ZURICH

Topical Thoughts
September 2026

The AI revolution: a snapshot in time

Source: AI generated image

Economic & financial market transformation?

As artificial intelligence (AI) hits an inflection point and its power becomes increasingly understood, excitement has been replaced by fear and anxiety in the minds of many. As observed in past structural shifts, change is disruptive and takes time to prove its worth. What is clear is that it cannot be ignored. Over two chapters, we take a deep dive into how the AI revolution is currently impacting both economic conditions and the financial markets that are funding it. How disruptive is it actually? How transformative can it become? And how sustainable are the finances that power it? Data suggest reason for optimism.

The scale of AI funding is remarkable. Trillions of dollars are being committed by the Hyperscalers to build out infrastructure, and investors are currently only too willing to fund these plans. What has become clear in our findings is that contradictions are rife and many developments are counterintuitive. Yes, spending is huge, but it is dominated by companies with strong fundamentals, limited leverage and remarkably robust cash-flows. Credit issuance is surging, but aggregate debt levels are low and the quality of credit indices is actually improving. Dollar commitments are staggering, yet in a global context, as a share of GDP and in relation to transformational developments in the past, the figures are modest though concentrated in nature.

Perhaps the most profound observation is that change may not go far enough, and the impact of AI development could simply be very good rather than truly revolutionary. If efficiencies are made and productivity improved without creating new avenues of creativity for societies and new jobs to facilitate them, then AI will have failed as a true general-purpose technology, with disruptions indeed proving painful for many.

While acknowledging the risks of unleashing artificial intelligence on society, there is also reason for optimism. Profound changes in science and medtech are already improving wellbeing, and breakthroughs in energy optimisation will help bridge the move to greater sustainability. It is also clear that the potential for invention in ways that are unimaginable today is enormous and exhilarating.

Although history shows that technological transformation brings capital misallocation and destruction with it, the strong balance sheets and diversified portfolios of today's leading players can cushion the blows. That noted, the technological arms race with China could potentially see Western business models become unprofitable as open architectures and subsidised funding overwhelms shareholder profits, as has been the case with electric vehicles and renewable energy. Evidence suggests that in the evolving trade-off between margins and revenues the increasingly ubiquitous use of the technology favours the latter.

Our analysis shows significant change is afoot in both economic development and in funding the transformation, not all of which is intuitive and much of it appears to be underappreciated. Risks are of course omnipresent, but for now at least, human ingenuity is taking us on a transformative and exciting trajectory.

Chapter I

AI from a macroeconomic perspective: A driver of change

AI is poised to become the most important driver of macroeconomic change over the coming decade. The near-term effects are visible in large-scale investment spending, rapidly rising memory prices, and upward pressure on electricity prices. The longer-term consequences will depend on whether AI can deliver a sustained improvement in productivity and be sufficiently transformative to foster new areas of economic growth.

We expect AI to drive productivity over the coming decade, acting as a disinflationary force for the global economy. On balance, the evidence also suggests that AI is more likely to resemble a general-purpose technology than a narrow automation tool, with the potential to trigger new innovations, transform industries, and reshape labour markets. While it is too early to make any definite conclusions, we highlight the growing role of AI in scientific discovery and energy systems, as these point to effects that extend well beyond efficiency gains.

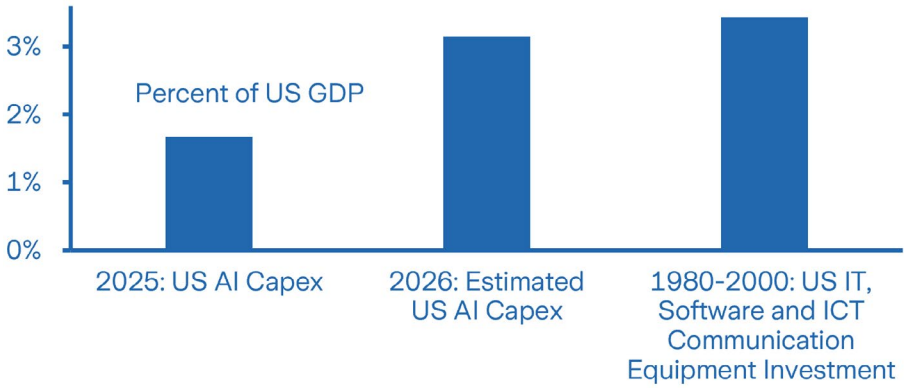
While we view the overall macro impact of AI as positive, economic divergences will be stark, across regions, sectors and within societies, and stakes are high when it comes to geopolitical and security issues. Here, the focus is on the broader macroeconomic forces that AI is likely to unleash and the consequences for the global economy.

AI provides a boost to demand near term

Over the next couple of years, the main impact of AI on the broader macro environment is likely to come through the demand channel. AI related infrastructure investment has risen sharply and is underpinning a robust capex cycle in the global economy, a marked contrast to the past two decades during which investment was notably weak. While the pace of the AI buildout has been very rapid, the levels of investment are still relatively moderate, both in proportion to the overall economy and compared to previous investment cycles. Relative to GDP, current AI investment remains below the levels reached during the Information and Communication Technology (ICT) investment cycle, as well as during the railway boom and the electrification period.

This suggests that the current capex cycle has room to run before signs of overheating or excess capacity emerge.

The scale of AI capex spending is not yet unprecedented



Note: 1980-2000 data show annual averages. US AI capex covers US Hyperscalers, semiconductor companies, and data center developers, and is used as a proxy for AI related investment. The AI component of capex is identified by looking at change relative to the 2022 level. Private companies not included.

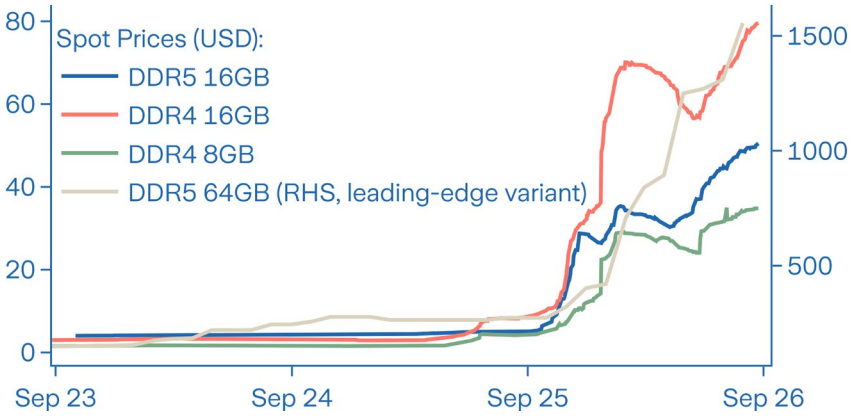
Source: Bloomberg, OECD

AI will drive pockets of higher price pressures in the near term

The near-term impact of AI on inflation is also working through the demand channel, as strong demand in combination with a constrained supply of key inputs adds to price pressures. The AI buildout is also happening at the same time as defence and energy investments are ramping up. As the three sectors require similar inputs, bottlenecks and pressure points are emerging.

This is most visible in surging memory prices. DRAM memory prices are up by a factor of six over the past year, in stark contrast compared to the past. Between the 1960s and 2020, the price of a gigabyte of DRAM fell by a factor of ten every five years, which underpinned a disinflationary trend globally on electronics and goods prices and helped to contain inflation more broadly. This long-standing trend appears to have at least temporarily reversed.

Memory prices are surging

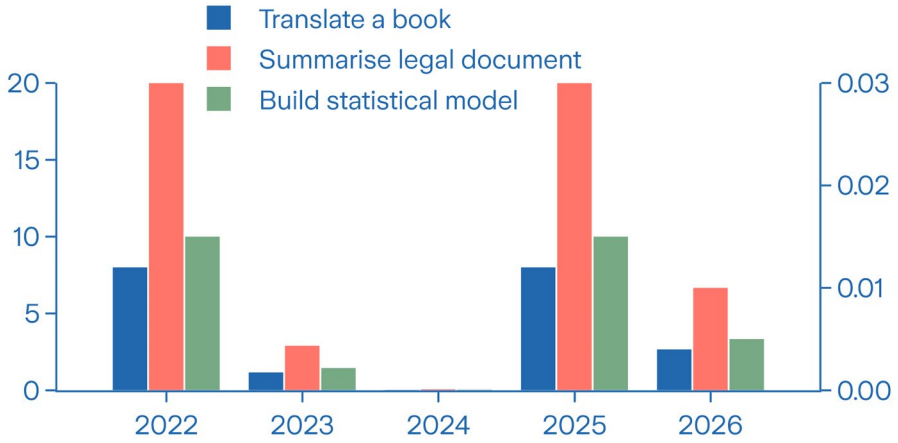


Source: Bloomberg

So far, rapidly rising DRAM prices have been manageable for the AI sector itself, given extraordinary productivity gains. As a simple illustration, over the past three years the price of using AI to translate a book has fallen by over 90%. This disinflationary impulse matches the decline in benchmark token prices over the same time. However, AI driven input price pressures may crowd out investment and demand in other sectors which are not benefitting from the same exponential pace of improvements.

While price pressures in the AI supply chain have emerged, the risk that this will lead to a broad-based and persistent increase in consumer price inflation is in our view limited. A key reason for this is the impact that AI is expected to have on both productivity and the labour market, discussed below. It also reflects the relatively low share of consumer spending that is directly exposed to AI related price pressures, such as consumer electronics.

Prices of AI services have plummeted



Note: Shows the price of using AI to perform specific tasks, tracking the same service over time, attempting to hold quality constant, USD. Scale for 2022-2024 on the left, for 2025-2026 on the right.

Source: Stanford AI Index, Epoch, OpenAI

Will AI lead to productivity improvements?

The reason companies are investing in AI capacity is of course that it is expected to boost productivity and corporate profitability. If this happens, it will help to sustain stronger economic growth and contain inflation.

While it is too early to conclude how AI will affect productivity, historical trends provide a useful starting point. US labour productivity is characterized by a remarkably stable trend, rising by an average of around 2% per year over the past 100 years. Actual productivity fluctuates around this trend, shifting between decade-long 'low productivity' and 'high productivity' regimes.

The period since the global financial crisis in 2008 has been a low productivity regime, resulting from weak investment growth and a lack of technology breakthroughs. The key question is whether AI technology will finally push the global economy into a high productivity regime or even go beyond that.

US labour productivity growth is characterized by two regimes

Note: GDP per hour of labour input. Stronger measured productivity around 2020 reflects Covid related distortions.

Source: Federal Reserve Bank of San Francisco

AI is likely to boost productivity, even if it fails to trigger a technological revolution

A starting point for estimating AI's impact on productivity looks at the share of specific tasks in the economy that could be performed using AI and the associated cost savings. Empirical studies suggest that this could lead to an increase in annual productivity growth in the US of around 0.7 percentage points, potentially lasting a decade before fading away.[1]

A productivity gain of this size would push the US towards a high productivity regime. The increase matches that which followed the ICT investment boom in the 1990s and is significant in size. To put it in context, if US productivity growth increases by 0.7pp per year over a 10-year period, it is equivalent to boosting the economy by almost three additional years of GDP over the same period. In other words, even if AI is only used to automate existing tasks in the economy, its impact on productivity could be material.

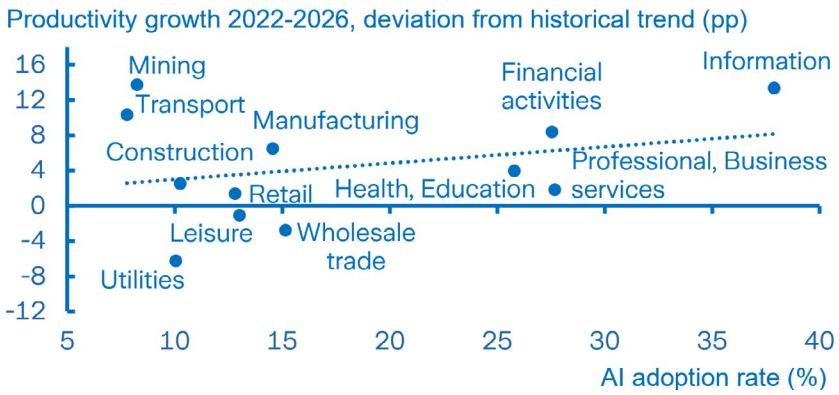
1 This is a median estimate based on a range of empirical studies, discussed by e.g. Aghion and Bunel (2024), AI and Growth: Where do we stand.

Industry data show a correlation between AI adoption and productivity

While still early days, industry data for the US show a correlation between AI adoption and productivity. Industries that have been quick to adopt AI have seen stronger productivity gains relative to the historical trend since the end of 2022, when ChatGPT was launched. The correlation breaks down for industries that have been slow in adopting AI, suggesting that some threshold level of usage needs to be reached before gains materialise. Clearly, some industries have also been affected by non-AI factors that have shifted productivity over this period.

The four services sectors that have seen AI adoption rising above 25% (professional and business services, education and health, financial activities, information) make up around 40% of US employment, so together they are sizable enough to have a significant impact on the overall productivity trend, should recent dynamics accelerate.

Tentative boost to productivity in sectors with high AI uptake



Note: Productivity calculated as real value added per hours worked, sector specific historical trends estimated over 2014-2019.

Source: BTOS, BLS, BEA

The main question is whether AI will do more than drive efficiency gains

While productivity growth tends to be surprisingly stable over long periods of time, this does not mean that all technological advances are the same. A few general-purpose technologies (GPT), which include the arrival of steam engines and electricity, can explain a large part of the increase in productivity over the past. GPTs cause profound and long-term changes to how people work and live. They are disruptive, changing the way societies are organised, and are pervasive, employed across the economy in a wide range of sectors. Most importantly, they trigger new innovations that amplify and prolong their impact on productivity. Whether or not AI will eventually prove to be a GPT will be decisive.

What could a more profound impact look like?

The arrival of electricity is the canonical example of a GPT. It altered societies and led to continued technical improvements, but it took almost a century for this to happen. The process started with Faraday's generation of the electrical current in the 1830s, but more material productivity gains only started to arise in the 1920s when factory work was reorganised, with assembly lines, division of labour, and the emergence of mass production and the consumer society. This led to an eventual pickup in annual US productivity growth of close to 1.5 percentage points per year for a period of time, but it took almost 90 years before gains were visible.

AI technology was first developed in the 1940s and 1950s, beginning with research on thinking machines and neural networks. Already in 1997 was IBM's Deep Blue model able to defeat world chess champion Kasparov, but it took another 25 years until ChatGPT and other large language models made the technology available on a broader scale. From a timing perspective, this suggests that conditions may be ripe for a more fundamental impact. If the technology eventually proves to be truly transformative, productivity gains could be very significant.

In our view AI is likely to become a GPT. It is already used in a wide range of sectors, and there is mounting evidence from the field of science that it is accelerating the pace of discoveries. Since scientific innovations form the backbone of productivity, this is vital for the outlook.

AI could accelerate scientific progress

Since the 2000s, productivity growth has slowed across large parts of the world, weighing on economic activity and living standards. At the same time, the rate of scientific discoveries and technological breakthroughs has fallen, and some have argued that ideas may be getting harder to find. If AI lowers the cost of generating scientific knowledge, identifying new materials, developing drugs and inventing new technologies, it has the potential to reverse these dynamics.

Early evidence suggests that AI is already solving problems that were previously cost prohibitive, time-consuming, or complex to solve. One important example is that of AlphaFold, which is a Nobel-Prize winning machine learning algorithm that in 2020 solved the problem of predicting the 3D structure of proteins based on their genetic code. These structures play a critical role for understanding the role of proteins in cells and for the development of new pharmaceutical therapies. The process of identifying them has so far relied on expensive and slow experimental methods, acting as a bottleneck in the research pipeline.

By shifting efforts towards previously unknown protein structures, one of the consequences of AlphaFold is that under-researched areas are being explored, which raises the likelihood that new discoveries will be made over time. While the impact on R&D, patents and business applications has been muted so far, this may reflect the short time span, with gains still to be harvested.[2]

AlphaFold is just one example of the role that AI can play as an accelerator in science. More broadly, empirical work has found that the benefit from AI is particularly pronounced when existing research knowledge within a field is sparse, complex and fragmented. This may reflect AI's ability to see patterns and make connections, also in highly complex, underexplored and data-rich fields where humans would be slower. By providing a roadmap for new research topics, this suggests AI complements humans in the research process and can act as an accelerator in science more broadly.[3]

2 Hill and Stein (2026), How Artificial Intelligence Shapes Science: Evidence from AlphaFold, studies the implications of AlphaFold across the research field.

3 See e.g. Bianchini et. al (2026): AI in science: When and where it makes a difference.

AI has the potential to transform the energy sector

Another example of AI enabling innovation and transformation rather than just efficiency gains can be found in the energy sector.

Without energy, there is no AI. At the same time, AI has the power to transform the energy sector. Over the near to medium term, the former will dominate developments. But looking beyond the next few years, the latter may emerge as a driving force. Given energy's role in powering the global economy, advancements in this sector will have implications that could be transformative for the broader economy.

Data centres are huge consumers of electricity and the rapid build-out is adding to energy demand and pressure on the grid. Electricity demand will increase sharply over the coming decade, becoming a bottleneck for further AI expansion unless tackled. As a result, the Hyperscalers are increasingly becoming involved in the energy supply chain. This is speeding up the upgrading of ageing and inefficient infrastructure and adds capacity, most notably for renewables. While this is positive, demand is set to continue to outstrip supply for now, with implications for energy prices.

AI is, however, also emerging as a powerful tool for transformation within the energy sector itself. It is already being used to optimise the performance of energy systems through predictive maintenance, load forecasting and dynamic grid control, improving efficiency and stability in today's energy systems. And while renewables have already seen huge leaps in technology and cost competitiveness, bottlenecks persist, particularly around storage and grid stability. As the International Energy Agency (IEA) highlights, energy systems are highly complex and, since AI thrives in complexity, it has the potential to tackle some of the remaining hurdles. Were this to happen, it would support more sustainable energy systems and potentially driving down costs over the longer run. In other words, AI may allow a more fundamental energy revolution to take place.

Labor market developments will be critical to overall economic impact

While AI technology is likely to boost productivity irrespective of whether it triggers more fundamental changes or not, the overall impact on economic activity critically depends on how it affects labour markets. If AI leads to structural job losses that are not offset by the creation of new occupations this will disrupt demand and economic activity, potentially offsetting any gains to productivity.

Historically, periods with profound technological change have often been accompanied by rapid job creation. The mechanisation of agriculture displaced farm workers in large numbers and the industrial revolution automated tasks in spinning and weaving, initially leading to widespread job losses. In both cases, disruptions were over time counterbalanced by the creation of new jobs. This not only involved replacing physical labour work with factory jobs, but importantly also the creation of whole new sectors and activities, with rapid growth in transportation (railways, shipping), finance (insurance, banking), administration, engineering, retail and distribution.

The biggest risk might be that AI technology is not profound enough

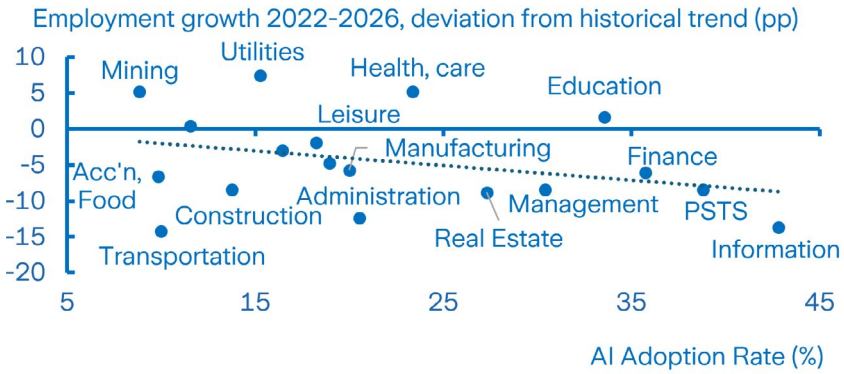
There is no economic law that ensures that new jobs are created at the same pace as old jobs are destroyed, however. One clear risk is that AI improves efficiency at the margin but is not profound enough to fundamentally transform economies. Jobs would be lost but the offsetting creation of new occupations would underwhelm, particularly if the gains from AI were not distributed across societies. This suggests that if AI fails to be a truly transformative technology, it may lead to higher unemployment in parts of the economy and economic stagnation, with limited benefits to societies as a whole.

At the other end of the spectrum lies a scenario in which AI has a profound impact on societies and knowledge, triggering a new wave of innovation and economic restructuring. Over time, new industries and occupations would evolve, but there will still be a period of disruption before this happens.

Labour market data suggest AI is having an impact

US labour market data give a first glimpse of potential AI impact. It shows that job growth has tentatively slowed in services and knowledge sectors with high AI adoption rates. While the impact is visible, it is narrow across sectors, likely reflecting the fact that practical AI use cases are still lacking in large parts of the economy, with relatively low adoption rates. Similarly to productivity, some industries may also have been affected by non-AI factors that have shifted job growth over this period.

Softer job growth in sectors with high AI adoption rates

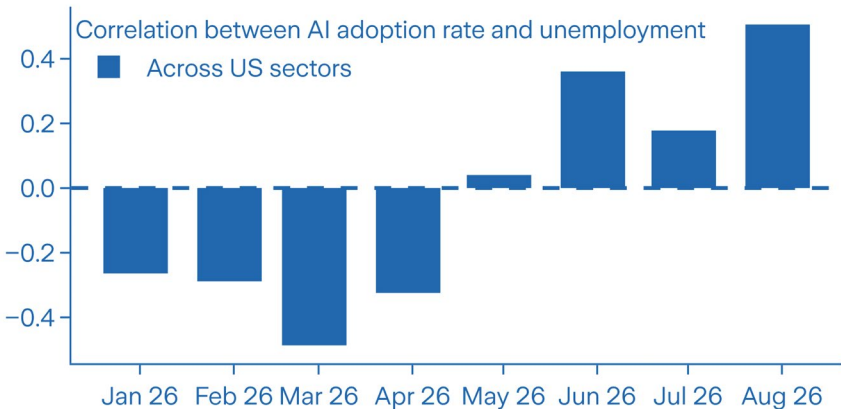


Note: Sector specific historical trends estimated over 2012-2019. AI adoption rates per July 2026. PSTS denote professional, scientific and technical services.

Source: BTOS, BLS, BEA

Unemployment rates by sector also suggest that trends may tentatively be shifting. Until recently, the relationship between unemployment and AI adoption rates across US sectors tended to be negative—sectors with worse unemployment trends relative to history tended to be those that were slow at adopting AI. More recently, the relationship seems to be changing, with higher unemployment now being associated with industries that have been quick in adopting AI. Once again, impact is narrow across sectors, with no economy-wide effects so far.

Unemployment dynamics are shifting, at least for now



Note: Correlation between AI adoption rate and unemployment rate (change since end 2022) at US sectoral level at different points in time.

Source: BTOS, BLS

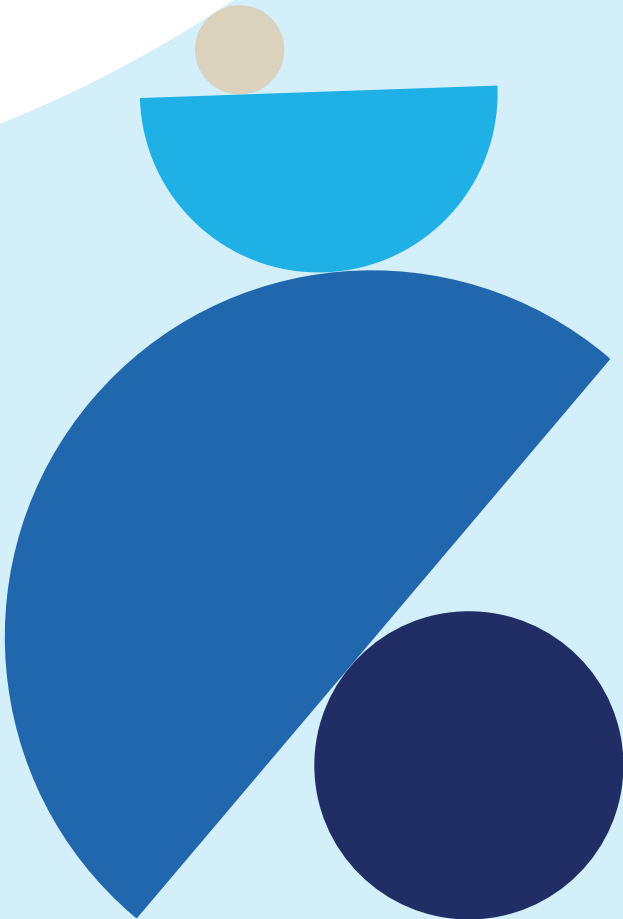
Some jobs are more exposed than others

While it is too early to make a firm conclusion on AI's overall labour market effects, the data suggest that impact will be felt at least at a sectoral or occupational level. As companies tend to cut back on hiring before laying off workers, and as entry level jobs are potentially more exposed to automation, younger workers and new entrants to the labour market are likely to be more severely affected. If widespread AI adoption leads to the destruction of entry level jobs, with associated opportunities to learn and gain skills, this would have a long-term impact on young people's career prospects and reduce human capital formation, with consequences for societies. From a macroeconomic perspective, this poses a risk to the outlook and warrants attention.

Conclusion: AI is transforming economies

AI represents a fundamental change to economies and societies. Over the near term, the AI buildout is boosting demand and adding to price pressures as strong demand competes for scarce inputs. Over the medium to longer term, we believe that AI will support productivity, acting as a disinflationary force for the global economy.

On balance, the evidence suggests that AI is more likely to resemble a general-purpose technology than a narrow automation tool. While significant labour market disruption is likely, the growing role of AI in scientific discovery and energy systems points to effects that extend well beyond efficiency gains. Risks are clearly high, with economic divergences and disruption set to increase, alongside geopolitical and security risks. However, if recent trends continue, AI could become a major driver of productivity growth and economic expansion over the coming decade, though one that also comes with a high degree of unpredictability and disruptions.



Chapter II

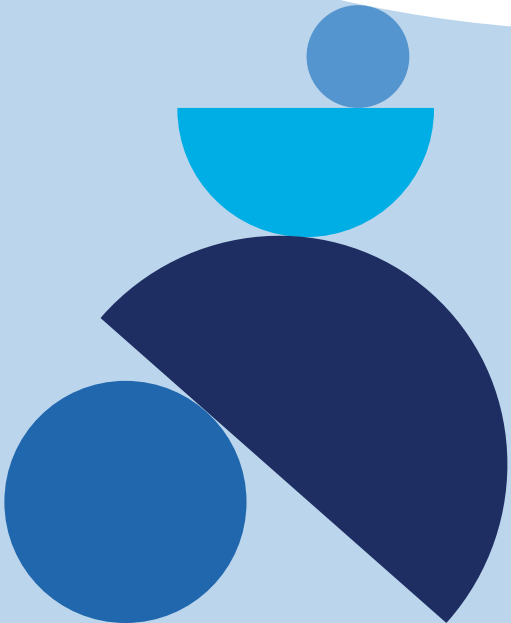
AI from a financial market perspective: follow the cash

AI is expected to be revolutionary in terms of its impact on companies and consumers. While the technological impacts are still evolving and in many ways are at their early stages, the forward-looking character of financial markets makes navigating the uncertainty challenging. Our trusted mantra in addressing this uncertainty is to 'follow the cash' and assess the sustainability, trajectory and prospects of the potential AI boom.

While trillions of dollars in investments are being committed in the coming years, as per company plans and analyst forecasts sourced from Bloomberg, in order to ascertain the prospects of financial markets we ask ourselves the following five questions:

1. Is the AI revolution sustainable from a funding and cash flow perspective? In other words, are the big spenders spending within or beyond their means?
2. Which segments of financial markets are likely to be the greatest beneficiaries?
3. Which segments of financial markets are the most vulnerable?
4. What are key risk factors that could cause or precede a deep market correction?
5. Most importantly, what are financial markets pricing today and what is the outlook?

Our net view is positive on aggregate stock markets and more circumspect on credit markets, but positive on most AI related companies in both stocks and credit. We believe the stock market pricing is rather sceptical and does not seem exuberant. Furthermore, there is a substantial difference today in valuations versus during the dot-com bubble. Further upside in stocks hence may be possible. Risks and volatility are to be expected, however, as investors grapple with fast-paced technological development against the backdrop of long-term investment commitments, and some capital is likely to be misallocated. Our cash flow analysis suggests that most companies at the forefront of the AI boom are not overspending beyond their means and have enough headroom to change course if needed. Certain pockets of the market are clearly at greater risk than others and selectivity is warranted.

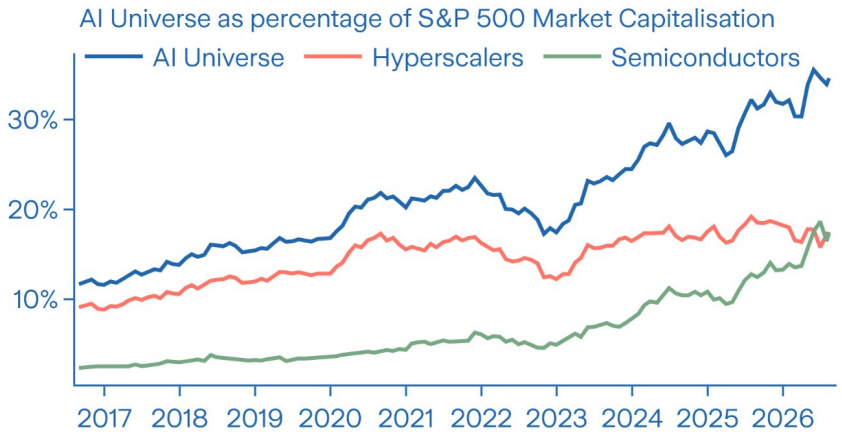


Background: AI as a driving force for financial markets

AI will likely remain a driving force for financial markets for many years, if not decades. The landscape of financial markets is changing fast as investments are made and business models upended. The impact on productivity is likely to be positive, but there is heightened uncertainty as to who will be the winners and losers. In equity markets, the AI revolution has driven remarkable returns for technology stocks since the release of ChatGPT in November 2022, with the market capitalization of AI related stocks skyrocketing to around a third of the entire market capitalisation of the US S&P 500 stock index. While semiconductors have benefited most visibly from the 'picks and shovels' narrative, Hyperscaler stocks have also seen meaningful gains. Several multi-trillion-dollar market capitalisation companies have recently emerged in the US, which testifies to the increasingly important prospects of AI for stock markets.

Credit markets are also being rapidly transformed. Not only are Hyperscalers and related issuers accessing equity and debt markets at an unprecedented pace, but the variety of funding instruments has expanded significantly across the capital structure. These include equity issuance, Investment Grade (IG) and High Yield (HY) corporate bonds, Asset-Backed Securities (ABS), Commercial Mortgage-Backed Securities (CMBS), off-balance sheet structures, and private debt across currencies and maturities ranging up to 100 years. As the credit universe continues to evolve rapidly, investors need to assess the holistic size of the on and off-balance sheet funding.

AI related stocks now represent a third of the S&P 500's market capitalisation

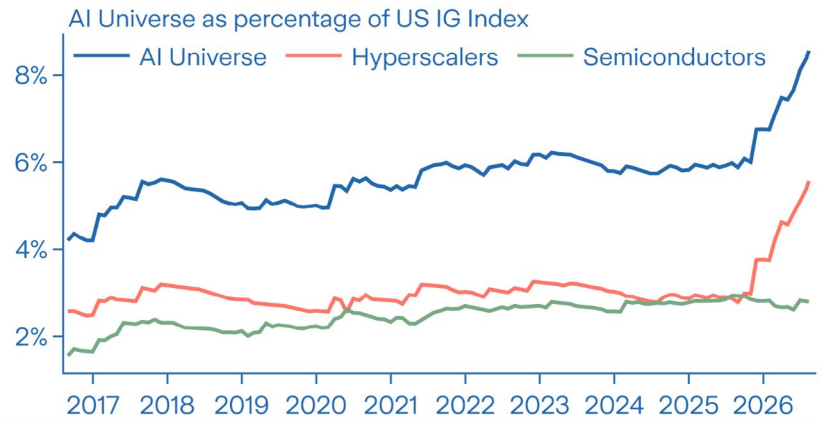


Note: AI universe defined as the S&P 500 constituents falling within Hyperscalers, semiconductors and memory/hardware companies, and data centre developers and financing vehicles.

Source: Bloomberg

As Hyperscalers scale up their investments, debt markets have been also accessed, drawing funding from both public and private debt markets.

Rapid evolution of the credit universe in recent quarters

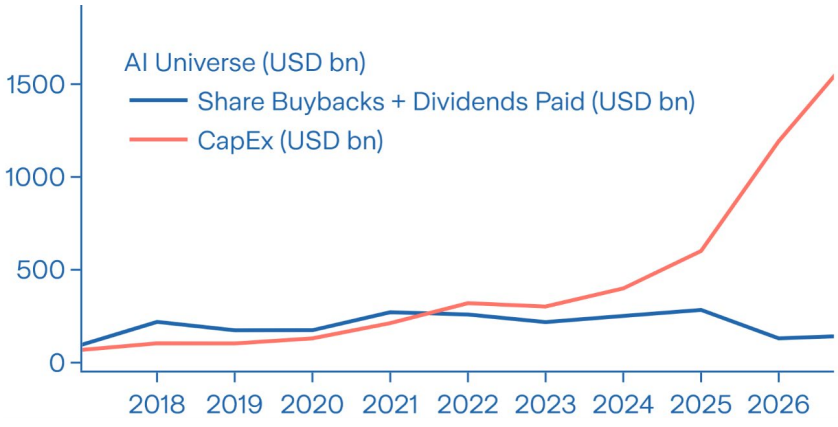


Note: AI universe defined as the credit market issuers falling within Hyperscalers, semiconductors and memory/hardware companies, and data centre developers and financing vehicles.

Source: Bloomberg

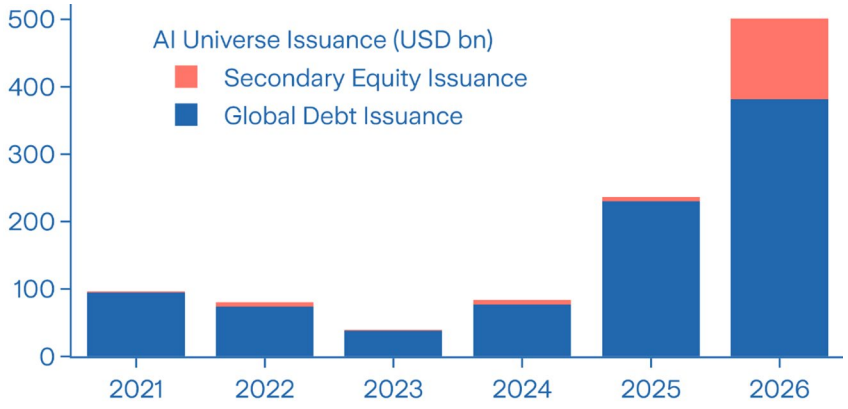
The scale of this shift is visible in how AI related companies are allocating capital. Capital expenditure has risen from roughly USD 300bn in 2022 to over USD 1.1tn in 2026, funded through a combination of internal cash flows, project financing, and, increasingly, through equity and debt issuance. While the cash returned to the shareholders remains positive in absolute terms, it is modest relative to the scale of investment as capex now runs at roughly eight times the combined value of buybacks and dividends across the universe. Both bond and equity issuance have surged in parallel, reflecting the breadth of funding channels being tapped simultaneously.

Returning cash to shareholders takes a backseat to capex in the AI universe



Source: Bloomberg

Bond and stock issuance are surging

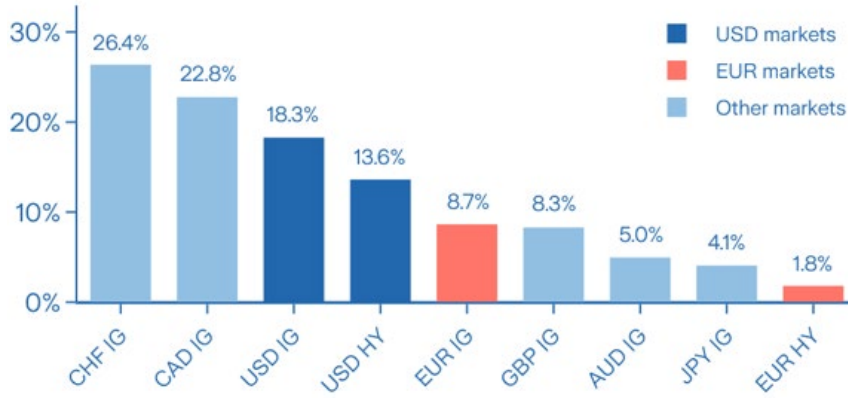


Note: As of 26th of August 2026.

Source: Bloomberg

It is notable that while most of the credit funding has so far been in the US credit markets due to the size and domicile of most companies, other markets are likely to benefit from a spillover. This can be seen in recent debt deals by the major Hyperscalers that have been issued across tenors from five to 100 years and in various currencies such as USD, GBP, CHF, EUR, CAD, AUD and JPY.

AI corporate bond issuance as percentage of total corporate bond issuance across credit markets so far in 2026



Note: As of 26th of August 2026.

Source: Bloomberg

Understanding the key components of the AI ecosystem

The AI ecosystem essentially involves the entire capital market in some shape or form. However, the main focus currently lies on the companies that take a central part in model development and the infrastructure needed for it. It is worth noting that the eventual success of AI as a technological revolution will depend on how widespread the use of AI is among companies and consumers and hence what the monetisation of AI investments will be.

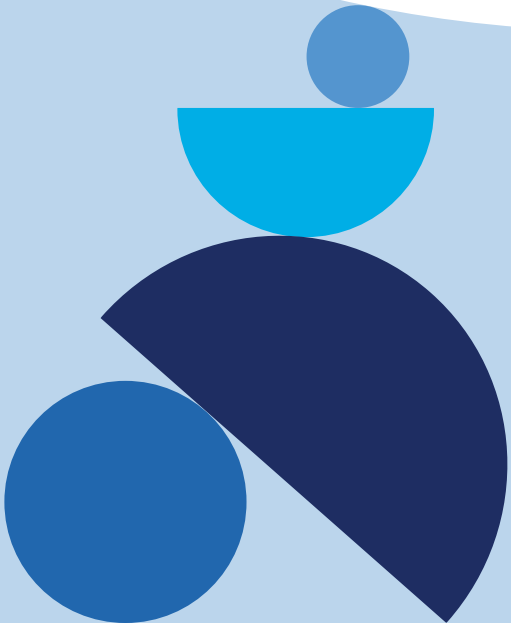
It is worth thinking about the ecosystem in the following terms as well as the companies associated with them

- Pure play model developers: OpenAI and Anthropic
- Hyperscalers and neo-cloud companies: Alphabet, Microsoft, Amazon, Meta, CoreWeave, Oracle, SpaceX
- Semiconductors and memory supply chains: Nvidia, ASML, SK Hynix, Samsung, TSMC etc.
- Data centres and data centre builders: Digital Realty Trust, Equinix, Applied Digital, Hut 8, Terawulf, Cipher Digital, Core Scientific
- Energy and utility companies: NextEra Energy, Vistra
- Peripheral AI related companies: IBM, ServiceNow, Salesforce, Snowflake, Dell Technologies, HP
- Eventual end users: the majority of non-AI companies

In our initial review, we categorised the corporate universe most relevant to AI at this point as outlined above. However, for the purposes of this paper we have created the following three categories to frame our analysis.

1. Hyperscalers
2. Semiconductors & Memory/Hardware companies
3. Data Center Developers and Financing Vehicles

It is important to point out that within the categories above, capital expenditure commitments are the largest from Hyperscalers. In this paper we mostly focus on the first two segments as the last segment is relatively small and developing.



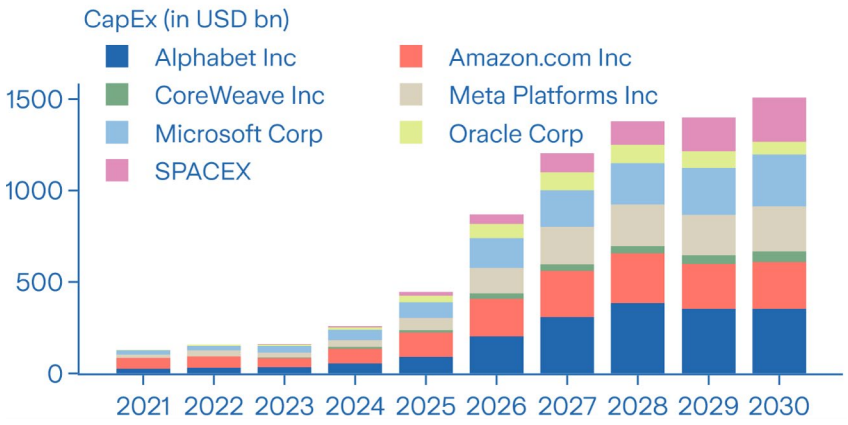
Question 1: Is the AI revolution sustainable from a funding or cash flow perspective? Are the big spenders spending within or beyond their means?

This is the most important question in our opinion and key when considering AI's impact on financial markets in the long term. The concentration and scale of capital commitment behind the AI buildout is staggering in absolute terms, although we have noted previously that the amount of capital spending relative to GDP is still milder compared to previous booms. It is estimated that the five large Hyperscalers, namely Alphabet, Amazon, Microsoft, Meta and Oracle will collectively spend approximately USD 5.5tn between 2025 and 2030. This figure swells further if the so-called 'Orbital-Hyperscalers' such as SpaceX, CoreWeave, OpenAI and Anthropic are included, which would bring roughly estimated commitments to USD 7.6tn through 2030. In addition, key semiconductor players in South Korea, which are the largest beneficiaries of AI outside the US, are also committing to spend USD 1.5tn to expand their capacity in chip manufacturing. All in all, around USD 9tn will be invested over the coming years, with the Hyperscalers doing the bulk of the spending.

Why Hyperscalers are best positioned to do the heavy lifting

Committing trillions to an unproven technology requires not only ambition but also the balance sheet strength and cashflow diversity. That is exactly what sets the Hyperscaler segment apart, which we define to be cloud-providers and AI-native platforms such as Alphabet, Amazon, CoreWeave, Meta, Microsoft, Oracle and SpaceX. Collectively, the spending plans of these companies cross an annual threshold of USD 1tn, and they intend to sustain it through 2030, as per company plans and analyst forecasts. It is notable that these capex forecasts have been revised up during the last few quarters, which is likely to continue for some time.

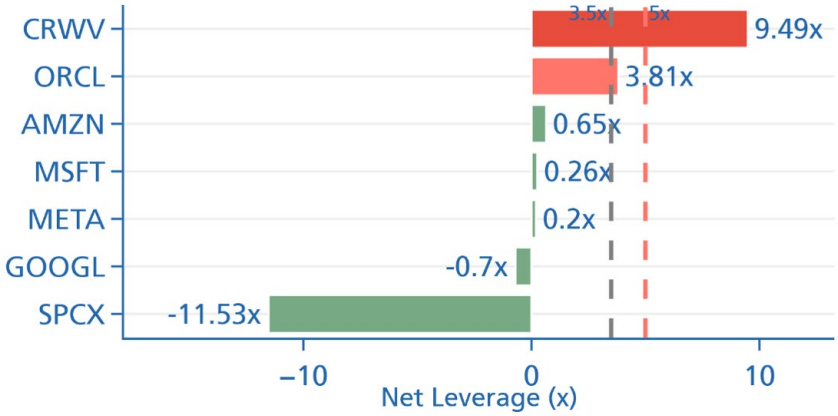
Capex trend in the Hyperscaler segment



Source: Bloomberg

Why Hyperscalers are the best placed for making substantial investments essentially comes down to their fundamentally strong balance sheets as well as diversified business models. The larger companies carry credit ratings in the AAA to AA range, and their cashflow generation across cloud infrastructure, advertising, enterprise software and e-commerce provides multiple independent revenue streams, meaning the AI buildout does not depend on a single bet paying off. That said, there are likely to be some winners and losers within the group. In particular, Oracle and CoreWeave have cash flow trajectories that appear less favourable than those of the stronger players, while SpaceX has also received lower credit ratings from rating agencies (BBB to BBB+ across S&P, Moody's and Fitch), despite its larger cash pile which is reassuring for short maturity bondholders.

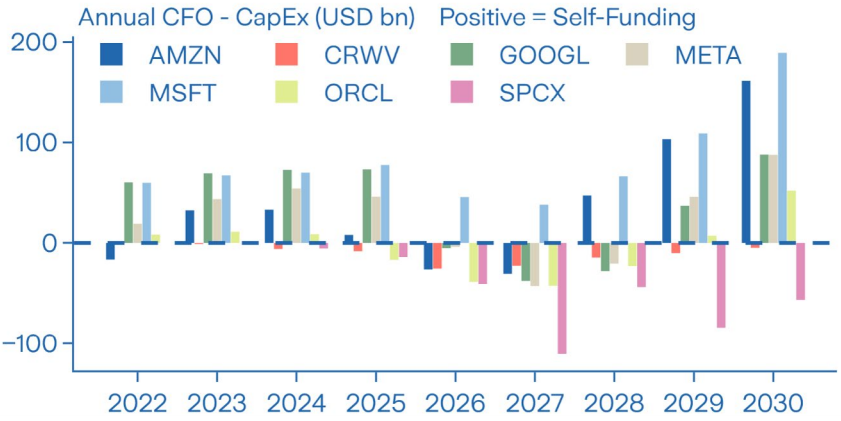
The starting point for the large Hyperscalers is one of balance sheet strength



Note: Leverage is defined as Net Debt to EBITDA ratio, as of 2026 Q2 numbers.

Source: Bloomberg

Several Hyperscalers can fund the AI buildout with organic cash flows

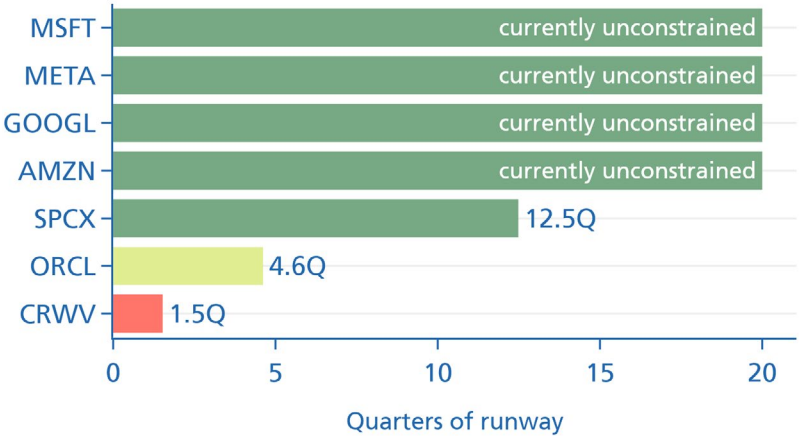


Note: CFO stands for cash flow from operations and CapEx stands for capital expenditures.

Source: Bloomberg

We believe that based on current capex assumptions, most Hyperscalers, with the exception of Oracle and CoreWeave, are likely to not run out of cash despite their capex commitments. This is a very encouraging sign especially given that cash generation at these companies comes from a diversified business model.

The cash runway of some large Hyperscalers is comfortably long given current spending forecasts



Note: Cash runway is defined as current cash balance divided by current quarterly net burn (operating cash flows ex capital expenditure). A short runway implies near-term external funding needs.

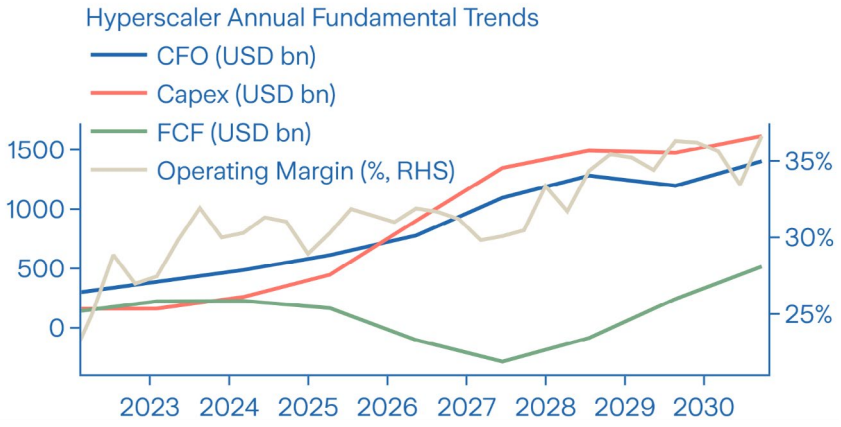
Source: ZIG, Bloomberg

While the cash flow picture is broadly reassuring for most of the group, it is not uniform. Operating margins across the large Hyperscalers are expected to expand steadily through the end of the decade, with margins at Alphabet rising from around 32% to 37%, Amazon from 12% to 18% and Microsoft holding remarkably stable at around 46% throughout, despite the scale of the investment commitment. These projections are based on analyst forecasts for these companies. This suggests that AI monetisation is expected to improve underlying profitability even as capex accelerates. While this may seem an optimistic assumption, the diversity of cash flows and the starting point for margins is important, which is the fundamental basis for our constructive view on the segment. Meta is the clearest example of the temporary squeeze dynamic, with operating margins dipping from 41% in 2025 to 34% in 2026 before potentially recovering to prior levels by the end of the decade, as per analyst forecasts.

Free cash flow tells a similar story for most names, compressing in 2026 before recovering as revenues scale. Oracle and CoreWeave are a different matter. Oracle runs negative free cash flow throughout the forecast period, potentially only turning positive in 2030, while its operating margins remain broadly flat around 30 to 34%, suggesting limited operating leverage from the investment. CoreWeave and SpaceX both begin the period with negative operating margins and, while both improve, their free cash flows are expected to remain deeply negative as capex consistently outpaces cash generation.

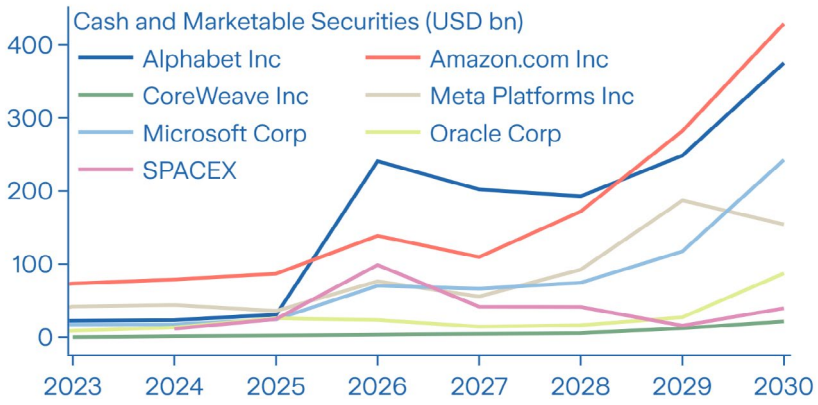
The key distinction within the group is therefore between those for whom the near-term cash compression represents a temporary lag between investment and returns, and those for whom structural dependence on external financing is a defining feature. It is the latter that warrants close attention from an investor's perspective.

Annual fundamental trends expected for cash and margins in Hyperscalers



Source: Bloomberg

Despite the capex, cash balances are expected to remain healthy



Source: Bloomberg

Hence, despite the increasing share of AI related companies in credit markets, somewhat counterintuitively, all the debt issued is likely at the margin to improve the quality of the credit market. This is likely to be the case because the share of high-quality technology would potentially increase versus that of industrials, financials and utilities. In conclusion we see the AI revolution as being sustainable at current projections from a cash flow perspective, as the large Hyperscalers appear to be spending within their means.

Question 2: Which market segments are likely to be the greatest beneficiaries of the AI boom?

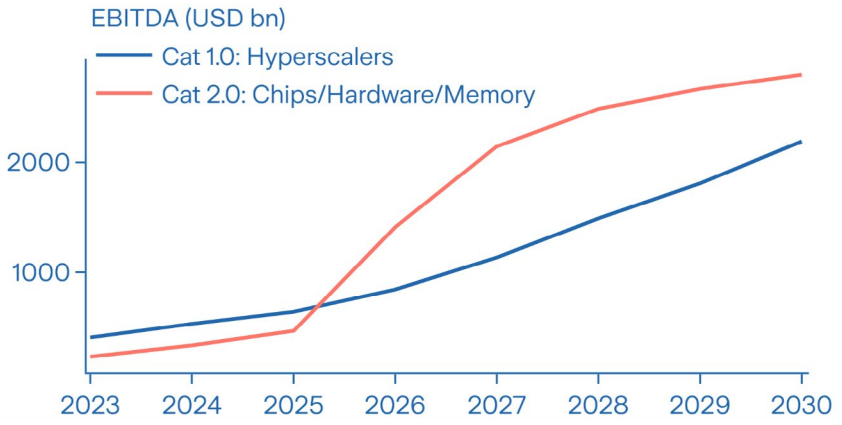
The largest beneficiaries in the long term – the Hyperscalers

As discussed previously, the Hyperscalers are likely to be the major beneficiaries as a segment in the long term, although name selection and constant adjustment of exposures will be important for investors as technology advances rapidly. As discussed already, the large Hyperscalers such as Meta, Microsoft, Amazon and Alphabet appear to be spending within their means and are likely to benefit from AI adoption while remaining more insulated from model provider risks.

The largest beneficiaries in the short to medium term – the Semiconductor and memory companies

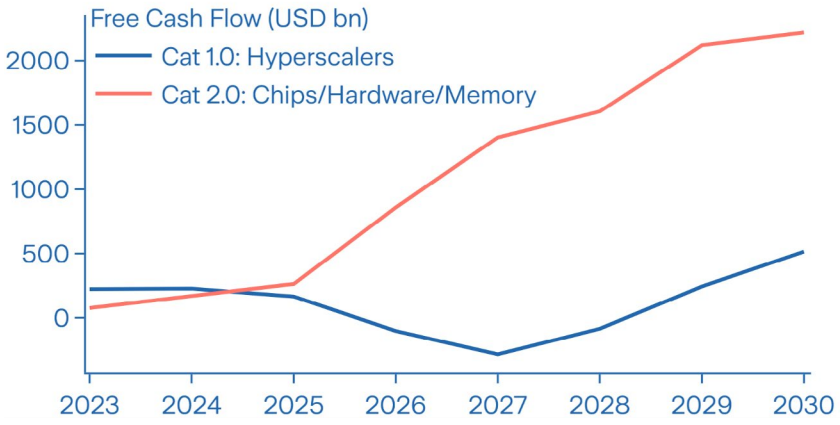
In our categorization, the semiconductor segment is the one best placed to benefit the most from the AI boom in the short to medium term, at least over the coming 2-3 years. There has been a structural shortage of supply for at least a few years, with users signing up for multi-year contracts. New investments in Korea, for example, are likely to expand capacity only after 2030. The increase in memory prices is boosting margins, although this raises the risk of impacting demand at some stage. It is worth noting that these are 'pick and shovel' companies, which also tend to be cyclical based on the long lead capacity buildout. That said, given the strong demand that is expected with AI buildout over coming years, there is a case to be made that this time could very well be different, and hence the growth is likely to be structural rather than cyclical. In any case, it seems the prospects for the next fe years are promising for the sector.

Semiconductors are expected to overtake Hyperscalers in aggregated EBITDA



Source: Bloomberg

Semiconductors could likely have the largest free cash flows as CFO exceeds capex



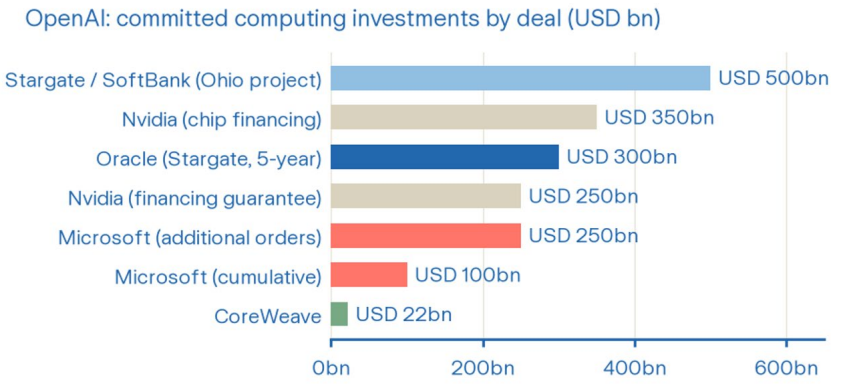
Source: Bloomberg

We believe that in line with the 'picks and shovels' narrative, other infrastructure providers such as construction and energy companies are also likely to benefit, along with most companies involved in the AI supply chain.

Question 3: Which segments are the most vulnerable?

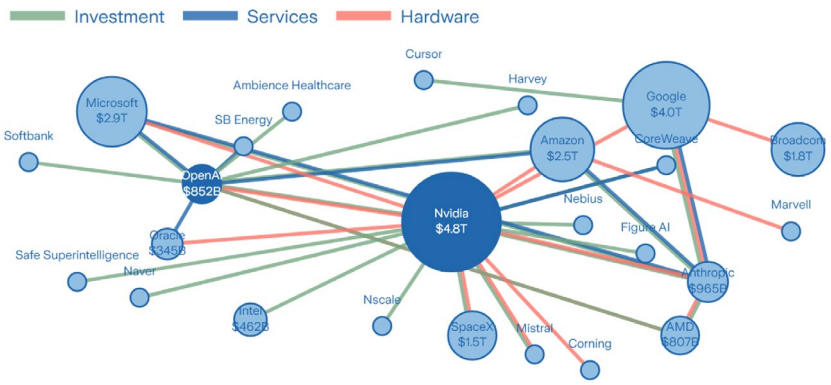
We believe pure play model developers such as Anthropic and OpenAI could be the most vulnerable from an investment perspective, along with companies such as Oracle that are exposed to them. The pace of commitments from OpenAI is very large and model development globally is running at a very fast pace. Hence the risk of disruption is high. As shown in the graphic below, there is an element of circularity that is of concern for many investors. This is precisely the reason why we believe it is important to focus on the vulnerabilities and weak points, using balance sheet strength and diversity of cash flows as an anchor to differentiate between the weak and the strong.

OpenAI's commitments



Source: OpenAI, Bloomberg

AI ecosystem companies are highly interlinked to each other



Note: Bubbles represent the valuations of companies, where public company valuations reflect market capitalisation and private company valuations are based on funding rounds as of July 27th, 2026. Lines represent announced deals between companies and are coloured by deal type: investment (equity stakes and funding commitments), services (cloud, compute and data center contracts) and hardware (chip and equipment supply).

Source: Bloomberg

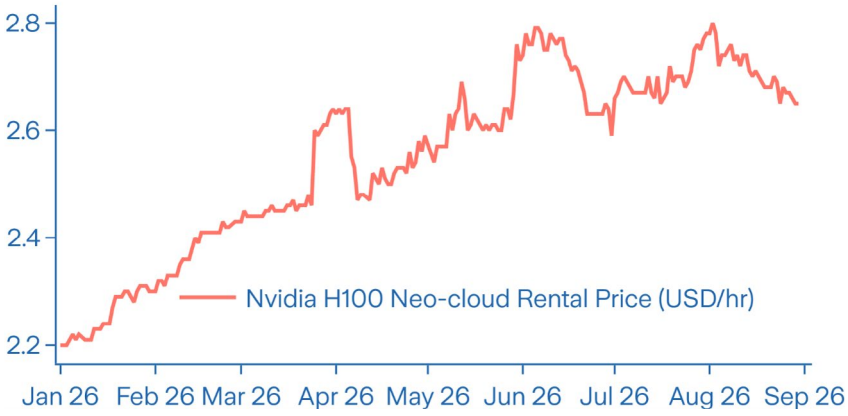
Question 4: What are the risks to the AI story in markets that can trigger a deep market correction?

While the biggest short-term risk to the AI technology revolution is rapid technological disruption, the biggest long-term risk is a lack of end-user demand.

Long-term user demand

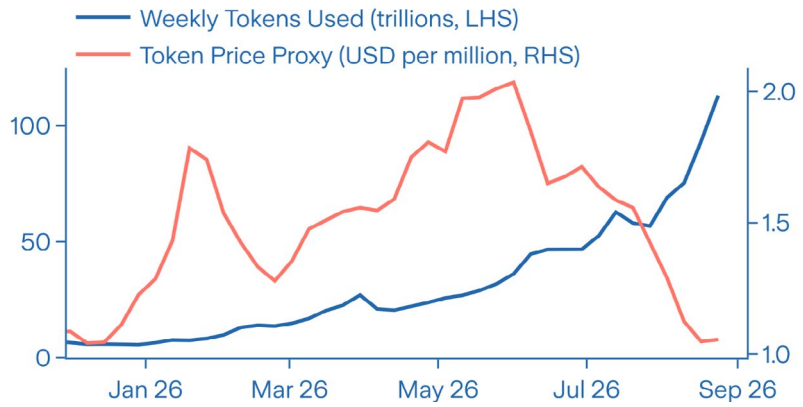
Although AI is expected to bring long-term productivity gains, long-term end-user demand is still unclear. We have looked at adoption by European companies in our previous topical thoughts, **Insert Tokens to Play** and the data there is mixed While many companies report boosts in productivity, not many report the earnings impact. Furthermore, if the main benefit of AI is the replacement of labour en masse, companies may face political backlash or additional taxes to help what are already stretched government balance sheets that will need to support more unemployed workers. The best solution for markets is the middle path that allows companies to generate higher profits without shedding too much labour, but the evidence for such a path needs to be seen. The risks for end-user demand can be monitored, however, using various measures of adoption.

GPU rental prices indicate demand is strong



Source: Bloomberg

Declining token price is positive for adoption as models advance



Source: Openrouter.ai, Silicon Data

Short-term risks from rapid technological development

The risk from cheaper Chinese models (with many labelling the release of Kimi 3 as a 'second DeepSeek moment') is most pronounced for pure play Model developers and less to others in the ecosystem. However, as the models evolve to be more efficient, there may eventually be less demand for compute, which could impact valuations for semiconductor producers as well as for data centres. Hyperscalers, however, look more insulated since cloud inference margins appear broadly similar whether serving open-source or closed-source models (at around 35% to 36% either way), with the markup charged by frontier labs accruing to the model provider rather than the cloud layer, according to analysis performed by Barclays (What Happens To Hyperscalers (AWS & GCP) As Open-Source Tokens Take Share?). Faster open-weight adoption would, if anything, diversify Hyperscaler revenue away from a handful of frontier labs like OpenAI and Anthropic, which we view as positive for cloud pricing power in the long term rather than a threat.

Other risks

There are further risks to consider as well, such as bottlenecks to AI capacity expansions, which could emerge from stress on capacity of the electrical power grid, lack of demand in credit markets, and public opposition to data centre construction. There is also the risk that Chinese semiconductor capabilities develop rapidly, and the market is flooded with cheap products, reminiscent of developments in EVs and solar panels, which could cause a structural decline of AI related profitability. A notable rise in bond yields is another risk as this can negatively impact not only the valuations of technology companies but also the economics of AI investments due to higher funding costs.

Question 5: Lastly and most importantly, what are financial markets pricing today and what is the outlook?

Equities: We are positive on the asset class and the AI sector

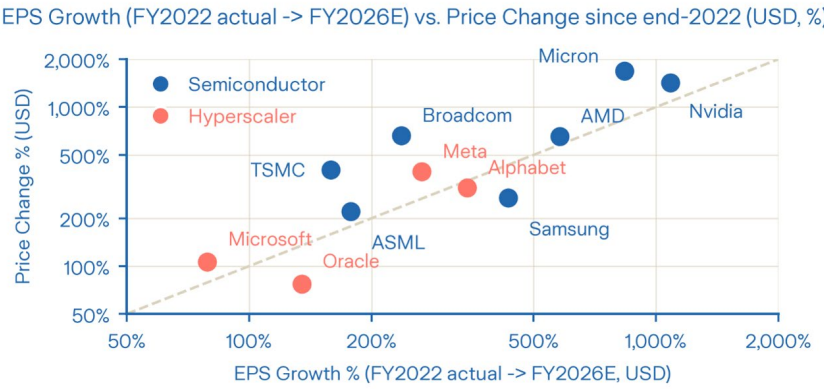
At an asset class level, despite intra market uncertainties, prospects appear positive for stocks overall as investments and a productivity boost from technology is likely to be earnings accretive in the long run. However, short-term gyrations are likely as the market digests the incoming changes and in the short-term stocks get overbought and oversold. A key reason for our view on stocks is that we are comfortable with Hyperscalers taking on more leverage in the short to medium term to fund the AI boom. If companies in another non-financial sector, such as industrials, were increasing leverage on this scale, we would be more concerned about the durability of the investment cycle.

Market pricing of AI stocks does not seem exuberant

Since the AI narrative took hold in late 2022, stocks have had a stellar rally in a secular bull market with technology stocks doing particularly well while credit spreads have been hovering around their historic lows, especially in the US. Despite this, we believe markets are not exuberant but instead are rather realistic in pricing the benefits from the technology advancements brought on by AI, which is why we believe stocks could likely have further structural upside in coming years.

If we compare the price relative to the rise in expected EPS since the end of 2022, we can see that market pricing has moved largely in line with earnings increases, especially for semiconductor producers such as Nvidia and Micron for which extraordinary EPS revisions of over 900% have been broadly matched by price appreciation. This makes us constructive on semiconductors as a group. Some hyperscalers such as Meta, Microsoft, Alphabet and Amazon have all seen meaningful earnings growth and upgrades that broadly justify their price gains, which is the foundation of our constructive view on the segment. While risks from technological development and end-user demand remain, there also exist upside risks if the adoption of technological improvements gathers pace. In our view, current pricing may not fully reflect the potential upside, while downside risks appear more contained for the large Hyperscalers than for less diversified AI related companies.

Price delta vs EPS delta for major Hyperscalers and semiconductors– since 2023 until end 2026



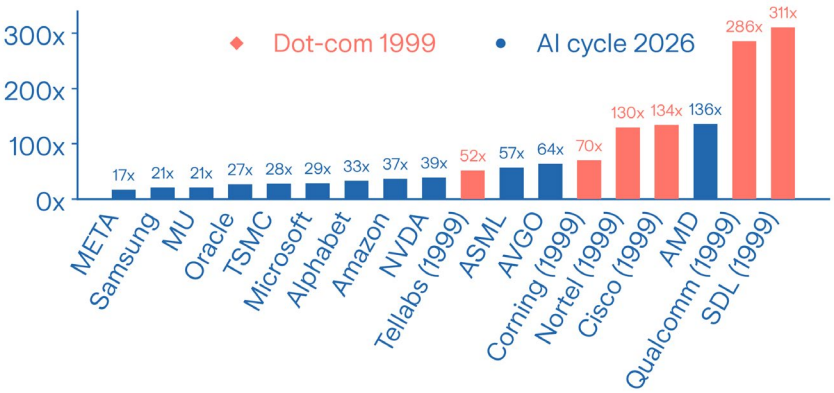
Note: Amazon excluded due to negative EPS in 2022.

Source: Bloomberg

A comparison to the dot-com era is enlightening:

Trailing multiples reinforce this picture, with most of today's AI names trading at a fraction of where dot-com comparables stood at their 1999 peak. Even Nvidia sits well below where Qualcomm or SDL traded back then. It is worth noting that several of the dot-com names were not consistently profitable, unlike today's AI leaders. This supports our view that AI related valuations remain grounded in earnings rather than the kind of multiple expansion seen in 1999.

Valuations are a far cry from the dot-com era: Trailing P/E: dot-com era (Dec 1999) vs. AI cycle (Aug 2026)



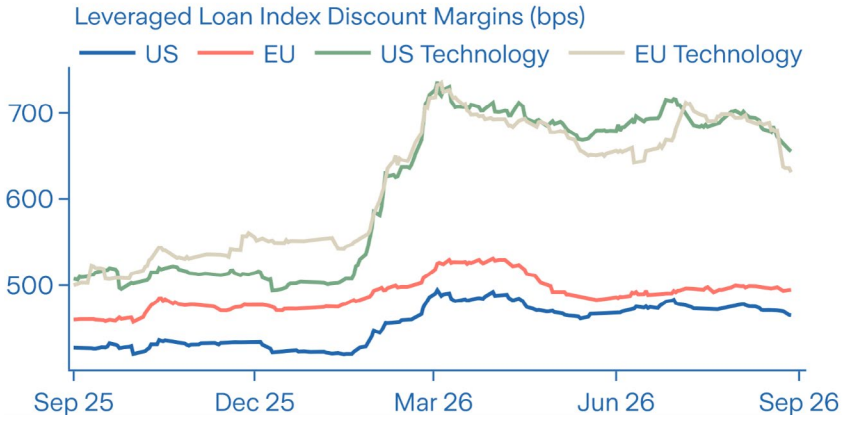
Note: Trailing 12m P/E of unprofitable companies from the dot-com era not shown.

Source: Bloomberg

Credit markets: We are positive on large AI issuers, negative on the broader market

Credit markets are at greater risk due to the natural dominance of more indebted companies in the indices and the market. Unlike equity markets, where many of the largest index constituents are likely to be direct AI beneficiaries, credit markets include a broader range of indebted companies that may not benefit from AI and could instead be disrupted by it. It is comforting that the utility sector, which is a large part of the credit market, is likely to benefit from the AI cycle but the same cannot be said for the broader industrial and financial space. The weight of the technology sector, and especially the Hyperscalers, is rising rapidly within credit markets, which we currently consider to be a positive rather than a negative development. The disruption in the software sector valuations earlier this year is an example of how business models can be perceived to be upended by technological developments.

Software disruption has hit High Yield and leveraged loan segments

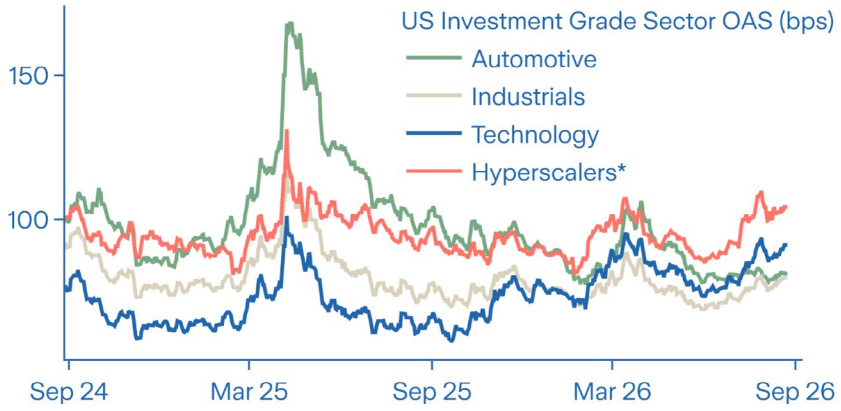


Source: Bloomberg

AI credit valuations appear relatively attractive versus fundamentals for most names

At the same time within credit markets, AI related spreads are trading wider relative to their quality. As mentioned before, some of the Hyperscalers, which are expanding at the fastest pace within the credit markets, are highly rated by the rating agencies. However, due to the large amounts of jumbo supply as well as investor scepticism, these bonds appear to trade wider to ratings and fundamental credit worthiness. It seems to us that given the rapid increase in credit supply from AI issuers, investors are also concerned about concentration limits, which is also partly responsible for the spread discounts. Hence, while we believe that credit spreads appear tight at an index level, within the index we view the risks to be discounted in spreads of technology names due to the supply/demand technicals. This is a positive development from a market stability perspective.

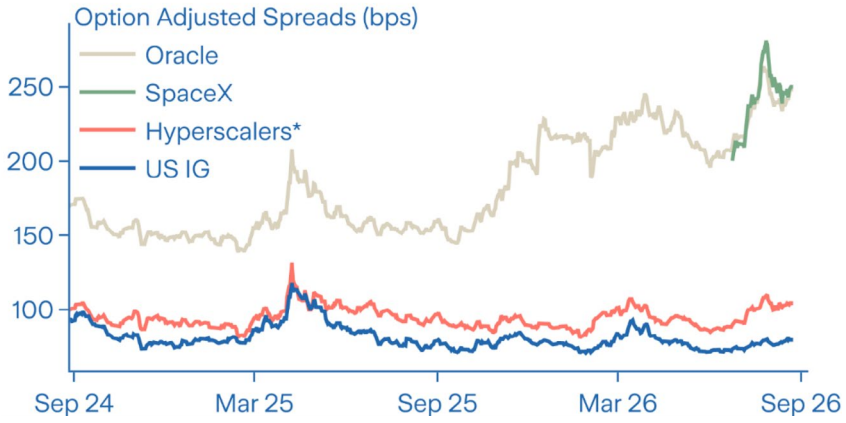
Hyperscalers trade wider than traditional sectors of credit



Note: Hyperscaler* for the purpose of this chart represents median Investment Grade Hyperscaler spreads excluding Oracle, SpaceX. CoreWeave is excluded as it is rated High Yield.

Source: Bloomberg

Not all Hyperscalers are treated equal in credit markets

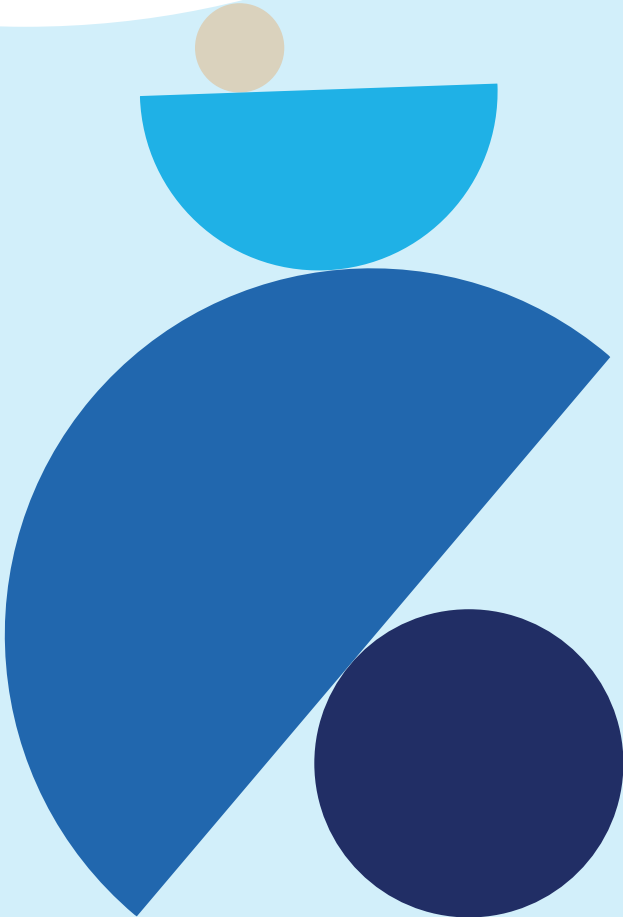


Note: Hyperscaler* is median IG Hyperscaler spreads excluding Oracle and SpaceX; CoreWeave is excluded as it is rated High Yield.

Source: Bloomberg

Conclusion

The AI boom is likely to drive financial markets over the coming years. We tried to assess the outlook from an investor's perspective by following the cash flows. We asked ourselves five key questions, the answers to which we found particularly insightful. Our first question was whether the AI spending boom is sustainable and if the big spenders of capex, which are the Hyperscalers, were spending within or beyond their means. Our conclusion was that the large Hyperscalers were operating well within their means, which was encouraging for the sustainability of the AI boom. This is one of the most fortunate aspects of the AI revolution for financial markets as Hyperscalers have diversified and highly cash generative businesses and very strong balance sheets—if there is any segment in the market that can do the heavy lifting of several trillions USD, it is indeed the Hyperscalers. Secondly, we asked who is likely to be the greatest beneficiary from the AI boom, and we concluded it would likely be the Hyperscalers, semiconductors and other infrastructure companies such as energy companies and construction companies. Thirdly, we asked which companies would be the most vulnerable. These would be the less diversified model developers that can be overtaken by rapid technology developments. Fourthly, we asked ourselves about the catalyst for a risk of a deep market correction. This could happen by way of underwhelming adoption of AI and technological disruption, especially from China. Our final question was around the prospects for financial markets given today's prices. This led us to the conclusion that the prospects appear positive for stock markets while being more mixed for credit markets. The valuations of the AI sector in both stocks and credit don't appear to be exuberant and appear to be a far cry from the dot-com era.



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