



Investing Outlook & Insight

Q3 2026

*Perspective on the economic
and market forces shaping
long-term investing*

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What matters right now for investors in the Age of Autonomy

This quarter, we explore the Age of Autonomy, as artificial intelligence (AI) moves from experimentation into operating budgets. Workplace adoption is increasing, and the largest cloud companies are committing extraordinary capital to chips, data centers, networking and power. That spending is already supporting supplier revenue and earnings. It's also increasing market concentration and raising the hurdle that future productivity and profits must clear.

For investors, the more consequential question is how the Age of Autonomy may reshape the distribution of growth, profits and risk across markets. Its investment significance will depend on which businesses convert new capabilities into durable profits, how quickly productivity gains emerge and how markets and policymakers respond to the accompanying disruption.

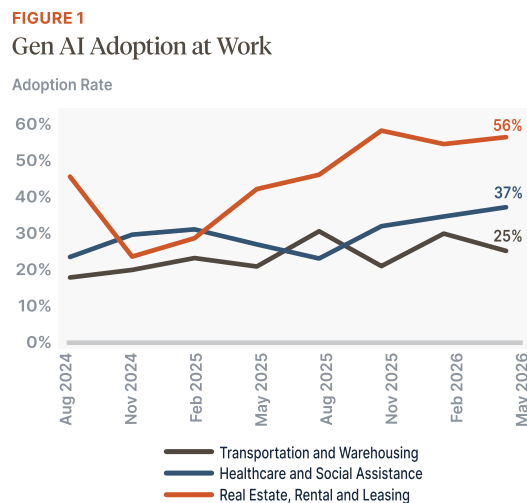
Although capital and earnings are currently concentrated among a relatively narrow group of beneficiaries, the implications may ultimately extend across industries, labor markets, inflation and economic policy. These developments can be evaluated in the context of existing exposures and a broader range of potential return drivers. In the analysis that follows, we consider where the evidence is strongest, where expectations may be most ambitious and what could determine whether this investment cycle fulfills its considerable promise.

Key takeaways

- AI adoption and corporate spending continue to rise, supporting a multiyear infrastructure investment cycle.
- Consensus earnings estimates help explain resilient equity prices, but current valuations depend on unusually strong results continuing.
- While market concentration is rising globally, it does not necessarily indicate a bubble. It does, however, mean that market performance depends more heavily on a small group of companies meeting high expectations.
- Productivity will likely be one of the most important measures of AI's long-term impact. Stronger productivity could support economic growth and public finances even as automation disrupts jobs and incomes.
- Thoughtful portfolio construction can maintain exposure to AI-related opportunities while broadening return drivers, managing taxes and preserving sufficient liquidity.

Why AI investment is accelerating

AI investment is accelerating because adoption and the willingness to pay are rising together. Workplace survey data show increased use across industries, although adoption varies and survey results remain uneven. **Figure 1** illustrates the upward trend across transportation and warehousing, health care and social assistance and real estate, rental and leasing.

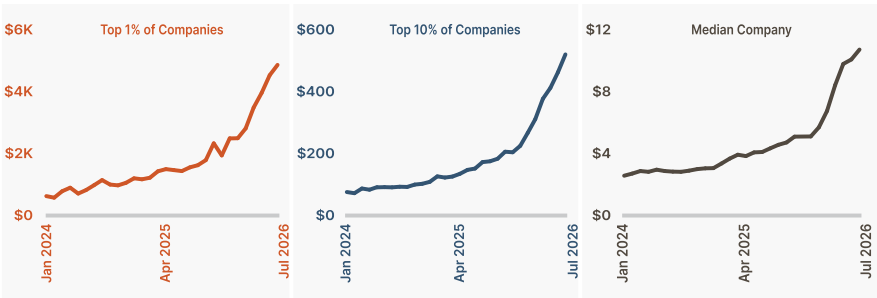


Data as of 6/30/26. Source: Aspiriant analysis. Data from GenAI Adoption Tracker, Harvard Project on Workforce, Bloomberg NEF. AI stands for artificial intelligence. The Gen AI tracker draws on the Real-Time Population Survey (RPS), a nationally representative online survey of US working-age adults (18–64) that has run continuously since 2020, designed and weighted to complement existing government surveys such as the Current Population Survey and the American Community Survey. Findings reflect roughly 40,000 respondents across eight survey waves. Forecasts are scenario-based and approximate, reflecting uncertainty in AI adoption rates, grid constraints and future efficiency improvements. Predictions are based on estimates and subject to change.

Spending data reinforces the adoption trend. Across the companies tracked in the Ramp AI Index, monthly AI spending rose sharply from early 2024 through June 2026 for the top 1%, top 10% and median company tiers. The absolute spending levels vary widely, but the direction is consistent: AI is moving from discretionary experimentation into recurring operating budgets. **Figure 2** also shows how uneven the cycle remains, with the largest spenders scaling much faster than the median company.

FIGURE 2
Monthly AI Spend per Company Employee

Three Company Tiers

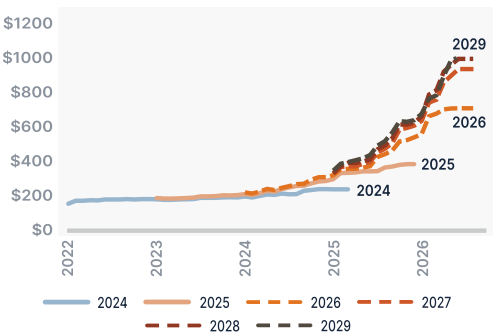


Data as of 6/30/26. Source: Aspiriant analysis. Data from Ramp AI Index. Ramp AI Index measures the adoption rate of artificial intelligence products and services among American businesses. Sample includes more than 70,000 American businesses and billions of dollars in corporate spend using data from Ramp's corporate card and bill pay platform.

This growing adoption is beginning to flow through the broader economy. As companies spend more on AI, demand rises for the computing capacity needed to run it. That, in turn, drives investment in data centers and power infrastructure, creating revenue opportunities for semiconductor, networking, cooling and other equipment providers. As shown in **Figure 3**, consensus estimates for Amazon, Microsoft, Alphabet, Meta and Oracle place combined capital expenditures near \$980 billion in 2029, up from approximately \$368 billion in 2025. These are consensus estimates, not commitments, and remain subject to revision.

FIGURE 3
Hyperscaler Capital Expenditure Estimates by Calendar Year

Billions of Dollars



Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg, MSCI, Standard & Poor's. Hyperscaler defined as a large technology company that operates massive, globally scalable data center infrastructure to deliver cloud, AI and data-intensive services. Hyperscaler capital expenditure (CapEx) estimates are derived from Bloomberg forward consensus capital expenditure forecasts for Amazon.com Inc. (AMZN), Microsoft Corp. (MSFT), Alphabet Inc. (GOOGL), Meta Platforms Inc. (META) and Oracle Corp. (ORCL). Estimates reflect company-level capital expenditures, aggregated across constituents for each forecast year. Data reflects analyst consensus expectations at the time of observation and are subject to revision. CapEx stands for capital expenditures.

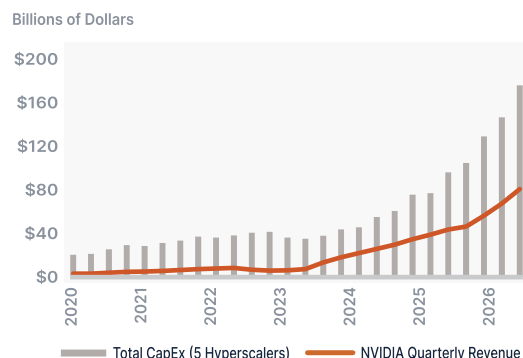
Capital spending alone does not prove that returns will be attractive. It does, however, distinguish this cycle from periods when market enthusiasm was not accompanied by substantial revenue. Figure 4 shows Nvidia quarterly revenue rising alongside hyperscaler capital expenditures. The most important signposts are utilization, pricing, free cash flow, power availability and return on invested capital. A sustained decline in capital expenditure (CapEx) guidance or supplier revenue growth would weaken the current thesis.

Can earnings justify current stock valuations?

Current earnings expectations suggest today's stock valuations are not necessarily detached from fundamentals, although they leave little room for disappointment. Among companies that had reported second-quarter results, 85% exceeded earnings expectations, compared with a long-term average near 75%. Consensus S&P 500 earnings estimates were approximately \$343 per share for 2026, \$397 for 2027, \$447 for 2028 and \$486 for 2029. The unusual feature is that estimates have been revised upward rather than fading as the forecast period approaches.

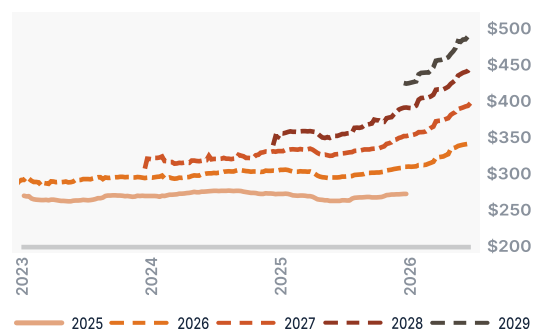
As shown in Figure 5, holding the current index value constant, those earnings estimates imply headline price-to-earnings multiples of roughly 22.8x expected 2026 earnings, 18.8x expected 2027 earnings, 16.7x expected 2028 earnings and 15.4x expected 2029 earnings. This illustrates how much future earnings growth is already embedded in today's valuation. Even if AI ultimately delivers on its promise, a slower path to monetization, lower margins or higher financing costs could still leave investors disappointed.

FIGURE 4
Hyperscaler CapEx vs. Nvidia Revenue by Calendar Quarter



Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg, MSCI, Standard & Poor's. Hyperscaler defined as a large technology company that operates massive, globally scalable data center infrastructure to deliver cloud, AI and data-intensive services. Hyperscaler capital expenditure (CapEx) estimates are derived from Bloomberg forward consensus capital expenditure forecasts for Amazon.com Inc. (AMZN), Microsoft Corp. (MSFT), Alphabet Inc. (GOOGL), Meta Platforms Inc. (META) and Oracle Corp. (ORCL). Estimates reflect company-level capital expenditures, aggregated across constituents for each forecast year. Data reflects analyst consensus expectations at the time of observation and are subject to revision. CapEx stands for capital expenditures.

FIGURE 5
Consensus U.S. Earnings Expectations Over Time



Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg. The S&P 500 Index is a market-capitalization-weighted index of 500 leading U.S. publicly traded companies; it is unmanaged and cannot be invested in directly. EPS estimates reflect the Bloomberg consensus, computed as the mean of sell-side analyst forecasts for S&P 500 constituents on a bottom-up aggregated basis. Fiscal year references (FY2026–FY2029) align with each company's reported fiscal calendar, which may not match the calendar year. Forward-looking estimates are subject to revision and are not a guarantee of future results. Past performance is not indicative of future results. There can be no assurances that any strategy will meet its investment objectives. All investments can lose value. Indices are unmanaged and have no fees. An investment may not be made directly in an index.

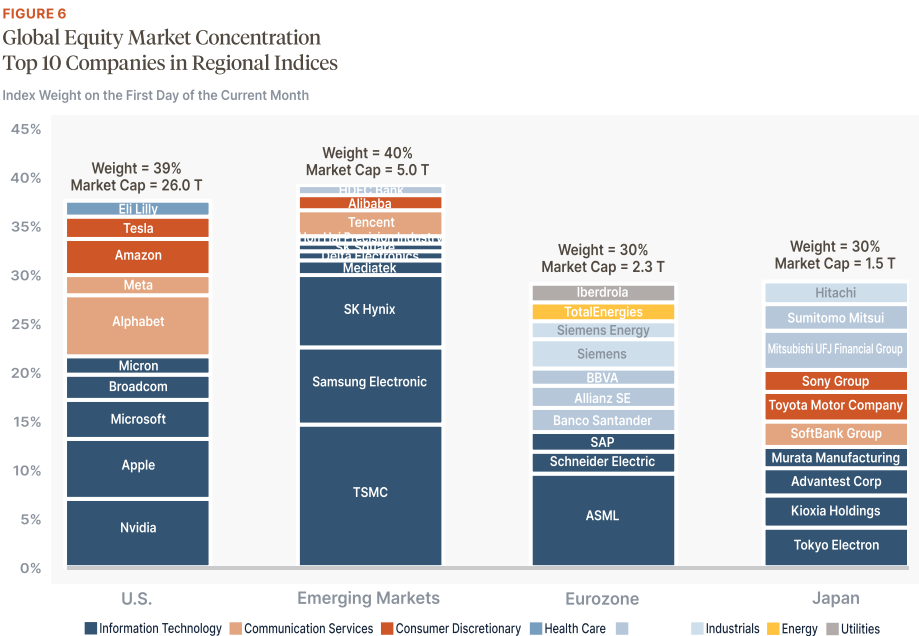
Table 1 summarizes the key assumptions embedded in current market expectations, along with the factors that could support or challenge them.

TABLE 1

Key Assumptions Reflected in Current Market Expectations			
Market Question	Current Market Expectation	Supporting Factors	Challenging Factors
AI Demand	Adoption and spending continue rising	Recurring workflows, pricing power and utilization	Cheaper substitutes, weaker usage or budget discipline
Earnings	Strong revisions persist through 2028	Supplier revenue, margins and productivity	CapEx slowdown, competition or cost overruns
Valuation	Multiples normalize through earnings growth	Results broadly match consensus	Earning revisions fall or interest rates rise

Does market concentration mean a bubble is forming?

Market concentration does not, by itself, establish that a bubble exists. It does, however, make broad index returns more dependent on a small group of companies meeting elevated expectations. As shown in Figure 6, the 10 largest companies accounted for approximately 39% of the S&P 500 and 40% of the MSCI Emerging Markets Index as of June 30, 2026, with much of that concentration tied directly or indirectly to the AI value chain. The comparable top 10 weights in the Eurozone and Japan were about 30%, with market leadership somewhat less concentrated and spread across a broader mix of sectors.

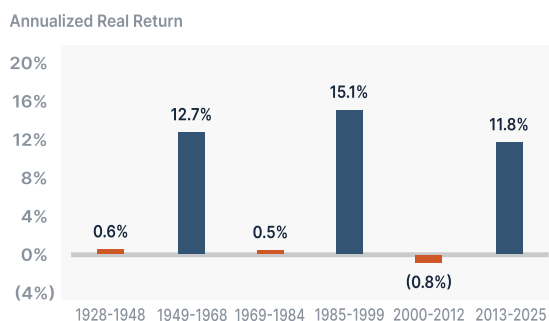


Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg, MSCI. Chart reflects the estimated weight of the ten largest constituent companies within each regional equity index, grouped by sector. U.S. represented by the S&P 500 Index; Emerging Markets represented by the MSCI Emerging Markets Index; Eurozone represented by the MSCI EMU Index; Japan represented by the MSCI Japan Index. Company and sector weights are illustrative estimates based on most recently available index composition data and are subject to change. The S&P 500 Index is a market-cap-weighted index of 500 leading U.S. large-cap companies across all sectors. The MSCI Emerging Markets Index captures large- and mid-cap companies across 24 emerging market countries. The MSCI EMU Index captures large- and mid-cap companies across Eurozone (European Economic and Monetary Union) countries. The MSCI Japan Index captures large- and mid-cap companies in the Japanese equity market. Past performance is not indicative of future results. There can be no assurances that any strategy will meet its investment objectives. All investments can lose value. Indices are unmanaged and have no fees. An investment may not be made in an index.

Today's leaders generally have real earnings, strong balance sheets and significant competitive advantages, an important distinction from many past speculative episodes. Even so, business quality and security valuation are separate questions. Excellent companies can still produce disappointing returns when several years of expected growth have already been reflected in the current price. That risk is particularly relevant after an extended period of unusually strong market performance, when exceptional returns can begin to feel like a reasonable baseline for the future.

Long-run market returns, however, tend to arrive in regimes rather than along a smooth path. The S&P 500 generated an annualized real return of 11.8% from 2013 through 2025, well above its roughly 5% long-run average. **Figure 7** shows that similarly strong periods have historically been followed by extended intervals of much lower real returns. This does not identify the market peak, but it does argue against treating the last decade's returns, factor leadership or valuation expansion as neutral starting assumptions.

FIGURE 7
Average Annual Real Returns, S&P 500



Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg. The S&P 500 Index is a market-capitalization-weighted index of 500 leading U.S. publicly traded companies; it is unmanaged and cannot be invested in directly. Average annual real return periods reflect commonly referenced market regimes bounded by major valuation or macroeconomic inflection points (e.g., pre/post major equity market peaks, troughs and inflation regime shifts) rather than fixed calendar intervals. Real returns adjusted for inflation. Past performance is not indicative of future results. There can be no assurances that any strategy will meet its investment objectives. All investments can lose value. Indices are unmanaged and have no fees. An investment may not be made directly in an index.

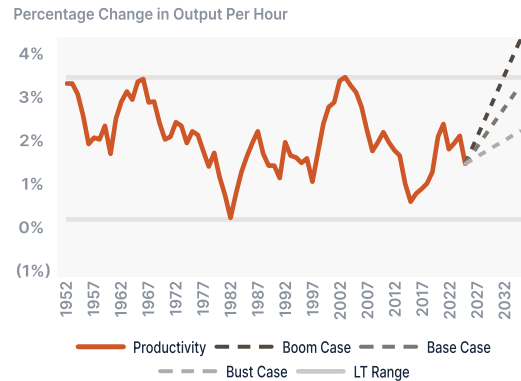
Will AI make workers more productive—or make fewer workers necessary?

AI and robotics could allow businesses to produce more with fewer labor hours, raising productivity even as employment weakens. This could strengthen the economy overall while disrupting workers, occupations and communities. The central question for the Age of Autonomy is whether these productivity gains are large and durable enough to justify today's capital spending, remain more cost-effective than human labor and generate benefits broad enough to offset the resulting labor-market disruption.

Figure 8 presents three Aspiriant sensitivity scenarios for U.S. labor productivity. Starting from a 1.8% baseline, the illustrative bust, base and boom cases reach 2.3%, 3.3% and 4.3%, respectively. These scenarios are intended to frame a range of possible outcomes rather than predict a single path. Because the Congressional Budget Office baseline already incorporates some productivity gains from generative AI, our analysis considers how the economic outlook could change if those gains prove materially greater than the baseline assumes.

The macroeconomic trade-off becomes clearer in Table 2. In the stronger productivity scenarios, nominal gross domestic product (GDP) rises while debt and deficits improve relative to the size of the economy. Those gains, however, are accompanied by higher unemployment as businesses automate tasks, reduce labor hours and leave some departing workers unreplaced. A February 2026 Morgan Stanley survey of 935 executives across five sectors with significant AI exposure reported an average 11.5% increase in net productivity and a 4% net decline in headcount over the preceding 12 months. Although the findings are preliminary and self-reported, they offer early evidence that AI-related efficiency gains may already be translating into lower labor demand.

FIGURE 8
U.S. Labor Productivity
5 Yr Rolling Average



Data as of 6/30/26. Source: Aspiriant analysis. Data from Bloomberg, the Bureau of Labor Statistics (BLS). U.S. Productivity is measured as real output per hour worked in the nonfarm business sector. The measure captures changes in the amount of goods and services produced for each labor hour, including the effects of technological advancement, capital investment, workforce skills and operational efficiency. LT Range denotes the long-term simple average range of productivity growth over the period shown. Internet 10 Years is the period from 1995 to 2004. Post-WWII 10 Years is the period from 1948 to 1957.

TABLE 2

Economic Forecasting Model				Three Productivity Scenarios			
#	Scenario	2036 Forecast National Statistics					
		Productivity	Unemp.	NGDP	Debt	Debt/GDP	Deficit/GDP
	CBO Forecast	1.8%	4.4%	\$48	\$58	120%	6.7%
1	Bust	2.3%	4.6%	50	57	114%	5.7%
2	Base	3.3%	5.5%	53	54	101%	4.2%
3	Boom	4.3%	7.0%	56	51	91%	3.0%
		worsening		improving			

worsening

improving

Data as of 6/30/2026. Source: Aspiriant analysis. Data from Bloomberg, the Bureau of Labor Statistics (BLS). U.S. Productivity is measured as real output per hour worked in the nonfarm business sector. The measure captures changes in the amount of goods and services produced for each labor hour, including the effects of technological advancement, capital investment, workforce skills, and operational efficiency. Unemp. Stands for unemployment. NGDP stands for nominal gross domestic product.

Will AI be inflationary or deflationary?

AI may influence inflation differently at each stage of the investment cycle. The initial build-out may be inflationary as rapidly rising demand for power, equipment, land and skilled labor encounters limited near-term supply. If adoption later produces broad and durable productivity gains, the resulting increase in output per hour could become disinflationary by

allowing the economy to produce more with the same or fewer inputs. The transition is unlikely to be linear, and both effects may coexist, placing greater importance on how adoption, employment, wages, tax revenues and public policy evolve.

Could geopolitics slow the AI boom?

Geopolitics could slow the AI boom because AI depends on physical resources embedded in increasingly contested supply chains. Advanced semiconductors, critical minerals, electricity, data centers and secure communications infrastructure are all subject to trade restrictions, industrial policy and national security priorities. Conflict or policy intervention can therefore affect not only market sentiment but also the cost, location and pace of AI investment.

Geopolitical shocks become more consequential when they outlast the initial market reaction and reshape the cost and availability of energy, technology and other critical inputs. A short-lived increase in oil prices may primarily heighten volatility, whereas persistent energy constraints, tighter technology controls or more fragmented supply chains can affect inflation, corporate margins, capital spending and interest rates. Their investment significance ultimately depends on whether those pressures fade with the headline or become embedded in the economics of the investment cycle.

At the same time, the broad economic benefits of AI give governments and businesses a strong incentive to preserve access to critical inputs, maintain commercial ties and develop workable forms of cooperation even amid strategic competition.

How can investors prepare portfolios for the Age of Autonomy?

Preparing a portfolio for the Age of Autonomy begins with understanding how AI-related exposures interact across the full portfolio. The Age of Autonomy is creating new sources of economic value while also intensifying existing concentrations across markets and household wealth. Navigating this environment begins with understanding how exposures interact across the entire portfolio, including where the same companies and factors recur through pooled funds such as mutual funds and ETFs, separately managed accounts (SMAs), and employer stock. What appears diversified by investment vehicle may still depend heavily on U.S. mega-cap equities, growth and momentum. A look-through assessment can reveal those overlapping exposures and provide a stronger foundation for portfolio decisions. For taxable investors, any adjustment must also be considered alongside embedded gains, liquidity needs and other planning constraints.

Broader diversification may come from defensive equity strategies and diversifiers with different sensitivities to growth, inflation, interest rates and geopolitical risk. Defensive equity approaches, including value and minimum-volatility strategies, may complement exposure to current market leaders. Diversifiers such as real assets, gold, global macro and long-short equity strategies can introduce additional return drivers, although outcomes depend on manager skill, fees, liquidity and tax efficiency. Fixed income can continue to support income,

liquidity and capital preservation without requiring excessive duration or weaker credit quality solely to increase yield.

Eligible investors may be able to use private-market investments to support income needs and gain exposure to opportunities that are less available in public markets. Private credit and asset-based finance, for example, may offer higher income than traditional bonds, while venture secondaries, defense and supply-chain investments may provide access to longer-term growth themes.

These opportunities also come with trade-offs. Private investments are typically less liquid, may require capital to remain invested for several years and can vary widely in quality depending on the manager. Investors should therefore evaluate them based on the strength of the underlying opportunity, the manager's experience and the portfolio's ability to meet near-term spending needs without relying on uncertain private-market distributions. Private-market investments are available only to eligible investors and involve the risk of loss.

Watch: Where we're finding opportunities in private markets



Private markets continue to evolve, creating opportunities in areas such as secondary markets, private credit and long-term thematic investing. In this discussion, Marc Castellani explains how our team evaluates opportunities and why disciplined manager selection remains essential.

Frequently asked questions from investors

Investors often have similar questions as new technologies reshape markets. Below are a few we're hearing and how our [Investment Strategy & Research team](#) is thinking about them.

What would cause your outlook on AI to weaken?

We'd become less optimistic if adoption slowed, utilization declined or companies reduced capital-spending plans without a corresponding improvement in cash flow. Other warning signs could include weaker supplier revenue, persistent cost overruns, falling pricing power or returns on invested capital that fail to justify the scale of investment. No single indicator would change our view, but deterioration across several measures would suggest spending is running ahead of economic value creation.

Do my broad market index funds already provide sufficient AI exposure?

Broad U.S. equity indices already provide substantial exposure to many of the largest AI beneficiaries, but that exposure is concentrated and may recur across your portfolio. Investors should weigh those overlapping exposures against embedded gains, liquidity needs and the tax cost of rebalancing. In some cases, directing new cash flows toward other regions or investment styles may broaden exposure more efficiently than an immediate sale.

When will we begin to see AI's economic benefits?

Productivity gains may emerge gradually because businesses must reorganize workflows, train employees and integrate new technology before efficiency improvements become visible. Early gains may also be concentrated among larger companies or particular industries. As a result, rising AI adoption and investment may precede broad-based improvements in measured productivity by several years.

Who is most likely to benefit from the AI investment cycle?

Today, many of the biggest beneficiaries are the companies supplying the infrastructure that powers AI, including semiconductors, memory, networking equipment, data-center infrastructure and power systems. Over time, value creation may shift toward businesses that use AI to increase revenue, lower costs or strengthen competitive advantages. The companies spending the most will not necessarily generate the highest returns; durable beneficiaries will likely be those that convert investment into sustained cash flow and returns above their cost of capital.

Prefer a deeper dive?

Watch the recent Investing Outlook webinar replay



Want to discuss how this applies to your portfolio?

Market developments can have different implications depending on concentrated holdings, taxes, liquidity, spending needs and private-investment commitments. Whether you're someone we currently serve or you're exploring if Aspiriant may be the right wealth management partner for you, we'd be happy to talk through what these developments might mean for your portfolio and financial goals.

Talk with us.

Disclosures

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Glossary of terms

Artificial intelligence (AI): Computer systems and software that perform tasks associated with human intelligence, including pattern recognition, learning and decision-making.

Capital expenditures (CapEx): Spending on long-lived assets such as data centers, chips, networking equipment, power systems and other infrastructure.

Embedded gains: Unrealized investment gains that could become taxable if an investment is sold.

Hyperscalers: Large technology companies that operate globally scalable cloud and data-center infrastructure.

Look-through assessment: An analysis that evaluates a portfolio's underlying holdings to identify overlapping exposures across individual securities, funds and other investments.

Market concentration: A condition in which a small number of companies account for a disproportionate share of an index or its returns.

Minimum volatility: An equity approach designed to reduce portfolio volatility subject to diversification and other constraints.

Momentum: An equity factor that emphasizes securities with strong recent price performance.

Productivity: The amount of output produced per unit of labor, commonly measured as real output per hour worked.

Returns on invested capital (ROIC): A measure of how effectively a company generates profits from the capital it invests in its business.