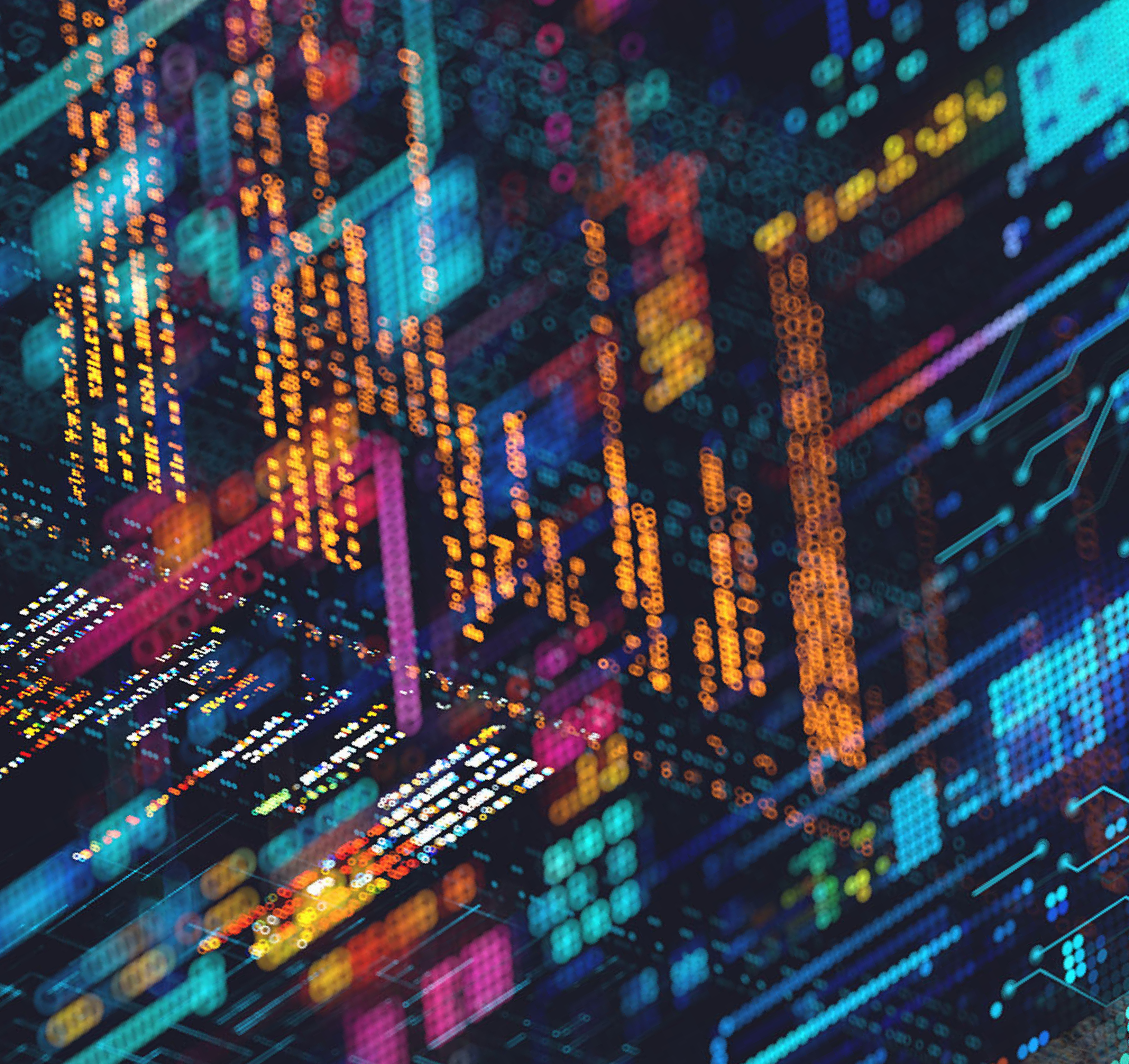

Leaning into AI

In this edition of Strategy Insights, we explore key considerations pertaining to AI investment opportunities across the globe.

PNC

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Still in the early days

Many investors may not realize that the term "artificial intelligence" (AI) was coined back in 1956 by computer scientist John McCarthy, on the vision of machines mimicking human reasoning. Fast forward to present day, in which the convergence of big data, computing power and deep learning algorithms have ignited rapid progress in productivity enhancements across several industries and sectors. That said, we believe the eye-catching news headlines about recent AI advances can obscure the big picture – that AI is still in the early days of its potential influence. Akin to the decades-long ripple effects of the internet's debut in the 1990s, the impacts of AI will transform markets, industries and society for decades to come, in our view (**Figure 1**).

As with other revolutionary technological advancements in history, the proliferation of AI has been met with a mix of enthusiasm and uncertainty. For investors, there is a structural transformation with long-term implications for productivity, profitability and investment portfolios. While thus far, much of the AI spotlight has aptly focused on the United States, China has quietly become a leader in important areas of AI patents, human capital, advanced manufacturing and aspects of AI infrastructure.

In this edition of *Strategy Insights*, we explore key considerations pertaining to AI investment opportunities across the globe. Overall, we believe the transformative promise of AI and its related technologies is robust, and the investment opportunity is highly favorable.

Fig 1. The Wide-ranging Impact of AI

The AI innovation cycle is still in the early stages, with use cases accelerating over time

Potential AI Impacts on Consumers

Near-term

- **Commerce:** Personalized recommendations for shopping and entertainment
- **Convenience**: Smart assistants embedded in emails, phones and cars (AI concierges)
- **Communication:** AI-powered creative tools and applications
- **Daily life:** Immersive experiences in gaming, shopping and education
- **Health:** AI diagnostics and wearables connected to doctors
- **Financial:** AI-powered investment and budgeting assistants
- **Risks:** Growing awareness of privacy trade-offs as AI services collect more data

Longer-term (5+ years)

- **Commerce:** Lower consumer prices as AI productivity gains reduce costs
- **Convenience:** AI companions blended across devices; offering true life management
- **Daily life:** Human-AI relationships; near-frictionless digital and physical integration (AI orchestrating daily life)
- **Education:** AI-customized education and career pathways
- **Health:** Preventive healthcare (AI predicting and preventing illnesses); personalized longevity tools (AI doctors, gene editing)
- **Risks:** Potential rise of AI-driven consumer advocacy (AI agents negotiating with businesses)

Potential AI Impacts on Businesses

Near-term

- **AI chatbots:** Customer support handled by chatbots and voice AI
- **AI copilots:** Widespread adoption in office software (Microsoft, Google, Salesforce)
- **Innovation:** Predictive healthcare and maintenance widely used in manufacturing, logistics
- **Labor force:** Jobs reshaped, humans supervising AI outputs
- **Productivity:** Automation cost savings; AI-driven decision-making on inventory, supply chains, pricing and hiring
- **Regulation:** Early-stage AI regulation compliance (EU AI Act, U.S. sectoral rules)

Longer-term (5+ years)

- **AI co-creation:** Humans and AI collaborating on product design, strategy and science
- **Innovation:** AI-led innovation in drug discovery, climate modeling and advanced manufacturing
- **Labor force:** Fully autonomous supply chains with minimal human intervention
- **Productivity:** Massive productivity leap; widespread robotics and AI integration in warehouses, agriculture and construction
- **Regulation:** Self-governing organizations, with companies competing on transparency, trust and responsible AI use

As of 9/30/2025. Source: PNC

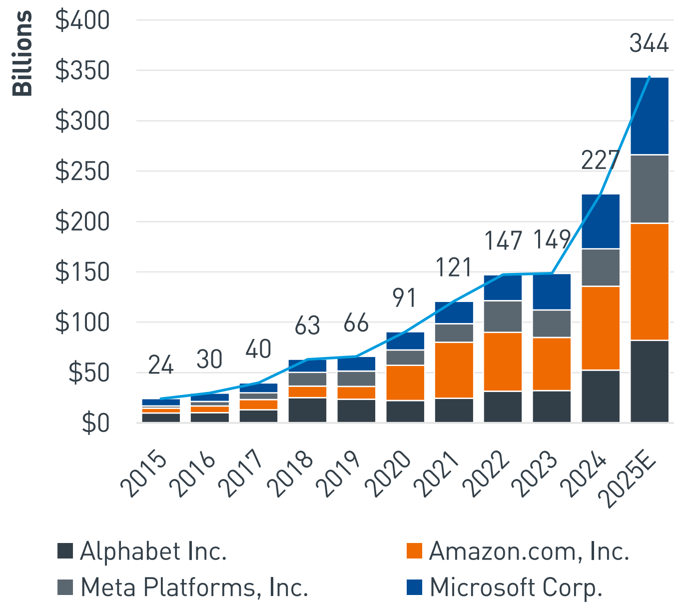
Capital expenditure translates into productivity, which translates into earnings

In our view, AI is a foundational technology reshaping the economy and driving the economic growth outlook. The recent growth in AI has resulted in a significant increase in computing power needs, and therefore data center construction. Mega-capitalization (cap) technology (tech) companies are driving a surge in data center investment; for calendar year 2025, Alphabet Inc., Amazon.com, Inc., Meta Platforms, Inc. and Microsoft Corporation have projected a combined $344 billion investment in capital expenditures (**Figure 2**). This represents a more than 50% increase from the prior year, and a more than 500% increase from the pre-pandemic level in 2019. Further, we believe the significant spending by such corporations is sustainable as it is largely supported by robust cash flows, rather than dependence on less reliable funding such as boom-bust initial public offering (IPO) markets.

The last major productivity cycle occurred in the mid-1990s during the internet rollout. We view the current stream of datapoints and anecdotes as precursors to robust future hard data. AI is already enhancing productivity by automating repetitive tasks, coding, analyzing vast amounts of data, disseminating knowledge and personalizing customer service. We are confident that the AI-driven economy is on the cusp of a once-in-a-generation productivity cycle (**Figure 3**).

Fig 2. Capital Expenditures by the Largest Hyperscalers

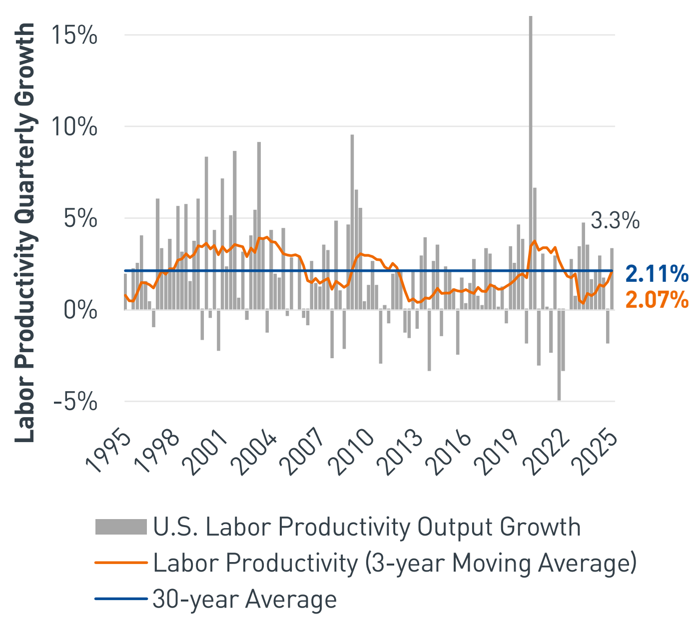
Data center construction is trying to keep up with computing power needs



As of 9/30/2025. Source: FactSet®. FactSet® is a registered trademark of FactSet Research Systems Inc. and affiliates.

Fig 3. AI Impact on Labor Productivity

AI is poised to have substantial effects on productivity



As of 9/30/2025. Source: Bloomberg L.P.

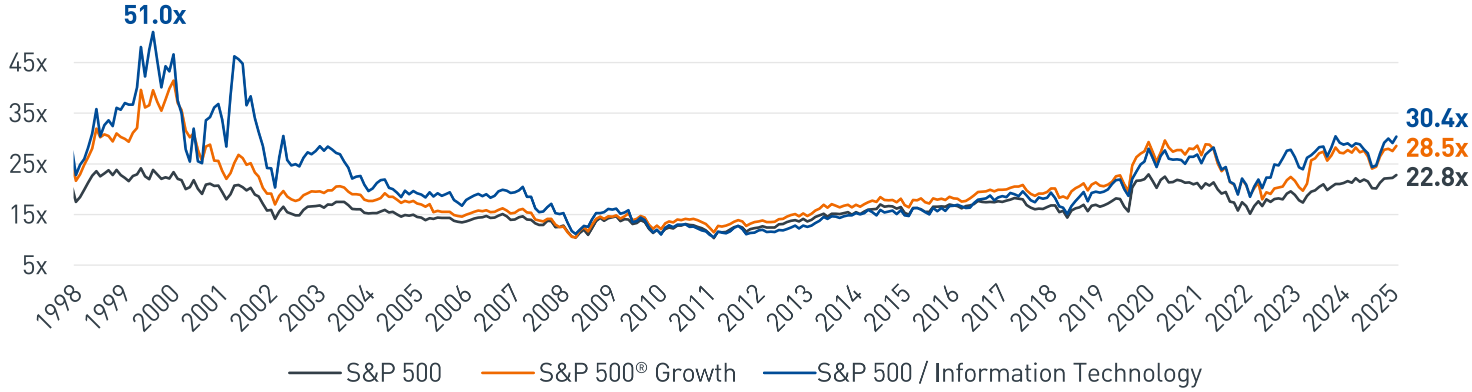
The market can party, but it is not like 1999

While there have been many comparisons between the AI developments of today and the dot-com bubble of the late-1990s, we think there are more differences than similarities. For example, valuation in the Technology sector is approximately 40% below the peak reached in 2000 (**Figure 4**). Highly profitable mega-cap tech companies now comprise a historic share of the equity market, and their proportion of earnings growth has also risen in kind.

Today, internet connectivity and mobile usage are ubiquitous, and consumer behavior has already embraced virtual interactions. This environment is in stark contrast to the 1990s when dot-com companies poured money into magazine and TV advertisements to try to cajole reluctant consumers to try out virtual marketplaces. ChatGPT, the largest AI large language model, has reached over 700 million weekly users as of August, with 5 million paying business users growing at a similar exponential rate as they embrace AI tools[1] , and paying business users of ChatGPT's AI are similarly growing at an exponential rate[2]. In contrast to the late 1990s, bubble-like qualities, such as the booming IPO market for dot-com companies that had little to no earnings, are largely absent today (**Figure 5**). The companies currently leading today's Technology sector returns generate significant free cash flow that funds much of their reinvestment. Unlike the dot-com bubble of the 1990s, we view the societal and economic conditions for rapid AI adoption and ongoing growth as highly favorable.

Fig 4. NTM Price-to-Earnings

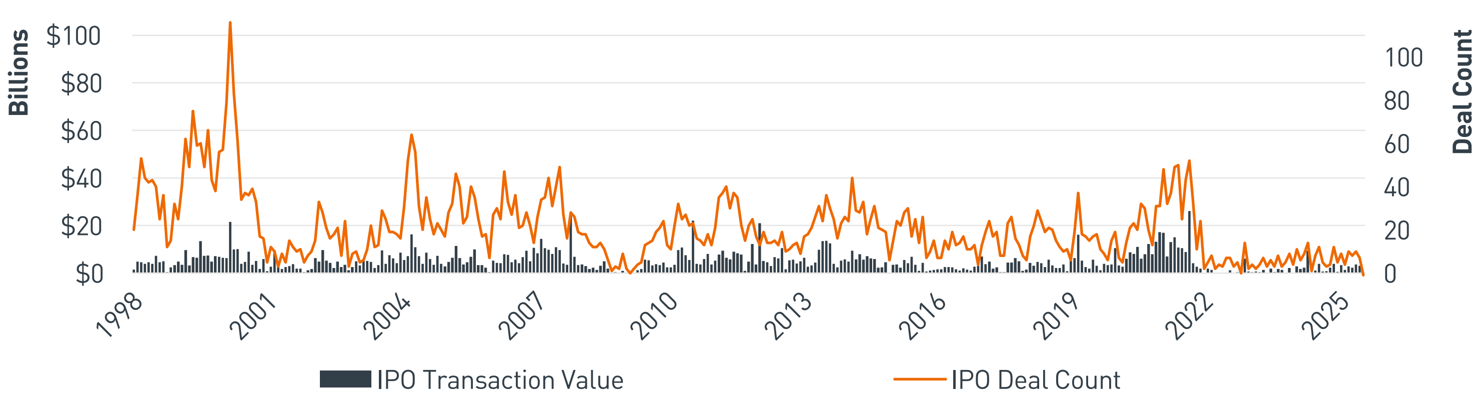
Growth and the Information Technology sector have driven S&P 500® valuations higher



As of 9/30/2025. Source: FactSet®

Fig 5. U.S. Initial Public Offerings

Today's IPO activity is far lower than that of the late-1990s boom



As of 9/30/2025. Source: Bloomberg L.P.

The macro environment

We believe the current macroeconomic backdrop is supportive of investment risk-taking. The Federal Reserve (Fed) has begun another cycle of reducing short-term interest rates via cuts to its policy rate, and it signaled that supporting the weakening labor market is a higher priority than combating inflation as of this writing. We expect short-term interest rates to fall in the coming months and quarters, and for this phenomenon to benefit AI and tech-focused companies, which are thought to be "longer duration" assets, i.e., those with payoffs farther into the future.

Additionally, current fiscal policy has stimulative components in terms of tax cuts and incentives for business investment. Further, we believe the fiscal policy uncertainty that beleaguered the U.S. equity market earlier this year is past peak, and the market has duly settled into a position of becoming comfortable with heightened uncertainty.

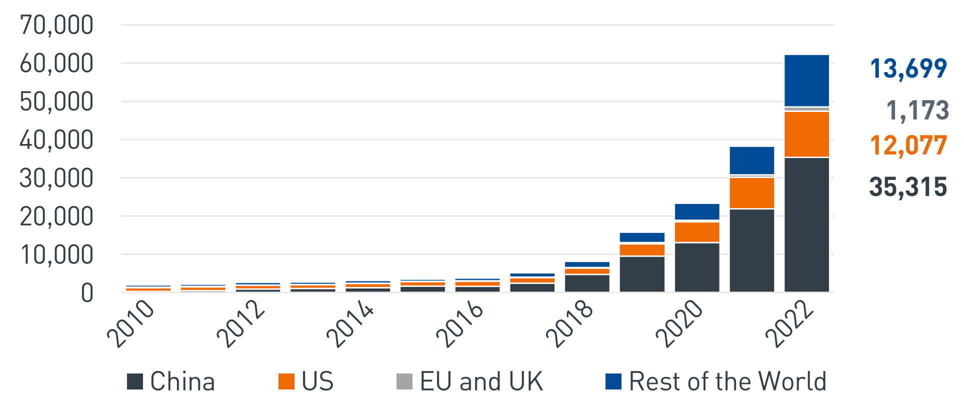
The prospect of rising goods inflation remains a modest concern to us but not only should it be a "short-lived" impact as described by Fed Chair Jerome Powell in his September 17 press conference[3], AI's deflationary impact should play a role in the coming quarters and years to help moderate inflation.

AI's global reach and opportunity

The U.S. and China are the clear global AI leaders. The U.S. has advantages in computational power and innovative large language models, while China has advantages in data volume, power infrastructure, advanced manufacturing and recent trends in AI-related patents (**Figure 6**). Although the U.S. retains an edge in data quality and accessibility, both key for training AI models, China has an edge in raw data itself, with an estimated 25% of all global data.

Fig 6. Number of AI Patents Granted Annually by Country

China accounts for nearly half of global AI patents



As of 9/30/2025. Source: Nestor Maslej, Loredana Fattorini, Raymond Perrault, Vanessa Parli, Anka Reuel, Erik Brynjolfsson, John Etchemendy,Katrina Ligett, Terah Lyons, James Manyika, Juan Carlos Niebles, Yoav Shoham, Russell Wald, and Jack Clark,"The AI Index 2024 Annual Report," AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA, April 2024. The AI Index 2024 Annual Report by Stanford University is licensed under Attribution-NoDerivatives 4.0 International.

AI in the news

- AI is rapidly changing the way we work with 40% of workers now reporting using AI on the job with 19% of workers using AI tools several times a week. As AI becomes more prevalent, corporate productivity should increase with workers needing to develop new skills.[4]
- Microsoft has developed an AI system that it claims to correctly diagnose complex illnesses and aliments 86% of the time compared to just 20% for the average American and British doctors.[5]
- In 2024, U.S. private AI investment grew to $109.1 billion – a growing body of research confirms that AI boosts productivity and, in most cases, helps narrow skill gaps.[6]

One critical area to watch is power infrastructure. The U.S. power grid and installed capacity is struggling to keep pace with the AI demand shock, while China has double the electricity generation capacity of the U.S. A large portion of China's generation is low-cost, helping to offset its larger quantities of less-efficient semiconductor chips used to power AI models. It is clear to us that both the U.S. and China will continue to be at the center of global AI developments.

Technology stocks in China: a new cycle is in place

While the U.S. has long been viewed as the epicenter of technological innovation, China's rapid ascent in AI and advanced manufacturing increasingly commands attention. We believe the case for investing in tech stocks in China is compelling, driven by innovation, favorable fundamentals and diversification benefits.

China's AI innovation cycle is also in its early innings, supported by robust infrastructure, fast-moving adoption and productivity-enhancing applications across medicine, law, pharmaceuticals and manufacturing. As for human capital strength, China is now home to 50% of the world's AI developers and leads the world in AI patents (**Figure 7**).

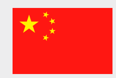
China's AI models are also closing the performance gap with U.S. counterparts, and the country's energy infrastructure is well-equipped to support the massive power demands of AI datacenters. Surprisingly, China's energy production – an essential foundation for scalable AI deployment – is roughly equivalent to the combined energy production of the U.S., the European Union (EU), Japan and India (**Figure 8**).

From a portfolio perspective, in which lower correlation equates to lower risk, China's Technology sector offers meaningful diversification. Its relatively low correlation to both U.S. and developed international markets implies that China tech's level of risk in a diversified portfolio is not extreme, in our view.

In terms of valuation, tech stocks in China currently trade at a discount to U.S. peers. As of September 2025, the MSCI China Information Technology (IT) sector had a price-to-earnings ratio of 27.9x, compared to 30.4x for the S&P 500 IT sector. While earnings have been cyclically depressed in China, sentiment is improving, and earnings growth is expected to rebound sharply –

Fig 7. The AI Race

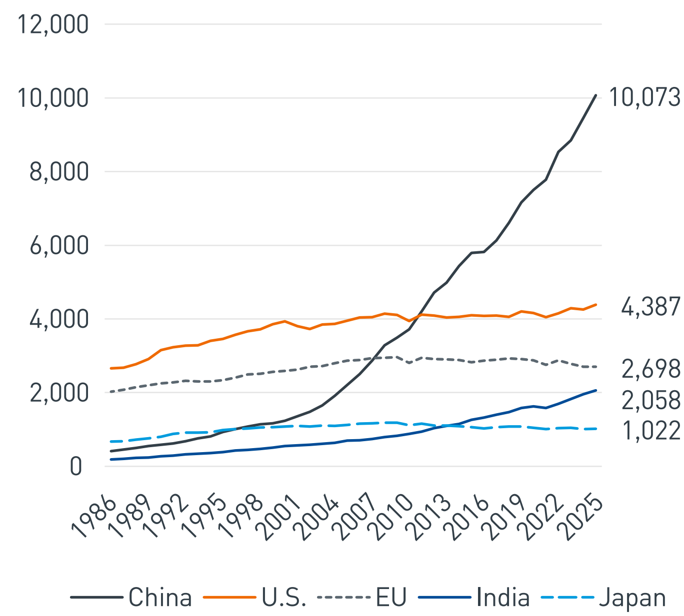
The U.S. and China are competing to achieve AI dominance

	U.S.	China	Leader
Share of global graphic processing units	75%	15%	
Shares of top AI talent	42%	28%	
AI performance score	1,385	1,362	
Granted AI patents (2021-2022)	39,506	94,369	
Internet users	321,000	1,108,000	
Electricity generation (TWh)	4,387.26	10,072.60	

As of 9/30/2025. Source: Bloomberg L.P., Stanford University Human-Centered Artificial Intelligence (HAI) 2025 AI Index Report

Fig 8. Annual Electricity Generation by Country (TWh)

China generated as much electricity in 2024 as the U.S., EU, India and Japan combined



As of 9/30/2025. Source: Ember (2025); Energy Institute - Statistical Review of World Energy (2025) – with major processing by Our World in Data.

analysts expect China's tech sector to go from negative earnings growth in 2025 to 45% earnings growth in 2026 (**Figure 9**). Return on equity, net earnings revisions and valuation metrics all point to positive directionality and upside potential.

Despite being the world's second-largest economy and the main trading partner for the vast majority of countries across the globe, China represents only 3% of the MSCI All Country World Index. This mismatch between economic significance and index representation – particularly as it pertains to China's prominent position in new technologies such as AI – implies that an overweight allocation to China tech is warranted simply to gain a more balanced exposure to global tech developments.

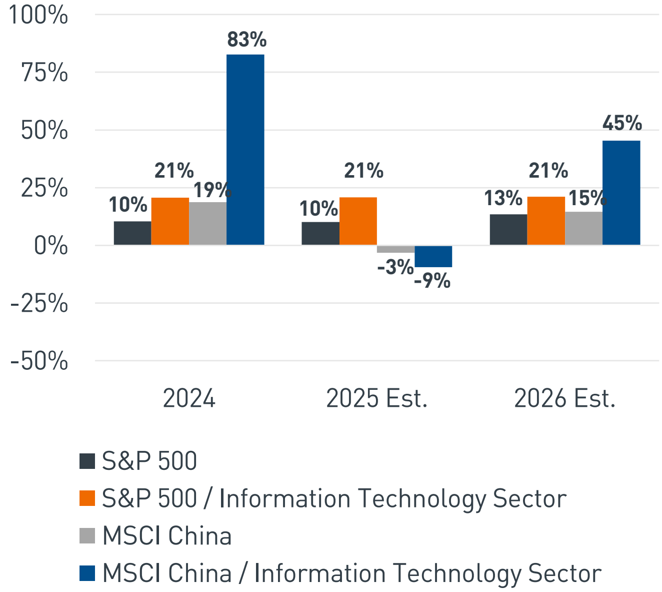
Investment merits, risks and recommendations

Merits

- One of the most compelling reasons to invest in AI-related companies stems from their leadership in a durable innovation cycle. AI-related stocks are not only driving earnings growth but also benefiting from strong secular tailwinds, including cloud computing, data analytics and automation. The early-stage nature of the AI infrastructure build-out suggests that the cycle is far from mature, offering investors a multiyear runway for growth.
- We recommend investors take a global approach to AI-related investments, focused primarily on stocks in the U.S. and China. Both the AI-focused exchange traded fund (ETF) Global X Artificial Intelligence & Technology (AIQ) and the ETF focusing on China tech, Invesco China Technology ETF (CQQQ), have modest correlation with the S&P 500, 0.87 and 0.20, respectively, on a five-year basis, which helps mitigate their risk in a diversified portfolio.
- While U.S. AI stocks trade at premium valuation multiples, these valuations are underpinned by robust earnings growth expectations. In China, tech-related stocks trade at a significant discount to their U.S. counterparts, despite signs of improving earnings momentum and a gradual unwinding of investor pessimism. While a valuation gap may be justified, if earnings growth materializes as expected in China's Technology sector, then they remain well-positioned and reasonably valued (**Figure 10, page 8**).

Fig 9. Annual Earnings Growth (Y/Y Change)

Significant growth is forecasted for U.S. and China Technology sector earnings



As of 9/30/2025. Source: FactSet®

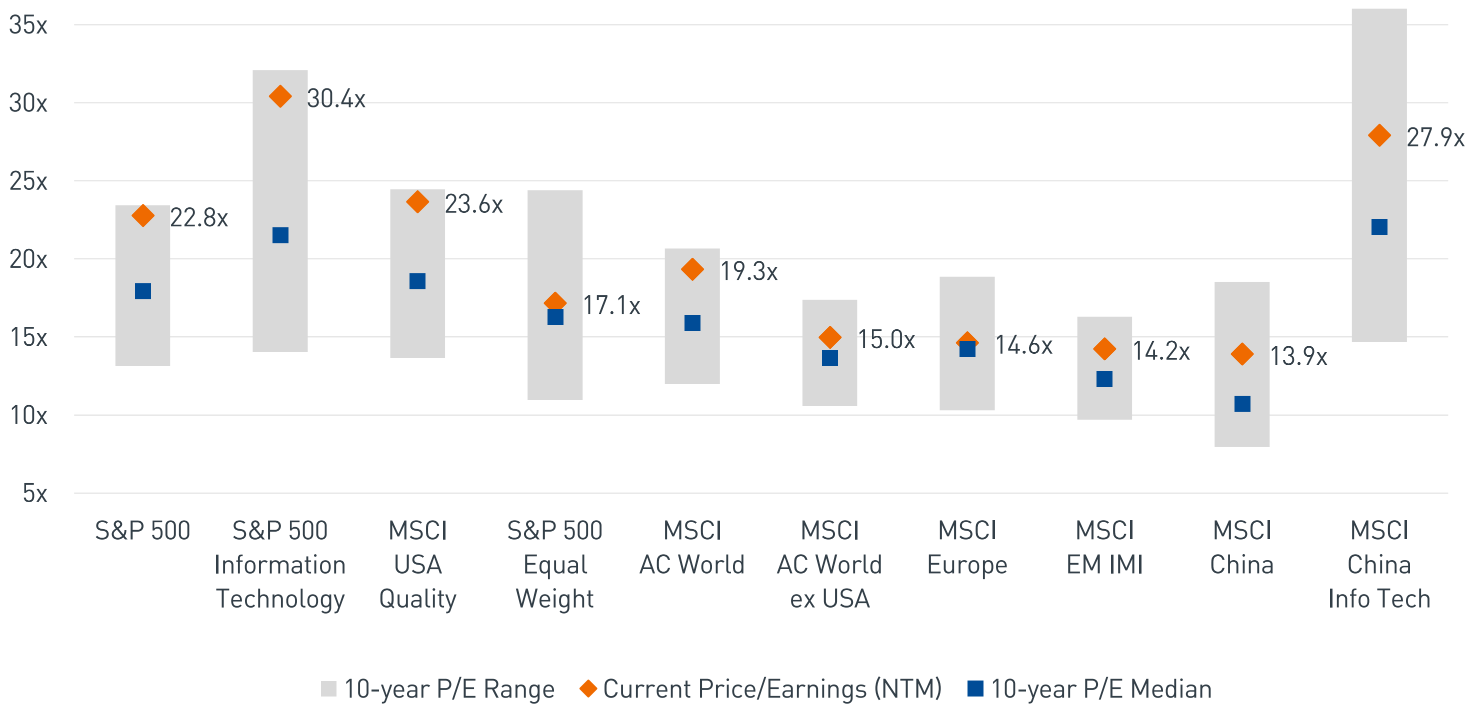
We recommend investors take a global approach to AI-related investments, focused primarily on stocks in the U.S. and China

Risks

- Despite the strong investment case, AI and tech-related stocks are not without risks. One of the primary concerns is the capital intensity of AI infrastructure. Data center build-out requires substantial investment, and any delays in scaling AI use cases could lead to downward valuation adjustments.
- Additionally, while our expected base case is for a favorable outcome to U.S.-China trade negotiations, geopolitical tensions remain a source of risk. That said, we view severe escalation of U.S.-China political tensions – particularly in the form of extreme sanctions or military action – as a low probability risk over the next five years.

Fig 10. NTM Price-to-Earnings

Valuations reflect shifting market drivers and structural dislocations



As of 9/30/2025. Source: FactSet®

Recommendations

- Given the current macro and valuation backdrop, a tactical allocation that leans into equity positions focused on global AI and related tech is warranted, in our view. The innovation cycle is still in an early phase, and a focus on U.S.-centric AI provides innovation leadership, while China tech offers growth upside, diversification benefits and additional global reach.
- Reducing defensive positioning in portfolios, in favor of growth-oriented AI exposure, aligns with the prevailing forces that are creating value for businesses and consumers, and which should continue to drive markets in the quarters and years to come. As always, investors should approach asset allocation with disciplined risk management, but we believe the long-term opportunity in AI and technology is too significant to overlook.

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Please contact your PNC advisor for more information.

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