



PERSPECTIVES

Special

October 2026

AI and economic growth
Waiting for the productivity dividend



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Key Takeaways

- Economic growth ultimately depends on capital, labour and productivity. AI can influence all three factors, but the timing of its impact will differ for each one.
- The AI boom is currently mainly in an investment and capital-deepening phase and broader productivity gains may take longer to appear.
- Chips, infrastructure and utility companies are the clearest immediate beneficiaries of AI capital-deepening phase. Hyperscalers are well positioned as owners of critical parts of the AI stack, able to capture application-layer revenues and major adopters themselves.
- As productivity gains spread, more sectors and industries could benefit as AI raises output, lowers costs and improves earnings. As a result, the equity opportunity will broaden. Long-term productivity beneficiaries could include software & services, commercial & professional services, health care, financials and industrials.

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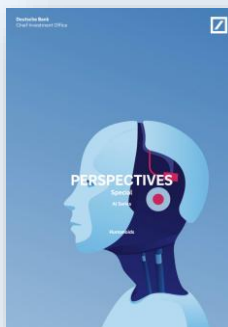


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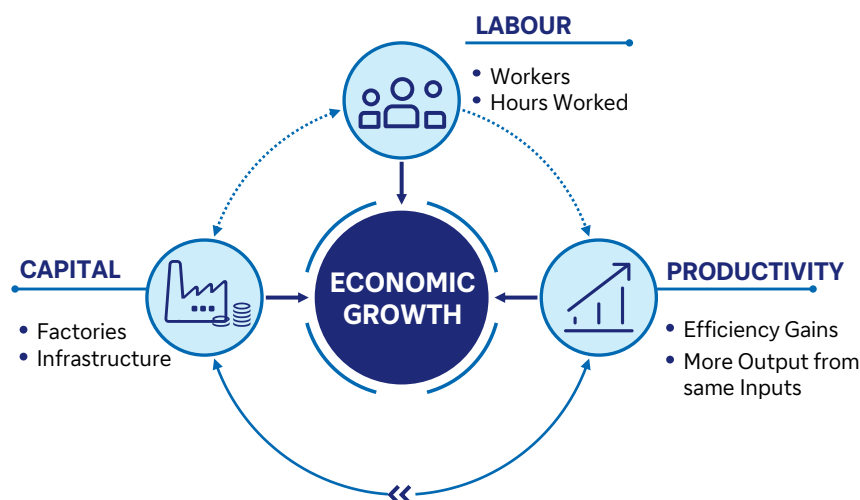
01

AI and the growth model

Growth models: To assess the impact of AI on economic growth, we need first to understand the components of growth. Traditional economic growth models see growth as driven by three core factors: capital accumulation, labour input and productivity increases, largely driven by technological progress. In essence: economic growth depends on how much capital and labour are deployed, and how productively they are combined (Figure 1). Capital deepening expands the economy's productive capacity through investment in productive capital including machinery, infrastructure, software and technology. Labour growth increases output by adding workers or hours worked. Productivity growth allows the economy to generate more output from the same amount of labour and capital.

AI and growth models: Artificial intelligence could fundamentally reshape traditional growth models. Until now, innovation has depended largely on scarce human expertise, while technology has primarily made labour and capital more productive. AI could change this by turning **cognitive capabilities into scalable capital**. Crucially, AI may increasingly **automate innovation itself**, allowing technology to help develop the next generation of ideas and AI systems. This could blur the traditional distinction between capital and labour, so making the cycle linking investment, innovation and productivity more powerful than ever.

Figure 1: The three factors of economic growth



Source: Deutsche Bank AG. As of October 12, 2026.

In the foreseeable future, nonetheless, the implementation of AI is likely to remain deeply entwined with all three traditional factors of economic growth – capital, labour and productivity – with the result that such growth models remain highly relevant. The key point, however, is that AI's impact on each is likely to vary over time.

AI and capital investment: In the near term, AI will remain most visible through higher capital investment. The build-out of datacentres, chips, cloud infrastructure and energy capacity represents a major expansion of the capital stock. This investment phase raises demand for AI-related products and services and, in turn, supports growth.

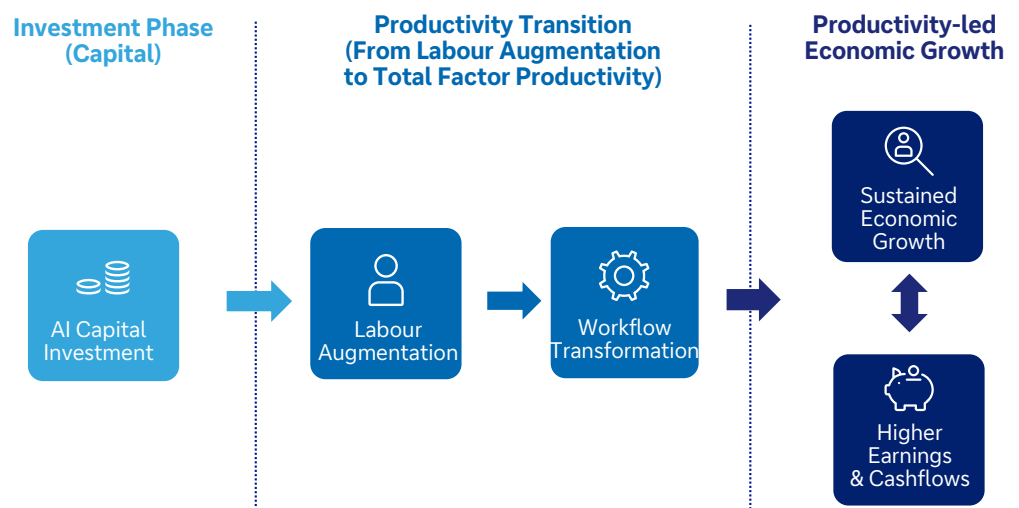


AI, labour and productivity: Figure 2 shows how today's AI investment boom could lead to a broader **productivity transition**. The first gains are already emerging through labour productivity. **Generative AI** (GenAI), which creates content such as text, code and images in response to prompts, is helping employees complete tasks faster and increase output, although largely within existing business processes.

Agentic AI, which can independently plan, make decisions and execute multi-step tasks, could mark the next, more structural phase. It could coordinate workflows and optimise processes across entire organisations, while humanoids may eventually extend similar capabilities into physical work.

Total factor productivity: Implementing these technologies at scale will take time, but they could ultimately become important drivers of **total factor productivity (TFP)**, which measures how efficiently labour and capital are combined to produce output. By enabling businesses to redesign workflows, coordinate operations and develop new products, agentic AI could help today's investment boom evolve into broader, productivity-led growth.

Figure 2: The economic growth factors in motion



Source: Deutsche Bank AG. As of October 12, 2026.

Forecasts of the impact of AI on TFP span a wide range. Aghion and Bunel (2024) estimate that AI could raise annual TFP productivity growth by roughly 0.8 to 1.3 percentage points (ppt) in advanced economies over the coming decade. The International Monetary Fund (2025) estimates global TFP gains of between 0.8 and 2.8ppt over the same period. Acemoglu (2024) takes a more sceptical view, arguing that many economically important tasks remain difficult to automate and estimating that current AI technologies may increase TFP by only around 0.7ppt cumulatively over the next 10 years.

The following section examines evidence of AI's impact on economic growth, using the US as the benchmark. As the world's leading destination for private AI investment, with almost USD286bn invested in 2025, the US provides the clearest early indication of how AI adoption could translate into productivity and broader economic growth.

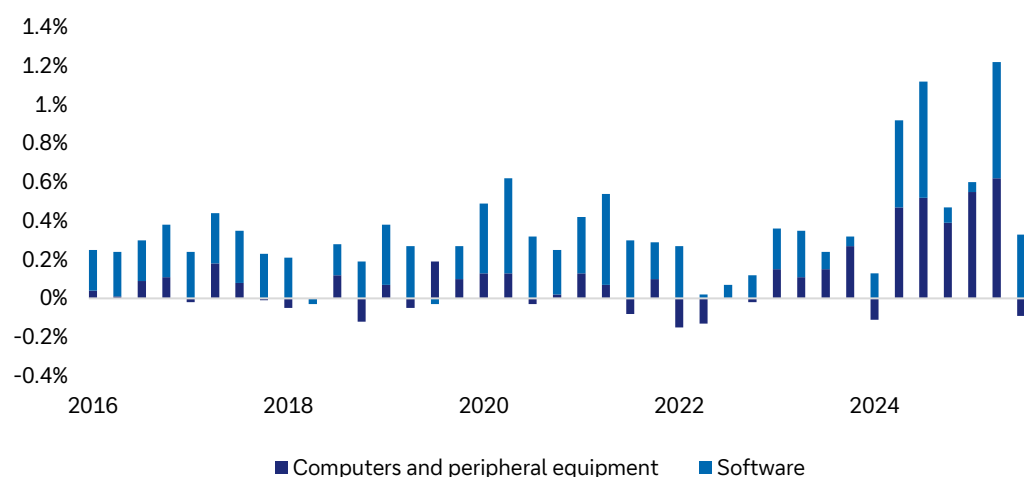


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AI and the US economy

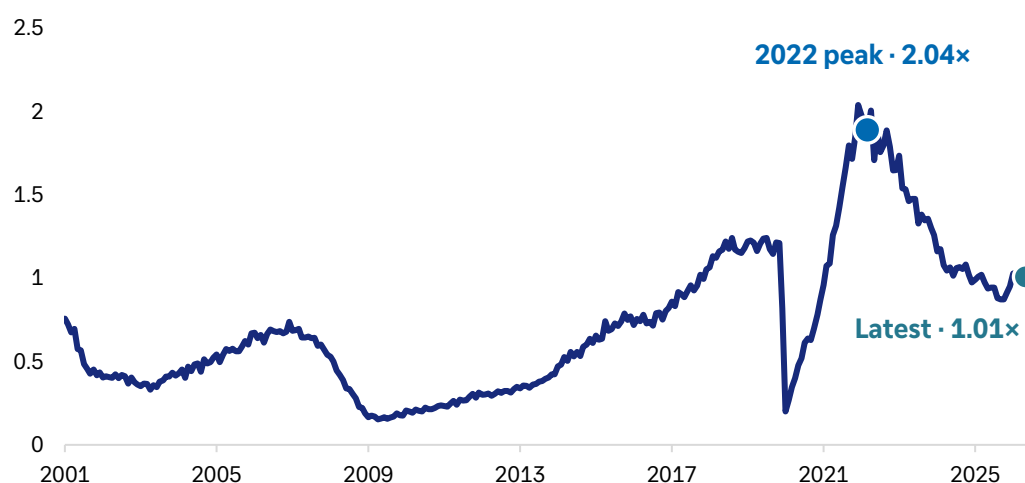
Investment data shows that the current AI cycle is already reshaping the composition of US economic growth. Spending on information-processing equipment, software, research and development, and data centres has increased significantly, even as investment in other parts of the US economy has been more subdued. As shown in Figure 3, the contribution of computers and software investment (only one part of the AI investment story) to GDP growth has risen sharply since 2020. The expansion of data-centre capacity is also generating additional investment in supporting infrastructure, particularly electricity generation and power grids.

Figure 3: AI investment has become a visible economic growth driver
Contribution to real GDP



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 14, 2026.

Figure 4: Tight US labour market in the 2020s
US vacancies per unemployed person



Source: OECD, US Bureau of Labor Statistics, Deutsche Bank AG. Data as of October 14, 2026.

In Europe, Middle East and Africa as well as in Asia Pacific this material is considered marketing material, but this is not the case in the US. No assurance can be given that any forecast or target can be achieved. Forecasts are based on assumptions, estimates, opinions and hypothetical models which may prove to be incorrect. **Past performance is not indicative of future returns.** Please refer to the historical performance in the appendix. Performance refers to a nominal value based on price gains/losses and does not take into account inflation. Inflation will have a negative impact on the purchasing power of this nominal monetary value. Depending on the current level of inflation, this may lead to a real loss in value, even if the nominal performance of the investment is positive. Investments come with risk. The value of an investment can fall as well as rise and you might not get back the amount originally invested at any point in time. Your capital may be at risk. This document was produced in October 2026.

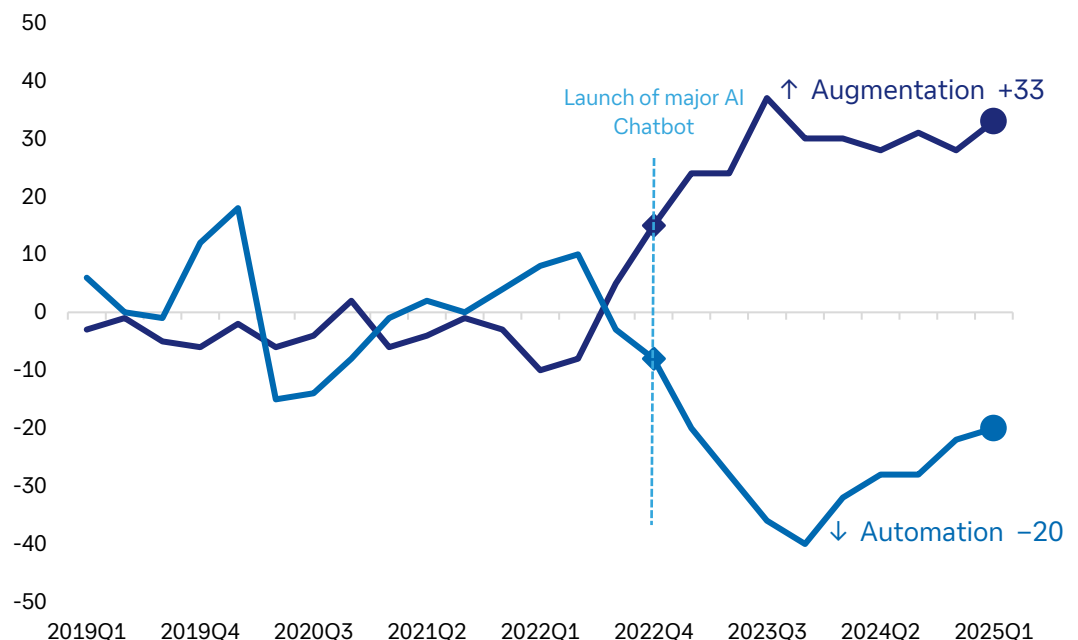


AI and the US labour market: US labour market data does not yet suggest a major AI shock. At present, measured in terms of vacancies per unemployed person, the US labour market is still quite tight, despite some normalization from a post-pandemic 2022 peak. As Figure 4 reminds us, this is very different from 2009, after the first phase of the financial crisis. Back then, the main issue was weak labour demand: employment had fallen, participation rates had declined and the labour market needed time to absorb the resulting slack. Today, the constraint is increasingly on the supply side. Population ageing, retirements, slower labour-force growth and restricted immigration limit labour supply, increasing the US economy's reliance on productivity rather than workforce expansion for GDP growth. AI will therefore matter not because labour is becoming irrelevant, but because labour appears to have become a more binding constraint on US output.

Augmentation vs. automation: As shown in Figure 5, a Harvard Business School study based on US job postings suggests that generative AI may already be reshaping labour demand. After the public release of a major GenAI chatbot in late 2022, the study finds rising postings for occupations where AI is more likely to augment workers, meaning to support or enhance human tasks, and declining postings for occupations seen as more exposed to automation (with tasks that AI can more easily perform instead of workers). The implication is that we are (at least for now) not dealing with broad job elimination, but with a shift in labour demand towards roles where AI can complement (and thus augment) human capabilities. However, this is still very early days in the AI transition: different employment trends may emerge, the existing data is only partial and very few studies exist outside of the US – either for developed or emerging markets.

Figure 5: GenAI seems to be reshaping jobs, not eliminating them

Estimated effect (change in job postings)



Source: Chen, Srinivasan and Zakerinia (2026), Deutsche Bank AG. Data as of June 10, 2026.



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AI and productivity: Historical lessons

Will AI capital investments ultimately translate into sustained productivity growth? Two interrelated patterns can be observed during previous technological revolutions. First, **investment cycles and productivity booms which are rarely fully synchronized**: productivity increases tend to lag related capital investment waves. Second, **labour productivity fluctuations that are stronger than for total factor productivity (TFP)**, as shown in Figure 6.

The Solow paradox: The first pattern is often referred to as the **Solow Paradox**, after the US economist Robert Solow, who observed wryly in 1987 that “you can see the computer age everywhere but in the productivity statistics”. One reason for the Solow paradox is that productivity gains are often unevenly distributed, with a small group of firms benefiting strongly while adoption among other firms remains slower. Moreover, shifts in economic structure will also influence aggregate productivity – so efficiency gains in highly automated industries may be offset if employment growth increasingly occurs in lower-productivity service sectors. In addition, successful technology adoption depends not only on investment, but also on complementary factors such as education and workforce skills. Demographic developments add another layer of complexity: ageing societies have an increasing need for productivity growth to compensate for slower labour-force expansion but may at the same time be less adaptable to technological change.

The second pattern – stronger labour productivity than TFP fluctuations – is because labour productivity can rise when workers are equipped with more capital, better tools or improved technologies, even if the underlying efficiency of the whole economy has not fully improved yet. In other words, labour productivity gains may initially largely reflect capital deepening rather than genuine efficiency improvements. Such improvement requires broader changes in workflows, production processes and business models, which take longer to achieve.

The late-20th century IT revolution: The US experience during the initial phases of the century information technology (IT) revolution illustrates these patterns and shows that the links between investment and productivity gains can take years to fully deliver. As shown in Figures 6 and 7, the 1980s were characterised by a substantial rise in investment in computers and IT, even though the impact on labour productivity and TFP initially remained limited (as Solow observed). The productivity payoff became more visible in the 1990s, as firms increasingly reorganised their operations around digital technologies and computers became more deeply embedded in business processes. Investment in internet infrastructure and telecommunications during the 1990s also laid the foundations for another period of strong productivity growth in the early 2000s. Labour productivity accelerated as firms benefited from improved connectivity and automation; in tandem, total factor productivity (TFP) continued to rise, reflecting technological and organisational innovations that had been building up since the previous decades. Notably, some of the strongest labour productivity gains emerged during the recoveries from the 2001 recession and the initial phase of the Global Financial Crisis, as firms accelerated the adoption of new technologies, streamlined operations and reallocated resources more efficiently. But in the 2010s, labour productivity and TFP growth moderated as the gains from the IT revolution matured and investment remained modest as a share of GDP, with much of it concentrated in the energy sector amid the shale revolution.

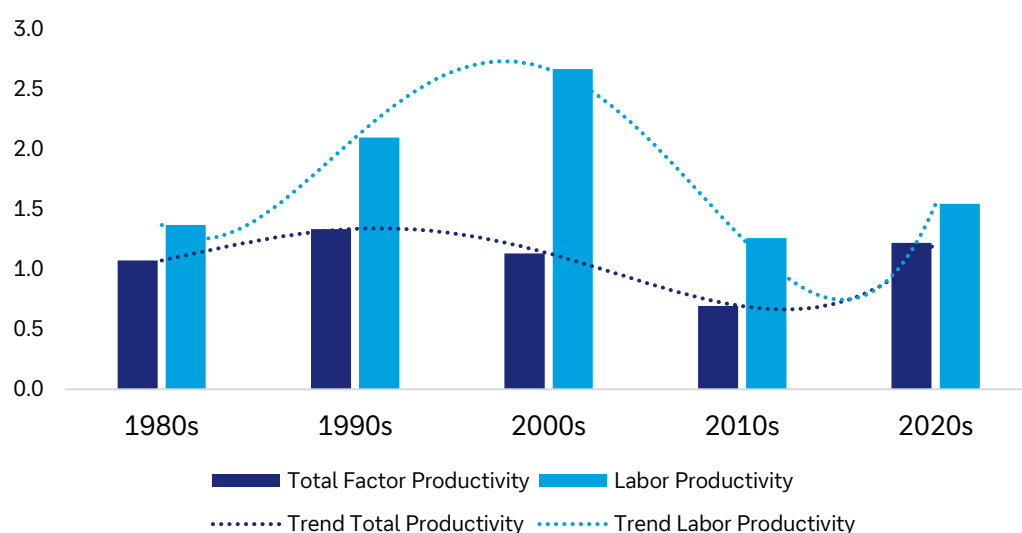
Recent productivity gains: So far in the 2020s, US labour productivity has shown signs of a rebound, but this improvement appears to be driven mainly by post-COVID-19 pandemic adjustments and labour market tightness rather than by AI (see Figures 4 and 6).



Firms were forced to reorganize operations, accelerate digital adoption and make more efficient use of scarce labour, which supported labour productivity gains. TFP also recovered, suggesting that some efficiency improvements from digitalization, automation and operational restructuring have materialized, but a surge in AI investment since 2025 has yet to be fully reflected in productivity data. This leaves considerable scope for future upside, if adoption broadens from worker-level assistance to process-level transformation.

Figure 6: Labour productivity has outpaced TFP, but the latter tells the deeper story

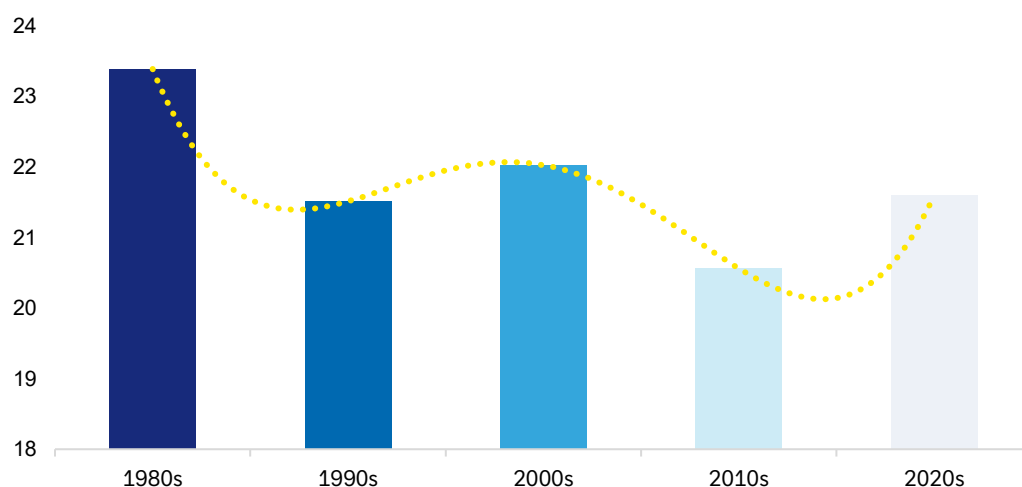
US Total Productivity vs Labour Productivity (average yearly growth rates in %)



Source: LSEG Datastream, Deutsche Bank AG, Data as of October 14, 2026.

Figure 7: Investment waves tend to translate productivity with some lag

US gross capital formation (% of GDP), 1990-2024



Source: LSEG Datastream, Deutsche Bank AG, Data as of October 12, 2026.



Financial market narratives and the limits of history. Financial market narratives will be impacted by the lag between investment and productivity gains. In this gap (as would be expected) markets are likely to move ahead of the data, pricing future efficiency gains before they are broadly measurable. This pricing may include implicit assumptions about the future development and impact of AI which are difficult to justify through looking at previous technological transformation. Debate around the relevance of historical comparisons is likely to continue: as we noted at the start of this report, AI can be seen as challenging existing growth models.

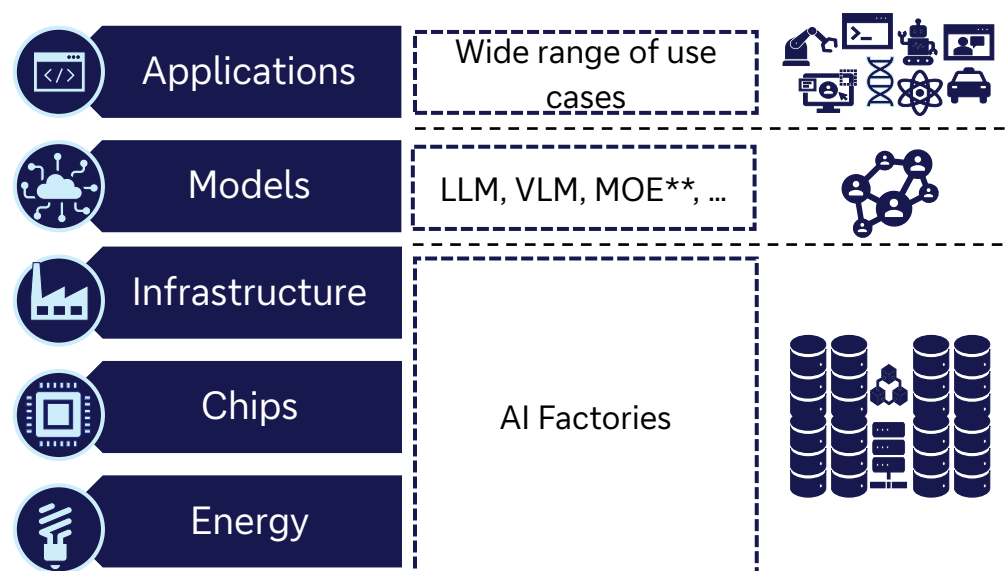
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The immediate AI value chain

Over the last couple of years, investors have primarily focused on companies undertaking and benefiting directly from the huge AI-related capital investments discussed above. As adoption broadens and productivity gains become more visible, attention may gradually shift towards a wider set of companies positioned to benefit from AI-enabled efficiency gains and stronger earnings growth.

The five-layer cake analogy: To illustrate the AI ecosystem and identify the sectors where AI is already affecting stock performance, the five-layer cake analogy coined by Jensen Huang, the President and CEO of Nvidia, may offer a useful framework (Figure 8). In Layer 1, energy provides the power required to generate intelligence in real time, making it the foundational input and a key constraint on AI scale. Chips (Layer 2) convert that energy into computation, while infrastructure (Layer 3) combines computing, networking, cooling and power systems into AI factories capable of producing intelligence at scale. On top sit the models (Layer 4) that transform computing power into useful capabilities, and the applications (Layer 5) that create economic value. Progress at one layer reinforces demand across the entire stack.

Figure 8: The AI value chain as a five-layer cake



Note: * Based on an analogy used by Jensen Huang at the World Economic Forum 2026. **) Large Language Model, Vision-Language-Model, Mixture of Experts. Source: Deutsche Bank AG. As of October 2026.

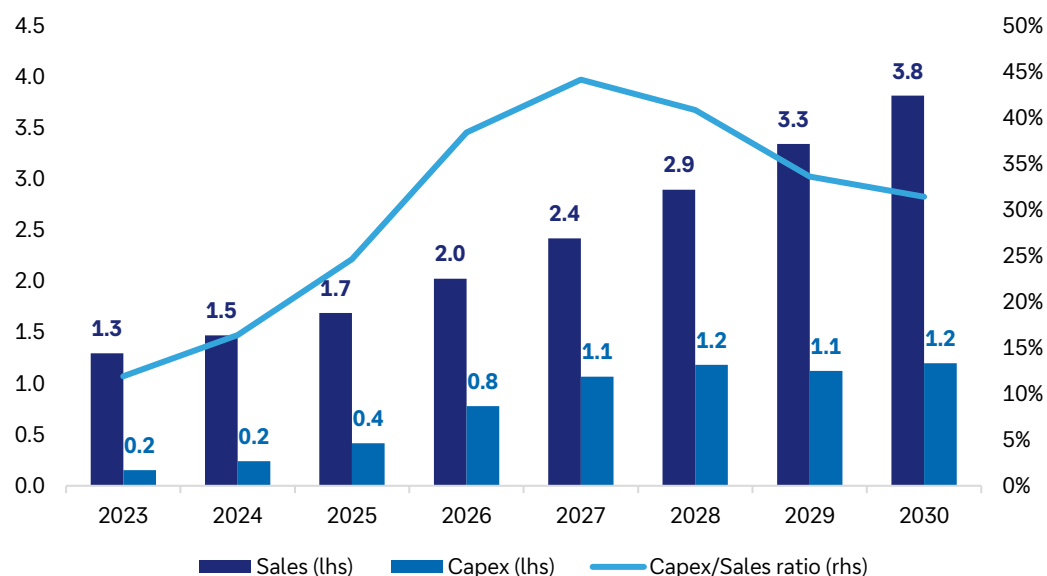


AI capability vs. financial validation: This interdependence has an important implication: while AI capability is enabled from the bottom up, demand and returns must ultimately be validated from the top down. Applications generate revenue by converting AI capabilities into products and services that customers are willing to pay for. Models earn licensing and usage-based revenue as application adoption increases demand. Infrastructure and chip providers benefit as expanding training and inference workloads require more cloud capacity, processors and related components. Energy providers benefit as greater computing capacity and utilisation increase electricity demand. But, ultimately, sustainable returns across the ecosystem depends on application revenues growing sufficiently to justify the capital invested throughout the stack.

Hyperscaler capex: Hyperscalers sit at the centre of the five-layer AI stack, linking customer demand and model development with the physical buildout of infrastructure, chips and energy. As operators of data centre networks (“AI Factories” in Figure 8) they fund a large share of the ecosystem, control critical parts of the stack and help direct the pace and scale of capacity expansion. Their strong balance sheets and cash-generative core businesses have enabled them to convert model progress into a large-scale investment cycle and hyperscaler capex is expected to rise further (Figure 9). This data centre buildout has generated demand for the energy, chips and infrastructure needed to develop and deploy AI at scale.

Figure 9: Hyperscaler capex is rising in both absolute terms and relative to sales

LHS: Hyperscaler sales & capex in USD tn
RHS: Hyperscalers capex/sales ratio in %



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 15, 2026



Hyperscaler cashflow: Although hyperscalers' operating cash flows remain strong, their huge investments have put some pressure on their free cash flow. Whether the investments ultimately bear fruit depends on whether they will lead to future revenues. Financial markets now show some scepticism as to whether future revenues will justify the scale of this spending: the NTM P/E ratio of the US hyperscalers has fallen to 22x as of October 2026, compared with a 10-year average of 28x and a historical range of 20x to 38x. This valuation compression has been accompanied by marked underperformance. Over the past year, US hyperscalers have returned only around 3%, compared with nearly 14% for the S&P 500. Current valuations may offer an opportunity for long-term investors who share our positive outlook on AI-driven profitability to add exposure. However, hyperscalers will be frequently tested by the market regarding their ability to generate returns on their substantial AI investments.

The immediate beneficiaries of hyperscalers' investments are the physical layers: chips, infrastructure and energy. These layers provide the scarce capacity needed to train models and deliver AI services, allowing spending to reach them before application monetisation is proven.

Chip demand and pricing power: Chips remain in high demand because need for compute has grown faster than the supply of advanced systems. Chip demand extends beyond AI accelerators to chip components and materials, manufacturing capacity and equipment for production. Associated companies are seeing their pricing power increase significantly, which translates into higher margins and earnings. Consensus NTM EPS (next 12 months earnings per share) estimates for the MSCI ACWI Semiconductors & Semiconductor Equipment Index are now more than six times higher than on November 30, 2022, when ChatGPT was publicly launched, while six-month NTM EPS revisions remain on highly elevated levels around +45% (Figure 10).

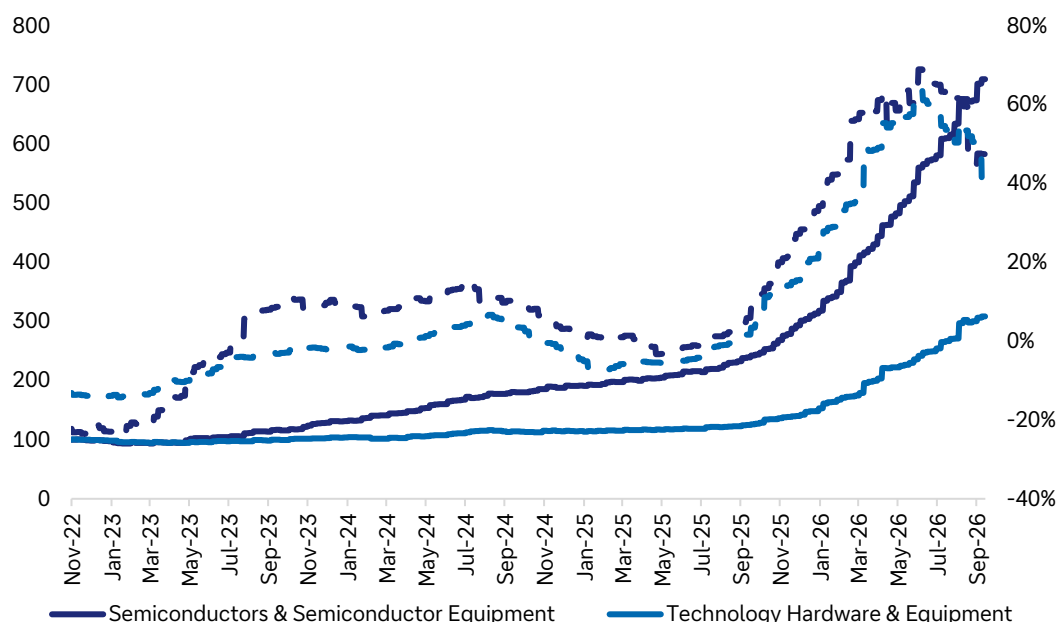
Infrastructure functions: Infrastructure companies turn chips into scalable operating capacity. Processors must be connected, housed, cooled and powered, creating demand for servers, racks, networking, optical interconnects, cooling, power management, electrical equipment and construction services. Consensus NTM EPS estimates for the MSCI ACWI Technology Hardware & Equipment as well as for the Capital Goods index are now 200% and 64% higher, respectively, than when ChatGPT was launched on November 30, 2022. Six-month NTM EPS revisions remain very high at +50% for Technology Hardware & Equipment and solid at +10% for Capital Goods.

Energy generation and delivery: Energy is the physical foundation of the stack. Data centres need reliable energy generation, grid access, power delivery and cooling; local availability of this can limit the pace of capacity expansion. However, this importance has not yet translated into the same near-term earnings acceleration seen in other layers. Consensus NTM EPS estimates for the MSCI ACWI Utilities Index are 45% higher than on November 30, 2022, while six-month NTM EPS revisions have stayed close to 0% for an extended period (see Figure 11).



Figure 10: IT industries with the largest earnings gains so far

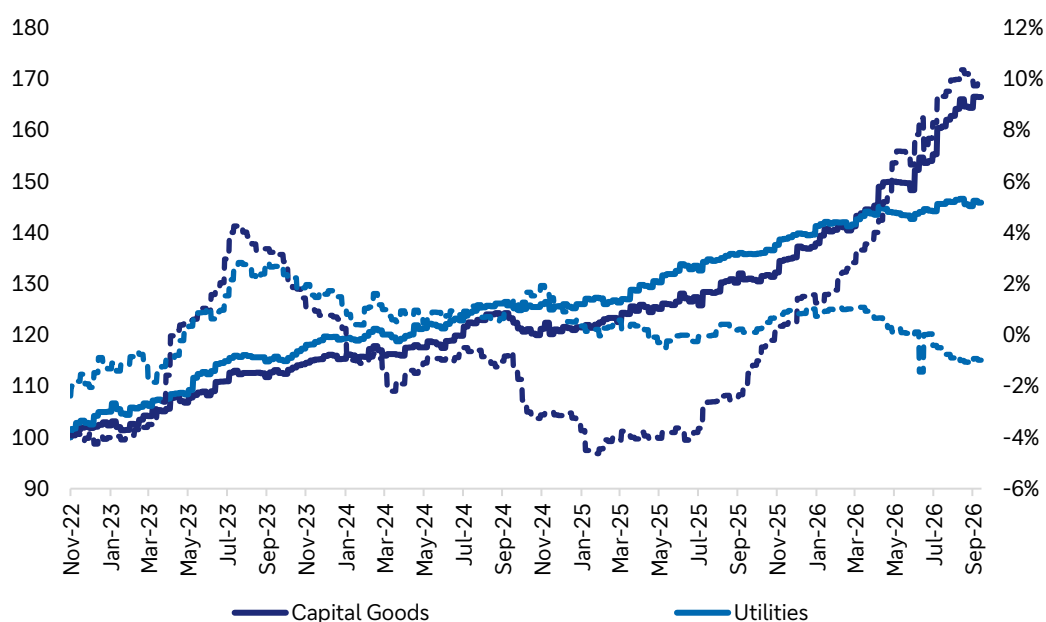
LHS: NTM EPS Growth (indexed: November 30, 2022=100)
RHS: 6M NTM EPS revisions (dashes)



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 13, 2026.

Figure 11: Capital Goods and Utilities deliver constant earnings growth

LHS: NTM EPS Growth (indexed: November 30, 2022=100)
RHS: 6M NTM EPS revisions (dashes)



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 13, 2026.



05

Applications are the cycle's ultimate test: they turn model capability into paid products and services, converting technological potential into adoption, recurring demand, revenue and productivity gains. Demand then flows back through the stack: successful applications drive model usage, which increases inference and compute demand, supports further infrastructure and chip investment, and raises the energy needed to operate that capacity.

Broader investment outlook

Application adoption and capital supply: The key equity question is whether application adoption can expand fast enough to justify the capital already invested. If use cases prove valuable, boost productivity and generate sustainable revenue, demand will flow back through the stack, support returns across multiple layers and link today's capital deepening to future productivity growth. To do this, the buildout must now convert into broad adoption, recurring revenues and measurable productivity gains.

A lagged productivity dividend: We think AI is set to deliver a genuine **productivity dividend** over the coming years even if the precise timing remains uncertain. As we have discussed, productivity gains typically emerge with some lag after major investment cycles and that lag is a reason for patience rather than for scepticism. Adoption must broaden, firms need to redesign workflows and business processes, and entirely new business models are likely to emerge.

Continued capital investment: In the meantime, the capital investment phase itself has further to run. The capex trajectory (see Figure 9) is expected to extend well beyond 2026, which supports the earnings base of the infrastructure, chip, and energy layers while investment opportunities across AI adopters develop. Although capex spending is therefore expected to remain elevated, growing AI adoption and higher revenues should gradually ease the pressure on Hyperscalers.

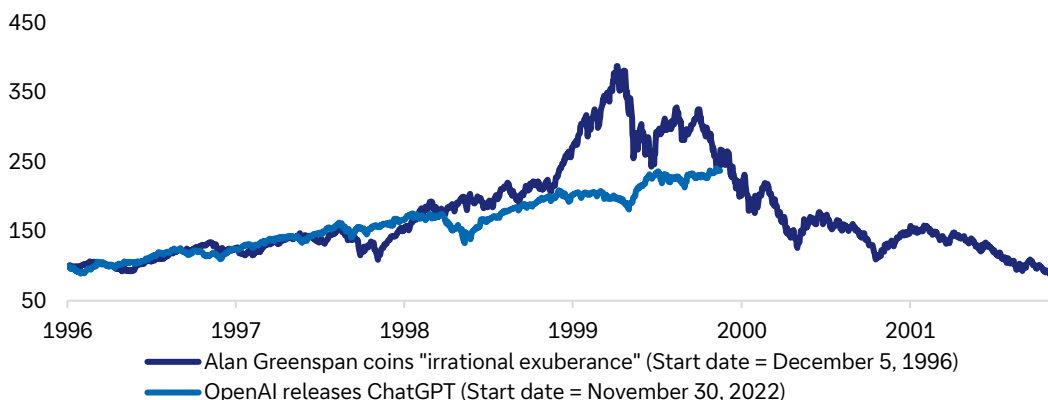
As in previous technology cycles, what begins as a concentrated investment boom can ultimately raise productivity and economic growth across the broader economy, supporting earnings growth well beyond the sectors directly involved in the AI buildout.

Hyperscalers still well positioned: We do not expect a repeat of the "boom and bust pattern" of the '90s for the leading platform companies for the foreseeable future, as Figures 12-14 show, asset prices have increased modestly compared to late '90s, earnings per share are higher and price/earnings (P/E) ratios are more restrained. Today's capex is funded from operating cash flow rather than debt while capacity is being absorbed as it is delivered rather than built speculatively. Hyperscalers are also not simply selling their products and then exiting the value chain, as equipment vendors did in the '90s. They own the cloud, models and end-customer relationship, capture application layer revenue directly, and are themselves among the most intensive adopters of AI. Hyperscalers should therefore themselves remain key beneficiaries of the productivity gains, alongside a widening set of adopters.



Figure 12: A measured AI rally

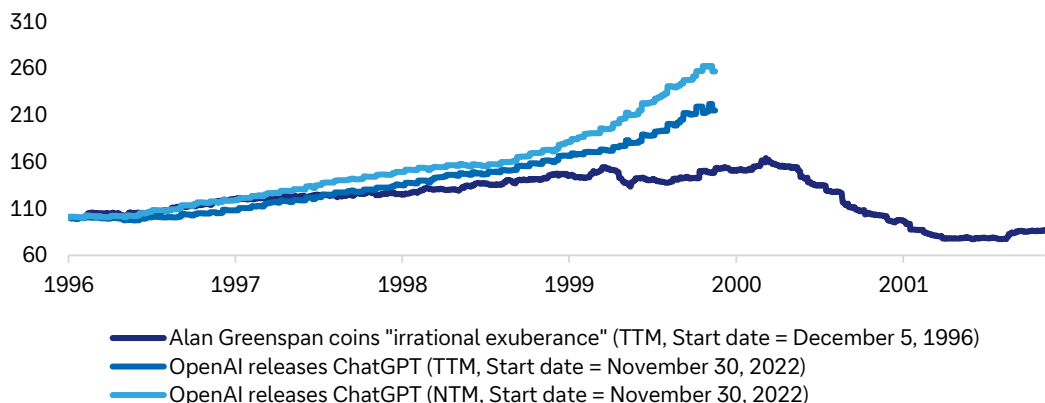
Nasdaq price (indexed: start date = 100)



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 14, 2026

Figure 13: Strong earnings underpin the AI rally

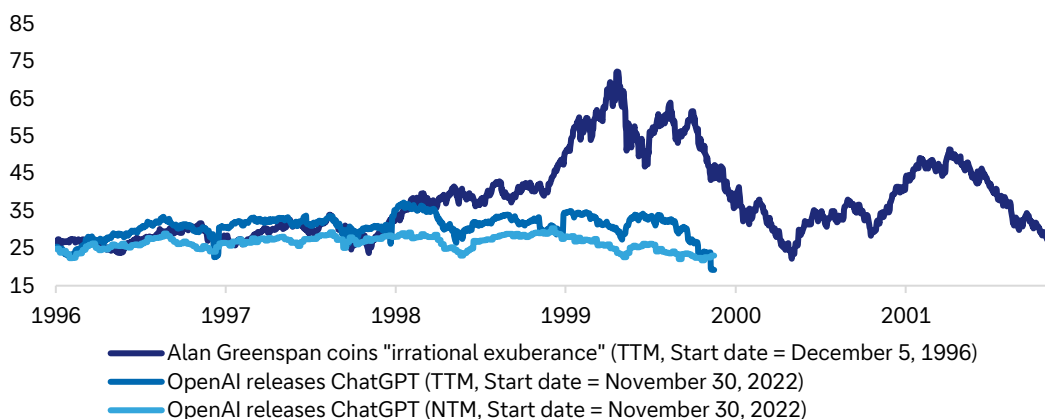
Nasdaq EPS (indexed: start date = 100)



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 14, 2026

Figure 14: Strong earnings keep valuations in check

Nasdaq P/E Ratio



Source: LSEG Datastream, Deutsche Bank AG. Data as of October 14, 2026



Market focus to broaden: Over the coming years, the equity market focus may broaden from the downstream layers of the five-layer cake to the companies using AI most effectively, increasing earnings through higher labour productivity and lowering costs through automation and more efficient processes, i.e. total factor productivity (TFP) improvements, as explained in Section 4. Long-term productivity beneficiaries could include the following:

- **Software & Services:** AI-assisted software development, testing and support lowering the cost to build and serve each customer, while agentic functionality broadens monetization from seat-based towards usage- and outcome-based pricing.
- **Commercial & Professional Services:** Automating research, document review, data preparation, and routine analysis absorbs work that has historically been labour intensive, freeing staff for higher-value client work and expanding capacity.
- **Media & Entertainment:** Localization, dubbing, subtitling, versioning and visual effects are labour intensive processes where AI materially lowers costs. This makes existing libraries and new content more economically viable across more territories and formats than previously.
- **Health Care:** Documentation, coding, prior authorisation, claims processing and scheduling are high-volume, rules-based tasks that require substantial labour. AI can reduce these costs while increasing clinical throughput from persistently scarce staff. In pharmaceuticals, AI can shorten discovery timelines and improve candidate selection.
- **Financials:** Banks have many high-volume, rules-based processes like company analysis, credit assessment, document review, and more that AI can address directly. For insurers, the larger effect may come through risk management rather than costs: better underwriting selection, faster claims triage and stronger fraud detection can improve underwriting results.
- **Industrials:** Predictive maintenance, automated visual inspection, energy optimisation and logistics routing may each provide incremental benefits, but together they can create operating leverage by raising throughput from the existing asset base rather than requiring new capital. Industrials are also where physical AI may eventually have its greatest impact, easing labour scarcity where it is most binding.

06

Conclusion and risks

Three factor economic growth models still provide a useful way to assess the impact of artificial intelligence

AI will influence all three channels driving growth – capital, labour and productivity – but over different time horizons. At present we are now in a period of high AI-related capital investment. The question is how quickly this boosts labour productivity and, eventually, economies' total factor productivity (TFP).

AI is already reshaping US economic growth but its labour market impacts are muted

AI-related investment has already become a visible growth driver, spreading across multiple sectors. Current US labour market tightness may be due to demographic and other issues around labour supply: at present, however, AI appears to be used to augment workers' abilities rather than displace them.



AI investment booms and productivity improvements will not be fully synchronized

The US experience in the late-20th century IT revolution shows how the links between investment and productivity can take years to fully deliver: we expect a productivity dividend, but it will be lagged. Financial markets will, however, move ahead of the data and may not feel constrained by historical precedent.

The different levels of the AI ecosystem are well illustrated by the five-layer cake analogy

Ultimately AI capability must be accompanied by demand and returns from the top down. Hyperscalers will continue to sit at the centre but AI adoption now needs to expand fast enough to justify the capital already invested and expected to be committed over the next few years.

The market focus will broaden to companies which can convert AI adoption into real, tangible productivity gains

But today's leading AI companies look likely to continue to thrive, given that the current buildout is underpinned by strong earnings growth rather than valuation expansion.

Four key risks could affect the relationship between artificial intelligence and economic growth

First, AI monetization may lag expectations, casting doubt on existing and future capital deployment, with implications for overall economic growth as well as individual investment. Second, greater regulation may be attempted changing investment assumptions and thus pricing. Third, geopolitical competition around AI value-chain inputs and export controls, may disrupt AI supply and innovation, with side effects on broader politics and policy. Finally, localised energy-supply shortages may limit AI supply and prove difficult to resolve due to localized political opposition motivated by resource concerns and/or rising electricity prices.



Appendix

Glossary

Artificial intelligence (AI) Technology that enables machines to perform tasks associated with human intelligence, including learning, reasoning and decision-making.

Capital expenditure (capex) Company spending to acquire, upgrade or maintain long-term assets.

Earnings per share (EPS) are net income less preferred dividends, divided by shares outstanding.

Generative AI (GenAI) creates new content, such as text, images, audio or code, in response to user instructions.

Gross domestic product (GDP) is the value of finished goods and services produced within a country in a specific period.

International Monetary Fund (IMF) promotes monetary cooperation, exchange-rate stability and economic development.

Large language models (LLMs) are foundation models trained on immense datasets to understand and generate language and other content.

MSCI is an independent financial services provider of market indices and other analytical tools.

NTM stands for next twelve months in the context of earnings and thus price/earnings ratios.

Price/earnings (P/E) ratios compare a company's share price with its earnings per share; LTM means last twelve months.

S&P 500 Index includes 500 leading U.S. companies and covers about 80% of available U.S. market capitalisation.

Total factor productivity (TFP) measures real-output growth beyond the growth in inputs.

USD is the currency code for the U.S. Dollar.

Vision-language model (VLM) is designed to understand and generate information using both visual and language inputs.



Appendix

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Appendix

Historical performance

	21.10.2021 – 21.10.2022	21.10.2022 – 21.10.2023	21.10.2023 – 21.10.2024	21.10.2024 – 21.10.2025	21.10.2025 – 21.10.2026
S&P 500	-16.2%	14.5%	40.6%	16.6%	16.5%
DAX	-17.7%	16.2%	31.5%	25.0%	5.4%
EURO STOXX 50	-13.6%	19.6%	26.8%	18.7%	12.4%
STOXX Europe 600	-13.0%	13.1%	24.2%	13.6%	15.9%
MSCI Japan	-4.1%	23.4%	22.1%	24.1%	26.6%
SMI	-11.0%	2.5%	22.3%	6.2%	18.8%
FTSE 100	0.6%	10.3%	16.7%	17.4%	17.7%
MSCI EM	-30.9%	10.3%	27.7%	23.9%	19.5%
MSCI Asia ex Japan	-31.3%	12.1%	30.6%	21.6%	17.9%
MSCI Australia	-4.2%	9.6%	25.5%	9.9%	2.8%
2-Year US. Treasury	-4.3%	2.3%	6.0%	4.9%	1.5%
10-Year US. Treasury	-18.1%	-1.9%	10.1%	6.4%	-4.2%
30-Year US. Treasury	-35.3%	-8.6%	14.2%	3.5%	-8.2%
2-Year German Bund	-3.8%	0.9%	3.3%	2.3%	0.5%
10-Year German Bund	-19.6%	-0.6%	7.7%	0.5%	-3.5%
30-Year German Bund	-46.4%	-13.0%	15.8%	-7.5%	-8.2%
10-Year UK Government	-19.4%	-2.4%	9.6%	2.2%	-0.9%
2-Year Japan Government	-0.2%	0.0%	-0.2%	0.0%	-0.1%
10-Year Japan Government	-0.8%	-1.7%	0.7%	-4.1%	-7.1%
EUR vs. USD	-15.9%	8.1%	2.3%	7.1%	-3.3%
USD vs. JPY	29.5%	1.5%	0.7%	0.7%	4.1%
EUR vs. JPY	10.8%	8.0%	2.6%	8.3%	0.7%
EUR vs. CHF	-7.8%	-4.1%	-0.7%	-1.5%	0.3%
EUR vs. GBP	3.5%	-0.2%	-4.4%	4.2%	-3.3%
GBP vs. USD	-18.0%	7.6%	6.8%	3.0%	0.2%
USD vs. CNY	13.3%	1.0%	-2.7%	0.0%	-6.3%
Gold (oz)	-7.8%	21.4%	36.5%	52.3%	-0.4%
Crude Oil (Brent Spot, bbl)	10.5%	-1.4%	-19.4%	-17.5%	77.5%
Copper (t)	-23.4%	2.1%	19.6%	12.4%	36.6%

Source: Deutsche Bank AG, Bloomberg Finance L.P., LSEG Datastream; Data as of October 22, 2026.

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Publication date: October 22, 2026.

058444 102226

Compliance approval date/code: 102026

DP/RD