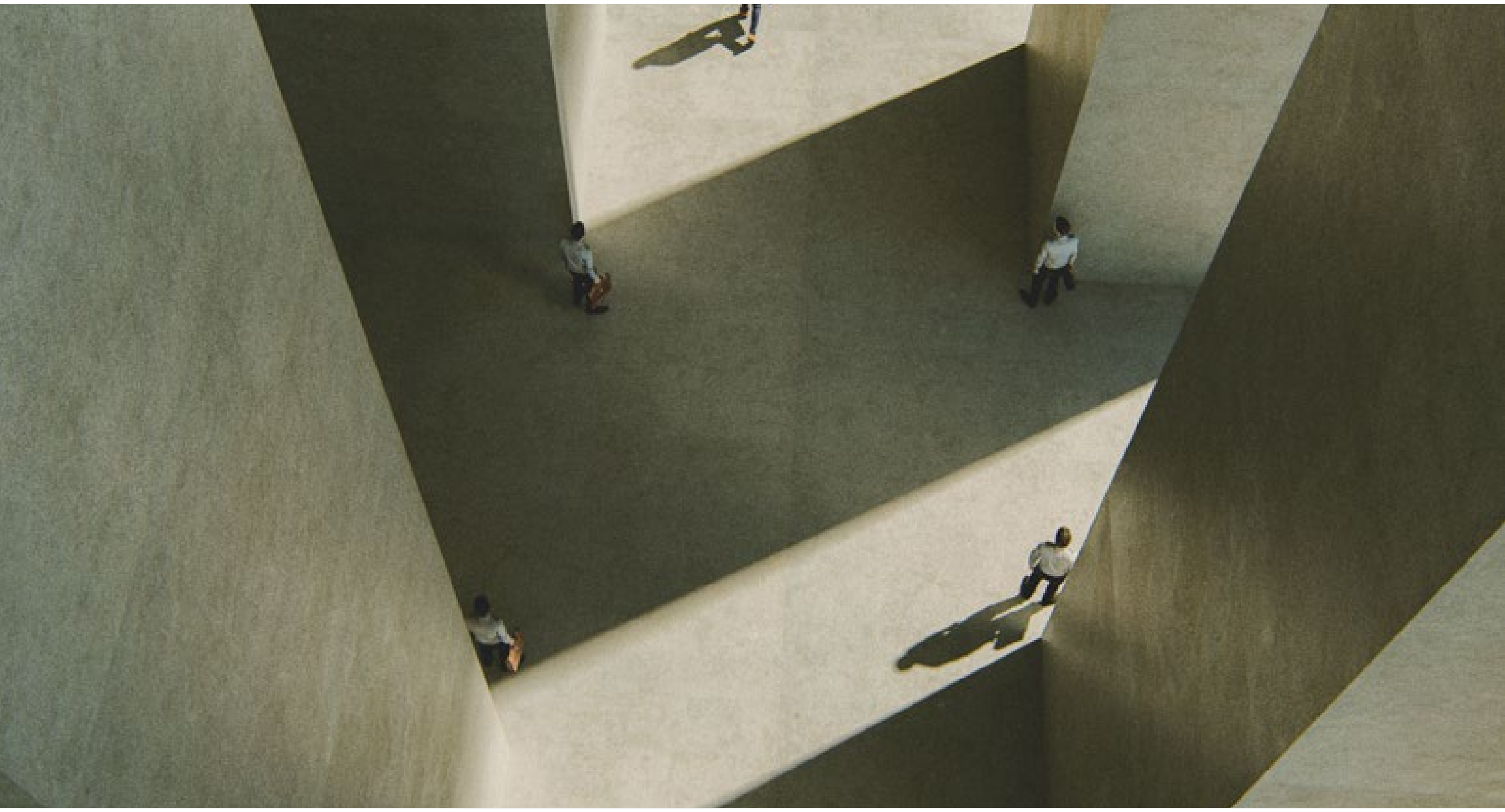
We may see other opportunities like this in the year ahead. Whether or not you engage in liability management, as borrowing costs fall, we expect to see an uptick in credit demand from home equity lines of credit (HELOCs), portfolio lines of credit, and mortgage purchases and refinances. Falling rates also matter for estate planning: Intra-family loan rates are less onerous, as are hurdle rates for grantor retained annuity trusts (vehicles in which asset appreciation above the hurdle rate is passed to the beneficiary free of estate taxes).

SHIFTING EXPECTATIONS OF FED POLICY MOVES CAN CREATE OPPORTUNITIES TO LOCK IN RATES

Expected 3-month interest rate implied by SOFR futures, %



Source: Bloomberg Finance L.P. Data as of October 23, 2024.



25 Reimagined cities

The physical landscape of cities is shifting. It's a post-pandemic phenomenon with global reach.

Even before COVID, cities were changing. In the United States, aging millennials were migrating to more affordable suburban areas. The pandemic and the proliferation of work from home arrangements supercharged the dynamic. Now, new development in many U.S. cities (including Boston, Indianapolis and the Dallas/Fort Worth metro area) features low-rise, garden-style multifamily properties; office buildings in premier suburbs and fringe urban areas; and redeveloped mix-use retail.

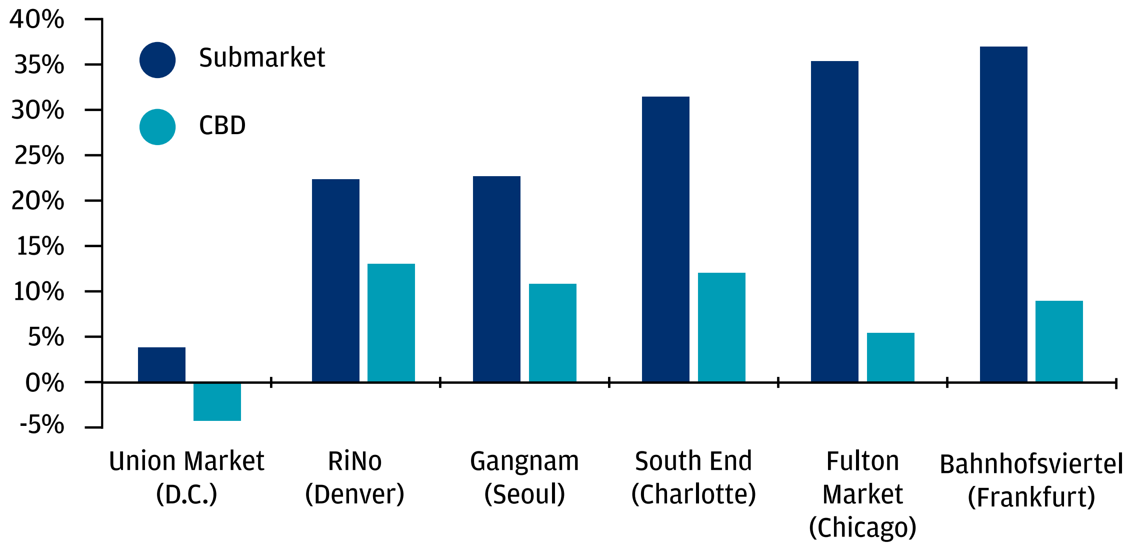
Globally, rent growth in urban fringe and suburban fringe markets such as Gangam (Seoul), Fulton Market (Chicago) and Bahnhofsviertel (Frankfurt) has outpaced central business district (CBD) rent growth by 2.5x–9x over the past five years. We expect this trend will continue.

Meanwhile, city governments and investors will increasingly partner to convert lower-quality, older class B and C office buildings to more productive uses (e.g., housing or even data centers). Over 80% of the office space in cities such as Chicago, Frankfurt and Singapore was built before 2015.

That said, new construction of LEED (Leadership in Energy and Environmental Design) certified class A office space continues to thrive. Some examples include the Salesforce Tower in Sydney and CapitaSpring in Singapore. J.P. Morgan's new headquarters, which is set to open in New York City in the summer of 2025, will be one of the new office towers changing the skylines of cities around the world.

OUTSIDE CITIES' CENTRAL BUSINESS DISTRICTS, RENT GROWTH IS PICKING UP

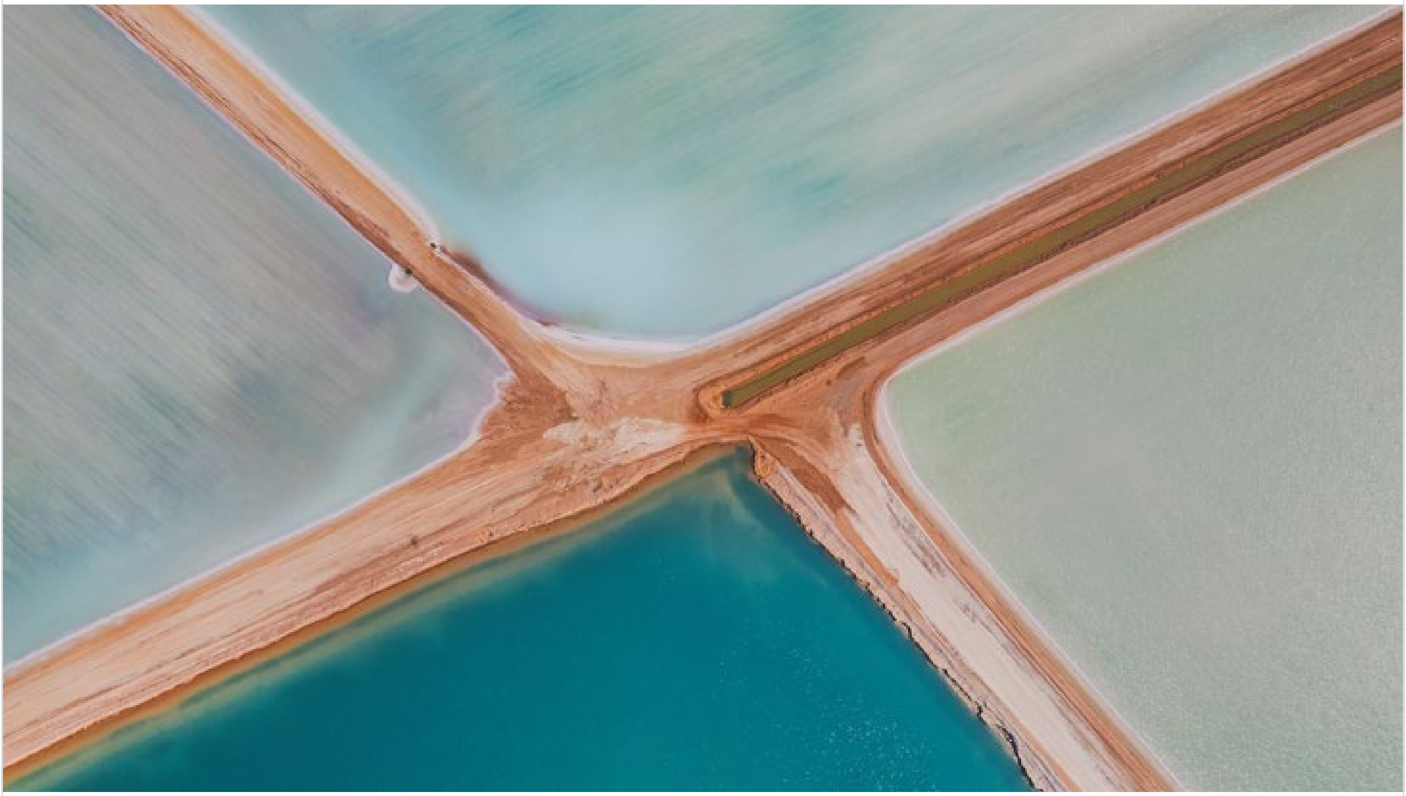
5-year rent growth, %



Source: JLL Research. Data as of May 2023.

Conclusion

2024 has turned out to be an exceptional year for investment returns. We are excited to build on that strength with you and your family in 2025. Whether it is capitalizing on the opportunity in accelerating capital investment, ensuring portfolio resilience through income and real assets, or understanding the potential impacts of the recent global election cycle, your J.P. Morgan team is here to help you and your family reach your goals.

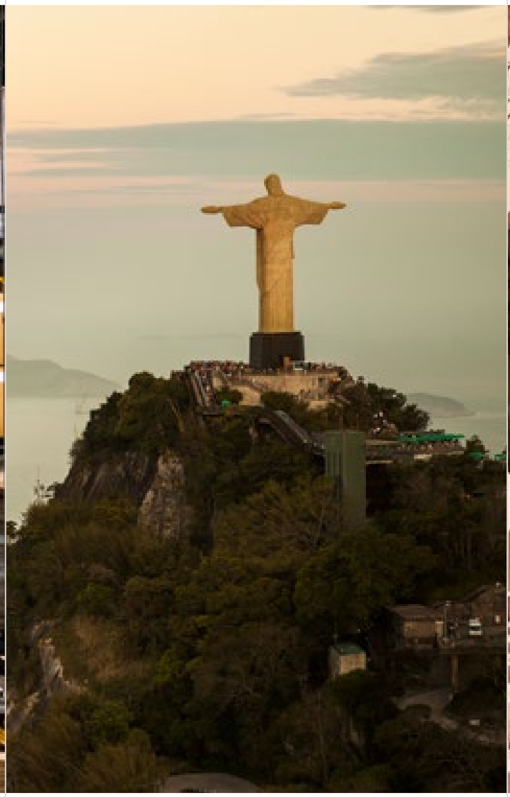
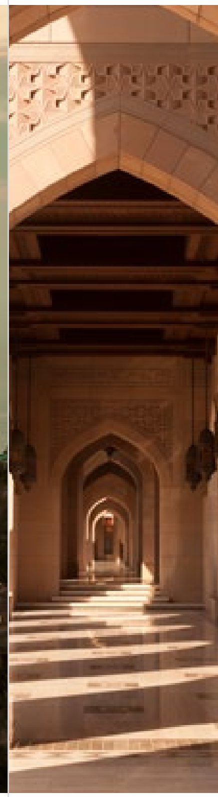


Part 06— Global perspectives

Asia

Latin America

Europe

Asia

How to find opportunities in emerging markets

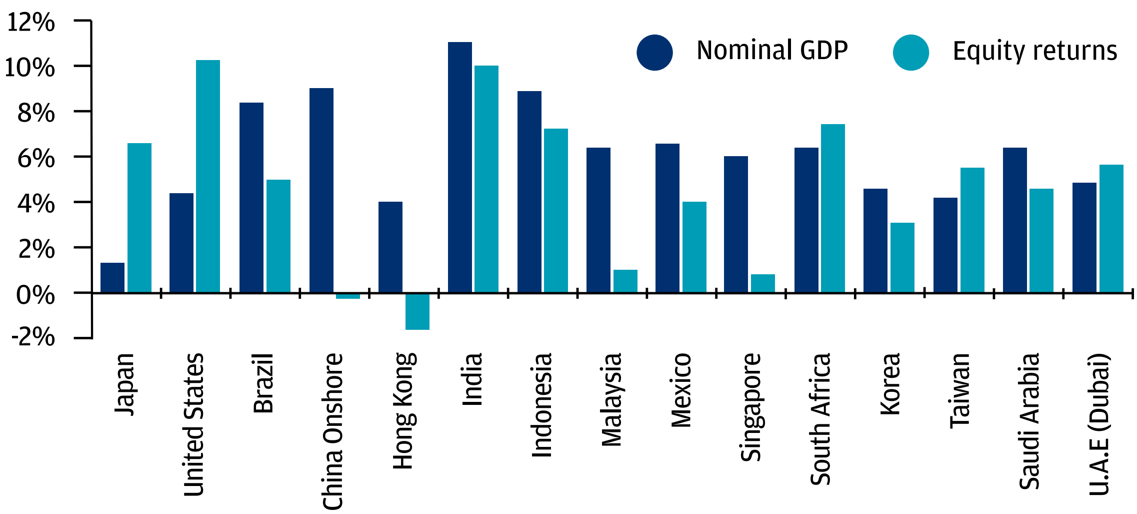
Emerging markets have disappointed investors for years. Despite promises of high growth and high returns, in aggregate, emerging market (EM) equities remain among the worst-performing asset classes over the last 15 years. Investor expectations of strong economic growth were largely met: On average, EM economies grew 4.3% compared with a 1.7% rate for their developed market (DM) peers. But in many markets, equity returns have not followed suit.

Why has growth in some countries spurred positive equity returns while in others it hasn't? As we discuss here, the critical nexus is between economic growth and corporate profits. Ultimately for investors, it's profits (and profit growth) that matter, so the key question is what factors allow economic growth to translate into corporate profits.

With the Federal Reserve (Fed) cutting rates and China engaging in a new round of stimulus, the outlook for emerging markets is improving. **But investors need to be attentive to the dynamics of particular economies and markets, and quite selective in determining where and how to invest across the EM spectrum.** Note that this view is focused on long-term investing. Short-term tactical opportunities—in Chinese markets this year, for example—can come and go based on other factors.

ECONOMIC GROWTH DOESN'T ALWAYS EQUATE TO RETURNS IN EMERGING MARKETS

Annualized nominal GDP growth vs. local equity index price returns since 2009, local currency, %



Sources: National sources, MSCI, Bloomberg Finance L.P. Data as of September 30, 2024.

What moves equity markets

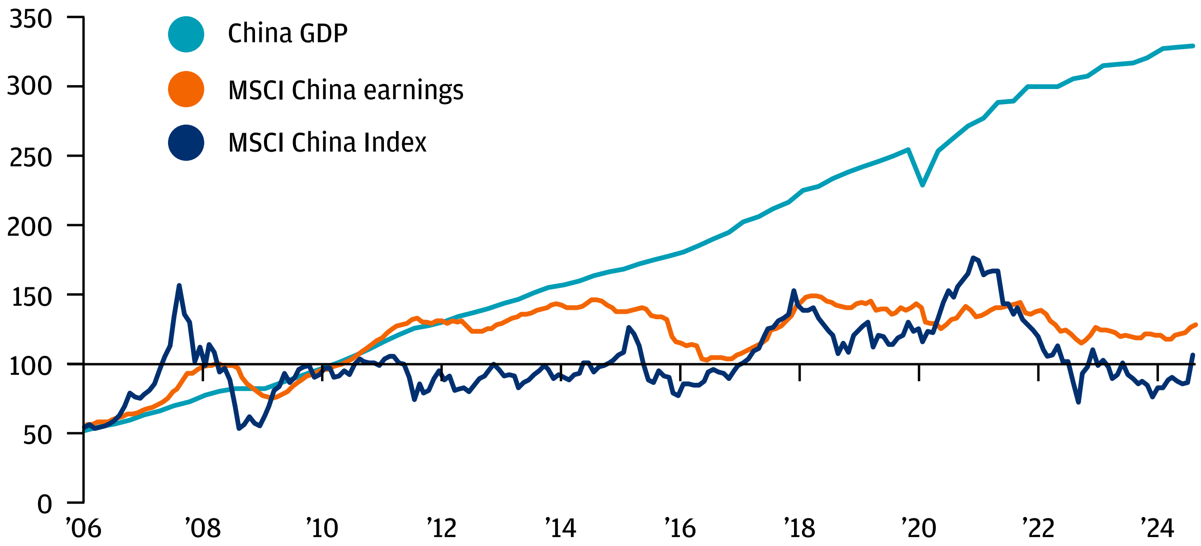
What drives equity returns? Investors are rewarded when companies grow their profits per share or return capital through dividends. In general, equities' movement follows profits (earnings) over the long run. When earnings grow, equity prices tend to rise. However, this is where EM equities have lagged their DM counterparts. While economic growth has been strong across a number of countries, many domestic companies have not seen their profits grow. One of the most glaring examples is China, where earnings have been flat over the past 10 years despite strong economic growth (see chart).

Three factors explain the relatively weak earnings growth, in our view.

First, economic models vary regarding the respective roles of the public and private sectors. Some countries do well in generating output—building infrastructure or growing export volumes—but their models are not conducive to generating corporate profits. For example, an economy might include hefty government subsidies that increase uneconomic competition and drive down prices. A similar dynamic results in economies that include many state-owned enterprises (SOEs) that are not as profit-motivated.

CHINESE STOCKS HAVE NOT KEPT PACE WITH ECONOMIC GROWTH

China nominal GDP and MSCI China Index and earnings, 2010 = 100



Sources: National Bureau of Statistics of China, MSCI, Haver Analytics, Bloomberg Finance L.P. Data as of Q3 2024.

The second factor is corporate governance. Even successful companies that deliver strong revenues don’t necessarily create profits. And importantly, they might not create profits on a per-share basis. Companies may generate significant revenues, but spend those earnings, for example, on wasteful investment or paying management higher salaries.

More frequently, companies are profitable, but they take shareholder “unfriendly” actions—issuing more shares, for example, and thus diluting shareholder value. **Because earnings are measured on a per-share basis, if share issuance increases in line with profits, earnings per share (EPS) never grows.**

The third factor is more macro and relates to the role of exports in a particular EM economy, and for emerging markets overall. Although domestic consumption has grown among EM economies, exports remain the most influential determinant for corporate profits. Thus, it’s no surprise that emerging markets had their heyday in the mid-2000s when global trade growth was skyrocketing amid hyper-globalization. With trade broadly under pressure from rising protectionism and shifting supply chains, finding economies that are still able to grow exports in this environment becomes an important factor.

A three-factor framework for EM investing

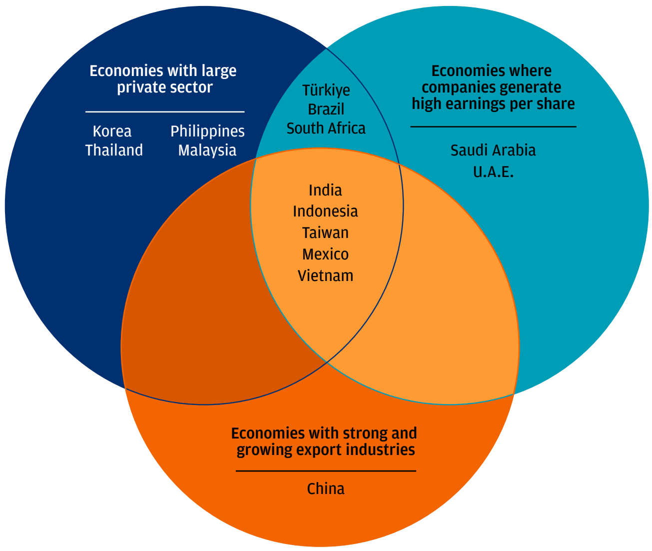
How can investors find opportunities in the current environment? We think the Venn diagram offers a useful framework.

Look at the economies that fit in the center of the Venn diagram: a combination of thriving private sectors with minimal governmental interference, companies that value shareholders and grow earnings, and growing exports. Admittedly, few economies fit the bill. And that's precisely why investors need to be especially selective when investing in emerging markets.

Looking at the first factor, economic structure, the private sector has become the key growth driver in many economies, with increased competitiveness spurring an improved corporate performance. Examples include markets with a small share of SOEs, such as India, Indonesia, Taiwan, Korea, South Africa and Türkiye.

SELECTIVITY IS IMPORTANT WHEN INVESTING IN EMERGING MARKETS

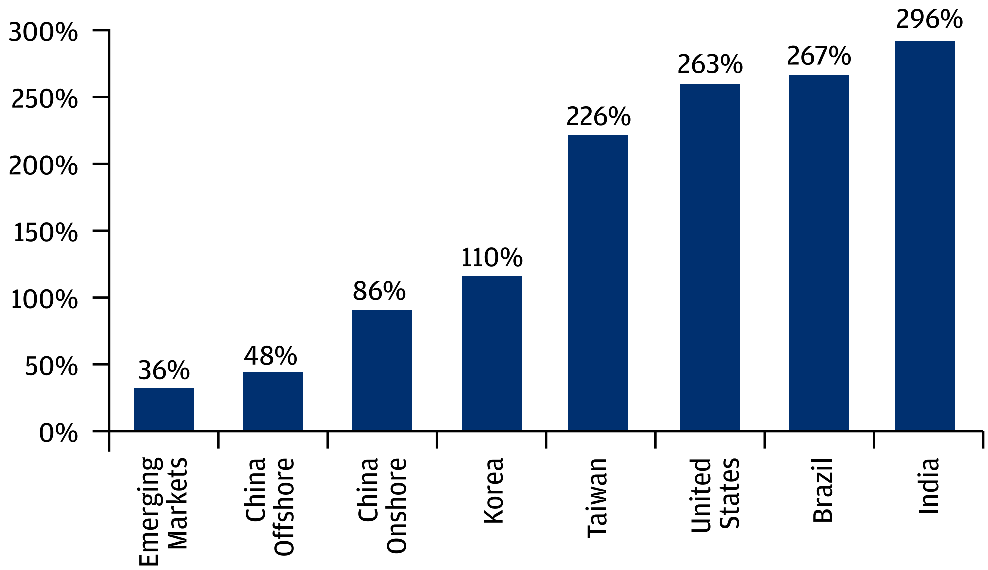
A framework for emerging markets investing



Source: J.P. Morgan Wealth Management.

CERTAIN POCKETS OF EMERGING MARKETS HAVE GROWN PROFITS AT AN IMPRESSIVE RATE

Earnings growth by region, local currency, September 2009-September 2024, %



Source: Bloomberg Finance L.P. Data as of September 30, 2024.
Note: Emerging Markets denoted by MSCI Emerging Markets, China Offshore by MSCI China, China Onshore by CSI 300, Korea by KOSPI, Taiwan by Taiex, United States by S&P 500, Brazil by Bovespa, and India by SENSEX Index.

When we consider the second factor, corporate governance—and more specifically whether companies create shareholder value—India, Brazil, Indonesia, Taiwan and the United Arab Emirates generate returns either through profit or dividend growth, and importantly, they tend not to dilute shareholder value. In these countries, companies generally focus on enhancing profits and returning that value to shareholders; not coincidentally, their companies tend to grow earnings per share at a good clip.

Turning to the third factor, the role of exports, China is the clear standout. Exceptional export performance in recent years has pushed China's global market share up to 15% of all global exports. From an investor's perspective, the surge in Chinese exports is related to the role of China's government in promoting exports. An economy with large government subsidies and stimulus efforts directed at increasing supply may not be a conducive backdrop for profit margins and earnings growth.

We note, too, that China's export power challenges many other emerging markets. China's burgeoning trade surplus and export growth in both low-tech and high-tech products are putting pressure on other global manufacturers. Recent reporting showing Korea running a trade deficit with China in kimchi highlights the scale of the challenge for emerging markets ex-China. Nonetheless, economies such as Vietnam, India, Taiwan, Poland and Türkiye have all been able to gain export market share.

So where should investors turn in the search for that elusive combination of high growth and high stock returns? In our three-factor framework, India, Indonesia, Taiwan and Mexico stand out as the most promising hunting grounds for equity investors. The EM Index may disappoint. But investors who pick their spots, and their stocks, have the potential to realize attractive returns.

Latin America

Politics and monetary policy: A cautionary tale

When the Fed launched its long-awaited first rate cut a few months ago, a global rate-cutting cycle hit its stride.

How might the cycle play out? To answer that question, we can look to Latin American monetary policy as a kind of case study. In some ways, it's a comforting story. Economic growth in much of Latin America remains strong, and inflation is contained. But in other ways, it's a cautionary tale. Politics and policy are key here.

How monetary policy and fiscal policy interact will be especially relevant as many countries move toward "fiscal activism," increased government spending and investment. As investors consider the impact of this rate-cutting cycle on economies and markets, the Latin American story can offer useful lessons.

Hyperinflation and the lessons of history

Latin America famously struggled with hyperinflation from the 1970s until the mid-1990s, when central banks played a pivotal role in reining it in. Privatizing state-owned industries, liberalizing trade and imposing austerity measures were also important. But the establishment of clear and predictable monetary policies, independent of executive power, proved decisive.

Chile led the way by granting autonomy to its central bank in 1989. Many other countries followed suit through the 1990s. Brazil, the region's biggest economy, made its central bank independent in 2021.

Conversely, countries that have undermined central bank independence, such as Argentina and Venezuela, continue to struggle to keep inflation under control.

LEGAL REFORMS USHERED IN GREATER AUTONOMY FOR LATIN AMERICAN CENTRAL BANKS

Central bank independence in Latin America before and after legal reforms, selected countries

Country	Reform Year	Pre-reform	Post-reform	Country	Reform Year	Pre-reform	Post-reform
Argentina	1992	0.4	0.8	Mexico	1993	0.39	0.64
Bolivia	1995	0.3	0.8	Nicaragua	1992	0.45	0.7
Brazil	2021	0.25	*	Paraguay	1995	0.38	0.62
Chile	1989	0.1	0.82	Peru	1992	0.43	0.8
Colombia	1992	0.27	0.69	Uruguay	1995	0.18	0.71
Costa Rica	1995	0.44	0.73	Venezuela	1992	0.43	0.73
Dominican Republic	2002	0.37	0.65	United States	**		0.48
Honduras	1997	0.36	0.67	European Union	**		0.86

Source: World Bank. Data as of 2017.
Note: The index of central bank independence is based on the legal provisions of central bank laws and related legislation. The overall value of the index fluctuates on a continuous scale from zero to one, with higher values indicating stronger legal central bank independence. Countries where subsequent legislation has reverted these reforms to some extent are marked with an asterisk. *Brazil's CB effectively became independent in 2021, but there is no updated score. **In the United States and the European Union, there have been no specific reforms to change the score.

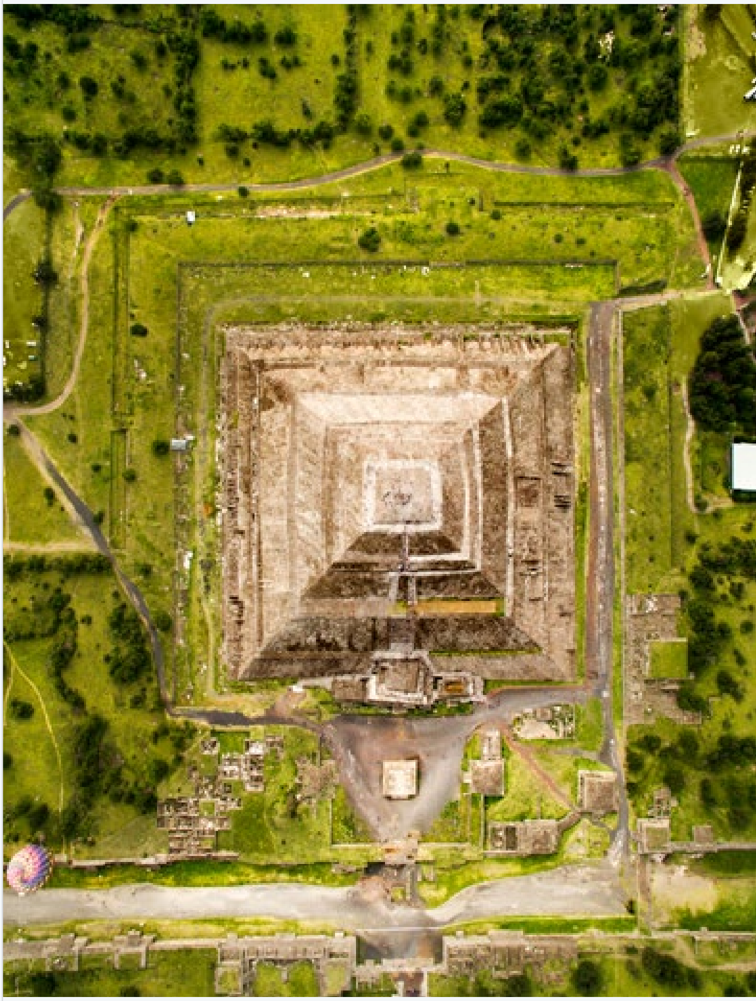
Policy after the global financial crisis and COVID

The past 15 years were a time of monetary policy challenges, but of a different sort. The global financial crisis (GFC) upended traditional notions of what central banks could and couldn't do. To stabilize the financial system, the Fed and other central banks took unprecedented actions, including zero interest rates and quantitative easing (purchasing government securities and other financial assets for the central bank balance sheet).

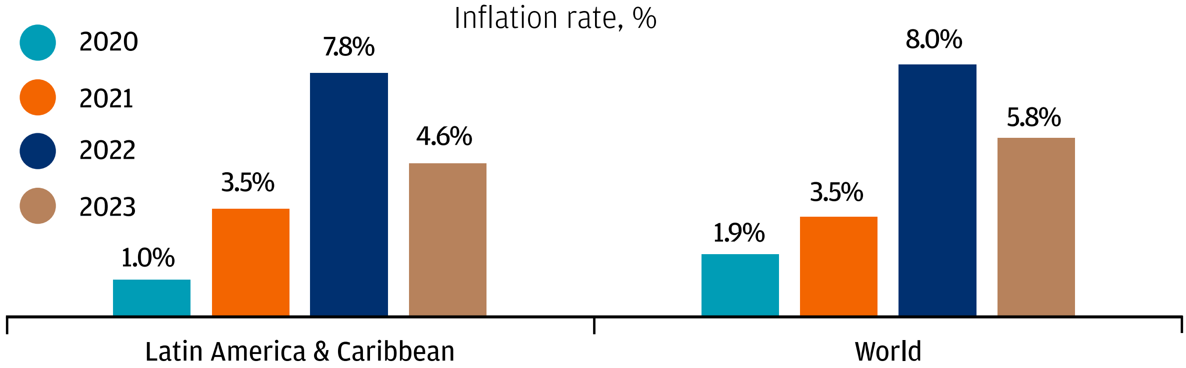
This "monetary activism" provided stability, but in hindsight, it's clear that it also boosted risk asset prices. Essentially, with cash rates close to zero, investors looking for yield and return had to seek, and as a result bid up, assets with more risk.

During this period, central banks in Latin America cut policy rates by over 500 basis points from 3Q08 to 4Q09. They also lowered reserve requirements and took other actions to boost liquidity, including providing USD liquidity in FX markets to alleviate short-term volatility in local currencies.

The COVID shock sparked renewed monetary activism from many developed economy central banks. Latin American central banks, for their part, stuck with more traditional monetary policy. Faced with the threat of relentless inflation, they raised rates more swiftly and forcefully than other major central banks.

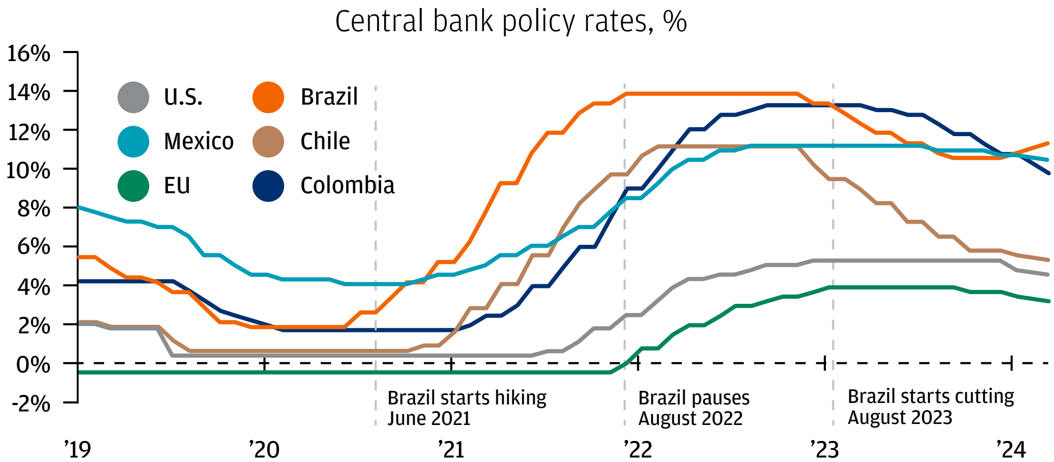


LATIN AMERICAN CENTRAL BANKS WRESTLED POST-COVID INFLATION UNDER CONTROL MORE QUICKLY THAN MANY OF THEIR GLOBAL PEERS



Source: International Monetary Fund. Data as of December 31, 2023.

DURING COVID, LATIN AMERICAN CENTRAL BANKS RAISED RATES MORE SWIFTLY THAN OTHER MAJOR CENTRAL BANKS



Source: Bloomberg Finance L.P. Data as of November 7, 2024.

Two paths to inflation control

As a result, Latin American central banks wrestled post-COVID inflation under control more quickly than many of their global peers.

By the time the Fed began hiking rates in March 2022, Latin America's major central banks had already hiked rates an average of 525 basis points. When the Fed paused its hiking in September 2023, both Brazil and Chile were already easing.

The significant real rate differential versus the United States allowed major Latin American currencies to appreciate considerably. This was particularly true for the Mexican peso (MXN), which also benefited from supportive macroeconomic fundamentals (solid growth, contained inflation, manageable fiscal and current account deficits).

Political pressure, economic instability

By any measure, Latin America's monetary policy was a success. Yet we learn (and not for the first time) that price stability and prudent monetary policy cannot guarantee economic stability. This is especially true as economies become more open to foreign capital flows and politics drives fiscal policy. Political rhetoric can easily undermine central banks' credibility. Electorally driven fiscal expansion often undercuts otherwise effective monetary policy.

A few examples:

In Brazil, President Luiz Inácio Lula da Silva's direct attacks on the central bank, coupled with the government's low credibility regarding fiscal targets, have led to higher inflation expectations. As a result, even as inflation is a relatively modest 4.4%, Brazil's central bank (COPOM) has restarted the tightening cycle. It has raised rates by 75 basis points, with 50 basis points more in hikes expected by year-end, as the central bank looks to rein in inflation expectations.

Elsewhere in the region, politics has pressured both price stability and economic growth. Colombia faces one of the highest fiscal deficits in the region, and President Gustavo Petro's reform agenda exacerbates the problem by undermining private investments and investment certainty. In Mexico, former President Andrés Manuel Lopez Obrador leveraged the Morena Party's overwhelming electoral victory to push forward a radical reform agenda, raising questions about the government's commitment to attracting private investments amid global supply chain relocation. The onus is now on President Claudia Sheinbaum to reel in a rampant fiscal deficit and rebuild the undermined credibility of Mexico's rule of law.

From their post-COVID lows, the currencies of Brazil, Colombia and Mexico have depreciated by an average of 16%, and sovereign spreads have widened an average of 31 basis points. At the same time, equity markets have gained, on average, "only" 31% in local currency terms (versus a 67% gain in U.S. markets).

As these examples illustrate, political risk has the potential to jeopardize economic stability. In our view, **investors in Latin American markets may want to leverage strong long-term trends such as nearshoring, but right-size investments to mitigate the risk of volatility.**

Conclusion

As the Fed and other central banks continue their easing cycles, the Latin American experience serves as a cautionary tale. Traditional monetary policy—especially early rate hikes—proved effective in controlling post-COVID inflation. But more recently, political pressures have threatened that legacy. This is a lesson for policymakers everywhere.

Europe

Not all AI profit is American: Unlocking Europe's growth potential

The global industrial cycle has been in a downturn for the better part of two-plus years. It's akin to long COVID: Pandemic-era supply chain disruption has been hard to shake off. European companies face challenges on a number of fronts, including labor markets, competition and productivity. Few sectors have struggled more than European manufacturing.

But look more closely and the outlook is brighter. We believe 2025 will be the year of capital investment by governments and businesses, as policymakers focus on supporting economic growth and CEOs see opportunities to profitably deploy their capital. This is a key theme in our Outlook. So even as traditional manufacturing has been slowing, innovative and profitable European industrial companies are well positioned to benefit from increasing capital investment in four key areas:

- **The AI value chain**
- **Infrastructure**
- **Aerospace**
- **Defense**

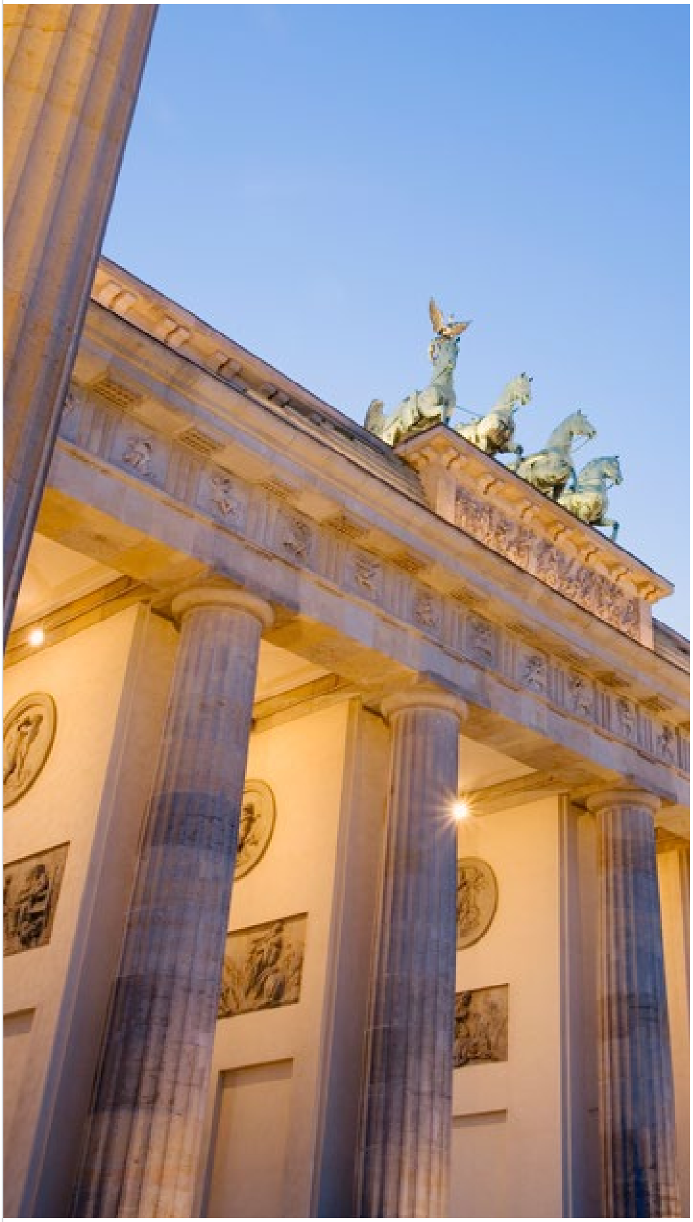
We think clients can find compelling opportunities investing in these themes via European companies.

In a well-diversified portfolio, the holdings could also complement U.S.-based tech stocks, which have grown into large overweights in many client portfolios, along with a higher exposure to the U.S. dollar. We think USD is structurally overvalued, which strengthens the argument for owning non-U.S. assets.

In addition, European companies may benefit from the stimulus and support measures that China implemented recently. If China continues with this approach in the months and quarters to come, it could boost revenues for the European firms that are key trading partners. Indeed, after the United States, China is Europe's second-largest trading partner.

Powering through a difficult macro backdrop

We recognize the recent challenging macro backdrop. Since the GFC, the Eurozone has slipped behind the United States in multiple respects.



The European manufacturing Purchasing Manager Index (PMI) has been below the key 50 threshold consistently since mid-2022. PMIs in Germany, Europe's traditional industrial powerhouse and some 25% of the Eurozone economy, have been hovering in the low 40s, an anemic showing relative to its recent past.[36]

For Europe's energy-intensive industries, challenges in procuring energy and burdensome government regulation further complicate the picture.

European policymakers recognize the need for a more competitive economy. Former European Central Bank President Mario Draghi's recently published report, essentially a blueprint to help the Eurozone "reignite growth," offers some thoughtful initiatives. We hope that some may be adopted over time.

Translating words into action, the European Commission has committed to investing EUR 20 billion per year in AI by 2030 to ensure Europe remains competitive in this important area.[37] This is a step in the right direction, we believe.

While headline GDP growth is weak in Europe, especially in the industrial sector, we think structural drivers—forces driving durable, non-cyclical growth—can "power through" the macroeconomic challenges. Sectors, notably European industrials, that support structural drivers in AI, aerospace, infrastructure and defense will likely grow much faster than the euro area economy overall.

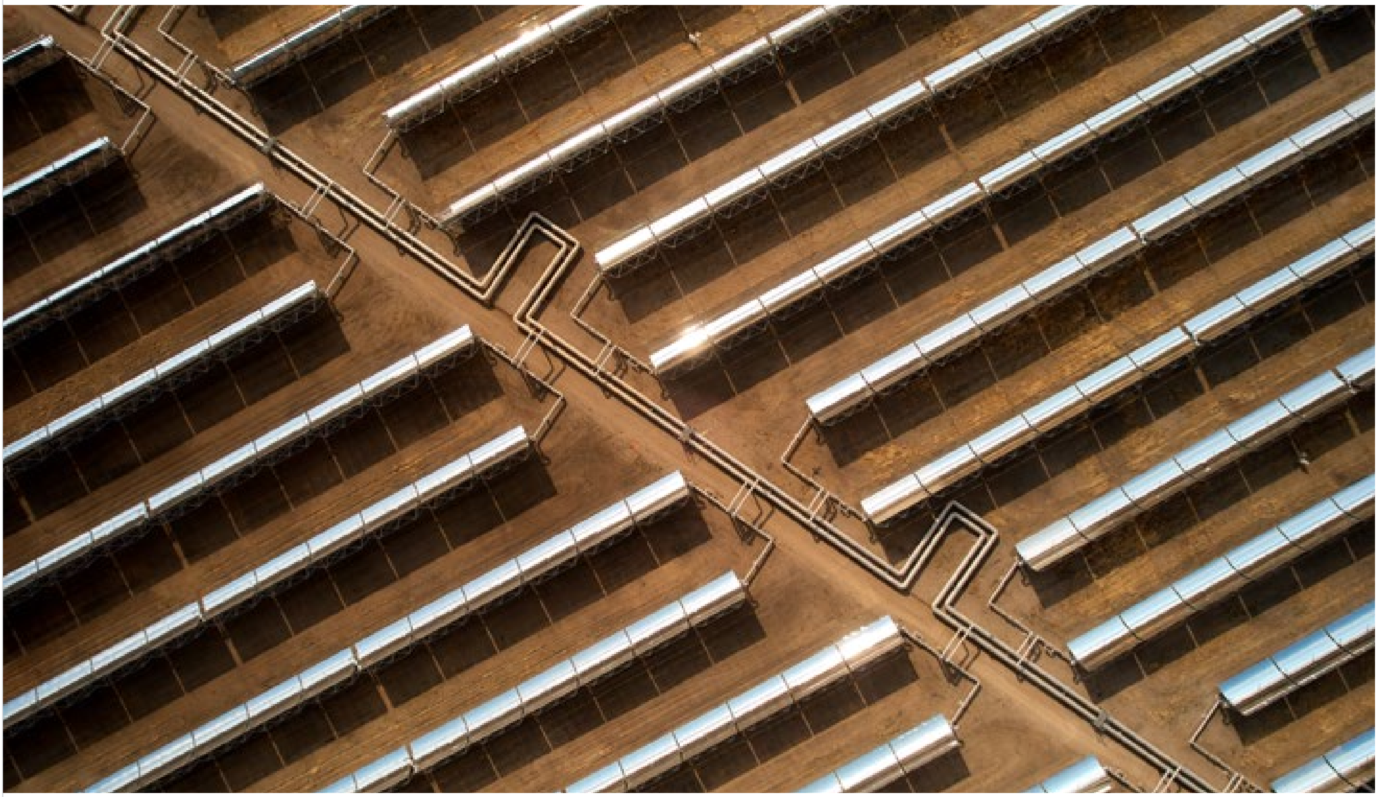
[36] Sources: HCOB, Bloomberg Finance L.P. Data as of October 2024.
[37] Source: European Commission. Data as of December 31, 2023.

The AI value chain

The world will move forward with an ever-increasing adoption of AI, we believe. In the AI ecosystem, which includes semiconductor manufacturers and makers of large language models, European companies supply critical inputs. In other words, these firms are part of the AI value chain. They are providing electrification (AI data centers have a near insatiable demand for power), renewable energy technologies, precision machinery and engineering expertise.

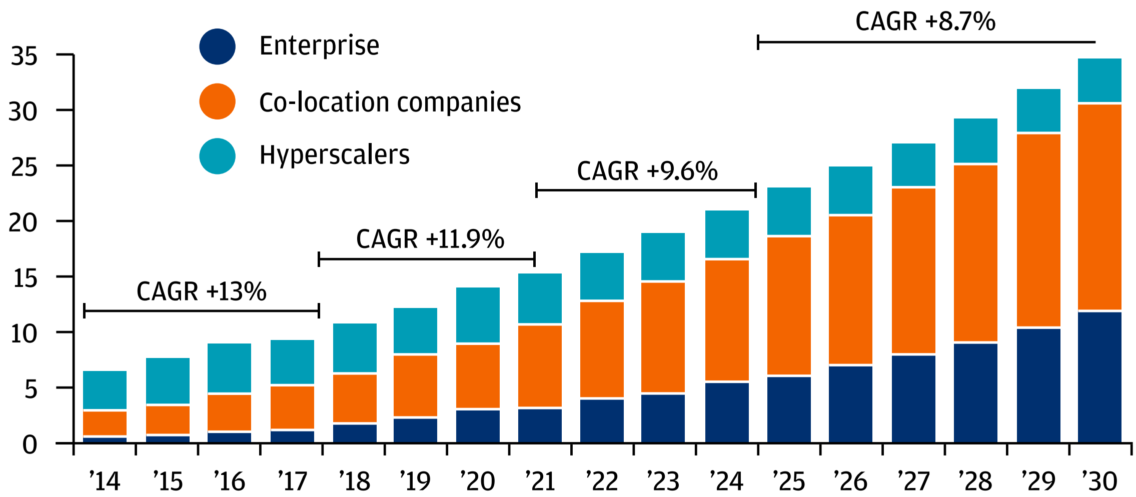
Consider: By the end of the decade, the global energy transition may require an additional USD 1–2 trillion in annual capital expenditure. AI could drive a tenfold increase in power consumption over the next three years. Meeting that skyrocketing demand will require ongoing innovation, and European energy companies are already working to provide it.

In the real estate sector, European companies are using AI to enhance energy efficiency and sustainability in buildings through “smart energy” management systems. The global smart building market is expected to grow from USD 80.25 billion in 2022 to USD 205.3 billion by 2031.



AI DATA CENTERS HAVE A NEAR INSATIABLE DEMAND FOR POWER

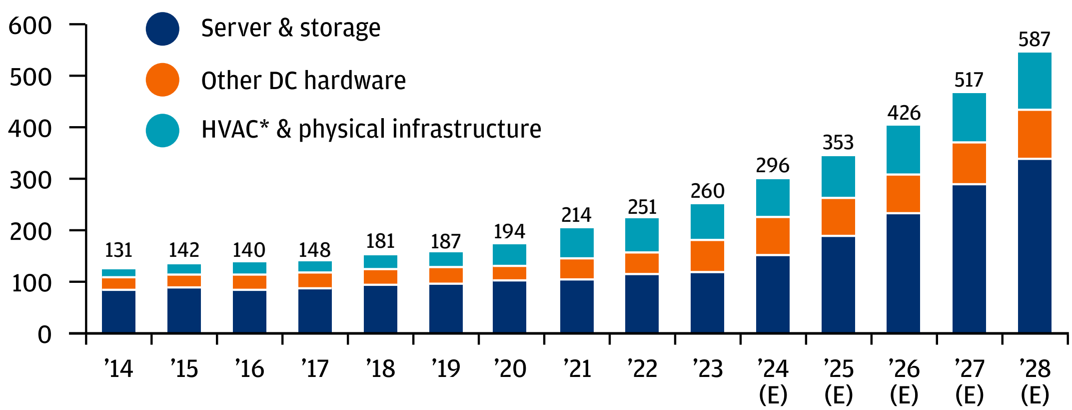
Data center power consumption by provider, gigawatts



Sources: J.P. Morgan Wealth Management, Bloomberg Finance L.P. Data as of Q2 2024.

SPENDING ON DATA CENTERS IS EXPECTED TO DOUBLE IN THE NEXT FIVE YEARS

Global data center capital expenditure, $ billion



Sources: Dell'Oro, J.P. Morgan estimate. * HVAC stands for heating, ventilation and air conditioning. Data as of March 2024.

PRIVATE INFRASTRUCTURE AND REAL ASSETS HAVE HISTORICALLY OFFERED UNCORRELATED RETURNS

Public and private market correlations, quarterly returns (Q2 2008-Q1 2024), %

	Global Bonds	Global Equities	U.S. Core Real Estate	Europe Core Real Estate	APAC Core Real Estate	Global Core Infra-structure	Transport	Timber	Direct Lending	Venture Capital	Private Equity	Equity Long/ Short	Relative Value	Macro
Global Bonds	1.0													
Global Equities	0.4	1.0												
U.S. Core Real Estate	-0.3	0.0	1.0											
Europe Core Real Estate	-0.2	0.0	0.7	1.0										
APAC Core Real Estate	-0.2	0.0	0.8	0.7	1.0									
Global Core Infrastructure	-0.1	0.1	0.4	0.3	0.5	1.0								
Transport	-0.2	-0.1	0.4	0.2	0.3	-0.1	1.0							
Timber	-0.2	-0.2	0.3	0.1	0.3	0.2	0.1	1.0						
Direct Lending	0.0	0.7	0.2	0.2	0.3	0.3	0.0	-0.2	1.0					
Venture Capital	0.1	0.5	0.3	0.5	0.3	0.2	0.0	0.0	0.5	1.0				
Private Equity	0.3	0.8	0.3	0.4	0.3	0.2	-0.1	-0.1	0.8	0.8	1.0			
Equity Long/Short	0.3	0.9	-0.1	0.0	-0.1	0.1	-0.1	-0.1	0.7	0.6	0.8	1.0		
Relative Value	0.2	0.9	-0.1	0.1	0.0	0.1	-0.2	-0.2	0.9	0.5	0.8	0.9	1.0	
Macro	0.0	0.3	0.0	0.1	-0.1	0.0	-0.1	0.0	0.1	0.2	0.2	0.3	0.3	1.0

Low correlation — High correlation

- Financial assets
- Global real estate
- Real assets
- Private markets
- Hedge funds

Sources: J.P. Morgan Asset Management, Bloomberg Finance L.P., Burgiss, Cliffwater, FTSE, HFRI, MSCI, NCREIF.
Note: Green = low correlation

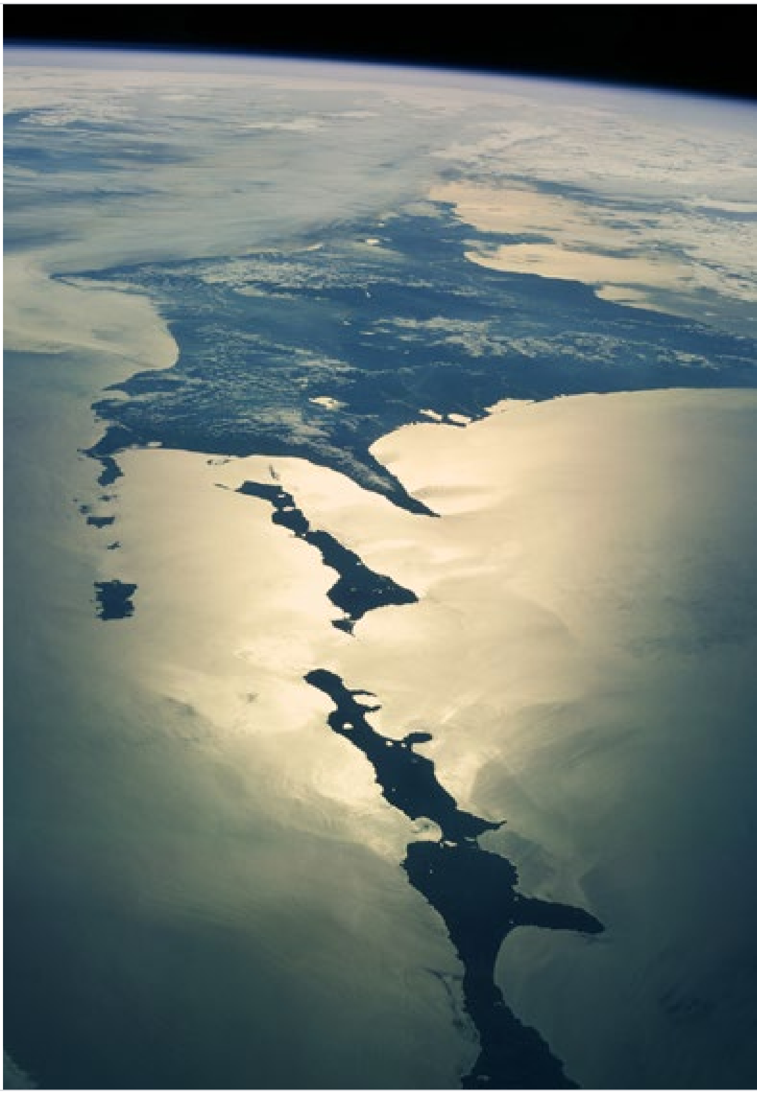
Infrastructure

Increasingly, governments and companies are focusing on investing in and modernizing infrastructure, including electricity transmission and distribution facilities, energy systems and utilities. In the transportation sector, AI and electrification can optimize port operations, reduce congestion and improve logistics. European companies are players on multiple fronts, with an especially important role in the energy transition.

Aerospace

European firms are also leading names in an aerospace sector that may soon be transformed by electrification and AI. For example, AI-driven predictive maintenance can reduce downtime and operating costs. AI can improve safety by analyzing vast amounts of data to predict and help prevent potential failures. Many aging fleets have a substantial need for ongoing upkeep and replacement. A strong aftermarket looks likely to continue, alongside a demand for newer, more advanced and more energy-efficient planes.

Defense



Amid rising geopolitical risks, members of the North Atlantic Treaty Organization (NATO) are spending more on defense. Indeed, of the EU members of NATO, 16 of the 23 are currently on track to surpass the 2% of GDP threshold in 2024, up to a cumulative total of EUR 360 billion. Ten years ago, the average member was only at 1.2% of GDP. We expect the uptrend to continue, with substantial expenditures to defense, aerospace, technology and logistics firms, among others.

Aerospace and AI are essential to these plans, and European industrial partners will likely feature in these investments. The main areas of investment include modernization of equipment, cybersecurity and infrastructure.

In national defense—as in any global industry—allocating resources to diverse suppliers can spread risk and increase resilience. Investing in businesses aligned with the defense theme looks promising.

Portfolio strategy

How might these four themes fit in your portfolio?

Growing capital investment related to AI and technological advancement across the global economy is a structural, not cyclical, force, in our view. **Investing in the AI value chain via European companies offers the potential for growth and geographic diversification.** We acknowledge the "U.S. exceptionalism" that has contributed to the outperformance of the U.S. tech sector. We also believe it's sensible to complement those positions with international exposure to AI-related themes.

We have confidence that capital investment in aerospace and defense will continue in the years ahead. These will be critical enterprises for economies in an uncertain world, providing long-term growth opportunities for client portfolios.

Finally, investment in private infrastructure strategies offers compelling attributes, including low volatility, consistency of cashflows, and low or negative correlations to broader asset classes.

Conclusion

European companies will continue to supply critical inputs to the AI value chain, infrastructure, aerospace and defense sectors. Especially for clients who have found themselves with outsized positions in U.S. tech stocks, we see the potential of a well-diversified global approach to investing in these four key growth areas. Europe's "Old Economy" has had its challenges of late, but the economy of tomorrow is already taking shape.

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DEFINITIONS OF INDICES AND TERMS

Note: Indices are for illustrative purposes only, are not investment products, and may not be considered for direct investment. Indices are an inherently weak predictive or comparative tool.

All indices denominated in U.S. dollars unless noted otherwise.

BAML Hybrid Preferred Securities: These are financial instruments issued by Bank of America Merrill Lynch that combine features of both debt and equity. They typically offer fixed or floating dividends and have a higher claim on assets than common stock, but may lack voting rights.

Bloomberg Euro Aggregate Government—Treasury (7-10Y) Index: Measures the performance of euro-denominated government bonds issued by Eurozone countries with maturities between 7 and 10 years. It serves as a benchmark for medium-term government bond investments in the Eurozone.

Bloomberg Global Aggregate Index: A comprehensive benchmark for global investment grade fixed-rate debt markets, encompassing the U.S. Aggregate, Pan-European Aggregate and Asian-Pacific Aggregate Indexes. It includes a diverse array of standard and customized subindices categorized by liquidity, sector, quality and maturity.

Bloomberg U.S. Aggregate Bond Index: A comprehensive benchmark for the U.S. investment grade, dollar-denominated, fixed-rate taxable bond market. It includes taxable bond issues rated BBB or higher, with one year or more to maturity and an outstanding par value of $100 million or more. The index encompasses Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS, and both agency and non-agency CMBS.

Bloomberg U.S. Aggregate Corporate High Yield Index: An index that tracks the performance of USD-denominated, high yield, fixed-rate corporate bonds. It includes securities rated Ba1/BB+/BB+ or below by Moody's, Fitch and S&P, excluding bonds from issuers classified as emerging markets by Bloomberg.

Bovespa Index: The Ibovespa Brasil São Paulo Stock Exchange (or Bovespa) Index is a gross total return index weighted by free float market cap and is composed of the most liquid stocks traded on the São Paulo Stock Exchange.

Capital Expenditures (CapEx): Refers to funds a company allocates to acquire or upgrade physical assets such as property, industrial buildings or equipment. These expenditures are often used to initiate new projects or investments, enhancing the firm's long-term value.

Cliffwater Direct Lending Index: An index that measures the performance of direct lending funds, which provide loans to middle-market companies. It offers insights into the risk and return characteristics of this asset class, reflecting the private debt market's trends and performance.

CML (Commercial Mortgage Loans)—Senior: A market-capitalization weighted average of all mortgages included in the Gilberto-Levy Commercial Mortgage Index, reflecting data as of the end of the first quarter of 2024.

Consumer Price Index: Measures the average change over time in the prices paid by urban consumers for a comprehensive basket of goods and services. This index covers all expenditure groups and is used to assess inflation and guide economic policy in a country or region.

CSI 300 Index: The CSI 300 Index is a free-float weighted index that consists of 300 A-share stocks listed on the Shanghai or Shenzhen Stock Exchanges. Index has a base level of 1000 on 12/31/2004.

EURO STOXX 50 Index: The EURO STOXX 50 Index, Europe's leading blue-chip index for the Eurozone, provides a blue-chip representation of supersector leaders in the region. The index covers 50 stocks from 11 Eurozone countries. The index is licensed to financial institutions to serve as an underlying for a wide range of investment products such as exchange-traded funds (ETFs), futures, options and structured products.

European Union Labor Productivity Index: Measures the efficiency of labor in the EU by assessing real employee compensation per employee. This index evaluates how effectively labor inputs contribute to economic output, providing insights into the region's economic performance and competitiveness.

FTSE EPRA NAREIT Global REITs Index: An index that tracks the performance of publicly traded real estate investment trusts (REITs) worldwide, providing a comprehensive view of the global real estate market across various sectors and regions.

HFRI (Hedge Fund Research, Inc.) Indices: A set of indices that track the performance of various hedge fund strategies. These indices provide benchmarks for hedge fund performance across different styles, such as equity hedge, event-driven, macro and relative value, offering insights into the hedge fund industry's overall trends and returns.

Gross Domestic Product: Gross domestic product (GDP) measures the final market value of all goods and services produced within a country. It is the most frequently used indicator of economic activity. The GDP by industry approach (or output-based GDP) is the sum of the gross value added (output less intermediate consumption) of all industry and services sectors of the economy (at basic prices), plus all taxes less subsidies on products. This concept is adjusted for inflation.

KOSPI Index: The KOSPI Index is a capitalization-weighted index of all common shares on the Korea Stock Exchange main board. The Index was developed with a base value of 100 as of January 4, 1980. Note: The preferred shares are excluded in calculating the KOSPI Index from June 14, 2002.

MSCI All-Country World Index: A free float-adjusted, market capitalization-weighted index that measures the equity market performance across developed and emerging markets globally, offering a comprehensive overview of international stock trends.

MSCI Australia Index: Measures the performance of the large- and mid-cap segments of the Australia market. With 57 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Australia.

MSCI Brazil Index: Measures the performance of large- and mid-cap segments in Brazil, covering approximately 85% of the Brazilian equity market.

MSCI Canada Index: Measures the performance of the large- and mid-cap segments of the Canada market. With 85 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Canada.

MSCI China Index: This index provides comprehensive coverage of large- and mid-cap stocks across various Chinese share classes, including A shares, H shares, B shares, Red chips, P chips and foreign listings such as ADRs. It represents approximately 85% of the Chinese equity market.

MSCI Emerging Markets: The MSCI EM (Emerging Markets) Index is a free-float weighted equity index that captures large- and mid-cap representation across Emerging Markets (EM) countries. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI Europe Index: A free float-adjusted, market capitalization index designed to measure equity performance in developed European markets.

MSCI France Index: Measures the performance of the large- and mid-cap segments of the French market. With 60 constituents, the index covers about 85% of the French equity market.

MSCI Global Private Infrastructure Asset Index: An index that tracks the performance of private infrastructure investments worldwide. It provides a benchmark for evaluating the returns and risks associated with infrastructure assets, including sectors such as transportation, utilities and energy.

MSCI Global Property Fund Index: Measures the performance of publicly traded real estate investment funds globally. It includes a diverse range of property funds that invest in various types of real estate assets, such as commercial, residential, industrial and retail properties. The index provides investors with a comprehensive view of the global property fund market, offering insights into the performance and trends of real estate investments across different regions and sectors.

MSCI India Index: Measures the performance of large- and mid-cap segments in India, covering approximately 85% of the Indian equity market.

MSCI Korea Index: Measures the performance of large- and mid-cap segments in South Korea, covering about 85% of the Korean equity market.

MSCI Taiwan Index: Measures the performance of large- and mid-cap segments in Taiwan, covering approximately 85% of the free float-adjusted market capitalization.

MSCI United Kingdom Index: Measures the performance of the large- and mid-cap segments of the U.K. market. With 77 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the United Kingdom.

MSCI USA: An index that measures the performance of the large- and mid-cap segments of the U.S. stock market. It provides a comprehensive view of U.S. equity market trends and dynamics.

MSCI World: The MSCI World Index is a free-float weighted equity index. It was developed with a base value of 100 as of December 31, 1969. MXWO includes developed world markets, and does not include emerging markets.

NASDAQ (U.S.): The NASDAQ is a major U.S. stock exchange known for its electronic trading platform and focus on technology and growth-oriented companies. It hosts the NASDAQ-100 Index, which includes 100 of the largest non-financial companies listed on the exchange, making it a key indicator of the tech sector's performance.

NCREIF Property Index—ODCE: The NCREIF Open-End Diversified Core Equity (ODCE) Index is a benchmark that tracks the performance of open-end core real estate funds. It focuses on diversified, income-producing properties in the United States, providing insights into the core real estate market's performance.

NCREIF Timberland Property Index: The NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual U.S. timber properties acquired in the private market for investment purposes only.

Personal Consumption Expenditures Index (PCE): A comprehensive measure of the prices paid for goods and services by U.S. residents or on their behalf. It effectively captures inflation or deflation across a broad spectrum of consumer expenses and reflects shifts in consumer behavior.

Purchasing Managers' Index: PMI Surveys track sentiment among purchasing managers at manufacturing, construction and/or services firms. An overall sentiment index is generally calculated from the results of queries on production, orders, inventories, employment, prices, etc.

Sensex Index: The S&P BSE Sensex Index is a capitalization-weighted stock market index that tracks the performance of 30 well-established and financially sound companies listed on the Bombay Stock Exchange (BSE) in India. It is one of the oldest and most widely followed equity indices in India, serving as a barometer for the Indian stock market and the economy. Sensex has a base date and value of 100 in 1978–1979. The Index shifted to free-float methodology since 09/01/03.

S&P 500®: Widely regarded as the premier gauge of the U.S. equities market, this index includes 500 leading companies across major industries, focusing on the large-cap segment. It represents approximately 80% of the total market capitalization, making it a key indicator of overall market performance.

TAIEX Index: The Taiwan Stock Exchange (TWSE), or TAIEX, Index is capitalization-weighted index of all listed common shares traded on the Taiwan Stock Exchange. The index has a base value of 100 based on its 1966 level. The index is also known as the TSEC Index.

U.S. 10-Year Treasury Yield: The interest rate paid by the U.S. government on its 10-year Treasury note. It serves as a key benchmark for other interest rates and reflects investor sentiment about future economic conditions and inflation.

U.S. Labor Productivity Index: Measures the efficiency of labor in the U.S. nonfarm business sector by calculating real output per hour worked. This index reflects how effectively labor inputs are converted into economic output, serving as a key indicator of productivity and economic performance.

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