CIO View

CIO Special

December 12, 2025
Marketing material

AI – the power of large numbers

We believe that artificial intelligence will continue to drive the markets in 2026 – both positively and negatively. Its possibilities remain exciting. But investors will become more selective.

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IN A NUTSHELL

- In the past year, 2025, financial markets were once again under the spell of Artificial Intelligence (AI). Rapidly rising user numbers and ever-increasing investment volumes continued to fuel imagination.
- At the same time, rapid shifts in favorites among AI pioneers, plunging share prices in the AI sector, and debates over financing and capital interconnections revealed the downsides of the dynamism. In addition, China threatens to emerge as a rival in this segment, via sheer scale, quality, and aggressive pricing.
- And yet we expect to see positive impulses dominating. Our year-end 2026 target for the S&P 500 is 7,500 points based on sustained growth in the AI sector. We expect equipment suppliers to be among the main beneficiaries, while end-users are only gradually coming into focus.

Artificial Intelligence – the party goes on but the guests are getting more picky

We take a positive view of AI as an asset manager and believe it could be the key driver of double-digit earnings growth for U.S. equities over the coming years. AI-related stocks are expected to contribute to the drive towards our S&P 500 year-end 2026 target of 7,500 points, a rise of about 9% over the current level. The disruptive dynamism of AI is likely to persist and may continue to create new winners and losers across the entire value chain. We do not deny that this optimistic conviction rests on assumptions that could still be disproven in the years ahead. Fundamental questions remain unanswered. Can today's dominant large language models (LLMs) deliver everything expected of AI, or will other approaches be needed?[1] Will China soon overwhelm the market? Will power supply in the West become a bottleneck? Are the numerous cross-shareholdings among major AI players stabilizing – or destabilizing? And, of course, will there be enough profitable business models to justify trillion-dollar investments? The litmus test for a sustainable AI business model is still to come. At the same time, the speed of AI adoption remains breathtaking, both for private and commercial applications. The pace of innovation too is impressive – just compare the first ChatGPT from 2022 with Google's[2] current Gemini 3 – and both the range and the breadth of applications are expanding rapidly. So, uncertainty also exists in a positive sense. Figure A illustrates perhaps the most compelling argument for AI in general: its exponential spread, shown by the number of tokens processed daily by language models. The Figure also shows how quickly individual models can rise or fall in user favor.

[1] There are prominent skeptics. University professor and founder of two AI companies, Gary Marcus, for example, says: "Today's large language models (LLMs) are essentially still auto-completion programs on steroids. This approach does not deliver the reliability needed for critical applications such as medicine or finance. Simply scaling further will not produce the desired results."
[2] Any mentions of individual securities in this document are for illustrative purposes only and should not be considered a recommendation.

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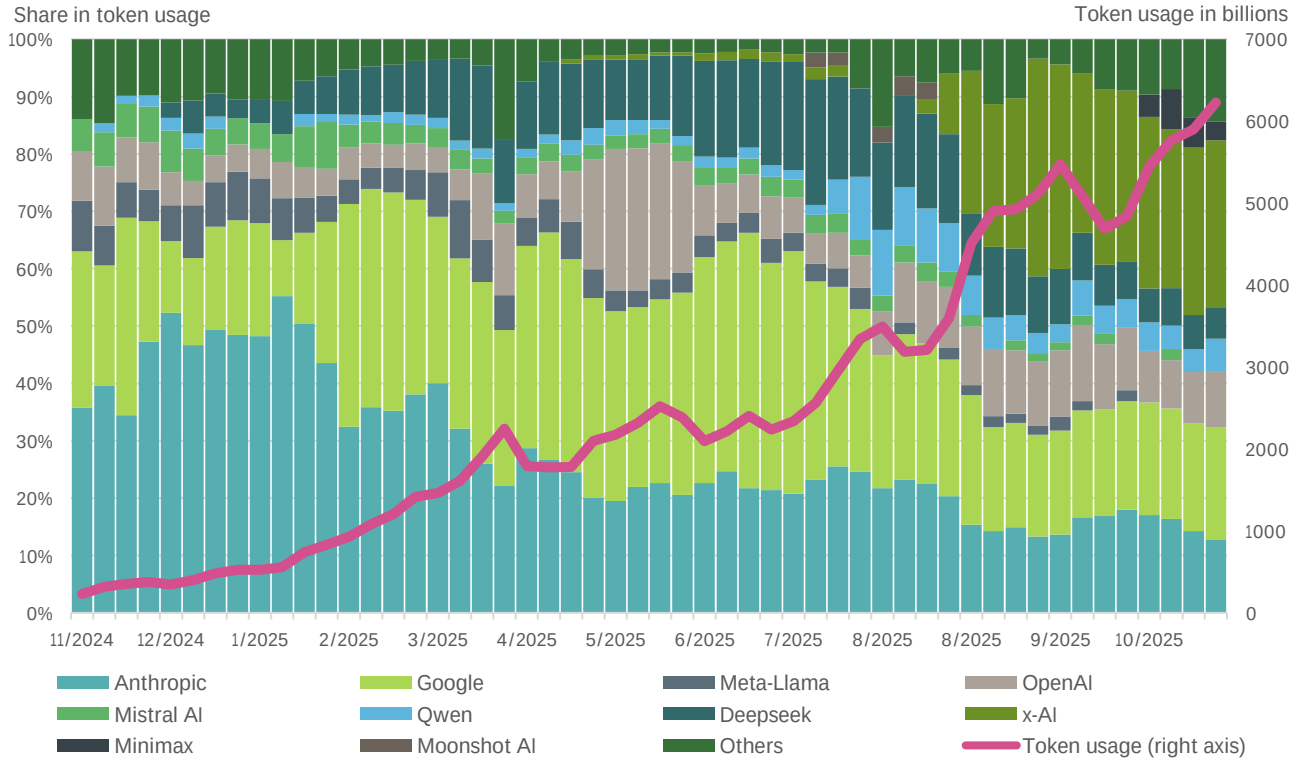
Fig. A: 2,605% increase in demand in just one year – with constant shifts in preferred AI providers



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Sources: OpenRouter AI; DWS Investment GmbH; as of November 16, 2025

AI is expected to remain a market driver creating winners and losers across the value chain

AI has been shaping realities for years – primarily through investment volumes now counted in trillions of dollars. These funds tend to generate corresponding profits for other companies, regardless of whether the investments ultimately pay off. It may therefore appear to be rational to invest amid this exuberance. Whether today's exuberance is irrational will only become clear over time. We believe current valuations are demanding but not irrational, provided that: a) Enough AI applications are purchased to keep the investment wave going. b) The U.S. avoids sliding into recession over the next three years. c) The U.S. Federal Reserve (Fed) does not feel compelled to raise interest rates significantly. Tobias Rommel, Senior Portfolio Manager and Sector Head Information Technology, summarizes: "AI models have evolved within just three years – from large language models to reasoning language models to agent-based models. We are now witnessing the spread of physical AI solutions. The pace of innovation is enormous. This gives us confidence that the number of AI products customers are willing to pay for is likely to continue to grow. Perhaps we should stop waiting for a single killer app and instead prepare for a multitude of specialized products." Sebastian Werner, Lead Growth Portfolio Manager, DWS USA, adds: "The high level of dynamism in the AI universe is expected to continuously produce winners and losers. Investors must repeatedly scrutinize the business models of each individual company and examine their portfolios for potential losers. This initially argues against a buy-and-hold strategy and may favor of an active, tactical selection of individual stocks. In other words, competition for investment capital could be increased within the portfolio context. Given the many open questions that remain, a healthy mix of strongly AI-driven and AI-independent investments may be worth considering."

In this study we aim to take a balanced approach to the AI phenomenon, with the following focus: why AI once again dominated market activity in 2025; what consequences the trillion-dollar investments have; what risks arise from the high concentration of tech stocks in the markets; whether China could disrupt the U.S. AI wave; what successes can be measured so far; and, of course, how valid the comparisons with historical investment bubbles are. We uncover some surprising insights

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– for example, that bottlenecks can have very positive aspects and that even in markets with over 50 percent demand growth, losses can still occur.

1 / 2025 – The year of capex exuberance

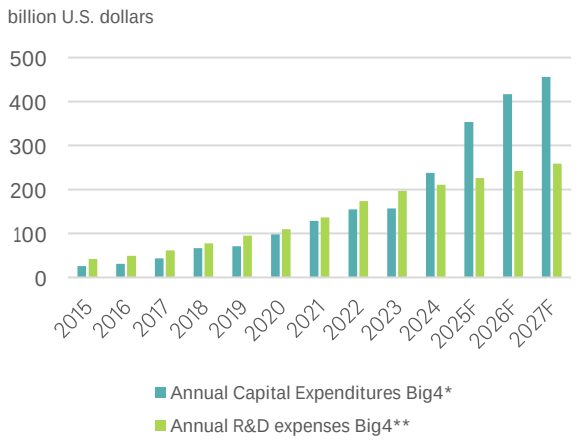
1.1 Investment race – curse or blessing?

Trillions are the new billions – America's Big Tech firms are stuffing their balance sheets

The main reason why AI was once again the decisive topic on the stock market during 2025 is, in our view, that AI investment plans continued to be revised upwards (see Fig. 1.1b). Figure 1.1a shows the development of capital expenditures from 2015 to 2027 (consensus estimates) for the hyperscalers One of those companies went even further in its presentations, projecting an annual global AI investment volume of three trillion dollars by 2030 according to its company estimates.

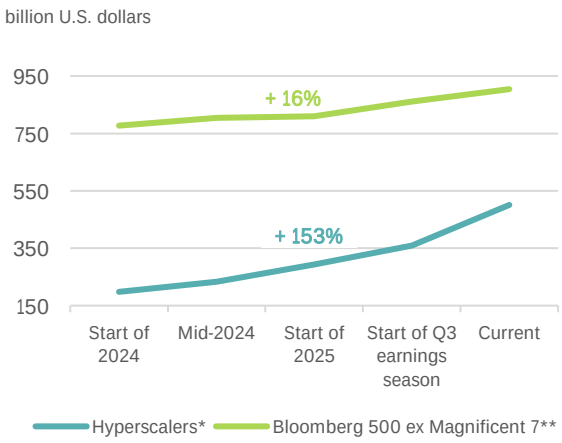
Fig. 1.1 Capital expenditures (capex) and R&D spending of the hyperscalers

Fig. 1.1a: Growth and absolute figures are impressive



*Amazon Web Services, Alphabet, Meta, Microsoft
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 24, 2025

Fig. 1.1b: Consensus estimates for 2026 for the hyperscalers and for the 493 S&P 500 companies excluding the Magnificent 7



*Amazon Web Services, Alphabet, Meta, Microsoft, Oracle;
**Bloomberg 500 ex Magnificent 7 Price Return Index
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

The fact that these high investment volumes did not unsettle investors was due to the overall strong quarterly results, which in our view, reinforce confidence in the long-term earnings power of America's tech elite. Figure 1.2 shows the revenue and profit growth figures for all Magnificent 7 (Mag 7) companies. These numbers are all the more impressive when you consider that this growth is built on already high absolute figures.

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Fig. 1.2: Consensus growth figures of the Mag 7 from 2015 to 2027F

Fig. 1.2a: Revenue growth

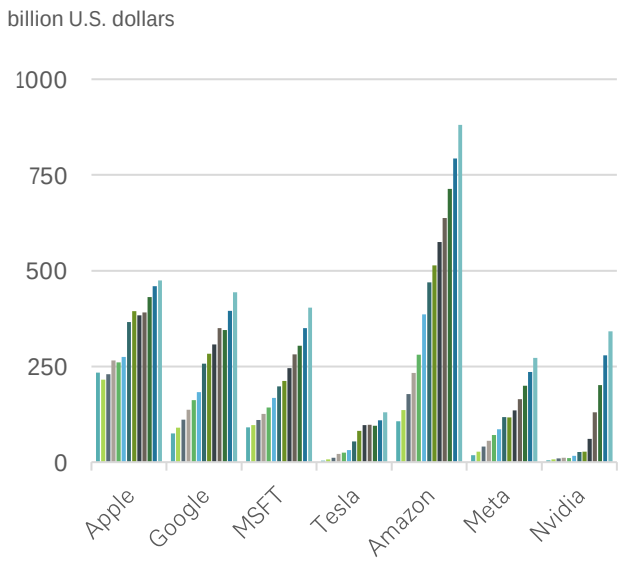
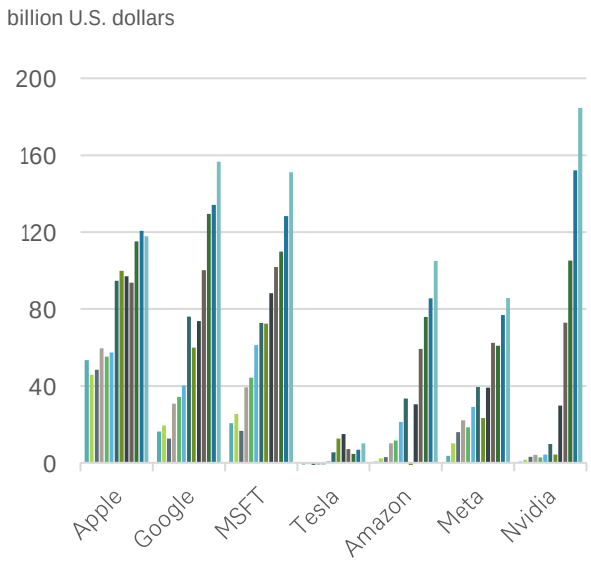


Fig. 1.2b: Profit growth



Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 4, 2025

2 / DWS equity strategy: AI remains an important driver

2.1 DWS economic and market forecasts

Our forecasts for 2026 anticipate a positive impact from the wave of AI investments, particularly on the U.S. economy. We expect a slight acceleration in growth in the U.S. and Europe over the course of the year. However, this can hardly be called a classic cyclical upswing, with growth rates of 2% for the U.S. and 1.5% for the EU (annualized, comparing Q4 to Q3 2026). In our baseline scenario we also do not expect a recession in the G7 countries over the next three years. We think the Fed may cut rates three more times (by 25 basis points each) and the European Central Bank (ECB) is expected to maintain its key rate at 2%. With monetary policy therefore not all restrictive we anticipate a good year for equity markets. Moreover, as we observed again in 2025, listed companies regularly showed their ability to adapt quickly to challenges – tariff policies this time - and consistently managed to achieve earnings growth rates that are higher than overall economic growth.

2.2 Our positioning: AI boom, not AI bubble – with potential upside

We expect AI to continue dominating the markets in 2026. The profits, the investments, the partnerships, the technological innovations – in our view, they are real and they can influence markets and economies. For 2026 we anticipate earnings growth of 16% in the AI-related technology sector; for the rest of the market, we still expect 8% earnings growth, based on current assumptions. In our view, this could push the S&P 500 to 7,500 points by the end of 2026, about 9% above its current level.

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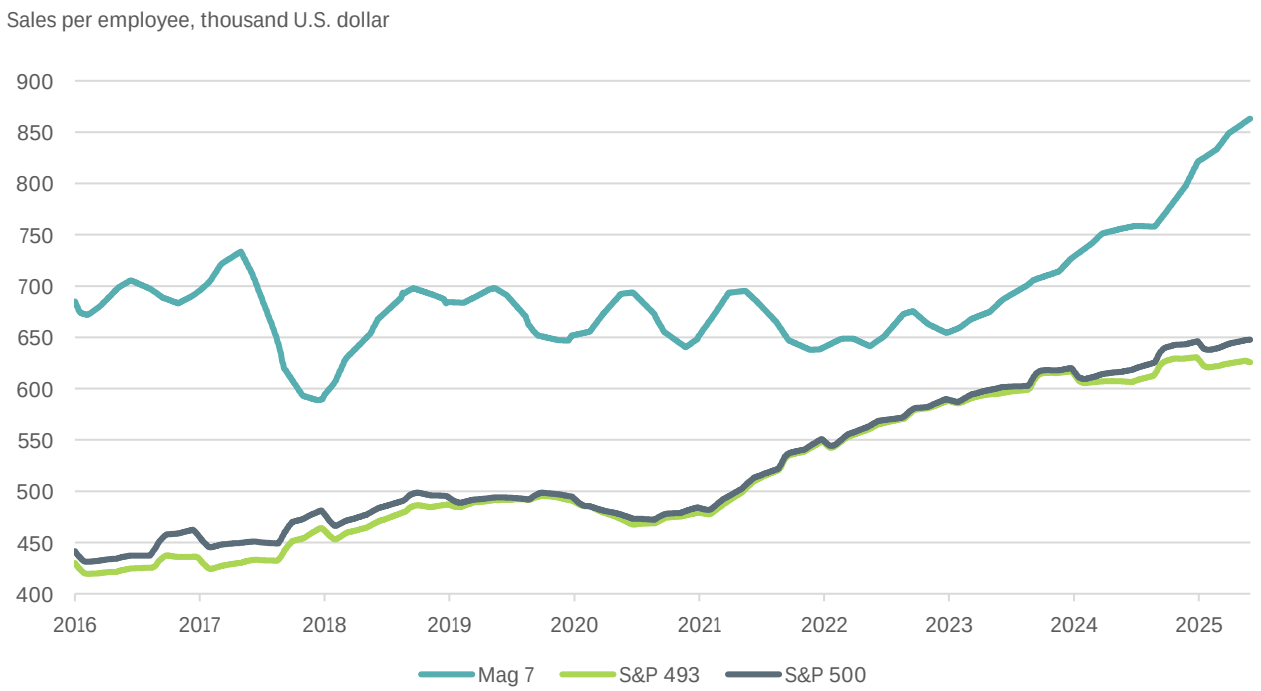
Fig. 2.1: Let's call it productivity growth – the Magnificent 7 are expanding without having to hire



Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 25, 2025

In our view, the main beneficiaries of the massive expansion of data centers are primarily found in four MSCI sectors: Information Technology, Industrials, Communication Services, and Utilities. However, even here, the market is increasingly distinguishing between AI winners and losers, making broad sector recommendations appear insufficiently specific. Our analysis indicates to not only focus on selective individual stocks but also on targeted allocations to subsectors and themes that appear to be benefiting from the AI boom. For example, Asian semiconductor manufacturers that have profited from strong demand for innovative AI chips and supply bottlenecks in memory semiconductors. Or industrial companies that benefit from the electrification trend in general and offer specific product solutions for data centers – such as ensuring power generation, grid connectivity, cooling systems, and similar infrastructure. We expect that in 2026 there may be growing evidence of AI-driven improvements in labor productivity. At the same time we expect concerns about the scale of investment spending and the sustainability of individual business models may keep volatility among AI-related stocks high – not least because the rapid pace of innovation shortens the life cycle of key technical components (especially the latest GPU chips), which is likely to pose additional challenges for data center operators. Otherwise, investors are likely to welcome any indication of AI-driven productivity gains. One such indication can be seen in Figure 2.1, which shows that Mag7's revenues have grown disproportionately to their number of employees. This is particularly important because the major AI providers advertise that they are practicing what they preach, or rather, they like to report on how the use of their own AI tools significantly shortens work steps and therefore frees up workforce.

2.3. Which sectors is AI expected to influence

We divide the AI investment universe into three investable areas: data aggregators (e.g., hyperscalers and/or LLM developers), hardware developers for operating AI (e.g., semiconductors, network components), and companies that apply AI. So far, hardware manufacturers – especially component makers for data centers – have delivered the highest returns. Chip demand is expected to remain robust so long as the race for the most powerful LLM and the growth in AI user numbers continue to drive the need for more computing power. However, we see the greatest potential for the future possibly is in the area of AI users. Here, we are dealing with a wide range of sectors. Whether in industry, healthcare, or education, various

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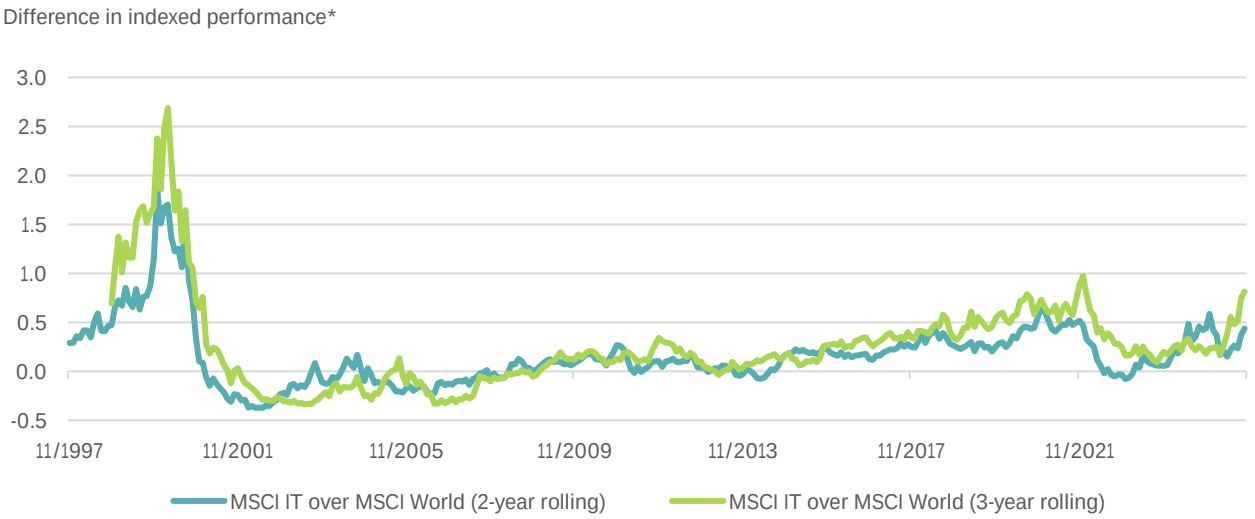
companies can improve their products and reduce costs through AI applications. We are currently seeing major progress in the development of self-driving cars and humanoid robots.

2.4 Why not simply focus on the IT sector?

The IT sector has historically offered above-average growth rates and profit margins...

Even without the AI boom, the IT sector has been among the consistent winners in the stock market, at least since the Great Financial Crisis. As Figure 2.2 shows, with a holding period of three years, the global IT sector has outperformed the broader market at almost every point, except in April 2010. Even with an investment horizon of two years, you would have beaten the market nine times out of ten. However, the picture is more complex: from 2001 to 2008, IT was largely on the losing side in relative terms. In 2025, however, the IT sector is benefiting from the AI boom across various subsectors. Earnings estimates have turned positive again in all subsectors: for both 2025 and 2026, consensus estimates call for 20% growth on average.[3]

Fig. 2.2: Since 2013, the IT index has generally outperformed the MSCI World on a 3-year view



Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 25, 2025
* Performance of the MSCI World IT Index minus the performance of the MSCI World, calculated on a rolling basis for 2 and 3 years.

...and investors know that, meaning the sector is not cheap...

The IT sector is currently trading at a valuation premium of nearly 50 percent compared to the overall market, which is above the average premium of the past ten years. This makes the sector particularly vulnerable if ambitious growth and margin targets are not met. Negative industry news or rising interest rates could also have an impact. In addition, IT exhibits one of the largest discrepancies between reported and adjusted earnings (i.e., generally accepted accounting principles (GAAP) vs. non-GAAP results), driven by high stock-based compensation and the amortization of intangible assets.

...which is why investors may want to consider weighing it equally in the portfolio context

We believe there may be further upside potential in the IT sector and believe that market dynamics in the coming year may create enough volatility to potentially offer better entry points. The AI theme and the sector's structural growth prospects continue to remain supportive in our view. AI winners likely may be found across the entire market: The U.S. remains the country where access to the AI theme is greatest. However, regions like Europe or Japan are driven by entirely different

[3] Consensus estimates for earnings-per-share growth for the MSCI World IT Index: 2025: 14%, 2026: 24%, and 2027: 17%. Source: Bloomberg Finance L.P., as of 12/04/2025.

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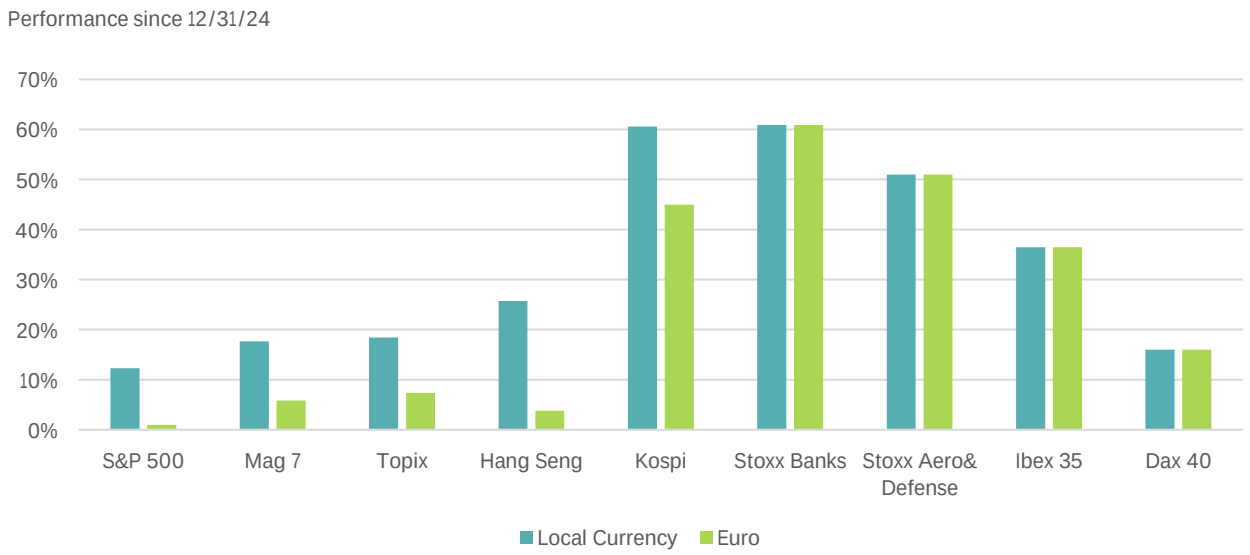
themes than AI. Even this year we have observed that while AI companies dominated, the performance in many other markets – especially from the perspective of non-U.S. investors – was even more impressive.

Fig. 2.3: In 2025, there were bigger winners than U.S. tech, especially from a euro perspective: Global stock markets compared.



Topix based on Topix Index, Hang Seng based on Hang Seng Index, Kopsi based on Korea Stock Price Index, Stoxx Banks based on Euro Stoxx Banks, Stoxx Aero&Defense based on Stoxx Europe Aerospace & Defense Index, Ibex 35 based on IBEX 35 Index, Dax 40 based on Dax.
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

2.5 Do investors close to the AI epicenter have an advantage – or disadvantage?

European investors, in particular, may worry about an information gap, as it seems likely that those in the high-tech ecosystem in Silicon Valley are always a few steps ahead of the rest of the market. On the other hand, the echo chamber of California's AI world – dominated by powerful personalities – also provides an environment where euphoria can turn into hubris. Here, not even the sky is the limit.[4] And even the U.S. market sometimes has to revise its judgments quickly, as the example of Oracle shows. The 40% surge in its share price after announcing AI plans in September was wiped out within two months, with the stock now trading at mid-June levels.

3 / Artificial Intelligence: less a natural bubble than a human-made boom

It's hardly surprising that many parallels are currently being drawn to the last major tech boom. We don't particularly like these comparisons – you quickly find as many differences as similarities. When does a price trend become a bubble, and when is it simply an overvaluation? At what point have the three bubble criteria (disruption through innovation, far above-average valuation, financial leverage) reached critical thresholds? Do we first need to see the absurdities of the turn of the millennium to call it a bubble? Back then, the Nasdaq 100 doubled within six months before reaching its peak.
It's always tricky to compare different price trajectories. That's why we have not limited ourselves to just one comparison. Figure 3.1a shows the Nasdaq's development during its hot phase starting in 1996, and the same index since ChatGPT effectively ushered in the broad AI era at the end of 2022. Figure 3.1b focuses on the top tier – currently The Magnificent 7 –

[4] For example, in November 2025, xAI founder Elon Musk spoke about the possibility of operating data centers in space.

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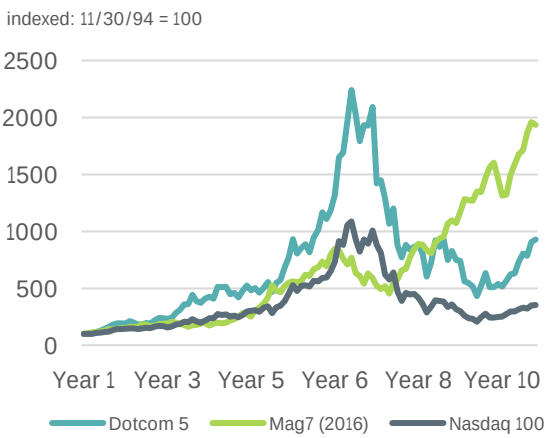
starting in 2016, and compares them with the Nasdaq 100 from the end of 1994 (which was more tech-heavy then than today). The Magnificent 7 have easily outpaced it, with a thirtyfold increase in nine years. But if you look only at the five biggest Nasdaq winners then (the Dotcom 5 in the chart[5]), which already had several years of history, today's performance looks less spectacular. And one important difference must be highlighted: At the turn of the millennium, price gains were primarily driven by valuation expansion (based on metrics like the price-earnings ratio), whereas today's gains are largely based on growing profits, as figure 4.1 further below illustrates.

Fig. 3.1: Price comparison of major indices and company groups then and now

3.1a Nasdaq Composite 1996 vs. 2022

Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of December 2, 2025

3.1b Nasdaq and Dotcom 5 1994 vs. Mag 7 since 2016



Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 25, 2025

Comparisons with major investment periods of the past are also popular for assessing systemic risk. The expansion of the railway network and the fiber-optic network are particularly relevant examples. Figure 3.2a shows the unadjusted investment amounts as a percentage of gross domestic product (GDP). Based on this, the current AI build-out still appears modest compared to previous technology surges. However, some argue that, given the significantly shorter lifespan of AI infrastructure − especially compared to the rail network − these ratios could eventually converge.

...from asset light to asset heavy...

Looking at the accounts shows that the extensive investment plans of the four hyperscalers have transformed them from lean technology companies into capital-intensive infrastructure providers with high recurring investment needs. Historically, these firms underperformed the broader market immediately after a bubble burst,[6] but not just then.

[5] Applied Materials, Cisco, Intel, Microsoft, Qualcomm
[6] Exponential View, Paul Kedrosky, Sparkline, as of October 2025

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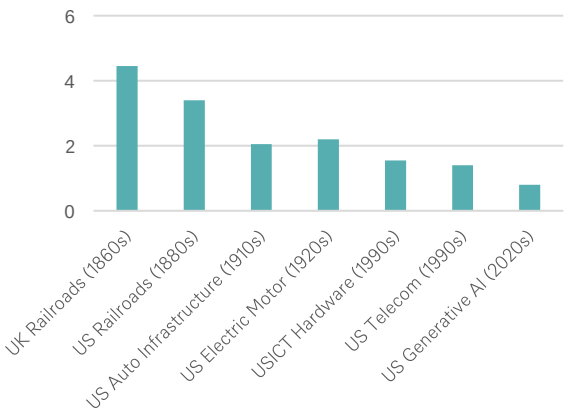
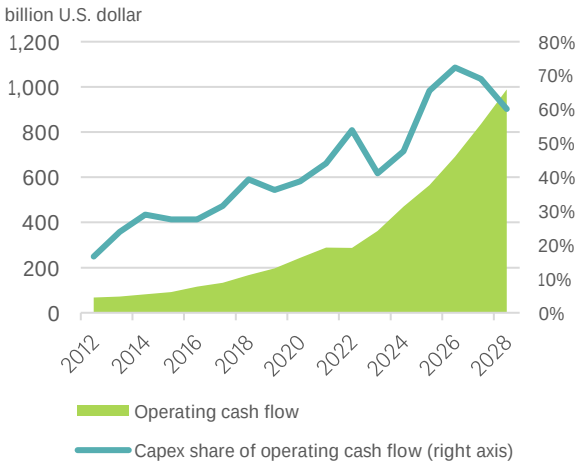
Fig. 3.2: Seen this way, there have already been larger investment waves

3.2a Capital expenditures as a percentage of GDP



Sources: Goldman Sachs, US Bureau of Economic Analysis, Bloomberg Finance L.P., DWS Investment GmbH; as of November 3, 2025

3.2b Operating cash flow and Capex share of the hyperscalers*



* Amazon, Google, Microsoft, Meta and Oracle; consensus estimates for 2025 to 2028
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

...but once the infrastructure is build, it should provide benefits broadly

From a macroeconomic perspective it is almost irrelevant whether those who provide the infrastructure end up sliding into insolvency as a result of overcapacity and collapsing prices. Their legacy can still be used by second-generation companies and ideally, as was the case with the railway network, could lead to years of subsequent productivity gains. One could speak of cross-subsidization of AI infrastructure users by AI infrastructure providers. The parallels to the expansion of the fiber-optic network are clear.

3.1 Even in growing markets, companies can incur losses and underperform

The growth figures for AI usage and expansion are dizzying. However, high volume growth in demand does not always translate into revenue or profit growth – and into surging stock prices. When demand grows by 50 percent but supply grows by 100 percent, overcapacity typically leads to fierce price competition. Nothing illustrates this better than the fate of memory chip manufacturers in the 2000s, shown in Figure 3.3. When supply growth outpaces demand growth for homogeneous goods in capital-intensive sectors with high innovation rates, things can quickly become precarious. In the 2000s, memory chip makers had to push into the market with steep discounts, even at the cost of losses.

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Fig. 3.3: High DRAM bit growth in the 2000s did not lead to stock outperformance (left chart) nor to positive profits (right chart)

Fig.3.3a: Below-average stock market performance

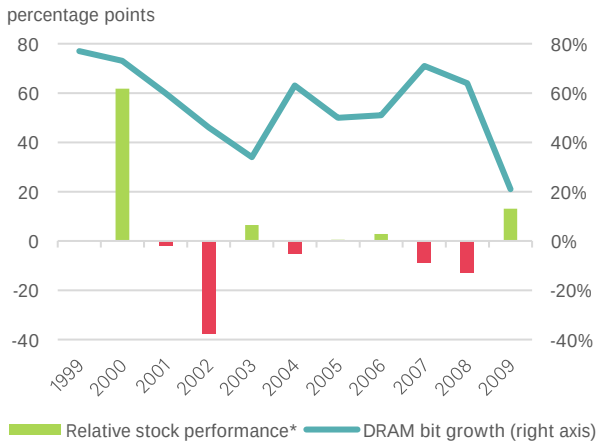
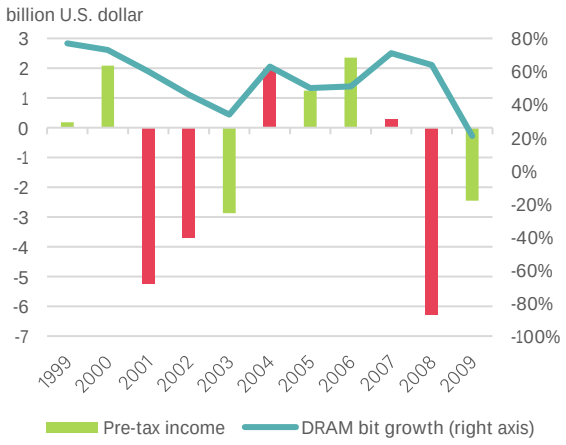


Fig. 3.3b: Revenue decline and losses



*Average performance of Infineon, Micron, and SK Hynix compared to the MSCI World
Sources: Bloomberg Finance L.P.; IC Insights; DWS Investment GmbH; as of February 2015

If we had to decide whether to call the AI phenomenon a bubble or a boom, we would choose the latter. That does not mean, however, that as AI adoption advances along the value creation and utilization chain, there won't be episodes of excess. Already during the course of 2025 it has become clear that investors – even with a topic as structurally significant as AI – are becoming more cautious, drawing interim conclusions, and questioning previous assumptions. And while we believe AI may continue to be a key driver of the positive equity market performance we expect, we are monitoring certain developments closely because they might slow down AI adoption, or alter the framework conditions, or shift the balance of power – within AI providers themselves or between providers and their customers.

We begin by looking at the biggest players in the market – simplified, The Magnificent 7. We examine how their influence manifests in stock indices, how their investment offensive impacts their balance sheet strength, and what lies behind the many interconnections within the industry. Then we turn to the only serious rival to the U.S. in the AI space: China – and how it is leveraging its strengths to compete against American dominance. Fast expansion of power generation capacity is one of China's assets because electricity is, arguably, the industry's most critical bottleneck. However, we also show why bottlenecks can be more a blessing than a curse. Finally, we explain why AI consumes so much electricity, where the limits of this technology lie, and what existing customers have to say about their experience with AI.

4 / Critical developments in the AI universe

4.1 The prolonged stock market rally: digitalization outperformed almost everything

Major AI providers' share prices and profits rose in tandem – only partly driven by AI

Even though the U.S. AI giants (the "Mag 7") have only been moving in step with the rest of the U.S. market (the so-called S&P 493) over the past two months, they have significantly outpaced the market in recent years. As Figure 4.1 shows, earnings expectations for the Mag 7 have also risen consistently faster than those for the rest of the market.

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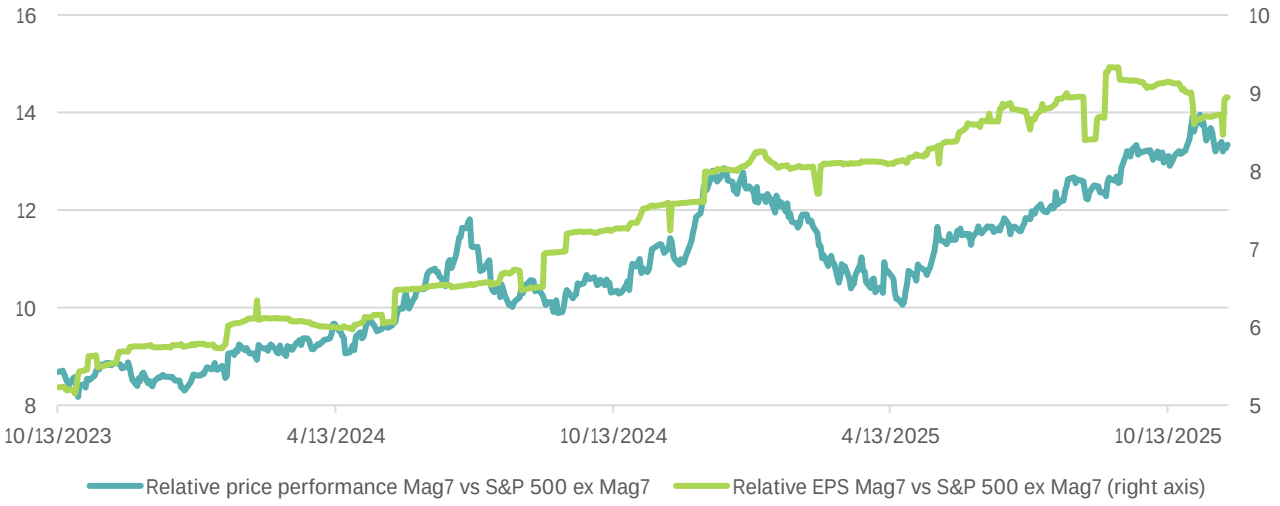
Fig. 4.1: Relative price and earnings trends of the Magnificent 7*



*Based on Bloomberg consensus forecasts for earnings per share (EPS) for the next four quarters
Source: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

Market and power concentration on and off the stock exchange...

As the outperformance of U.S. technology stocks has persisted for several years, debates about market concentration keep resurfacing. The Magnificent 7 currently account for 32 percent of the S&P 500's market value - a record high. Casting the net a bit wider to the 41 names that explicitly generate AI-related revenues, the share rises to nearly half of the index. That degree of concentration is concerning even though it's important to remember that all of these companies (unlike, say, OpenAI, Anthropic, or Mistral) are not solely dependent on AI. Among non-listed companies, a Bank of America study published at the end of October[7] found that the so called "Private Magnificent 7" (OpenAI, SpaceX, Anthropic, Anduril, Databricks, Stripe, xAI) increased their value over the past year five times as much as the listed Magnificent 7.

The dominance of technology stocks is not just an American problem

The significant market power of U.S. technology stocks is also a global issue, due to the dominance of U.S. exchanges. As Figure 4.2a shows, the top ten listed companies account for almost 30 percent of global market capitalization. This means that even a global equity index is heavily dependent on the fortunes of just a handful of firms. What makes this even more alarming is that, if you consider only the free float for index calculation, the entire top ten consists solely of U.S. companies – and eight of them are technology-driven.[8] In the 2000 – 2010 period, the top ten were spread across two to three countries and four to five different sectors.

[7] Unicorns, Decacorns and Hectocorns: The Private Companies Primer", BofA Securities; as of 10/21/25
[8] Measured by the Bloomberg World Index as of November 21, 2025. Taiwanese TSMC, however, repeatedly manages to break into the top ten. According to official GICS sector classification, four of the eight technology-oriented companies are assigned to the Communication Services or Consumer Discretionary sectors. But that does not change the fact that investors primarily view them as technology companies – especially since three of them belong to the hyperscalers

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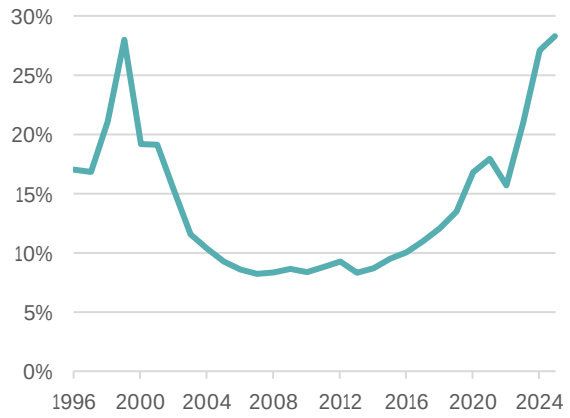
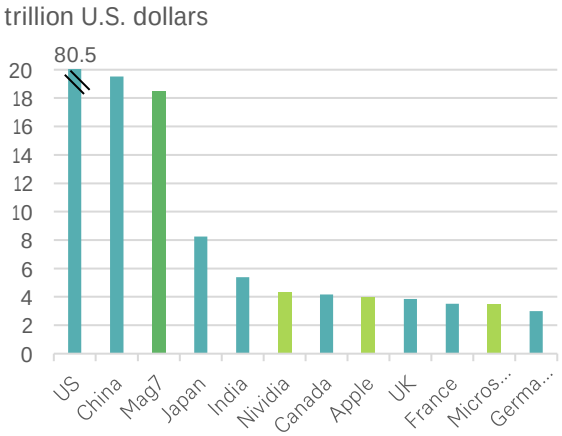
Fig. 4.2: Global dominance: concentration and market capitalization of the largest companies

4.2a Share of the 10 largest companies in global index*



* Measured by the Bloomberg Developed Markets Large & Mid Cap Price Return Index and by market capitalization
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

4.2b Market capitalization by countries, companies, and indices



The data represent the aggregated market capitalization (in USD) of all active, primarily listed shares.
Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 21, 2025

4.2 How much firepower do the AI heavyweights still have?

Financial concerns are probably the last thing one would associate with the U.S. technology sector as a whole. However, investors are paying attention to two developments in the market. First, some AI-related companies have stock or bond prices, or credit default costs that reflect a fair amount of skepticism. Second, structural changes in the numbers of the leading (listed) AI players are being noticed. For a long time, low investment, strong cash positions, and abundant free cash flow generation were their hallmarks. But with the capital-intensive race for the best LLM, the balance has shifted somewhat. While this has little in common with the excesses of the late 1990s – as we will show in the next chapter – the aura of unlimited resources no longer surrounds the AI sector.

Some pure plays still continue to report losses....

The fact that some heavyweights in the AI universe are not publicly listed, and that listed companies do not break out their pure AI activities, makes valuation even more challenging. Reports suggest that the company at the epicenter of the AI boom, OpenAI, may have incurred significant losses this year, based on publicly available information. Similar challenges could affect other LLM developers.

The established players may need to get creative – in bonds....

This year, the bond market has been tapped heavily by the tech sector. Among the largest bond issuers were Meta (USD 30 billion), Alphabet (USD 24 billion), and Oracle (USD 18 billion).[9] According to UBS, bond issuance by the U.S. technology sector has risen by 115 percent compared to 2024. Morgan Stanley[10] estimates that in the coming years, roughly half of AI investments in the tech sector may not be able to be financed with internal funds. However, investors do not welcome every spending spree equally – as Meta and Oracle have experienced, with their share prices suffering after announcing major expenditures.

.... and a more progressive accounting approach.

Hedge fund manager Michael Burry – known for his bets against the U.S. housing market in 2007 – recently drew attention to changes in accounting practices within the industry. All four hyperscalers and Oracle have extended the depreciation

[9] Bloomberg Finance L.P.; as of: 12/5/25
[10] "Bridging a $1.5bn Data Center Financing Gap"; Morgan Stanley; as of 7/16/25

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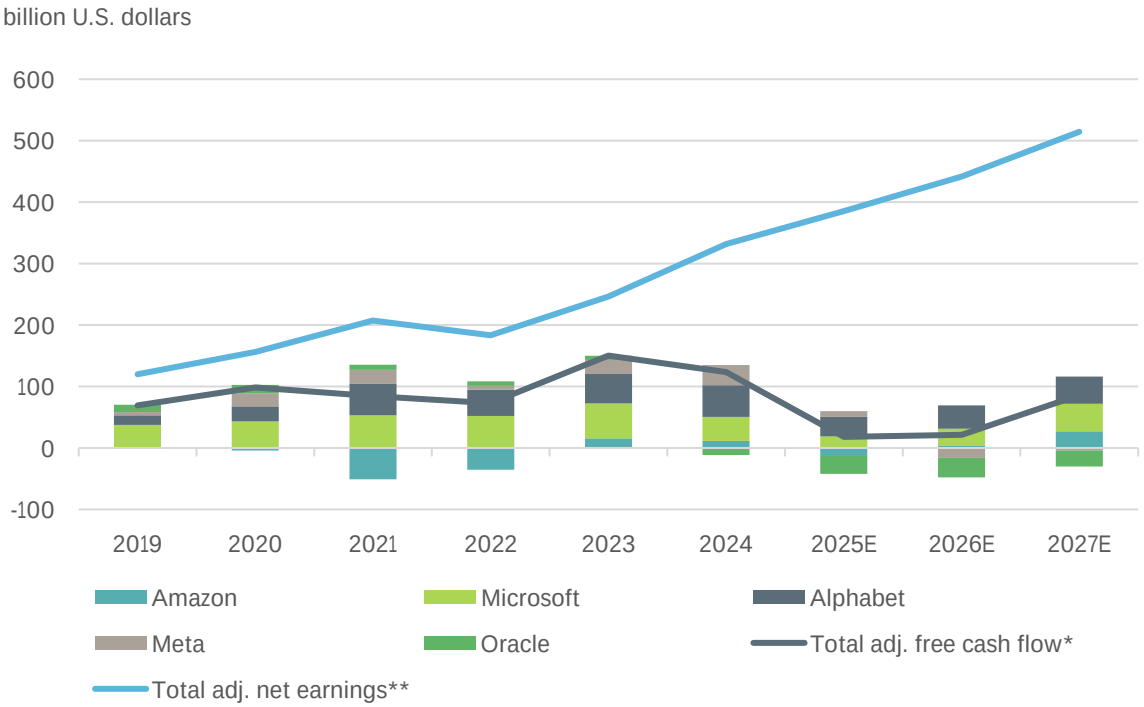
period for their technical equipment between 2020 and 2025; Alphabet, for example, from three to six years. If acquisition costs for technical gear double, the depreciation expense in the income statement is halved − amounting to several billion dollars. Meta noted in its nine-month report[11] that simply extending the assumed useful life of servers and network systems from 4.5 to 5.5 years reduced depreciation by USD 2.3 billion and increased net income by USD 2 billion. Whether the renewal cycle for the most demanding AI learning systems and applications truly spans five years is hotly debated in the market.[12]

Fig. 4.3: The gap between profits and free cash flow



* Free cash flow acc. to CROCI: Adj. EBITDA minus tax minus change in NWC minus capex. **Adj. for stock option costs.
Sources: Bloomberg Finance L.P., DWS CROCI ; DWS Investment GmbH; as of November 24, 2025

The top chart shows that, taking into account the investment plans of the five major hyperscalers (as well as employee stock option programs), a gap is opening up between net profits and available funds. In addition, since 2022 these five companies have collectively reported a net debt position rather than net cash.

Revenue today, costs tomorrow

What should also be kept in mind in this context is that the substantial investments by the hyperscalers and other companies tend to result in revenue and profit for equipment suppliers, while for the buyers they only gradually impact earnings through depreciation. According to Bloomberg[13] consensus estimates, depreciation for the five hyperscalers is expected to almost triple from USD 88.5 billion in 2024 to USD 254 billion, while revenue may increase by only about 40%.

Circularity – curse or blessing? In the end demand may ultimately decide

[11] Meta's quarterly report dated September 30: In January 2025, we completed an assessment of the useful lives of property and equipment, which resulted in an increase in the estimated useful lives of most servers and network assets to 5.5 years, effective January 1, 2025. Based on the servers and network assets placed in service as of December 31, 2024, the financial impact of this change in estimate included a reduction in depreciation expense of USD 2.29 billion and an increase in net income of USD 1.96 billion, or USD 0.76 per diluted share, for the nine months ended September 30, 2025.
[12] See Bloomberg's article by Chris Bryant from November 11, 2025
[13] Bloomberg Finance L.P.; as of 12/8/25

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In the third quarter there were numerous announcements about partnerships, funding rounds, and financial cross-linkages within the AI sector. Everyone seems to be fueling everyone else (when the cross deals of Oracle, Nvidia, AMD, and Broadcom were announced, the market capitalization of these four firms increased by USD 636 billion immediately afterwards). The AI wheel must keep turning, and if one AI firm is short of cash, they may be helped – directly or indirectly – by a capital injection from one of their peers. Whether these numerous crossholdings will one day prove to be accelerants or stabilizers remains to be seen. It seems clear, however, that for now they push the day of reckoning into the future. The contracts are partly quite flexible, with payment streams scheduled for several years ahead, which could increase the chances that profitable AI-related business models may have emerged to meet the payment obligations. Yet how resilient these linkages are will ultimately be decided by demand. The negative share price reactions of companies most intertwined with OpenAI after the release of Google's Gemini3 show just how fast investors can become nervous.

5 / China – the land of extensive AI possibilities?

If you boil AI infrastructure down to chips and LLMs, it quickly becomes clear that the U.S. and China currently play leading roles in the AI race. Concerns about China catching up have frequently been cited as one of several factors behind U.S. administrations' decisions to introduce certain sanctions and export restrictions on China. There is broad consensus that China still lags several years behind, particularly Nvidia, in developing the most powerful GPUs. At the same time, voices are growing that say these export restrictions will only accelerate China's catch-up, as the country is taking significant steps towards supply autonomy at every stage of the AI production chain. Nvidia's CEO Jensen Huang warned of this risk early on – driven, of course, by concerns over losing revenue. His recent prediction that China could win the AI race is also unlikely to be free of self-interest. His remark that China's AI sector benefits from cheaper electricity and looser regulation should be seen as a pointed message to the U.S. government. Beyond long-term geopolitical questions, the development of China's AI sector is also crucial for market participants of Western AI providers. In a risk scenario, China could flood the world with low-cost AI.

5.1 A systemic comparison

Different framework conditions

In a technology where scale plays such an overriding role, the world's most populous country naturally enjoys certain advantages. China has not only a population of 1.4 billion versus 350 million in the U.S., but also 7 million software engineers versus 4.4 million. Added to this is the closer integration of state and private enterprise, which can be advantageous when making strategic economic policy decisions. China's more relaxed approach to data protection is also beneficial for training LLM models. Then there is the previously mentioned access to cheap electricity. Goldman Sachs estimates that the U.S. may struggle with energy shortages at least until 2030, while China is expected by 2030 to build up reserve capacity equal to three times the projected electricity demand for data centers[14]. (More on the power competition in Chapter 5.3.)

China's AI solution

The presentation of the open-source model DeepSeek-R1 in January sent the Western AI world briefly into a state of shock. It was developed for under USD 6 million – a fraction of the cost of GPT-4 or Claude 3[15]. The models run on older chips, are resource-efficient, and can be integrated directly into existing processes – such as in public administration, healthcare, or industry[16].

Fig. 5.1: Competition among equals? A duel between American and Chinese AI programs

[14] Goldman Sachs: Global Markets Daily: "Power Bottlenecks Could Slow the US in the AI Race With China"
[15] "From DeepSeek to ByteDance: American Tech CEOs Sound Alarm on China's AI Breakthroughs"; Techstartups; as of 1/24/25.
[16] "China's AI Shock? What DeepSeek Disrupts (and Doesn't)"; The Diplomat; as of 1/31/25

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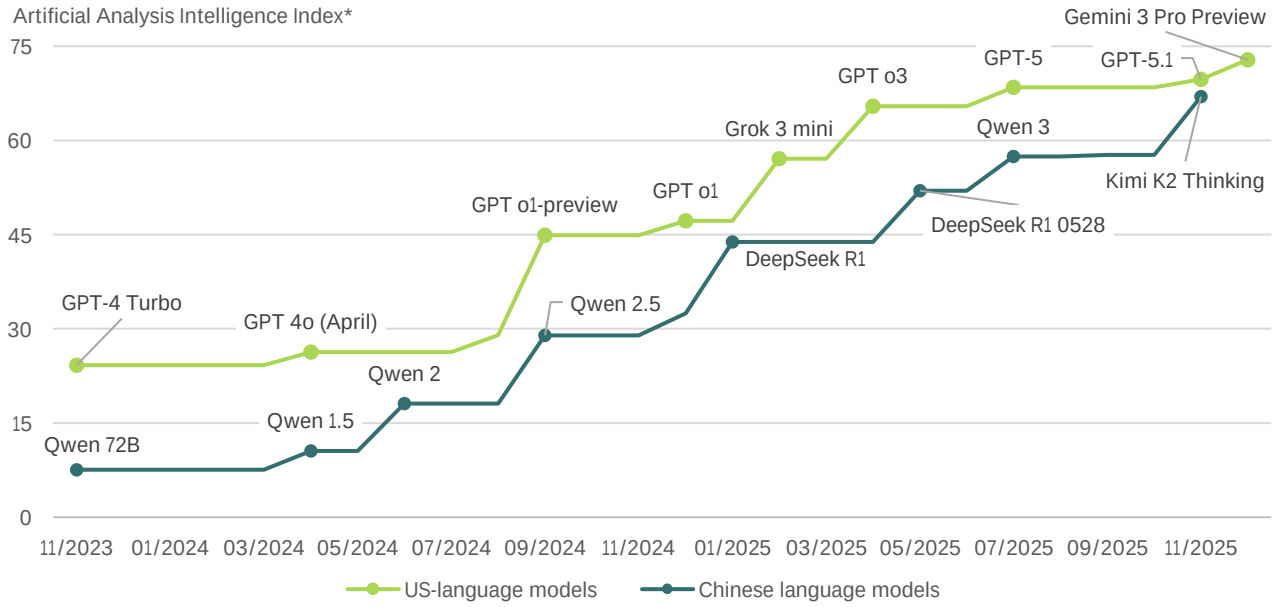

* Composite benchmark that evaluates the overall capabilities of AI systems
Sources: Artificial Analysis AI, DWS Investment GmbH; as of October 2025

On the publicly accessible site LiveCodeBench, nearly 300 available LLMs are compared. While U.S. products generally hold many top spots, Chinese solutions also appear in the Top 10. Recently, an until-then unknown reasoning model shot straight to second place (before Google's Gemini 3 moved ahead at the end of November): Kimi K2 Thinking by Moonshot, which combines strong technical performance with relatively low usage costs. The fact that U.S. markets did not react prompted Bloomberg to headline: "Are DeepSeek Moments Now the New Normal?"[17] The article notes that some Silicon Valley software firms have already switched to this model though they have not publicized it widely due to anti-China sentiment in the country. However, Airbnb's management publicly announced that its customer service AI bot uses Alibaba's Qwen because it is fast and cost-effective.

The system question

China and the U.S. are pursuing different microeconomic strategies in the AI race. China relies on open, adaptive structures and affordable products that enable rapid diffusion. The U.S. cultivates proprietary systems focused on control and monetization. Who leads in the long run may not be determined solely by the quality of the model but by the ability to organize value creation broadly and sustainably – and by the institutional frameworks that make such organization possible. Whether business customers in the West will be convinced by the simplicity and cost advantage of Chinese products, or whether security concerns will make them stick with U.S. products, remains to be seen. What happens may vary greatly from country to country.

5.2. Preferred customer: the state – not very price-sensitive and interested in redundant structures

Despite its current dominance, AI is not just a security-relevant issue for China and the U.S. The magic word is AI sovereignty, which argues that no sovereign country should depend on others for a potentially strategic key technology like AI. To what extent this is even theoretically possible (chips, rare earths), or whether it is merely about geographic control over data centers and LLMs, is another question. But the potential revenues, as more countries build their own infrastructure, are significant. Analysts at Oppenheimer[18] have floated a figure of USD 1.5 trillion.

[17] "Are DeepSeek Moments Now the New Normal"; Catherine Thorbecke in Bloomberg L.P.; 10/17/25
[18] Nvidia update; Oppenheimer & Co Inc.; 7/15/25

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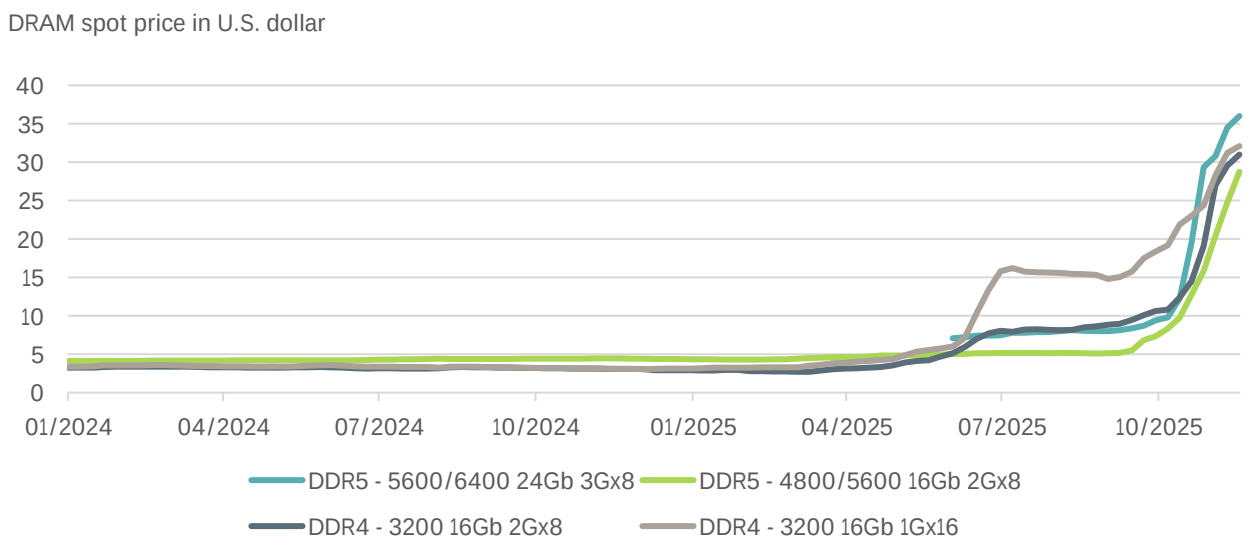
The state can support its AI companies not only as a potential customer, but also through regulation, subsidies, or guarantees – such as those recently requested by OpenAI. Although the White House rejected this proposal (which was not made under the company's official name) within hours, it is hard to imagine that the USD 500 billion Stargate AI project initiated by Donald Trump at the start of his second term – despite being driven by private firms – would receive no government assistance if it ran into trouble. After all, Trump himself described it as a project for national security.

6 / Bottlenecks – curse or blessing?

Throughout the past year, bottlenecks have increasingly been mentioned in connection with AI. Where triple-digit growth rates are being pushed, there is always a choke point somewhere in the value chain. The most frequently cited are electricity and chips (whether GPUs or memory chips). Equity and debt financing for growth could also be added to the list, given the increasingly complex funding models. These are necessary in part because analysts at Morgan Stanley[19] believe that only about half of the USD 3 trillion in data center investments projected by 2028 can be covered through internal financing. The extremes of this supply-demand imbalance are illustrated by Nvidia's gross margin of around 75 percent (and its sold-out products), as well as the price trends for memory chips – see Fig. 6.1. Contract manufacturer TSMC is also currently unable to keep up with production and says that it does not intends to raise capacity to match demand.

Fig. 6.1: The downside of success: memory chip prices



Sources: Bloomberg Finance L.P.; DWS Investment GmbH; as of November 24, 2025

Bottlenecks also arise in completely different areas, especially in the construction of data centers: suitable building sites, government planning and permitting offices, rare earths, or any other type of equipment for data centers. For example, the CEO of GE Vernova, a manufacturer of power generation equipment, told the Wall Street Journal[20] that his industry would not be able to provide the capacity needed to meet the expected additional electricity demand in five years, but only in 10–15 years. Perhaps Chinese companies could step in here(?). As of today, GE Vernova's turbine production is sold out through 2028.

[19] "Bridging a $1.5bn Data Center Financing Gap"; Morgan Stanley; as of 7/16/25
[20] When AI Hype Meets AI Reality: A Reckoning in 6 Charts"; WSJ; 11/14/25

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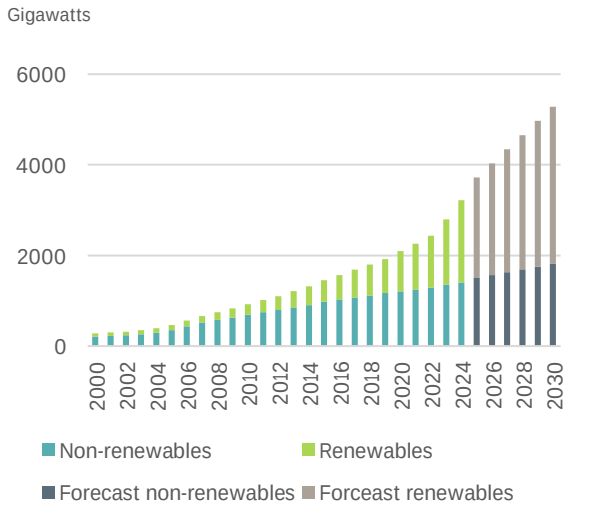
6.1 Could the AI race be decided in the power market?

Bottlenecks can be seen in a positive light. Sebastian Werner, Lead Growth Portfolio Manager, DWS USA, says: "Bottlenecks may impose discipline, and so power shortages could prevent the U.S. AI sector from going on an excessive expansion spree. This could smooth the AI cycle and thereby help extend it." This does not apply to China, where there is anything but a shortage of electricity. Could the race for AI dominance therefore be decided by power availability? China is already far ahead in adding new capacity, as Fig. 6.2a shows, and the gap is expected to widen in coming years. Roughly speaking, a new data center requires about 1 GW of power capacity – about as much as 100,000 households. A 2024 report by the U.S. Energy Agency[21] estimated that data centers consumed 4.4 percent of U.S. electricity production in 2024. By 2028, this could rise to 7–12 percent, as the agency expects the U.S. will need 134 gigawatts of additional supply by 2030 to satisfy the power hunger of new data centers. Currently, only 12 additional gigawatts of production per year are planned. In China, by contrast, according to the five-year plan, 200–300 gigawatts of renewable capacity are expected to come online annually[22]. In 2025 alone a total of 500 GW is slated for installation, 400 GW of which from renewable sources.

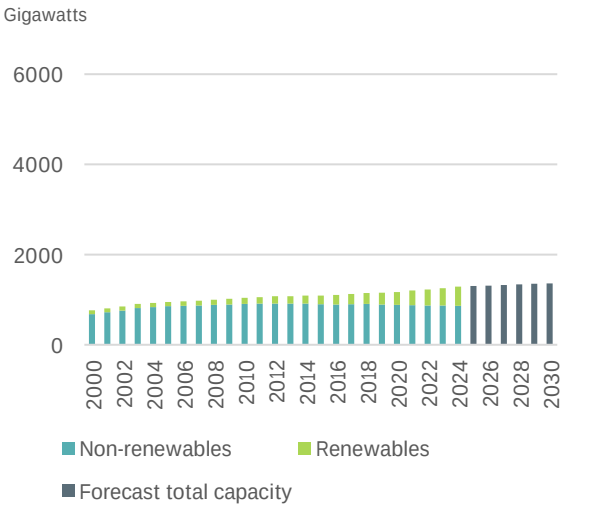
Fig. 6.2: China expected to leave the U.S. behind in expanding new and renewable power generation capacity

6.2a China forecasted to double its capacity within four years



Sources: Ember Energy, The State Council of the People's Republic of China, DWS Investment GmbH; as of November 2025

6.2b Hardly any new capacity expected to come to market in the U.S.



Sources: Ember Energy, The State Council of the People's Republic of China, DWS Investment GmbH; as of November 2025

6.2 Do bottlenecks slow down the build-up of overcapacity?

The chip manufacturer Nvidia mentioned bottlenecks as a potential risk for the first time in its latest financial report. "Our customers' and partners' ability to secure capital and energy and to build complex datacenter infrastructure in a timely manner" are among the factors that have – or could in the future – impact our revenue. That reflects the company-specific negative view of the impact of bottlenecks. From a macroeconomic perspective, however, one could argue that these bottlenecks might actually curb the potential scale of future overcapacity. At present, it appears that the completion of data centers is outpacing the demand from customers who monetize AI applications.

....and offer investment potential?

At least two hyperscaler CEOs have publicly stated that they see a greater risk in building too little rather than too much capacity. Right now, everyone wants to outpace the others in the AI race through sheer investment volume – a classic

[21] DOE Releases New Report Evaluating Increase in Electricity Demand from Data Centers"; U.S. Department of Energy; 12/20/24
[22] The State Council of the People's Republic of China

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suboptimal behavior in terms of the prisoner's dilemma. They are therefore still intent on eliminating all bottlenecks. From an investor's perspective, companies working to minimize these bottlenecks may present opportunities depending on market conditions.

7 / AI – Models, customers, costs

7.1 Large language models vs. world models

It would be hard to deny that the AI products launched so far, based on large language models (LLMs), are already achieving incredible results and helping to enable new business models, accelerate workflows, and significantly reshape some sectors. But are they enough to reach the next stage of AI and justify trillion-dollar investments? We are wary of giving a definitive answer. First, the views of two prominent skeptics. Yann LeCun, NYU professor and former head of AI of Meta − essentially one of the midwives of today's AI[23] − says, "I haven't made many friends in Silicon Valley, including at Meta, when I said that within three to five years this model [world models, not LLMs] will be the dominant model for AI architectures and no one in their right mind would use LLMs of the kind we have today. Think of generative AI as a highly gifted parrot. It can mimic complex patterns, produce diverse content, and occasionally surprise us with creative, brilliant results."[24]

Are LLMs as a dying model?

Gary Marcus, emeritus professor of psychology and neuroscience at New York University and founder of two AI companies, supports this view, saying: "Generative AI is essentially still a kind of 'autocomplete on steroids,' trained to predict the next word in a sequence. Current AI tools lack true understanding of the world and struggle to perform even basic tasks reliably, as issues like hallucinations and the inability to verify their own outputs persist." He adds: "As more companies develop AI models, the technology becomes commoditized, eliminating significant competitive advantages and driving prices down," and "the industry is finally starting to realize that LLMs are not the solution. I remain convinced that achieving Artificial General Intelligence (AGI) within this century is possible. Although I'm often labeled an AI critic, I'm more of an AI realist − I want AI to succeed, but I'm still not convinced that LLMs are the right path. The field currently lacks a solid theoretical foundation, and I believe real progress will require a fundamental change in approach."[25]

....or with more potential than can realistically be tapped in the near future?

Unsurprisingly, there are plenty of voices arguing that LLMs will continue to offer significant potential for the foreseeable future. Google's CEO Sundar Pichai said at an internal conference in 2018: "AI is one of the most important things humanity is working on right now. It's more important than, say, electricity or fire."[26] From a somewhat more neutral perspective, Daniel Rock of Wharton University stated: "Our study found that large language models (LLMs) meet the criteria for "general-purpose technologies."[27] They are ubiquitous. They improve over time and then require and foster complementary innovations, new techniques, new training, and new organizational structures to fully exploit the benefits of the technology." The study also found that LLMs − AI programs that process massive amounts of data to generate content − will have significant impacts on jobs, but this will only happen after a long period.[28] And Andrew McAfee, Principal Research Scientist at MIT Sloan School of Management, adds: "Occasionally, a technology emerges that is so powerful and broadly

[23] Yann LeCun is considered one of the "Godfathers of AI" and revolutionized AI research through the development of Convolutional Neural Networks (CNN), which are now standard in image and speech recognition. For his foundational contributions to deep learning, he received the Turing Award in 2018 – often referred to as the "Nobel Prize of Computing" – as well as other honors such as the Queen Elizabeth Prize for Engineering. Currently, he is advancing the next generation of AI with the concept of "world models," which go beyond the limitations of large language models and aim for a deeper understanding of the real world.
[24] Quoted from the WSJ article "He's Been Right About AI for 40 Years. Now He Thinks Everyone Is Wrong" dated November 14, 2025, presented by LeCun at a sympo-sium at the Massachusetts Institute of Technology in October.
[25] Quoted from an interview in the study "Top of Mind – AI: In a Bubble" by Goldman Sachs Research, October 22, 2025.
[26] Quoted by CNBC; February 2018.
[27] This refers to technologies that can fundamentally transform an economy.
[28] "How Large Language Models Could Impact Jobs"; by Knowledge at Wharton; 09/10/2024

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applicable that it accelerates normal economic progress. And like many economists, I believe generative AI falls into this category."[29]

7.2 The cost of learning and the finiteness of data

In this chapter, we let AI explain where it sees its own limits and problems, and we include its answers where we agree and add to them where something is missing. CoPilot came up with this opening summary: "Generative AI has enormous potential but faces significant challenges, particularly in connection with large language models (LLMs). The main issues are skyrocketing training costs, data bottlenecks, systemic limitations compared to more advanced model approaches, and persistent quality problems such as hallucinations."

Cost explosion – an inevitable problem?

The cost of training the latest LLMs has risen exponentially in recent years. While earlier models like GPT-3 in 2020 were estimated to cost between USD 2 and USD 4 million, the estimated costs for newer models such as Gemini or GPT-4 in 2024 ranged from USD 30 million to over USD 190 million − just for computing power. One study states: "Compute costs have increased proportionally with rising compute requirements: from around USD 1,000 for the first Transformer model in 2017 to Google's Gemini Ultra model in 2023, whose training cost USD 120 million. By the end of 2024, training costs for leading GenAI models are already closer to USD 200 million."[30] Another study found that training costs for 'frontier' models have grown by a factor of 2.4 on average since 2016.[31] The reasons for this increase lie in several factors: first, models follow scaling laws that require a drastic increase in parameter count and training data to achieve performance gains. Second, demand for specialized hardware such as GPUs and TPUs, along with massive energy consumption, drives costs even higher. Looking ahead, costs are expected to continue rising under linear scaling, even though new approaches − such as more efficient training algorithms, specialized chips, or parameter-efficiency methods - could flatten the curve. While there are ongoing debates about data quality and comparability, Chinese LLM developers regularly claim that training their models costs only a few million dollars.

The finiteness of freely available data

In addition to financial hurdles, LLMs are increasingly facing data shortages. Although they are trained on massive amounts of text and image data from the internet and other sources, the supply of high-quality, human-created text is approaching a saturation point. Moreover, available data often contains biases, errors, or copyright restrictions, leading to quality issues and legal risks. To overcome these bottlenecks, synthetic data is increasingly being generated. However, this carries the risk of so-called model collapse: when models are trained primarily on AI-generated data, errors and biases can reinforce themselves, ultimately threatening the quality and diversity of models. This scenario is also referred to as data doom − a state in which the data foundation for further progress is exhausted.

Hallucinated realities

Furthermore, there are quality issues such as hallucinations − the generation of factually incorrect but convincingly phrased text. Causes include insufficient training data, incorrect model assumptions, or internal biases. Furthermore, models reflect the subjective perspectives of their training data, which can lead to unfair or discriminatory outcomes. Decision-making within neural networks is often a black box, making traceability and error correction difficult.

7.3. From AI agents to AI robots: where the AI journey is headed

Once again we let AI describe how it envisions its own future − the results are even more impressive to us than those in the previous chapter.

Below are AI's unedited responses.

[29] Andrew McAfee, Principal Research Scientist at MIT Sloan School of Management.
[30] Bruegel, "The tension between exploding AI investment costs and slow productivity growth", from October 2024
[31] Cornell University, "The rising costs of training frontier AI models" from May 2024

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AI Agents as autonomous workforce

"AI agents will take over repetitive and complex tasks in companies – from code generation to process optimization. These systems operate independently, orchestrate workflows, and significantly boost productivity, making them a core component of digital transformation."[32]

Humanoid and collaborative robots (Cobots)

"Robots will no longer be limited to industrial settings but will also be deployed in healthcare, logistics, and hospitality. Thanks to AI and sensor fusion, they can respond flexibly, interact safely with humans, and perform tasks autonomously, paving the way for new business models. "[33]

Autonomous driving at level 3

"The first vehicles with true Level 3 functions are entering the market, taking over responsibility for limited periods. In parallel, robotaxi and shuttle projects are starting in geofenced zones, paving the way for scalable mobility services."[34]

Generative AI in the Industry

"Combinations of AI agents and generative AI enable adaptive robotics and voice-controlled machine operation. This lowers costs, increases efficiency, and opens up new automation possibilities in manufacturing and logistics."[35]

7.4 And what about its use in the economy?

It is the Gretchen question – or rather, the trillion-dollar question – of AI: Will companies achieve enough productivity gains to generate sufficient demand for AI solutions at sustainable prices so that the massive investments made so far pay off? The data, to put it cautiously, is still not very conclusive. That isn't necessarily bad, as there are plausible reasons. Perhaps even two to three years after widespread adoption, there still isn't enough historical data available; or perhaps the successes are simply hard to measure. In particular, the direct link between AI usage and workforce reduction will not always be easy to trace. In the semi-scientific realm, you can find a wide spectrum of views on AI's benefits. An MIT study[36] from the summer dramatically declared that 95 percent of companies using generative AI had no measurable success to show. At the other extreme the so-called Iceberg Project[37] is attempting to methodically assess how many jobs in the U.S. could become obsolete as a result of deploying AI agents. The figure of 11.7 percent – equivalent to a wage sum of USD 1.2 trillion – certainly fires up the imagination of those concentrating on operating margins. Not entirely altruistically, a study by model provider Anthropic projects productivity gains of 1.8 percent of GDP over a ten-year horizon[38], calculated on the most frequently used prompts and the work relief provided by common AI models. This places Anthropic toward the upper end of many (including academic) studies. Before we let a few companies anecdotally share how and to what benefit they use AI, we should cite private service provider Challenger, Gray & Christmas, which reported in early November that AI was the second most frequently cited reason for layoffs in October. Thirty-one thousand of the 153,000 lost jobs were attributed to AI.[39]

Technology and IT Services[40]

Indian IT companies such as HCL Technologies, LTIMindtree, and Coforge are showing early signs of nonlinearity and productivity gains through the use of AI, with revenue per employee increasing. TCS reports productivity improvements in the software engineering lifecycle and expects these to rise from single-digit levels to 20–25%. Amazon Web Services reduced Java application time from days to hours, while Palo Alto Networks reported a 30–40% productivity boost for developers using Copilot tools. LTIMindtree achieved productivity gains of 30–40%, compared to previous improvements of 5–10%. HCL Technologies recorded efficiency gains of 25–30% in coding, 40–45% in testing, 50–60% in legacy system modernization, and 40–50% in business operations.

[32] Digital-magazin, ITWELT
[33] Techobserver, Produktion (mi connect)
[34] Automotive market, Automarkt News
[35] Fraunhofer Institut
[36] Harvard Business Review, "Beware the AI experimentation trap" from August 2025
[37] Project Iceberg
[38] "Estimating AI productivity gains from Claude conversations"; Antrophic; November 25, 2025
[39] "October Challenger Report," Challenger, Gray & Christmas; November 6, 2025
[40] Source of all 4 subsegments: Bloomberg Finance L.P., as of 11/27/25

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Financial Services

Canadian banks such as RBC, TD, BMO, and CIBC are achieving operational efficiency gains through AI-driven automation and virtual assistants, with CIBC saving approximately 200,000 hours company-wide. Mastercard saved 1,200 hours in 28 days using Microsoft Copilot and reported an average improvement in fraud detection of 20% compared to previous AI implementations. HSBC drastically reduced transaction analysis time with AI – from weeks to days. J.P. Morgan implemented over 400 AI use cases across various business areas, particularly in monitoring and fraud detection, with potential productivity gains of 30–40%.

Retail and Consumer

Retail is leading the way in AI investments. Companies such as Nike, Puma, Under Armour, and Lululemon are reportedly using generative AI for product design and marketing. Retailers like Amazon, Wayfair, Warby Parker, Sephora, Ulta, Puma, and Under Armour leverage AI to improve customer service and personalize recommendations, resulting in higher conversion rates and improved productivity.

Telecommunications

The telecommunications sector is achieving cost savings and productivity gains through the use of AI, with Deutsche Telekom, Telenor, and Swisscom standing out for their early and ambitious AI strategies. Tata Communications has integrated AI into all its products and operational processes, delivering improvements in quality, efficiency, and speed – particularly in troubleshooting and network planning.

8 / Conclusion: AI likely to remain an important market theme for the foreseeable future

2025 was marked by ever-larger investment sums and deeper interconnections among the biggest AI firms. The stock market has generally welcomed this but recently has become more selective, as the winds in this dynamic industry can shift quickly. Given the enormous price gains, it's no surprise that investors are also pondering parallels with the late 1990s' bubble. We view current trends more as a boom than a bubble. The pace of innovation remains high, and both private and professional adoption of AI continues to advance. The speed of investment has exposed numerous bottlenecks within the AI supply chain – particularly in semiconductors, power generation, and data center infrastructure. We still see many potential beneficiaries for the 2026 stock market year. AI is expected to continue to be disruptive, creating relative winners and losers. For investors, monitoring risks and opportunities will remain important. China's activities May warrant close monitoring. In our view, its AI industry may be well positioned to significantly shape the global market.

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Glossary

Amortization is an accounting term which refers to the periodical reduction of the book value of intangible assets (such as patents) or bank loans.

Artificial intelligence is the theory and development of computer systems able to perform tasks normally requiring human intelligence

A balance sheet summarizes a company's assets, liabilities and shareholder equity.

Bloomberg Developed Markets Large & Mid Cap Price Return Index is a float market-cap-weighted equity benchmark that covers the top 85% of market cap of the measured market.

A bubble is characterized by prices surging higher than warranted by fundamentals, followed by a drastic drop in prices as a massive sell-off occurs.

Buy and hold is an investment strategy where an investor buys stocks and holds them for a long time.

Capital expenditure (Capex) are funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment.

Credit default swaps (CDS) is a financial derivative that allows an investor to swap or offset their credit risk with that of another investor.

Cyclical is something that moves with the cycle.

The Dax is a blue-chip stock-market index consisting of the 40 major German companies trading on the Frankfurt Stock Exchange.

In relation to currencies, depreciation refers to a loss of value against another currency over time.

The dotcom bubble was a rapid rise in U.S. technology stock equity valuations fueled by investments in Internet-based companies during the bull market in the late 1990s. The value of equity markets grew exponentially during this period. The bubble bursted between 2001 and 2002 with equities entering a bear market.

The Euro STOXX Banks is an index that tracks a supersector of the relevant benchmark index Euro Stoxx. Companies are categorized according to their primary source of revenue.

The European Central Bank (ECB) is the central bank for the Eurozone.

The financial crisis refers to the period of market turmoil that started in 2007 and worsened sharply in 2008 with the collapse of Lehman Brothers.

Free Cash Flow (FCF) is a measure of financial performance calculated as operating cash flow minus capital expenditures. It shows how much cash a company is able to generate after deducting the money required to maintain or expand its asset base.

Free float refers to the number of shares of a company that can be publicly traded in the secondary market.

Generally accepted accounting principles, or GAAP, are a set of rules that encompass the details, complexities, and legalities of business and corporate accounting.

The gross domestic product (GDP) is the monetary value of all the finished goods and services produced within a country's borders in a specific time period.

The Group of 7 (G7) consists of the finance ministers and central-bank governors of the seven major advanced economies as reported by the International Monetary Fund: Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. They meet to discuss primarily economic issues.

The Hang Seng Index (HSI) is a freefloat-adjusted market-capitalization-weighted stock-market index in Hong Kong. It tracks the 50 biggest and most traded companies on the Hong Kong stick exchange.

Hyperscalers are large cloud service providers, which can provide services such as computing and storage at enterprise scale.

The IBEX 35 Index is a market-capitalization-weighted index comprising the 35 most liquid Spanish stocks traded in the Madrid Stock Exchange General Index.

The Korea Stock Price Index (KOSPI) captures the performance of the 759 companies listed on the Korean stock market.

Magnificent 7 is a name for the group of the 7 largest stocks in the S&P 500.

Market capitalization, in the context of an individual firms, is the number of shares issued multiplied by the value of the shares.

Monetary policy focuses on controlling the supply of money with the ulterior motive of price stability, reducing unemployment, boosting growth, etc. (depending on the central bank's mandate).

MSCI is a company providing indices and other analytical tools for investors.

The MSCI AC World Information Technology Index captures large- and mid-cap securities across 23 developed- and 26 emerging-markets classified in the Information Technology sector.

The MSCI World Index tracks the performance of mid- and large-cap stocks in 23 developed countries around the world.

The Nasdaq-100 is an equity index which contains the 100 biggest common stocks listed on the Nasdaq Stock Market.

Operating Cash Flow is an accounting term that measures the amount of cash generated by a company through its usual business activities.

The price-to-earnings (P/E) ratio compares a company's current share price to its earnings per share.

A recession is, technically, when an economy contracts for two successive quarters but is often used in a looser way to indicate declining output.

The S&P 500 is an index that includes 500 leading U.S. companies capturing approximately 80% coverage of available U.S. market capitalization.

The Stoxx Europe Aerospace & Defense includes companies based in Europe whose primary business is the manufacture, service, supply and distribution of civil and military aerospace equipment, systems and technology, and civil and military defense and protective services equipment, technology, systems and services.

The Topix (Tokyo Stock Price Index) captures all companies (almost 2000) of the First Section of the Tokyo Stock Exchange.

The U.S. Federal Reserve, often referred to as "the Fed," is the central bank of the United States.

Valuation attempts to quantify the attractiveness of an asset, for example through looking at a firm's stock price in relation to its earnings.

A valuation premium is the excess a buyer is willing to pay for one asset relative to other assets.

Volatility is the degree of variation of a trading-price series over time. It can be used as a measure of an asset's risk.

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