

MARSH

October 2026

AI: Investing across the value chain

Max Becker, CFA – Global Multi-Asset Principal

Dmitri Smolansky – Partner, Multi-Asset Portfolios and Derivative Overlays

Key Takeaways

- **AI is not just one trade:** Value is distributed across the full ecosystem—from power and chips to compute, data, applications and robotics—not just a handful of headline names.
- **Exposure spans asset classes:** Public markets provide meaningful exposure, while private equity, private credit and real assets broaden access. Investors with private-market allocations may already be more diversified than they realize.
- **Diversifying the value chain is not the same as diversifying AI risk**: Having exposure across the AI value chain reduces reliance on one route to value creation, but does not remove the risk of a broad AI-related drawdown.

Executive Summary

Artificial intelligence is often treated as a single investment theme, but its economics span a much broader ecosystem. This paper maps that ecosystem across seven categories.

Each category has distinct growth drivers, business models, capital requirements, and risks. Infrastructure depends on access to power, permitted sites, grid connections, and financing. Semiconductor companies benefit from technology leadership and supply constraints, but face product cycles and geopolitical risk. Compute providers must convert substantial capital expenditure into utilization and returns above their cost of capital. At the software layers, value depends less on technical capability alone than on distribution, proprietary data, workflow integration, customer willingness to pay, and durable pricing power.

Investors can access the value chain through public equities, private equity, venture capital, private credit, real assets, and infrastructure. A conventional public markets portfolio (60/40 etc.) already provides meaningful exposure through hyperscalers and semiconductor companies, while private markets can offer more direct access to data businesses, model developers, applications, robotics, power, and data-center assets.

The central conclusion is straightforward: diversification within AI is not a substitute for deciding how much AI exposure a portfolio should hold. It is, however, a more resilient way to express a long-term view. In our view, investors should remain exposed to AI's structural growth while diversifying the routes through which that growth is captured.

Introduction

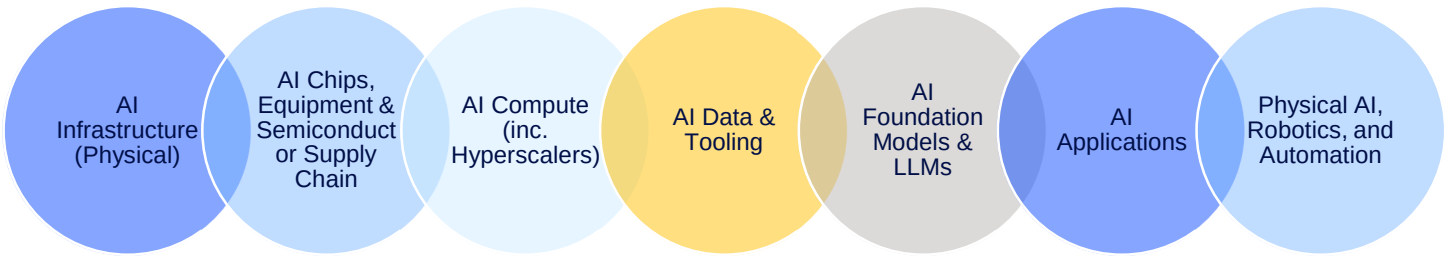
Artificial intelligence is often discussed as a single investment theme. That framing is convenient, but incomplete. AI is an ecosystem that includes the chips and power systems that supply computing capacity, the cloud networks that distribute it, the models that create capability, the software that turns models into dependable tools, and the applications that place those tools into business workflows.

The distinction matters because technological progress, commercial adoption, value capture, and investor returns do not move at the same pace or in the same places. A breakthrough in model efficiency can alter demand for computing infrastructure. A surge in infrastructure spending can benefit equipment suppliers before enterprise customers see a financial return. A widely adopted AI tool may create value for its users without generating durable excess returns for its provider. Investors therefore need to distinguish the ecosystem's economics from the theme's popularity. Put more simply, the question is not only how much AI to own, but what to own within AI.

This paper provides a seven-category framework for mapping AI exposure across the ecosystem and across public equity, private markets, credit, and real assets. Its core conclusion is that investors can participate in AI's structural growth without relying on a single company type, asset class, or point in the value chain. Diversifying across the chain is not a substitute for managing overall AI exposure, but it can reduce reliance on any single assumption (e.g., productivity growth or pricing power) about where AI's economics will ultimately accrue.

The AI ecosystem

The ecosystem has seven layers. We believe this represents the broadest possible addressable market for the AI ecosystem. We describe each component in more detail below.



Source: Marsh Investments.

AI Infrastructure (Physical)

AI Infrastructure comprises the sites, power, and connectivity that enable data-center operations, providing reliable, scalable physical capacity for AI computing. In practice, the scarce asset is often not the building itself, but rather a site with permits and timely access to power, connectivity and labor[1]. Critical mineral supply also plays a key role within AI infrastructure[2].

Demand is driven by growth in data-center capacity, measured in gigawatts; the higher power density of AI workloads; and the need for resilient facilities close to network connections. The International Energy Agency (IEA) expects global data-center electricity demand to rise from about 415 terawatt-hours in 2024 to roughly 945 terawatt-hours by 2030, with AI as the main driver of growth[3].

Companies in this space generate revenue by developing and operating data-center space, providing reliable power and connections, or investing in generation and transmission. Returns depend on how quickly a site can secure power, the quality of customer contracts, reliable operation, and financing costs. Strong demand for AI alone is not enough: investors must also consider equipment and labor costs, depreciation, and the expense of upgrading facilities for newer technology. Politics and permitting are also important at this layer. Increasingly, we are witnessing the need for data centers to BYOP and BYOW[4] rather than relying on public utilities.

AI Chips, Equipment & Semiconductor Supply Chain

The AI Chips, Equipment & Semiconductor Supply Chain covers the equipment that turns electricity and data-center space into usable computing power. It includes chips that perform calculations, memory that stores information, servers, networking equipment, and the factories and specialist equipment used to design and make them.

Demand is driven by model training, the rising use of AI in day-to-day tasks, cloud investment, and the need to replace older equipment. NVIDIA reported $193.7 billion of data-center revenue in fiscal 2026[5]. TSMC reported that its most advanced chips accounted for 74% of its 2025 wafer revenue[6]. Both of these data points highlight the importance of these companies and advanced semiconductors in the AI ecosystem.

Business models range from selling chips and servers to manufacturing them, supplying memory, or selling production equipment and support. The strongest returns tend to come when a company has leading technology, compatible software, scarce manufacturing capacity, or a critical position in the supply chain. The category also faces rapid product cycles and geopolitical exposure, which can introduce risks.

---

[1] https://www.datacenterwatch.org/q2-2026. Accessed October 10, 2026.
[2] https://www.sciencedirect.com/science/article/abs/pii/S030142072600142X. Accessed October 10, 2026.
[3] iea.org/reports/energy-and-ai/energy-demand-from-ai. Accessed October 10, 2026.
[4] Bring Your Own Power (BYOP) and Bring Your Own Water (BYOW)
[5] Company filings. Accessed October 10, 2026.
[6] https://siliconcanals.com/j-v-advanced-chips-of-7-nanometers-and-beyond-made-up-74-of-tsmcs-wafer-revenue-in-2025-the-frontier-the-rest-of-the-world-depends-on-has-quietly-become-the-companys-entire-business/. Accessed October 10, 2026.

AI Compute (including Hyperscalers)

AI Compute providers turn chips, power, networks and software into computing capacity that customers can rent as needed or reserve in advance. For capacity reserved under contract, remaining performance obligations, or RPOs[7], represent revenue that has been contracted but not yet recognized. The category includes hyperscalers[8] alongside newer specialist cloud providers known as neoclouds. These businesses supply the computing power used to train, improve, and run AI models.

Demand comes from companies adopting AI, continued use of AI systems after they are built, and ongoing model development. Large cloud providers combine considerable scale with existing customer relationships, software products, and the financial capacity to fund major investment. Compute is sold through pay-as-you-go services, reserved capacity, managed services, and more specialized platforms. Its economics depend on how fully capacity is used, the strength of customer relationships, and access to scarce computing resources.

AI Data & Tooling

AI Data & Tooling covers the information and software needed to build, run, and oversee AI systems. It includes data usage rights, data preparation and validation, and machine learning operations (MLOps). Its value depends on data quality and legal rights, and on whether it supports an important business task.

Demand reflects the need for valuable data, reliable ways to test AI outputs, and compliance with privacy and intellectual-property rules. Providers can earn revenue through licenses, subscriptions, governance software, and services. Data can also create value indirectly by improving a company's products, pricing, or risk management.

Regulation adds complexity, particularly outside the US. The EU Data Act[9], applicable from September 2025, gives users greater access to data from connected products and makes it easier to switch cloud providers. Rules for general-purpose AI models under the EU AI Act began in August 2025. Both developments increase the importance of knowing where data comes from, how it is managed, and who has the right to use it.

AI Foundation Models & LLMs

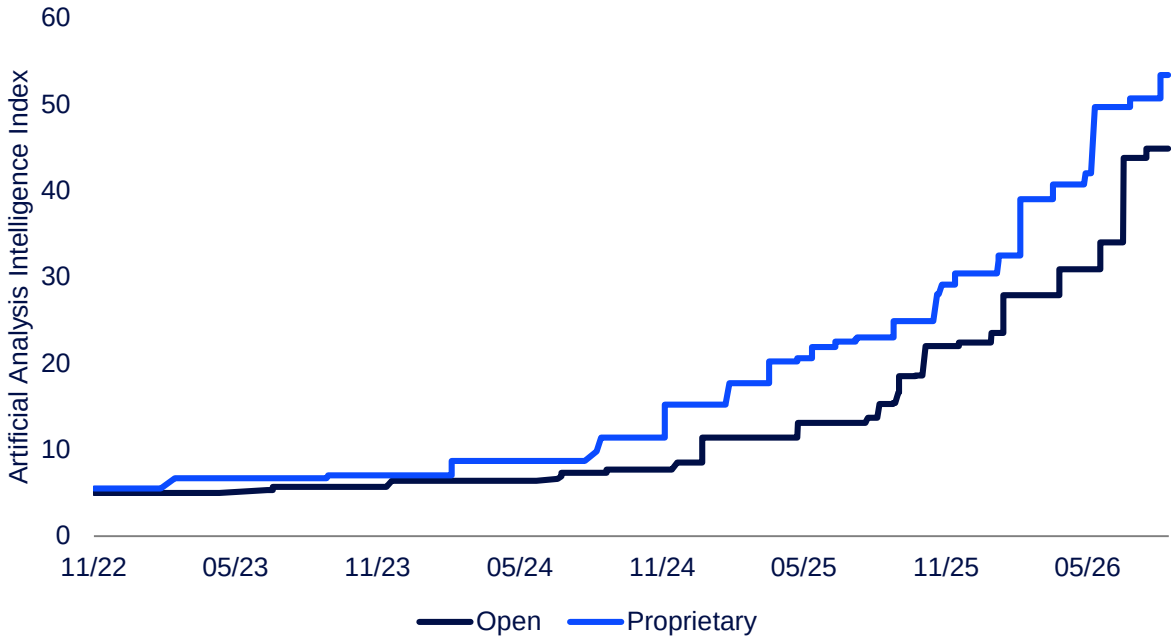
Large Language Models (LLMs) are AI systems trained on very large amounts of information. They can turn prompts or other inputs into text, code, images, predictions, or decisions. Organizations can access them through an application programming interface (API), which lets one piece of software request results from another, through enterprise licenses or by integrating them into customized internal systems. This layer depends on the supply of chips, computing power, and data described above.

[7] As of June 30, 2026, RPOs across the hyperscalers (Meta, Microsoft, Amazon, and Google) and Oracle were close to $2.5trn. Source: Company filings.
[8] Meta, Amazon, Google, Microsoft
[9] https://www.lw.com/en/insights/eu-data-act-what-businesses-need-to-know. Accessed October 10, 2026.

Demand is rising as AI becomes useful in more settings and the cost of using capable systems falls. Artificial Analysis estimates that the cost of using an OpenAI o1-level[10] system fell 99% between September 2024 and March 2026[11]. At the same time, Anthropic and OpenAI have reported rapid growth in annual recurring revenue (ARR), a measure of recurring subscription and contracted revenue. Barclays expects AI-lab ARR to exceed $200 billion at the end of 2026[12].

The economics of models combine high costs for research, training, safety, and running the systems with recurring revenue from businesses and users. Lasting value is more likely to come from model adoption, proprietary data, reliability, and lower operating costs than from raw capability alone. Some models are open-weight, meaning their trained parameters are available for others to download and adapt. Other models are proprietary, meaning the developer keeps them private. Frontier models are the most capable systems available at a given time. The gap between open and proprietary models is narrowing[13], which means that leading capability on its own may not remain a durable advantage.

Frontier releases for Open weight models vs Proprietary models



Source: Citi Research, Artificial Analysis. Data as of September 2026.

AI Applications

AI Applications are the products and services through which people and businesses use AI. This part of the ecosystem is closest to customers, where AI can change how work is done, potentially increase revenue, reduce costs, or manage risks.

[10] OpenAI's o1 model was released in September 2024 and was its first model with reasoning capabilities, designed to spend more time thinking before responding. OpenAI subsequently folded its reasoning (o-line) into GPT-5.
[11] Citi Research, Artificial Analysis. Accessed October 10, 2026.
[12] Source: Barclays Research "Charts Worth A Look: Unpacking AI Infrastructure - "Backstop 101". Accessed October 10, 2026.
[13] Citi Research, Artificial Analysis. Accessed October 10, 2026.

Demand depends on whether customers are willing to pay for a clear result. One segment of AI applications supports common tasks, such as productivity, customer service, and software development. Another segment focuses on serving a specific industry, such as healthcare or legal services. These can be more difficult for competitors to replicate or displace when they combine sector expertise, trusted data, regulatory knowledge, and a close fit with the customer's daily workflow.

Business models include subscriptions, usage-based charges, enterprise licenses, outcome-linked fees, implementation work, and managed services. Microsoft reported more than 30 million paid Microsoft 365 Copilot seats in the fourth quarter of fiscal 2026, a 50% increase from the prior quarter[14]. Salesforce reported $800 million of annual recurring revenue for Agentforce in the first quarter of fiscal 2027[15]. These figures show commercial demand, but they do not mean every AI application will achieve the same outcome.

Physical AI, Robotics & Automation

Physical AI, Robotics & Automation covers systems that use AI to sense what is happening around them, make decisions, and act in the physical world. It includes robots, self-driving or mobile systems, drones, and the software and sensors that support them. A digital assistant belongs in AI Applications, whereas a system that moves, handles objects, navigates, or performs a physical task belongs here.

Demand is driven by labor shortages, safety, the need to improve output, and the potential savings from automating repeatable physical tasks. Demand is also boosted by national security concerns, with countries wanting to bring manufacturing home. The strongest cases are usually controlled settings where benefits can be measured, such as warehouses, factories, ports, and hospitals. The International Federation of Robotics reported five million industrial robots operating in factories worldwide in 2025[16], providing an established base from which AI-enabled capability can grow.

Physical AI is a combined hardware-and-software business, not a software-only business. Revenue may come from equipment, software, services, and outcome-linked contracts. Returns depend on reliable deployment and sound unit economics—the revenue and cost of each system or deployment.

How is the ecosystem funded and what about circular financing?

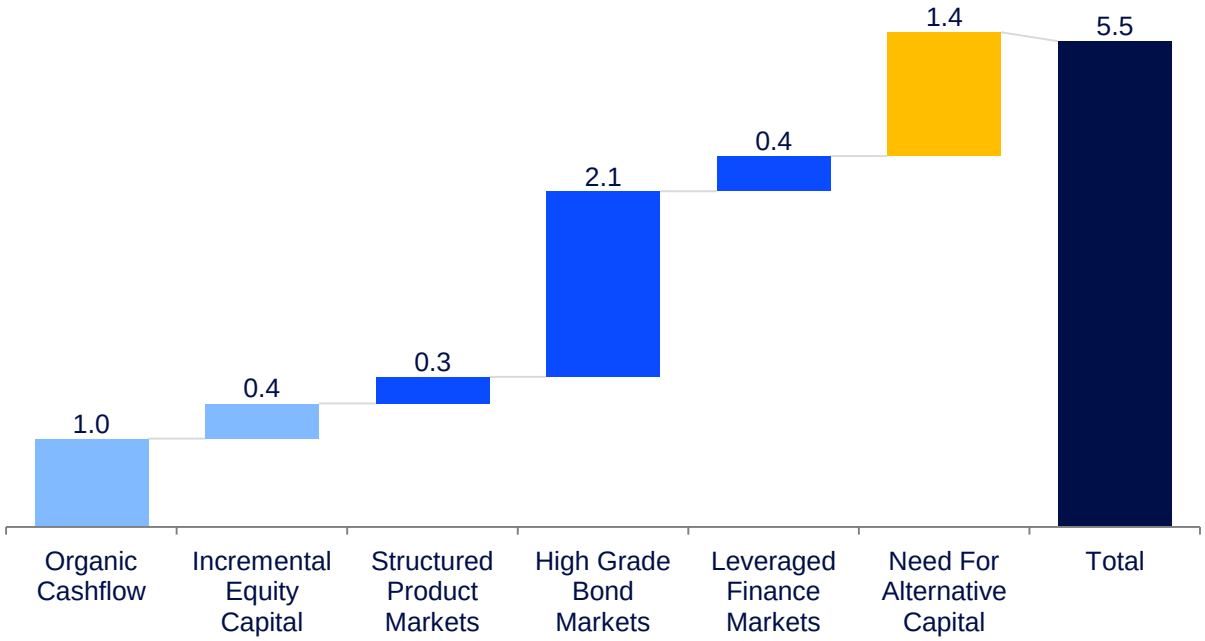
The AI build-out is funded through a mixture of public and private markets. The largest cloud and technology companies initially funded much of the physical build-out from strong operating cash flows, but are now beginning to tap into bond markets and, in some instances, issue equity[17]. This makes the current cycle different from earlier infrastructure booms, which relied more heavily on bond markets throughout. Hyperscalers are transforming debt markets, issuing nearly $250bn of debt in 2026 to date. Furthermore, off-

[14] Company filings. Accessed October 10, 2026.
[15] Company filings. Accessed October 10, 2026.
[16] https://ifr.org/ifr-press-releases/news/five-million-robots-now-operate-in-factories-globally. Accessed October 10, 2026.
[17] https://www.ft.com/content/85299cdd-d9b3-4b40-8d10-73fc9ddb4573?syn-25a6b1a6=1. Accessed October 10, 2026.

balance sheet agreements between hyperscalers and other issuers[18] are allowing lower-rated debt to achieve higher ratings, with implications for the corporate investment-grade (IG) bond market. These bonds tend to be focused in the Chips & Equipment space, as well as in AI Infrastructure.

Private capital is becoming more important. J.P. Morgan estimates that close to $5.5trn of AI-related capex will be incurred through 2030, of which $1.4trn will need to be financed through alternative sources of capital, such as private credit[19].

Anticipated AI Capex Funding Sources ($trn)



Source: J.P. Morgan. “AI Capex 2.0 - If You Build It, They Will Finance It - Updated Growth & Capital Markets Forecasts”

Relationships between model developers, cloud providers, and hardware suppliers can sometimes appear circular, as strategic investments are paired with long-term computing commitments. This is not inherently a concern yet, but if demand or positive sentiment for AI were to decline, this interconnectedness could create problems. We like to take the glass half-full approach to circular financing, where, in the midst of a technological revolution, partnerships can coordinate scarce capital, capacity, and demand.

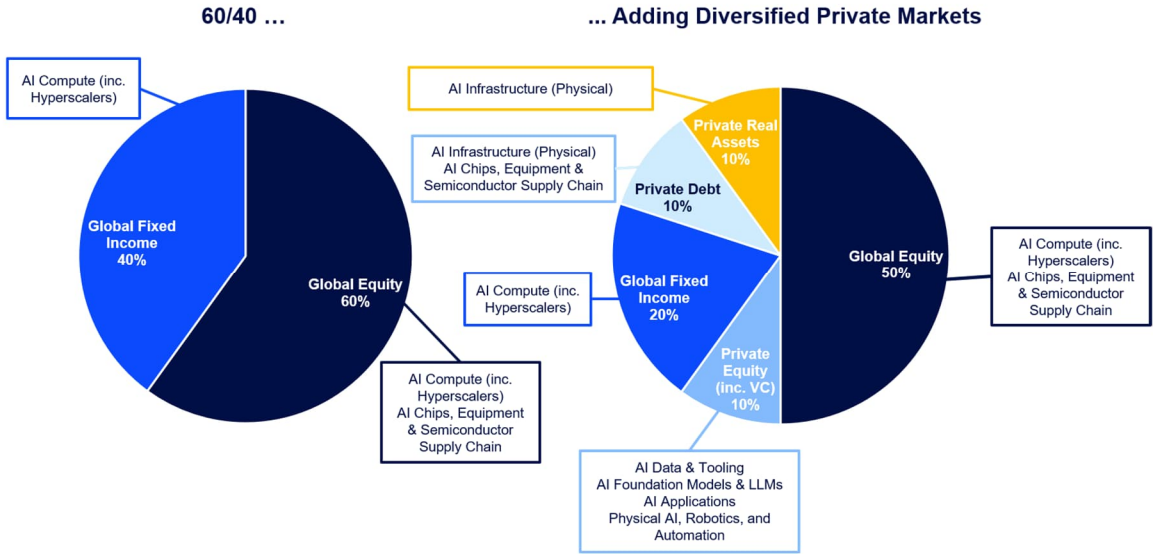
How to gain exposure to the value chain

Now that we have defined the ecosystem, the question becomes how a portfolio can gain exposure. We begin with a simple portfolio comprising 60% public equities and 40% aggregate bonds (government and corporate). Public equities provide exposure across the AI value chain, for example through hyperscalers (compute providers), semiconductor,

[18] https://www.ft.com/content/00f94018-e658-4545-b16e-1bc00e19b754?syn-25a6b1a6=1. Accessed October 10, 2026.
[19] Source: J.P. Morgan “AI Capex 2.0 - If You Build It, They Will Finance It - Updated Growth & Capital Markets Forecasts”. Accessed October 10, 2026.

memory, and other equipment companies. Listed infrastructure and REITs also provide some exposure to physical AI infrastructure, including data centers and grid-related assets. Fixed income markets, especially corporate credit, can also provide exposure to the value chain, particularly through compute (i.e., hyperscaler) issuers.

As we move from a simple 60/40 portfolio to one that includes a diversified private markets portfolio, we gain more exposure to other areas of the AI value chain. Private equity and venture capital provide more direct access to model developers (including AI labs), data businesses, and AI applications. They also offer more direct exposure to early-stage robotics, drones, and autonomous systems. These routes offer potential access to earlier-stage growth, but they also involve illiquidity, and other potential private markets-related risks. These businesses, particularly at the venture stage, may have all their eggs in one basket, unlike publicly listed companies, which may have legacy business segments outside AI. Private real assets, such as infrastructure, can provide access to data centers, power generation, transmission, cooling, land, and grid-related assets. Private credit and asset-backed finance can support data-center capacity, equipment, and contracted computing demand.



Source: Marsh Investments. For illustrative purposes only.

Allocators already exposed to private markets may be more diversified across the AI value chain than they realize. This matters because, during periods of rapid technological advancement, it is uncertain where the ultimate value of AI will accrue. The outcome may also depend on the investor's time horizon, as value may accrue at different stages along the value chain. Given our desire to diversify value chain exposure, private market vehicles that provide exposure sooner (i.e., secondaries, co-investments, and evergreens) are more attractive, but require careful implementation, whereas closed-end vehicles take longer to build exposure.

For allocators unable to access private markets, diversifying across the value chain is more challenging. However, we do not believe these portfolios necessarily have more "AI risk," but rather may be exposed to fewer return drivers across the value chain than portfolios with access to private markets. Hedging or diversifying the risk of a portfolio wide AI-related

drawdown is different from diversifying exposure to how AI's potential value accrues along the value chain. In this case, building robust portfolios whose potential drawdowns align with risk objectives is more important, and this is something we consider when constructing and designing reference portfolios.

Turning back to accessing the AI value chain, one potential drawback of public equity investing is that AI exposure can be diluted because many companies have substantial businesses beyond AI or are still in the early stages of adoption. An allocator may therefore decide to use more concentrated thematic exposures to isolate or increase exposure to certain sub-themes within the ecosystem, either through ETFs or thematic mutual funds.

What are the long-term risks to the AI value chain?

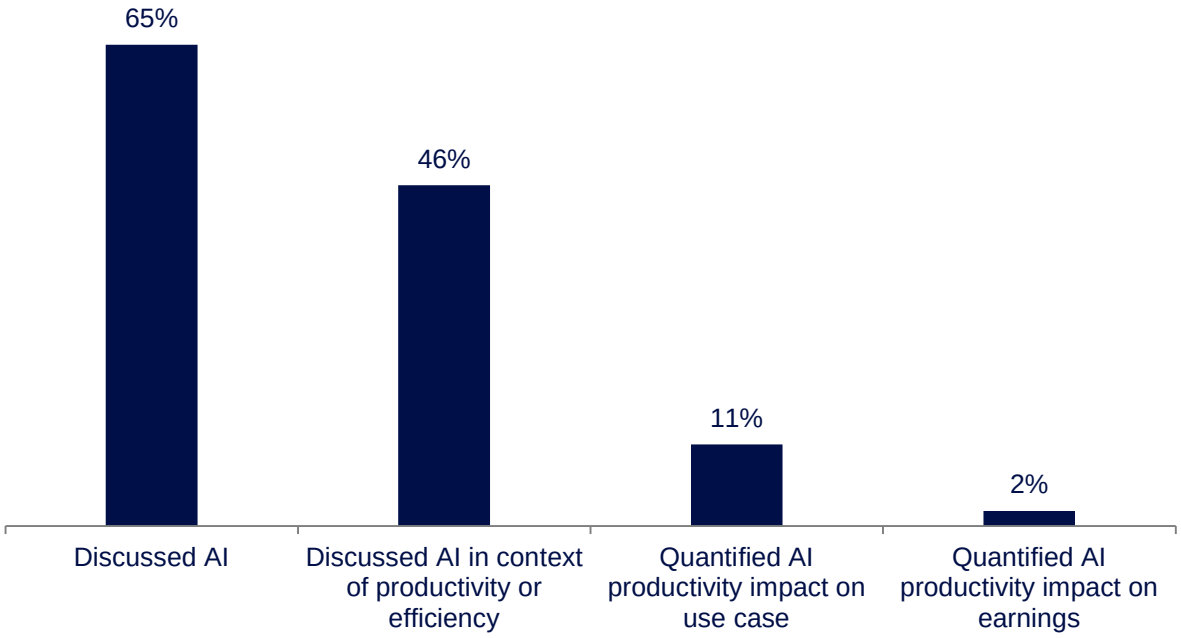
AI has clear technological momentum. However, we must remain cautious and identify the risks to the ecosystem and economy-level adoption.

First, productivity gains may arrive more slowly than advances in technical capability. Estimates of AI's potential effect on total-factor productivity, and thus economic growth, vary widely. Goldman Sachs has one of the more bullish forecasts, expecting AI to lift productivity growth by 1.5 percentage points over a 10-year period[20]. Acemoglu (2024) estimates a smaller boost to productivity growth under his assumptions[21]. Both perspectives support continued progress, but they differ on the pace and scale of diffusion.

Second, enterprise adoption may not rise quickly enough, and may not translate into broad financial gains at the same pace as usage. McKinsey's 2026 survey shows progress in scaling, but also a gap in earnings impact[22]. This is corroborated by analysis showing that far fewer firms quantify AI's productivity effects on earnings than discuss its productivity and efficiency benefits (see chart below). This creates a distinction between tools that are widely used, tools that generate local productivity gains, and tools that create company-level financial value. The distinction matters most in application businesses, where valuations may assume rapid conversion from pilot to ARR.

[20] https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent. Accessed October 10, 2026.
[21] https://www.nber.org/system/files/working_papers/w32487/w32487.pdf. Accessed October 10, 2026.
[22] https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai. Accessed October 10, 2026.

Share of S&P 500 Management Teams That [...] on Their 2026Q2 Earnings Call



Source: GS Dataworks, Goldman Sachs Investment Research. “Earnings Season Takeaways: Consumer Strength Before the Slowdown”

Third, declining costs can expand use but may also reduce pricing power. Lower-cost models and computing can make new applications viable. They can also intensify competition. Whether falling costs produce greater aggregate spending (i.e., the Jevons paradox[23]) or simply lower prices depends on demand, procurement budgets, and the value of emerging use cases, is a risk.

Fourth, physical constraints can slow the build-out. The International Energy Agency (IEA) expects global data-center electricity demand to increase rapidly through 2030. Bringing new generation, transmission, and data-center capacity online requires equipment, land, and grid connections. Power constraints can create opportunities for infrastructure owners and utilities, but they can also delay the revenue expected from hardware and data-center investment. This creates further hurdles for physical infrastructure investment. Despite this, results from our 2026 Marsh Global Asset Owner Barometer suggest allocators plan to increase infrastructure investments over the next 12 months[24].

Fifth, regulation and politics can change the timing and economics of AI investment, even where commercial demand remains intact. In the United States, federal policy priorities may shift across administrations, while state and local authorities can determine whether data-center and power projects secure permits and community support. State-level legislation in

[23] Jevons paradox is the observation that improvements in the efficiency with which a resource is used tend to increase rather than decrease its total consumption, because lower effective costs stimulate greater demand.

[24] https://insightcommunity.mercer.com/api/v1/uploads/26245857_GL_MER_2026_GAOB_Report_Digital_long_be39381d79.pdf?public=false. Accessed October 10, 2026.

the US has become notably more negative toward data centers in recent months[25] [26]. The pace of AI regulation is also likely to vary across jurisdictions, but AI labs' self-regulation or voluntary decisions to slow development could further delay adoption or ongoing model development[27].

Embedded within these risks, notably within potential capacity constraints, politicization of AI, and the pace and scale of regulation, are environmental, social and governance considerations that can emerge at different points in the AI value chain. These include climate-related regulation (particularly carbon intensity), the sustainability and resilience of AI infrastructure (including water stress), as well as the ongoing 'social license to operate' of companies across the AI value chain. Further downstream, they may also include issues relating to data governance, privacy, bias, safety, ownership and control structures, and labor-market disruption as AI is deployed more widely.

Conclusion

The central investment conclusion is straightforward. Investors can maintain meaningful AI exposure without relying on a single layer, company type, or asset class. Periods of technological change will create winners and losers, but identifying them in advance is difficult. Diversification across the value chain is therefore the most practical way to participate in the theme while reducing reliance on any single route to value creation.

Return drivers differ by layer. Infrastructure and semiconductors may benefit from capacity build-out and scarcity. Compute providers, meanwhile, may benefit from higher utilization and customer distribution. Data, tooling, models, and applications benefit from improved performance and distribution. Physical AI adds a further return driver: reliable deployment of hardware and software in real-world environments. These opportunities may mature at different times, which is why diversified exposure across the chain and, in practice, across public equity, private markets, credit, and real assets matters.

Diversifying across the AI value chain is distinct from deciding how much total AI exposure a portfolio should hold. Investors should assess how much AI exposure to take alongside their objectives, risk tolerance, liquidity needs, and the portfolio's resilience through drawdowns. Portfolios are designed to be robust in line with their objectives. Therefore, we believe investors should remain invested in AI, but diversify the exposures through which they express that view.

The AI trade is likely to remain an important structural theme for investors over the coming years. Owning it intelligently means looking beyond a single headline, model, or asset class. It means staying invested in the theme while diversifying exposure across the value chain and sizing it within a portfolio built to withstand drawdowns.

[25] https://www.ft.com/content/3204d65e-ae34-4ab3-a73f-a55d354f40ab?syn-25a6b1a6=1. Accessed October 10, 2026.
[26] https://www.ft.com/content/1c390476-9d93-4df5-9b41-7381db43b4ea?syn-25a6b1a6=1. Accessed October 10, 2026.
[27] https://darioamodei.com/post/we-must-pace-the-frontier. Accessed October 10, 2026.

Appendix

Category	Definition and place in ecosystem	Principal investment routes	Main considerations for value capture
AI Infrastructure (Physical)	Physical sites, power, cooling, grid connection, fiber and related systems that support AI data centers	Listed real estate, utilities, infrastructure funds, direct real assets, project finance and credit	Deliverable power, time to power, utilization, contract quality, construction, permitting, financing cost and residual value
AI Chips, Equipment & Semiconductor Supply Chain	Accelerators, memory, servers, networking, semiconductor design, manufacturing, packaging, equipment and supply-chain inputs used for AI workloads	Public equities, private component and systems businesses, equipment finance and credit	Technology leadership, supply constraints, HBM and packaging access, margins, refresh cycles, export controls, customer concentration and cyclicality
AI Compute (inc. Hyperscalers)	Hyperscale cloud, GPU-cloud, hosted-cluster and managed training or inference services that sell access to compute	Hyperscaler equities, specialized compute providers, private infrastructure and credit	Utilization, depreciation, energy cost, realized pricing, contract duration, customer credit, software ecosystem and capital discipline
AI Data & Tooling	Data rights, quality, preparation, governance, retrieval, evaluation, MLOps, monitoring, vector databases and developer tooling	Data and information-service equities, private data platforms, MLOps, governance and tooling software	Lawful rights, workflow ownership, durability against bundling, compliance, customer retention and willingness to pay
Foundation Models & LLMs	Broadly capable pretrained models, including LLMs, APIs, licenses and model platforms where model IP is the core product	Private model developers and public platforms with embedded model exposure	Training and serving cost, distribution, performance, data, safety, regulation, pricing and model commoditization
AI Applications	End-user AI software, industry solutions and implementation services that deliver a specific customer workflow or outcome	Public software and services equities, private equity and venture capital	Repeatable customer return on investment, workflow lock-in, retention, distribution, model cost, competition and valuation
Physical AI, Robotics & Automation	AI-enabled systems that sense, decide and act in the physical world, including robots, drones, autonomy and enabling software	Industrial automation, machinery, mobility and medical-technology equities, private robotics and autonomy companies, equipment finance	Field-level unit economics, safety, integration, service capability, utilization, regulation, capital intensity and deployment cycle

Source: Marsh Investments.

Important notices

"Marsh" refers to a collection of Marsh People and Investments subsidiaries providing investment services around the globe, including the entities listed below, collectively and in their individual capacities as the context requires.

As part of Marsh's ongoing brand evolution, updates will occur to our branding, including our name, logos, and other visual identity elements, across our websites, communications, and other materials. Since these changes are being implemented on a phased basis, both current and updated branding may appear concurrently during the transition period. In addition, legal entity names will be updated over time to align with the updated branding. Information regarding legal entity name changes will be available at Marsh Legal Entity Changes.

© 2026 Marsh. All rights reserved.

This content may not be modified, sold or otherwise provided, in whole or in part, to any other person or entity without Marsh's prior written permission.

Marsh does not provide tax or legal advice. You should contact your tax advisor, accountant and/or attorney before making any decisions with tax or legal implications.

The views expressed are those of the author(s), as of the date of publication, the findings, ratings and/or opinions expressed herein are the intellectual property of Marsh and are subject to change without notice.

For Marsh People and Investments' conflict of interest disclosures, see Conflicts of Interest.

This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities and/or any other financial instruments or products or constitute a solicitation on behalf of any investment manager, or their affiliates. This content is general in nature and does not contain investment advice for any particular circumstances. Additional advice would be required in advance of entering into any contract. When Marsh is engaged to provide investment services, it provides recommendations that are based on the particular client's circumstances, investment objectives and needs. As such, investment results will vary and actual results may differ materially.

Certain information may constitute forward-looking statements, and there is no guarantee that these results will be achieved. Past performance of any asset class, product or security is not a reliable indicator of future results. The value of investments can go down as well as up, and you may not get back the amount you have invested. Diversification does not guarantee a profit or protect against a loss. Investments denominated in a foreign currency will fluctuate with the value of the currency. Certain investments, such as securities issued by small capitalization, foreign and emerging market issuers, real property, and illiquid, leveraged or high-yield funds, carry additional risks that should be considered before choosing an investment manager or making an investment decision. There are substantial risks associated with investments classified as alternative investments.

Information contained herein may have been obtained from a range of third-party sources. While the information is believed to be reliable, Marsh has not sought to verify it independently. As such, Marsh makes no representations or warranties as to the accuracy of the information presented and takes no responsibility or liability (including for indirect, consequential, or incidental damages) for any error, omission or inaccuracy in the information.

Marsh's investment universes: Marsh's investment universes are intended to provide collective samples of strategies that best allow for robust peer group comparisons over a chosen timeframe. Marsh does not assert that the peer groups are wholly representative of and applicable to all strategies available to investors.

Please see the following link for information on investment management index definitions.

Not all services mentioned are available in all jurisdictions.

Investment management and advisory services for U.S. clients are provided by Mercer Investments LLC and Mercer Investments Solutions LLC. Each of Mercer Investments LLC and Mercer Investment Solutions LLC is a federally registered investment adviser under the Investment Advisers Act of 1940, as amended. Registration as an investment adviser does not imply a certain level of skill or training. Each of Mercer Investments LLC's and Mercer Investment Solutions LLC's Form ADV Part 2A & 2B can be obtained by written request directed to: Compliance Department, Mercer Investments, 99 High Street, Boston, MA 02110.

Certain regulated services in Europe are provided by Mercer Global Investments Europe Limited and Mercer Limited. Mercer Global Investments Europe Limited is regulated by the Central Bank of Ireland under the European Union (Markets in Financial Instruments) Regulation 2017, as an investment firm. Registered office: Charlotte House, Charlemont Street, Dublin 2, Ireland. Registered in Ireland No. 416688. Mercer Limited is authorized and regulated by the Financial Conduct Authority. Registered in England and Wales No. 984275. Registered Office: 1 Tower Place West, Tower Place, London EC3R 5BU.

Investment management services for Canadian investors are provided by Marsh Investments Canada Limited. Investment consulting services for Canadian investors are provided by Marsh (Mercer) Canada Limited.

Investment advisory services for Brazil clients are provided by Marsh Consulting (Brasil) Ltda, a company regulated by the Brazilian Securities and Exchange Commission to provide Financial Advisory services.

Investment advisory services for Mexico clients are provided by Mercer Asesores en Inversión Independientes, S.A. de C.V. , a company regulated by the Mexico National Banking Commission to provide Financial Advisory services.

Mercer Investments (Australia) Limited ABN 66 008 612 397 AFSL 244385 and Mercer Consulting (Australia) Pty Ltd ABN 55 153 168 140 AFSL 411770 are licensed to provide financial services to Australian investors. This content is presented to wholesale investors (within the meaning of section 761G of the Corporations Act 2001 (Cth)) for educational purposes only.

MARSH