Global Asset Management

Artificial Intelligence: paradigm shift or bubble? Maybe it's both

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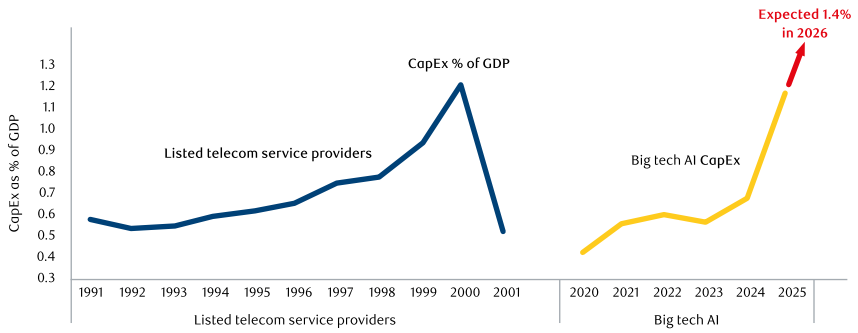
"While AI represents a revolutionary leap forward, much like the internet 25-30 years ago, the parallels to past speculative bubbles are hard to ignore."

The current surge in AI investments mirrors the exuberance of the late 1990s dot-com boom, with capital pouring into infrastructure and tech hardware at an unprecedented scale.

Measured as a percentage of U.S. GDP, these investments have already surpassed the dot-com era (Exhibit 1). The only historical parallel requires looking back to the 1820-30s, when the U.S. and the U.K. heavily invested in railroads. While AI represents a revolutionary leap forward, much like the internet 25-30 years ago, the parallels to past speculative bubbles are hard to ignore. The question is whether we are still in the early stages of growth or nearing unsustainable levels.

Exhibit 1: AI CapEx versus telecom CapEx in the 90s



Source: Bloomberg, Lombard Research, based on U.S. GDP in dollars, as at H1 2025.

On the surface, the enthusiasm appears justified. There is no sign that capital expenditure in AI infrastructure is slowing. The leading companies driving these investments maintain strong balance sheets, allowing them to sustain aggressive spending on datacentres, chips, and model training without financial strain. Demand for AI services continues to grow exponentially, as reflected by rising AI token usage. This aligns with Jevons paradox – falling costs per token makes AI cheaper to use, which in turn stimulates even greater demand. And demand from enterprise AI has barely started (Exhibit 2). Technological progress on both the hardware and software fronts also continues at a remarkable pace. The computational requirements for new AI models continue to increase at more than twice the rate of Moore's Law (the number of transistors in a chip doubles every two years), fuelling sustained demand for advanced semiconductors and high-performance memory. Finally, while valuations of AI-related stocks are at or near historical highs, they remain below the extremes reached during the dot-com bubble.

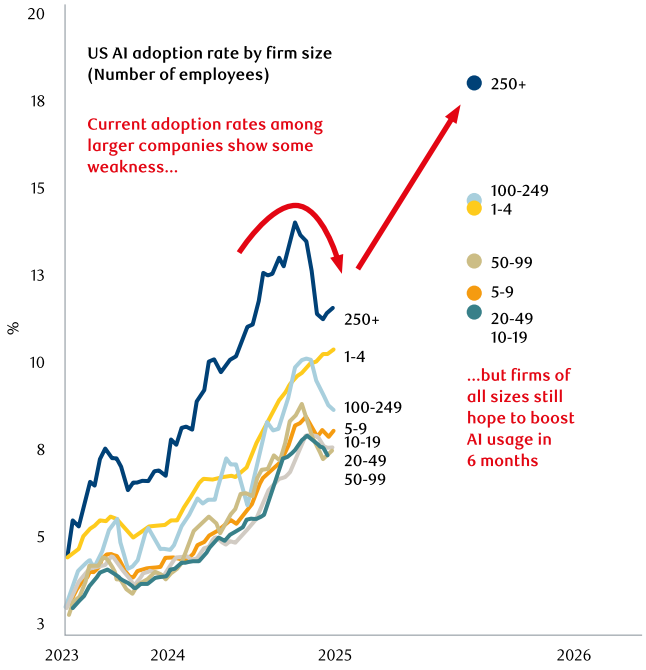
However, there are some good reasons for scepticism: rising leverage, the risk of competition undermining monetisation, and growing energy and infrastructure constraints.

Rising leverage: AI investments are consuming a growing share of cloud service providers' free cashflows (Exhibit 3), while a flood of new entrants over the last 12-18 months are relying exclusively on leverage. In this context, some emerging trends warrant caution, particularly the rapid expansion of private credit exposure to AI and the growing reliance on structured and vendor financing to purchase GPUs.

Many newer entrants with weaker balance sheets are turning to private markets to finance GPUs and datacentres, with two-thirds of VC capital (Exhibit 4) and one-third of U.S. private credit (Exhibit 5) in 2025 allocated to AI infrastructure. GPUs are increasingly being used as collateral to raise additional capital or are being leased back by suppliers. Off-balance sheet financing, private credit growth exposure to AI, GPU-backed loans and, more recently, M&A between suppliers and customers (circular financing), raise red flags about the sustainability of the current rate of growth in AI investment.

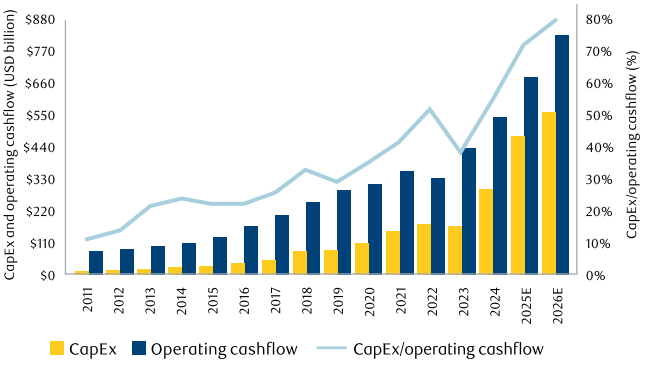
Monetisation challenges: AI investments in GPUs and datacentres typically begin 2-3 years before AI revenues materialise and 5-6 years before profits are realised. Consequently, the monetisation pathway for AI capital expenditures remains uncertain. Three primary risks to monetisation and returns are becoming more apparent, in our view. These are heightened **competition, slower incremental advancements in AI models, and misjudgements in depreciation estimates.** The success of a technology does not guarantee profitability for all participants; as mentioned there is a growing number of debt-funded entrants into the market, which could undermine future capital returns for the industry. Current monetisation remains limited, with Menlo Venture estimating a total industry-wide revenue of around USD12 billion from consumer and around USD25 billion from business subscriptions. This compares to total AI datacentre CapEx of around USD250 billion this year[1].

Exhibit 2: Enterprise adoption remains low but is increasing rapidly



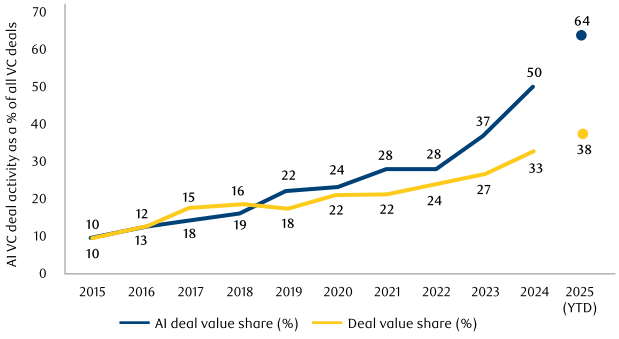
Source: Business trends and outlook survey (Census Bureau).
Note: data shown as a 4-survey average.

Exhibit 3: U.S. and China hyperscalers CapEx as a % of operating cashflow



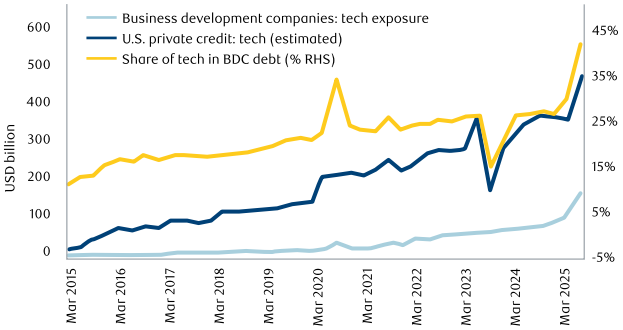
Source: company data, UBS, as at October 2025.

Exhibit 4: VC exposure to AI industry



Source: The Pitchbook, as at June 2025.

Exhibit 5: Private credit exposure to AI industry



Source: company data, UBS, as at October 2025.

[1] Bank of America, November 2025.

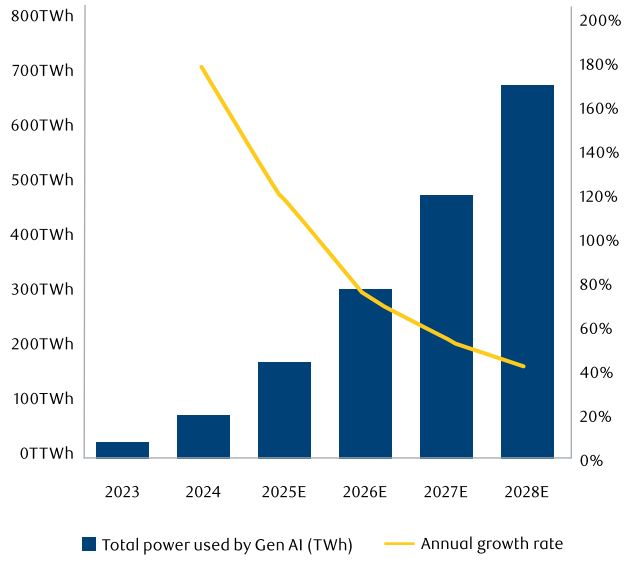
Additionally, GPUs, comprising around 40% of datacentre costs, may depreciate faster than anticipated, further straining returns. Even with current depreciation rates, the long timeline to profitability places increasing pressure on returns.

Infrastructure and energy constraints: the rapid growth in datacentre construction has strained the U.S. energy grid. Private construction spending on data centres has nearly tripled from USD14 billion annually in December 2022 to USD40 billion by June 2025 and growth in AI-related power consumption has doubled in 2025 from the prior year (Exhibit 6). This has led to companies scrambling to secure long-term energy deals. According to a recent survey by Schneider Electric, access to power in the U.S. is the number one risk to growth. 92% of respondents see grid constraints as the key challenge, with long utility wait times slowing down expansion. Access to chips and permitting issues were ranked in importance. If datacentre CapEx had to continue to grow at this pace, it's estimated that there is a potential shortfall of ~45GW of power in the U.S. between now and 2028 (Exhibit 7). To put this into context, 45GW of electricity is an immense amount, equal to powering a whole country like Italy.

Summary

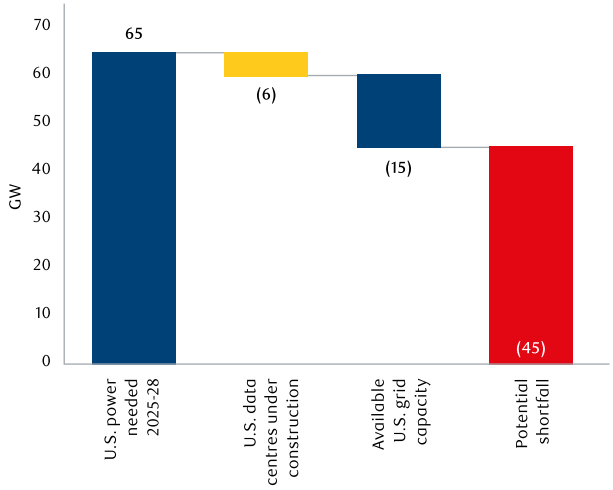
The investment thesis of investors in the dot.com revolution wasn't wrong. The internet has indeed transformed the world and created multi-trillion-dollar market cap companies. Instead, the lesson was that the excitement of a new transformative technology can result in too much capital chasing too few companies, pushing up valuations beyond reasonable expectations and reducing future investment returns. Despite its recent outperformance, the EM IT sector continues to trade at a significant discount of approximately 80% relative to the IT sector in developed markets (Exhibit 8). This substantial discount, combined with the fact that it is less widely owned than U.S. tech, could provide resilience in the event of significant market correction.

Exhibit 6: Total power growth used by Gen AI



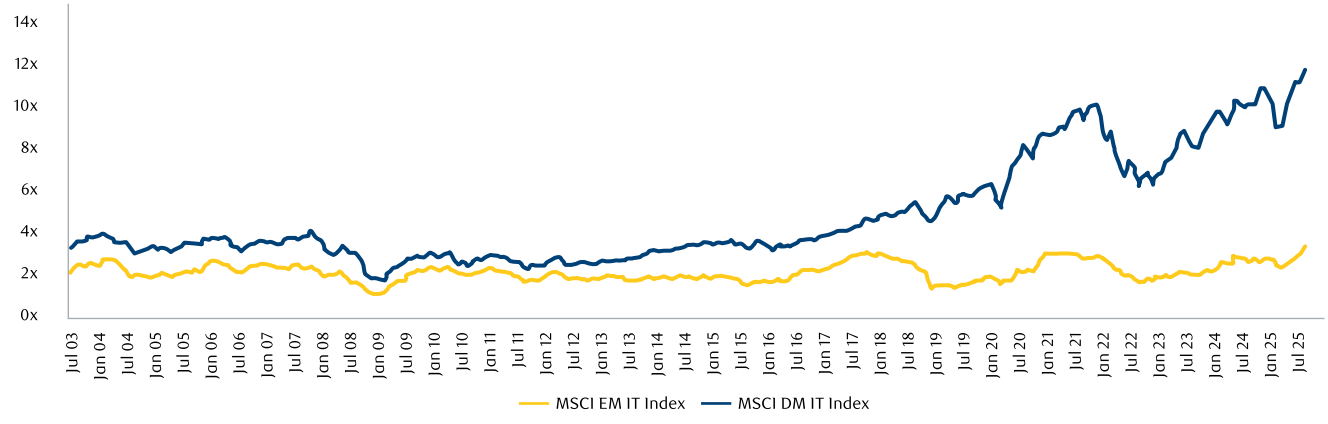
Source: Morgan Stanley, as at October 2025.

Exhibit 7: Potential power shortfall for U.S. datacentres 2025-28



Source: Morgan Stanley, as at October 2025.

Exhibit 8: MSCI DM IT versus MSCI EM IT indexes P/BV (USD)



Source: Bloomberg, as at 30 September 2025.

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Guido is a portfolio manager on the RBC Emerging Markets Equity team at RBC GAM-UK. In this role he is responsible for research on Taiwan and Central and Eastern Europe. Prior to joining the organization in 2010, Guido worked as an emerging markets portfolio manager and also as an equities analyst at a U.K.-based asset management firm Rexiter Capital Management, specializing in global emerging market strategies. He had previously worked at HSBC Asset Management firm as a securities analyst, where he progressed to become a junior portfolio manager. Guido began his career in the investment industry in 1998 as an equity and derivatives trader in Italy.

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