

Artificial intelligence update

February 2026

AI update

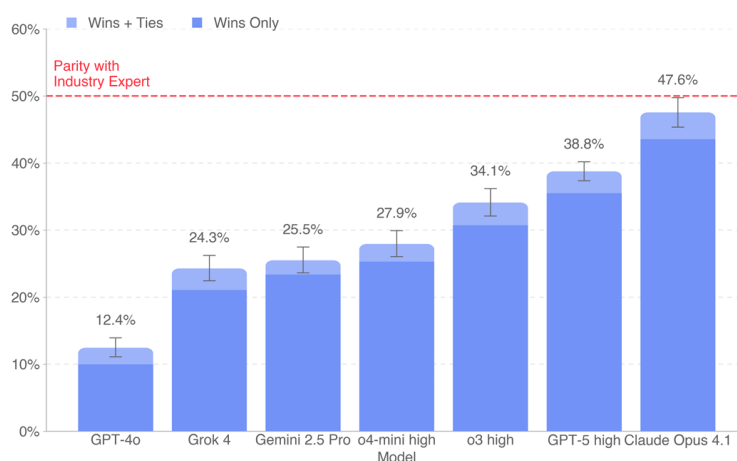
There are lots of various AI research pieces being published with views ranging from it is a bubble (Jeremy Grantham, GMO) to “future generations will look upon this time the way we look upon the Renaissance in Italy or the Scottish Enlightenment” (Bridgewater, Head of AI, Jas Sekhon), although Bridgewater does also conclude “there is a reasonable probability that we will soon find ourselves in a bubble.”

The paper is an informational background piece providing updates on various streams of AI development. AI is a key secular theme, as detailed in our latest ‘Annual Secular Outlook’ paper, and AI is a priority area of strategic investment research for Frontier, as included in our latest ‘Look Forward’ paper. It is an area that we will continue to evolve our research and thinking as AI development progresses.

AI capability

There are differing views provided on how AI technology is advancing or not. One analysis assessed the ability of AI models to complete realistic work tasks at levels approaching expert humans and that this was increasing with new models. It is noted that this is research released by an AI developer, OpenAI, but the research did rate a competitor model (Anthropic Claude) more highly, which reduces suggestions of bias.

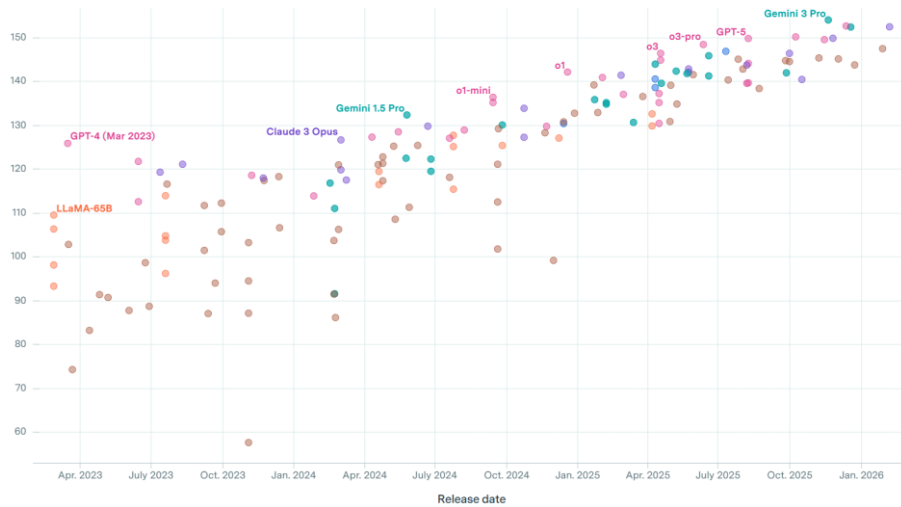
Chart 1: AI model % of time exceed human professional



Source: ‘GDPval: Evaluating AI model performance on real-world economically valuable tasks’, Patwardhan et al, OpenAI, September 2025

Other research shows the improving effectiveness of AI specifically in software engineering. While, the Epoch AI capabilities index based on different type of reasoning (textual reasoning, multi-modal reasoning, software programming, math) shows significant progress over the last year.

Chart 2: Epoch Capabilities Index (ECI)



Source: Epoch AI

A counter perspective is that hallucinations are in some cases at particularly high levels (e.g. greater than 40% rates of incorrect responses).

AI is able to outperform a human on increasingly more individual tasks, but humans are required to perform a combination of tasks. AI is currently still poor in the following key areas:

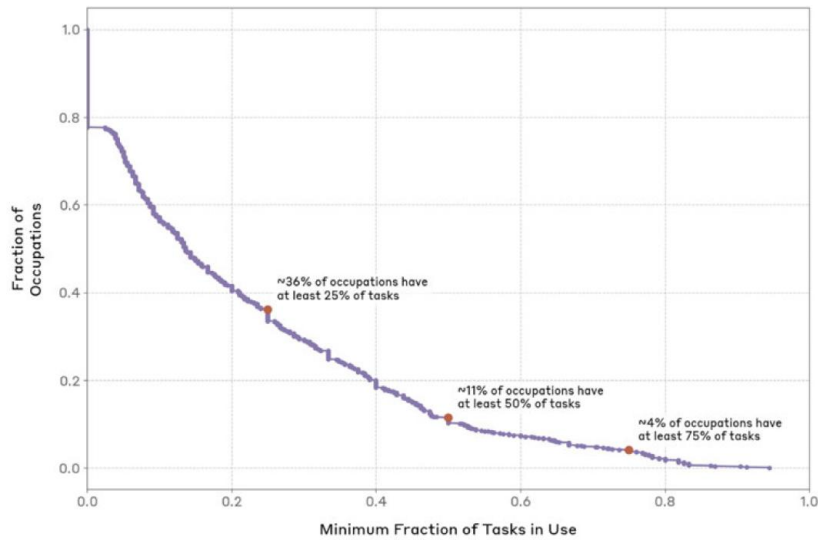
- Continual learning and extended memory;
- Long-term planning;
- Creativity.

AI productivity

Similarly, there are differing perspectives on the productive impact of AI. Pessimists reference a MIT study that claims only 5% of corporate generative AI pilot schemes showed any improvement in profitability, while optimists reference a piece from Wharton where around 75% of companies claim a positive return from AI investment.

A Stanford report on depth of AI usage suggests that 36% of occupations are using AI for 25% of their tasks, while the Ramp AI Index estimates the share of US businesses paying for AI tools has risen to 47% from 23% at the start of 2025.

Chart 3: Depth of AI usage across organisations



Source: Stanford AI Index report 2025

The productivity impacts of technology developments can be significant but not fully captured in economic statistics. US economic productivity and tech productivity have picked up since ChatGPT's launch but this could be entirely coincidental.

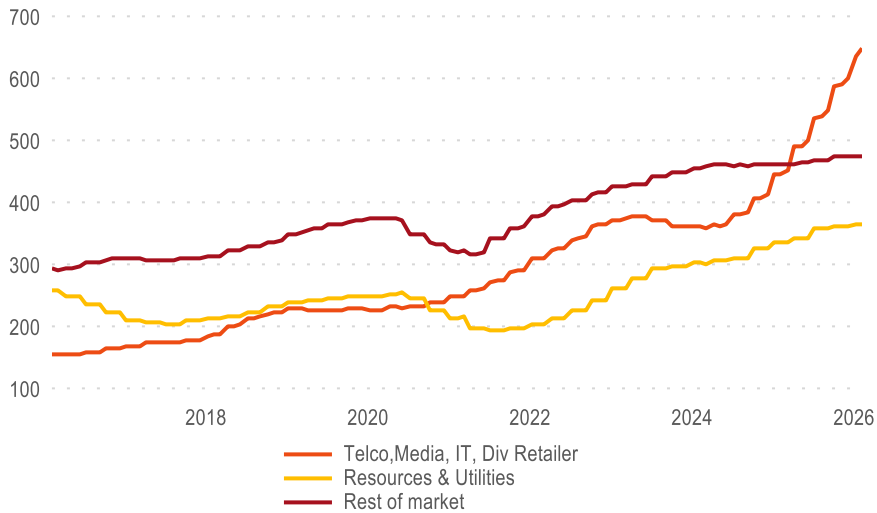
The outlook on AI impact depends on whether overcoming the technological issues are achievable, and over what time frame. Then how broadly AI is adopted, and which parts of the production/supply/development/utilisation chain realise the value from AI deployment.

AI capital investment

It has been noted that it is unprecedented in history for such large R&D investment as is occurring in AI, on a technology that is scientifically uncertain.

The growth in investment in AI related technology and development has been significant. CAPEX spend by US listed technology stocks has doubled in recent years to around US\$500 billion in 2025, forecast to grow a further 50%+ over the next two years.

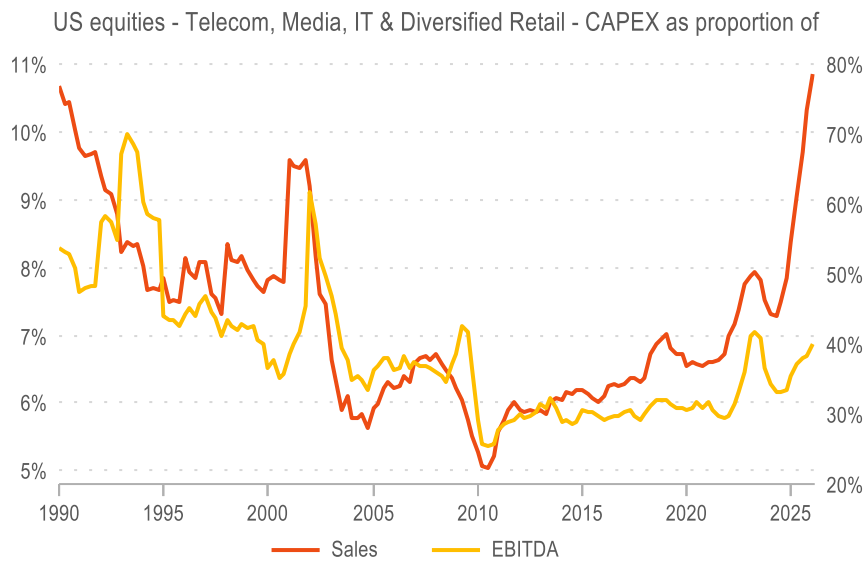
Chart 4: US listed equities capital expenditure (USD billions annual)



Source: LSEG Datastream

Earnings of US technology stocks are also growing very strongly. However, CAPEX spending is now more than 10% of sales, above the level through the 2000 internet investment period, while as a proportion of EBITDA it has risen to above 40%, but is not yet at the levels of pre-2000.

Chart 5: US equities – Telecom, Media, IT & Diversified Retail – CAPEX proportion of

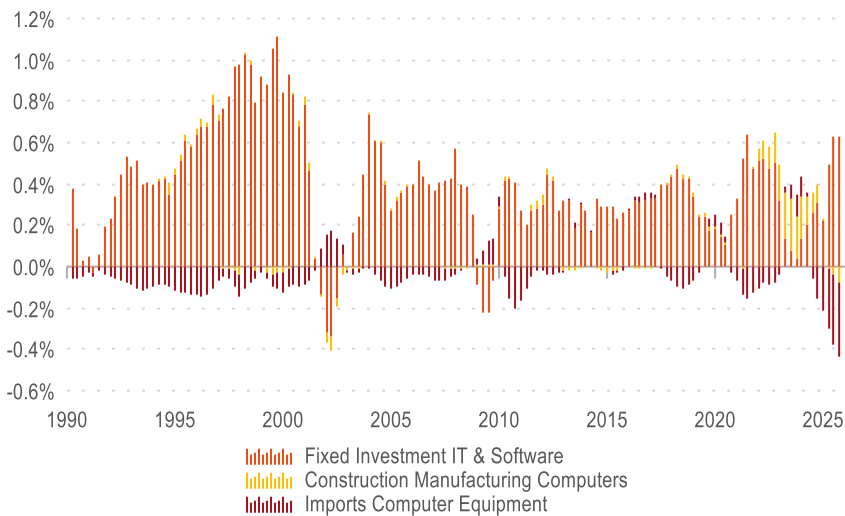


Source: LSEG Datastream

AI investment impact on economy

Investment in AI related technology and development has been a key driver of recent US economic growth. Investment in technology has contributed around one-third of US real GDP growth over the last 12 months (for the first six months of 2025 it was around two-thirds, although this was distorted by tariffs impact on GDP data). However, a large amount of the recent investment has been spent on computer equipment imports (chips) and therefore the net impact on aggregate US GDP growth has been more moderate. Although investment in AI is substantial the size of the contribution to GDP growth is not yet at the scale observed leading into the 2000 tech bubble.

Chart 6: Contribution of AI to US real GDP growth 12 mth

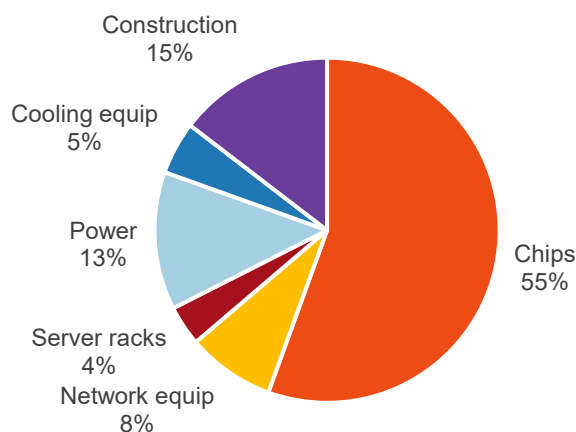


Source: LSEG Datastream

There is a view by some that the impact of the AI CAPEX investment as a driver of economic activity will mean US economic growth is stronger than consensus in the near-term. One forecast is that it will boost US GDP growth by 140bps in 2025 and 170 bps in 2026.

The ‘multiplier’ effect on GDP of AI investment is relatively small, with low amounts of labour in construction and operation of data centres, and technology related employment in aggregate is flat or falling. As noted a large part of the AI investment (chips) is imported from overseas. An estimate from a fund manager is that a little over half of the investment in a data centre is in chips, while Nvidia has suggested that the proportion is as high as 70%.

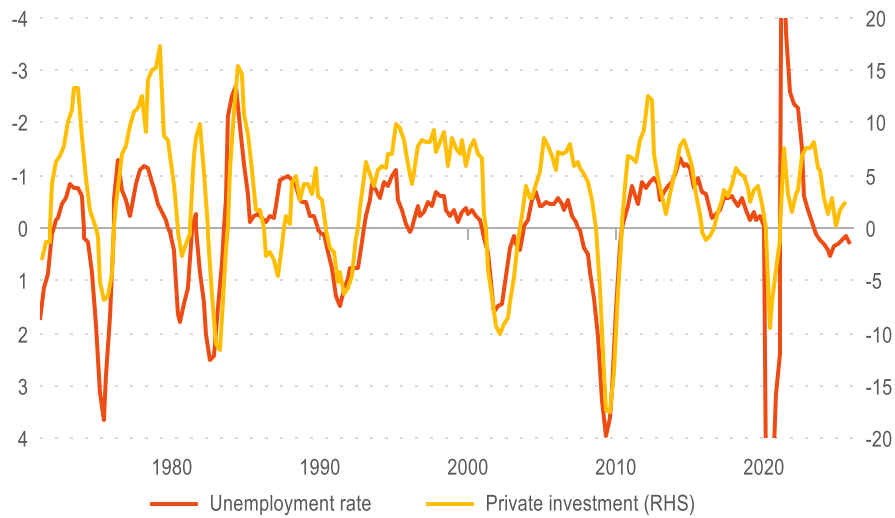
Chart 7: Data centre split of CAPEX



Source: Fund Manager estimate

In addition, data centre investment will push up power prices, and the size of the investment required could push up the cost of capital across the economy. The economic outlook could be a rare combination of strong business investment (with inflation and yield pressures), but soft employment growth.

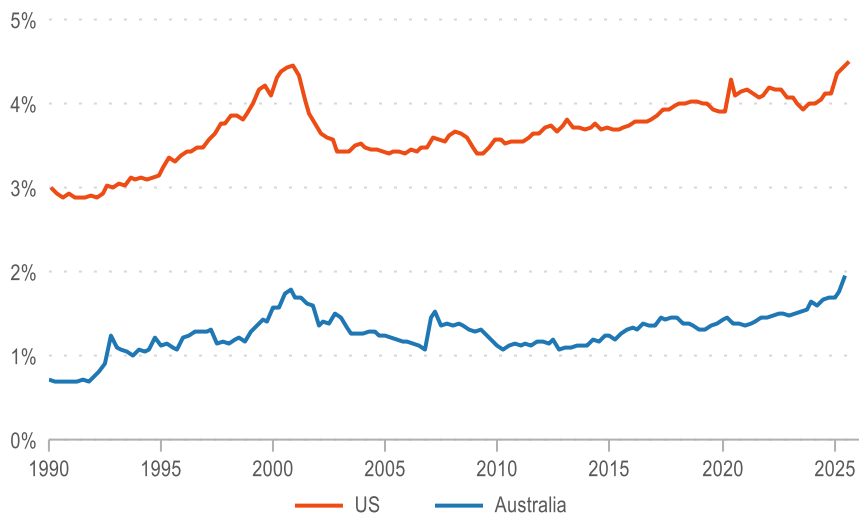
Chart 8: US change in unemployment rate and private investment growth (12 mth)



Source: LSEG Datastream

Investment in AI has also ramped up globally, including in Australia, although the scale is still relatively less than in the US,

Chart 9: Private investment information media, telecommunications & software % of GDP

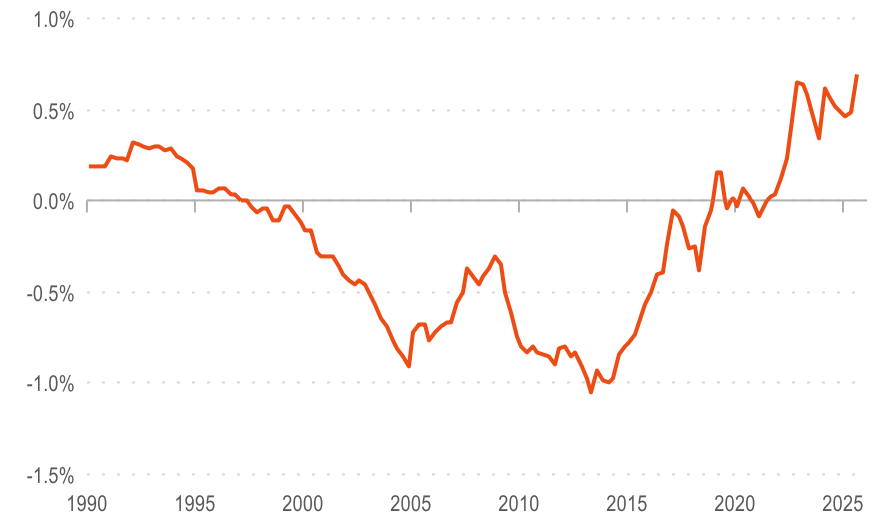


Source: LSEG Datastream

AI investment capital funding

US technology stocks cash balances are being drawn down, and funding of investment is now involving more debt funded financing.

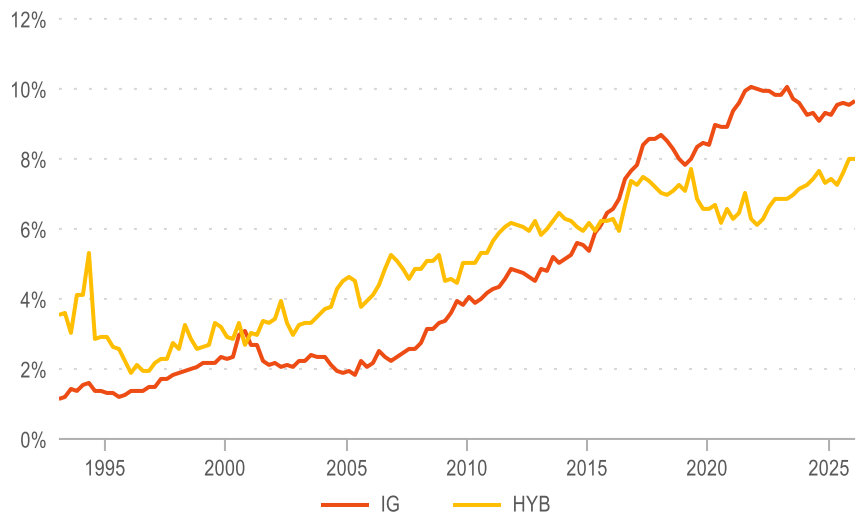
Chart 10: US listed technology equities net debt % of GDP



Source: LSEG Datastream

Technology corporate debt issuance has been increasing, with the technology sector now constituting around 10% of US corporate bond indices.

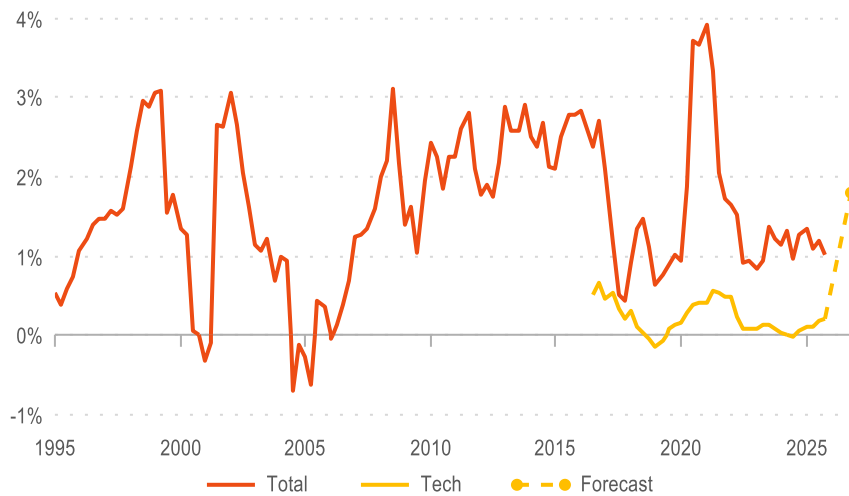
Chart 11: Technology sector proportion of US credit indices



Source: LSEG Datastream

Current levels of corporate bond issuance are not particularly elevated but forecasts of technology sector debt issuance in the year ahead, based on companies investment spending announcements, indicate a material shift in capital demand.

Chart 12: US net debt issuance IG & HY % of GDP



Source: LSEG Datastream

Data centre capacity

There is the possibility that advancements in chip computing capacity and/or AI computational efficiency will require far less data computation demand in the future.

However, at the current time there is no excess of data centre/chip capacity. Every GPU is being used today, and any additional capacity will get used as soon as it is online.

To date, the spending on computing is predominantly being used for R&D, while as the adoption of AI ramps up more of the computing resources will be required for inference, the using of the models. The potential demand is enormous.

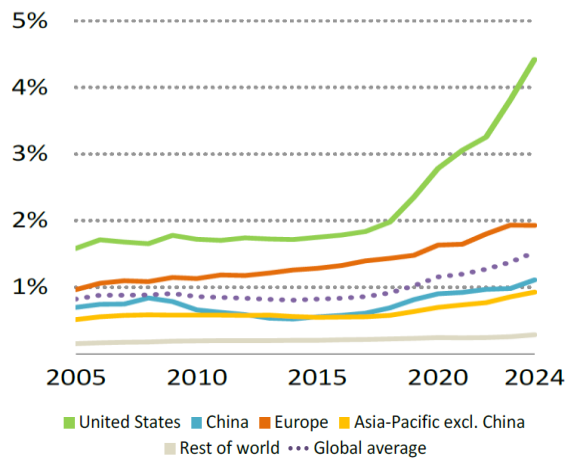
McKinsey estimates that US\$5.2 trillion will be spent on AI-focussed data centres by 2030. AI hyperscalers, such as Amazon, Google, Microsoft, Meta, and Oracle, have been the major investors in AI infrastructure, but real estate investment trusts, private credit, private equity, and sovereign wealth funds are increasingly investing in the space.

AI power usage

The rapid growth of AI is accelerating the trend of global data centre demand with capacity estimated to at least double between now and 2030.

The International Energy Agency (IEA) reports that data centres accounted for around 1.5% of the world's electricity consumption in 2024. However, demand is heavily concentrated, with data centres making up more than 4% of US electricity consumption, and nearly half of US data centre capacity is in five regional clusters.

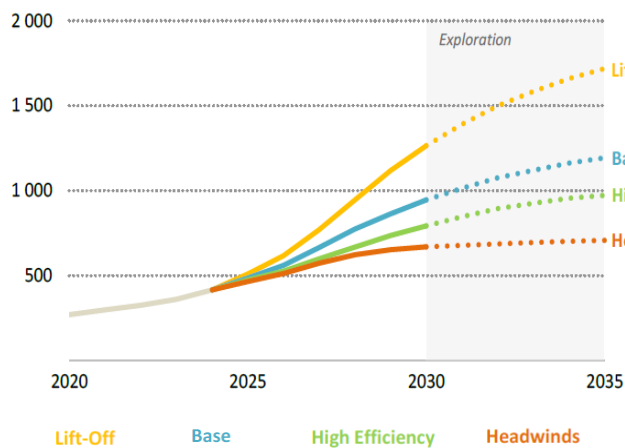
Chart 13: Data centre share of electricity demand



Source: IEA

In a 'lift off' scenario of data centre demand increasing by more than four times, data centres are forecast to reach 4.4% of global electricity consumption by 2035.

Chart 14: Global data centre electricity consumption forecasts, TWh



Source: IEA

AI development China vs US

DeepSeek showed that even with chip restrictions, competitors in China can make significant progress. However, DeepSeek is not at the frontier of AI development that US models are at. China will continue to lag without leading edge chips and computing resources, but with that computing resources it could possibly quickly catch-up.

The optimal strategy for chip access is argued from both angles within the US and China. China access to chips (lagged) provides capability to develop AI but makes beholden to US chip technology, while lack of access stalls China AI advancement but could encourage local chip development.

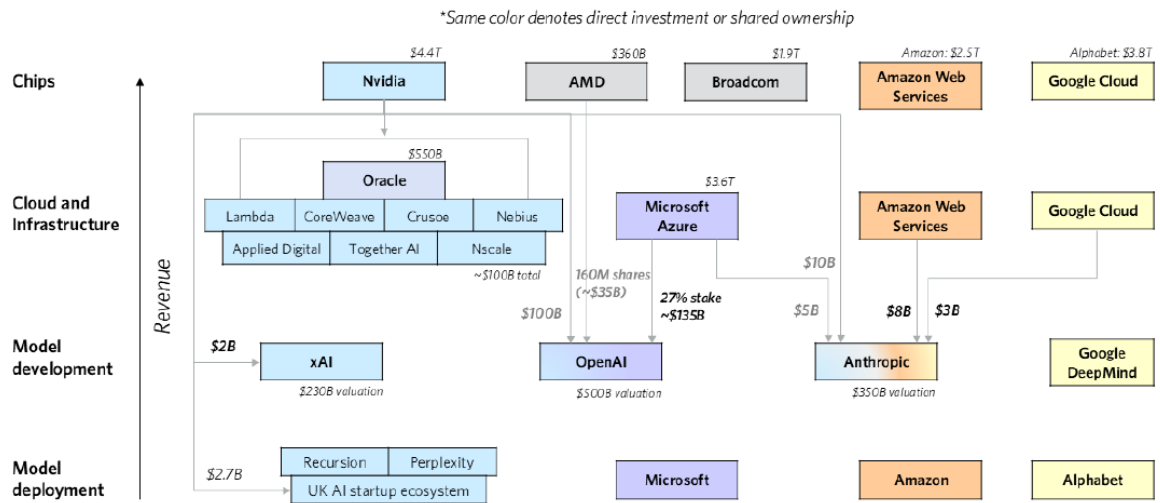
The US has a clear near-term technology advantage, but it is not certain that this is insurmountable over the medium/long-term.

AI industry structure

In the AI value chain (chips, cloud infrastructure; model; deployment) Google is the only party with scale across each component. This is partly driving Nvidia's circular investment (e.g. acquiring stakes in OpenAI, Oracle, etc). This is not artificially funding demand; it is strategically supporting its market position.

OpenAI is currently a key AI party but its future importance is uncertain as evidenced by Microsoft investing in both OpenAI and Anthropic AI models.

Figure 1: Connections among key players in the Ai industry



Source: Bridgewater