

AI and Markets

Towards the event horizon

Recent weeks have seen a string of warnings from bankers, central banks, and economists cautioning us about the risk of a bubble in stocks linked to artificial intelligence (AI). However, we must balance this against the very real transformation that AI is bringing to the global economy to decide how best to build resilient portfolios.





Summary

- In recent weeks, investors have been warned of high stockmarket valuations and a potential bubble in artificial intelligence stocks.
- We acknowledge that valuations across equity markets are generally elevated. An eventual stockmarket correction will come, as it always does. But there is little real data to suggest this risk is unusually high at the current time. We also believe that seeking to predict the timing of a correction is not possible.
- We do not believe the evidence exists to support the argument that there is currently a bubble in AI listed stocks. Yet, we are clear that a bubble could form. Both the risks and opportunities created by AI are among the largest in stockmarket history.
- We know that excessive speculation in private markets can find its way into listed markets.
- Understanding how a shock like this transmits across asset classes is key for us in the coming years. This will help us build resilient portfolios.
- Overall, the economic environment remains quite supportive for investment, with interest rates likely to fall further.
- However, we acknowledge the economic cycle is advanced, and this argues for portfolios that have higher levels of geographical and factor diversification than in recent years, with fixed income allocations that are focused on providing diversification rather than wringing the last ounce of value out of already well-priced credit markets.



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The current climate

There have been few moments in the history of technology so pregnant with opportunity as this one. Artificial intelligence is promising to transform almost every sector of the world economy, achieve previously impossible leaps forward in medicine, and force us to re-examine how we even define human work.

The hope that this feeds through into a decade of super-normal returns for stockmarkets has led equity prices to continue to rise throughout 2025 despite a wave of external events that could well have blown them off track.

So great has the enthusiasm been that it has helped lift almost all markets by supporting underlying headline economic growth, despite a wave of protectionist tariffs from the United States. To be sure, the pain felt by stockmarkets from the US administration's disruptive trade policy has also been eased by a benign global economic environment. Pressure from inflation has receded, if remaining above pre-COVID levels, and central banks are gradually cutting interest

rates.

Such apparent complacency though from stockmarkets, can be a cause for concern, a sort of irrational calm that warns us a bubble may be forming.

Warnings on this front have been unsettling in recent days, coming from key global institutions rather than just opinionated forecasters.

Kristalina Georgieva, the managing director of the International Monetary Fund, warns: "Today's valuations are heading towards levels we saw during the bullishness about the internet 25 years ago. If a sharp correction were to occur, tighter financial conditions could drag down world growth, expose vulnerabilities, and make life especially tough for developing countries."

Meanwhile, the Bank of England's Financial Policy Committee, which is responsible for spotting emerging threats, said: "The risk of a sharp market correction has increased."

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Kristalina Georgieva

Managing director
International Monetary Fund



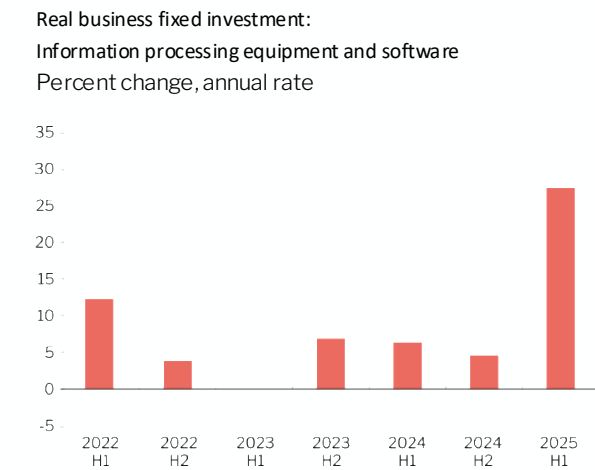
Economic dependence on artificial intelligence

At the root of this anxiety is an analysis of just how dependent the world economy and stockmarkets have already become on AI.

Jason Furman, a Harvard economist who served as chair to President Obama’s Council of Economic Advisers, estimates that in the first half of 2025, some 92% of US economic

growth was driven by investments into the energy-intensive data centres needed to power AI. Without this, he estimated US growth would be just 0.1%.

In fact, in these six months, he shows that more money was spent on data centres than was spent by the US consumer.



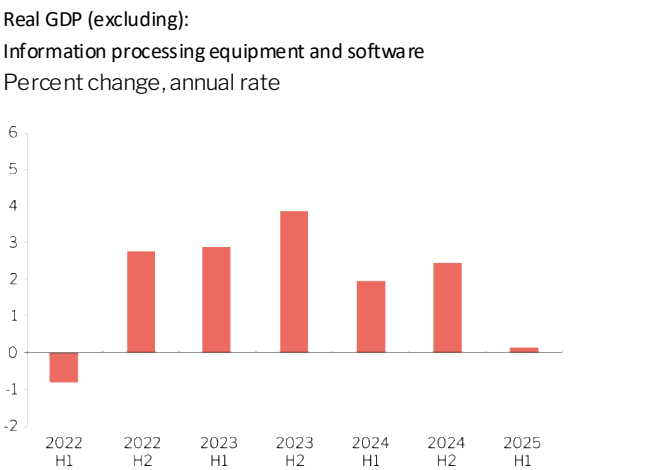
Source: Furman/Harvard

Within stockmarkets, the largest five US technology stocks now make up 16% of the global stockmarket and the largest 10, of which eight are directly technology-focused, make up 25%, according to Goldman Sachs.

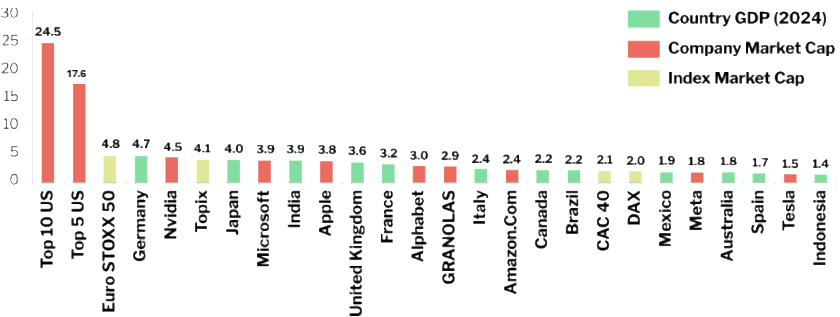
Consider these companies in reference to the size of countries, and we can see how dependent we already are on not just the fundamental market, but the bet that AI will transform the world and produce super-normal profits for years to come.

Importantly, the growth of AI does not come cheaply, and its growth is linked to the growth in another major transformative phenomena in world markets today: private credit. Following the financial crisis, businesses have increasingly begun turning to a shadow banking system to fund their growth, avoiding the regulatory focus of borrowing from highly regulated banks.

The rate of growth in this credit is extraordinary. A forecast



The top 10 US companies dominate the world equity market
2024 GDP, market prices as of last close; USD trn



Source: IMF, FactSet, Datastream, Goldman Sachs Global Investment Research
Past performance is not a guide to future performance.

from BlackRock suggests the money invested will rise from \$1.4 trillion at the start of 2025 to \$3.2 trillion by next year. The biggest consumer of this credit is AI data centres. Morgan Stanley estimates that by 2028, companies will have borrowed \$2.9 trillion to spend just on data centres. This wave of borrowing understandably leads people to question whether this is not simply a bubble but a debt-fuelled bubble that could lead to a credit crunch.



Is this currently a stockmarket bubble?

On the surface, the extraordinary AI share price growth looks exactly like a bubble, and the Bank of England has pointed to the classic metrics economic historians use to demonstrate this, such as how company valuations today compare to their valuations across the economic cycle.

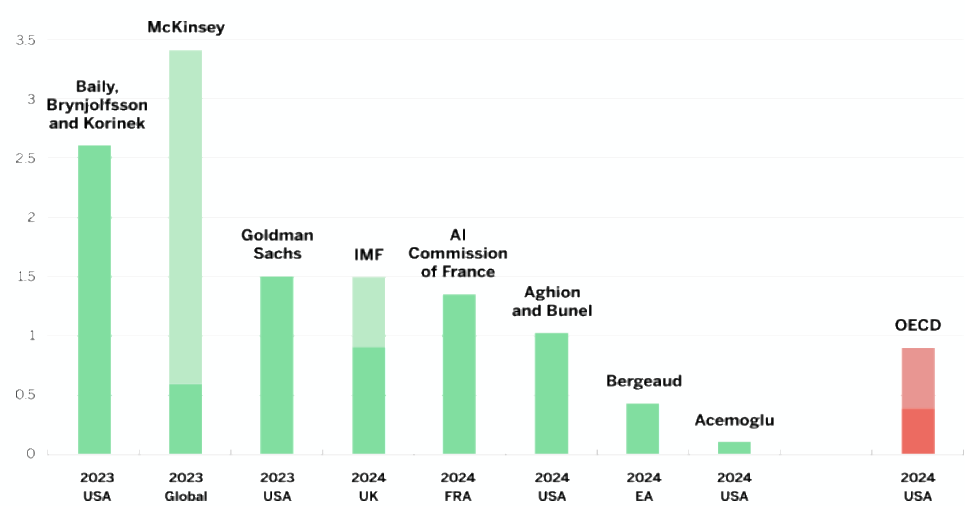
Technological breakthroughs, after all, do often lead to bubbles. One academic study from Chancellor and Kramer suggests that of 51 bubbles identified between 1825 and 2000, some 73% were related to enthusiasm about an innovative technology.

These bubbles have often formed just at the moment an innovative technology is about to enjoy commercial success, yet when enormous uncertainty persists about how big this success will be, or which companies will be the beneficiaries.

When it comes to AI, a similar sense of uncertainty exists about the scale of its potential impact.

Consider, for example, the range of forecasts that exist about how much AI will transform economic productivity – the key mechanism that leads to economic growth and then stockmarket return in the long-term.

Predicted increase in annual labour productivity growth over a 10-year horizon



Note: When the source presents a range of estimates as the main result, the lower and upper bounds are indicated by striped areas. In cases where modelling predictions primarily focus on TFP, labour productivity is obtained using simple assumptions about the aggregate capital multiplier.

Source: Goldman Sachs (2023), the underlying reference is Briggs and Kodnani (2023); for IMF (2024) the underlying reference is Rockall, Pizzinelli and Tavares (2024); for OECD, the range from this paper's main scenarios are shown.

All these eminent sources point to growth, but there is a huge variation in its size. More than enough variation, some may say, to determine whether the next ten years are a period of super-normal stockmarket returns or a profound disappointment to investors.

Goldman Sachs strategists Peter Oppenheimer and Sharon Bell sum up the challenge like this: “As the excitement grows,

the nature of the whole business becomes bigger than the sum of the parts. Ultimately, bubbles develop as the aggregate value of companies that are involved in the innovation exceeds the future potential cash flows that they are likely to generate; many investors have bought an option on the future, and they will not all pay off.”



Indeed, we can sum up how history has generally played out like this:

- A new technology emerges and becomes commercial
- New companies and credit flood into the market
- Valuations rise
- The bubble bursts, but the technology re-emerges and transforms the global economy
- The true company winners emerge
- Eventually, productivity rises across society, and difficult shifts can be needed in the job market

Perhaps the clearest example of this process in living memory is the internet-fuelled technology bubble at the turn

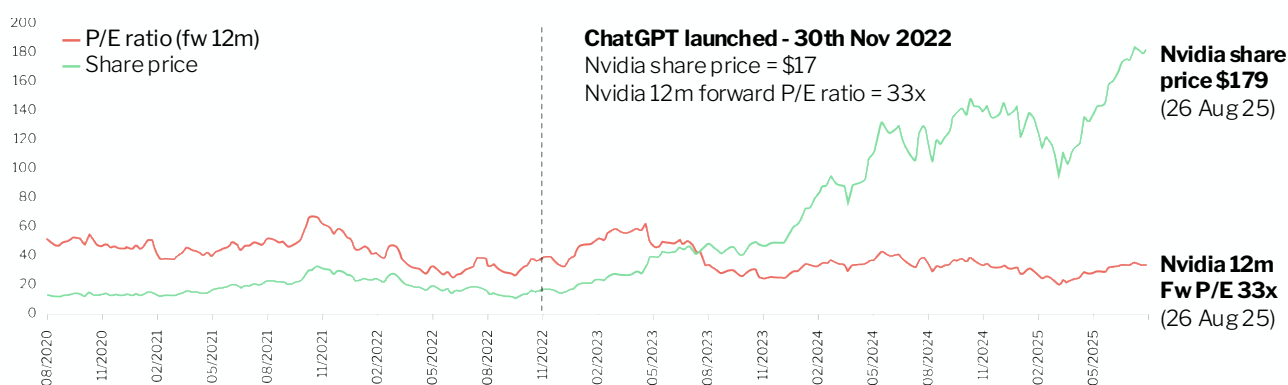
of the millennium, but there have been many others throughout history.

Using this reference to test the current explosion in the value of AI stocks shows us both why this seems highly similar but also flags some important differences.

The most important difference is that whilst valuations of US technology stocks are high this time, the profits produced by leading companies have kept up with their price rises in a way that is totally different from the eye-popping valuations seen in, for example, those internet stocks in 2000.

The most dominant stock in the phenomenon, the leading AI chip maker Nvidia, has kept its admittedly relatively high valuation at a hugely consistent level throughout the extraordinary rise in its price.

Nvidia share price and P/E multiple since ChatGPT launch



Source: Bloomberg at 26/8/25

It would be highly unusual for a bubble to occur because prices alone have gone up without being accompanied by highly speculative valuation, Oppenheimer and Bell say: "While stock prices have appreciated strongly up until now, these have been associated with powerful and sustained profit growth rather than excessive speculation about the future."

This is at odds with typical bubbles, which are related to speculation about profits that may occur in the future, not growth already being achieved. The tech-heavy Nasdaq index has actually seen valuations fall, not rise, over the past five years.

	Nasdaq Annualised Return	Nasdaq P/E Expansion	Nasdaq Earnings per Share Expansion
2015 – 2020	21.87%	11.26%	9.54%
2020 – 2025	14.86%	-3.42%	18.92%

Source: Bloomberg 30/08/2025

Past performance is not a guide to future performance.



The fact that overall valuations across the technology sector have not risen is also due to the fact that the market is rationally calculating the downsides of AI. These companies that mostly sell software have seen their share prices fall sharply over the last year on fears that their subscription-based models will break.

Further comfort around the specific point about whether the largest AI-focused stocks – the so-called ‘Magnificent 7’ are in bubble territory can come from who is financing their spending. Whilst debt levels have increased, they still amount to less than one year’s earnings, and the vast burden of funding for these companies is coming from free cash flow.

In reality, it could well be more cheaply valued companies trying to keep up with the AI boom who feel obliged to take on unmanageable debts, a risk that valuations of share price rises would provide no signpost for whatsoever.

In fact, the price rises we have seen in technology stocks have been highly correlated to real delivered earnings, and this is not a feature we generally see in bubbles. Goldman Sachs analysis suggests that the Magnificent 7 technology stocks are currently valued at around 27 times their earnings. This is around half the valuation of the most-favoured large technology stocks in the late 1990s and Japanese stocks at the peak of their bubble.

Total Returns % (USD)



Source: Bloomberg at 1/01/2010 to 16/10/2025
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These factors can provide us with some reassurance that AI stocks may not currently be in a bubble today.

It leads us to make an important but nuanced definition. Yes, it is true that, as the Bank of England highlights, global stocks are at high valuation levels relative to history. This may well foretell a stockmarket correction to bring valuations back in line. But this is a normal and self-healing process in stockmarkets and one that investors are generally well-advised to look through.

It is very different from the bursting of a major bubble in technology stocks in particular. When bubbles burst, it is not that valuations reset lower in order to respond to changing economic conditions; it is that they fall precipitously because their valuation was never rationally related to their price in the first place. Here, our base case is that a normal stockmarket correction will come; perhaps in the next six

months, perhaps in the next six years, but such changes are inevitable.

We should note though that much of the growth in AI businesses is happening in private markets, led by OpenAI itself. Venture capitalists are on track to spend \$200 billion in 2025 on AI companies according to the Financial Times. These start-up type companies are attracting genuinely eye-popping valuations unrelated to earnings. Venture capitalists of course expect many of their bets to fail. It is a very different sort of investing to that conducted by Albemarle Street Partners. But these unlisted highly-valued companies are doing huge business with the listed more reasonably valued Magnificent 7 we do hold. Shares in these stocks have risen sharply on days they have done deals with OpenAI, so any emerging funding concerns for the ChatGPT maker will feed into public markets and this must always be understood.

Shiller S&P 500 CAPE Ratio



Source: Data courtesy of Robert Shiller from his book, Irrational Exuberance.

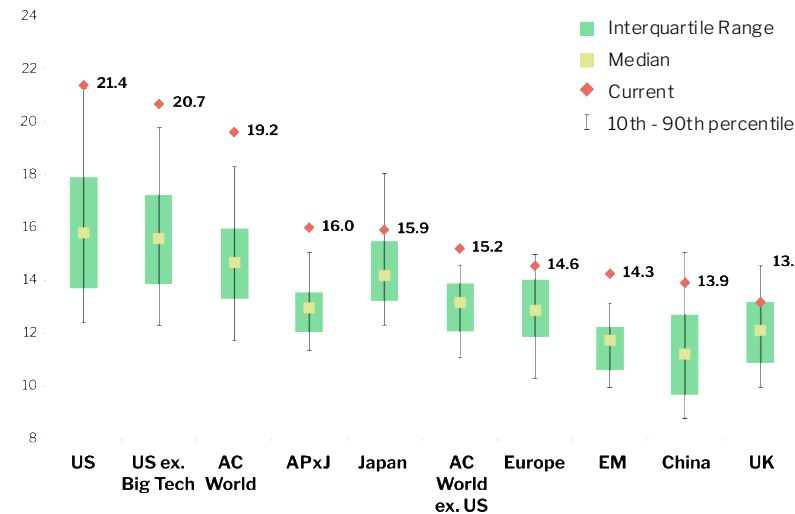
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It is also right to note that the US market, in general is more expensive relative to history than other markets.

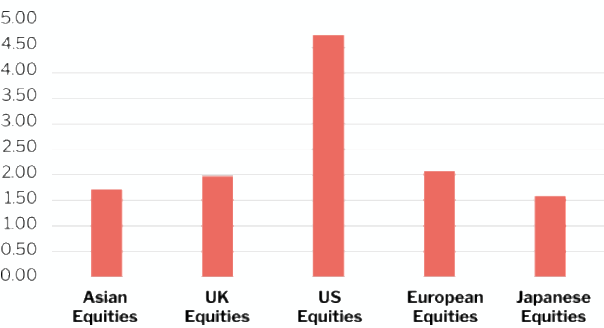
The US market is experiencing the most extreme valuations, in both absolute and relative terms

12m fwd P/E multiple. MSCI Regions, STOXX 600 for Europe and S&P 500 for USA. Data since 2003



Source: FactSet Goldman Sachs Global Investment Research

Price to book

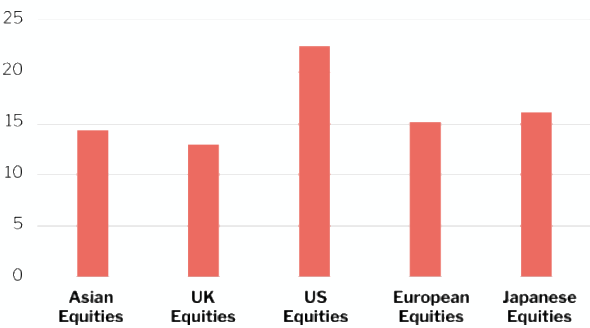


Source: FactSet, data to 26 /05/25

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This higher valuation has, however, been clearly justified by higher profits and earnings growth. Nonetheless, valuations matter, and the strategic asset allocation approach that Albemarle Street Partners applies each year arrives at estimated risk and return numbers that blend the long-term historical returns of assets with a backwards-looking and valuation-based analysis. This year’s valuation levels will likely pull down the suggested weight to the United States somewhat and lead us to a rational data-led modest reduction in our US allocations.

Price to earnings

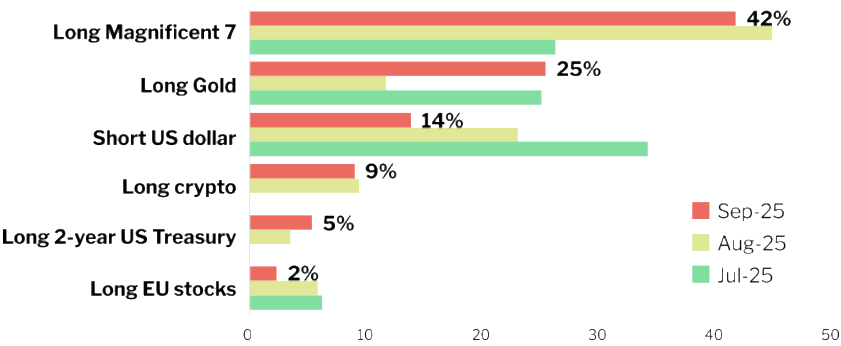


Such a shift away from the United States, due to generalised higher valuations, is in evidence amongst investors across the world and also arguably shown in the precipitous rise in the gold price seen in recent months.

It is also right to say that at the current time, global fund managers are embarking on what could be seen as quite an orderly process of diversifying their holdings away from the United States. This is not a stampede but a gradual progression. We can take some comfort that this leads to a re-ordering of global equity allocations, which somewhat lowers the chance of a shock shift.



"Long Magnificent 7" remains the most crowded trade



Source: BofA Global Fund Manager Survey

We must also be clear that whilst high valuations may suggest an ultimate stockmarket correction, the belief that this is imminent is not well supported by facts.

Over a ten-year period, it generally pays to own cheaper rather than more expensive shares, but over any time periods shorter than that, the correlation between the price you pay and the return on shares is very low indeed. You are slightly

more likely to do better if share prices are cheaper, but the effect is small. In short, the data does not tell us that share prices like this are particularly associated with a correction this year, next year or in five years with any certainty. Those investors who sell, hoping to avoid one, are in our view just as likely to miss a period of prolonged positive returns as to protect their investments.

Correlation of price paid and the return on shares

6m Correlation	1y Correlation	3y Correlation	5y Correlation	10y Correlation
-11.8%	-18.5%	-30.1%	-36.1%	-50.1%

Source: Shiller, Yale/ASPIM 30/08/2025

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Importantly, we do not believe the evidence is in place for the current market to be characterised as a bubble in AI stocks.

However, the current situation does not reassure us that a bubble cannot be in the stages of forming. It remains entirely possible that these companies cannot sustain their extraordinary profit growth, that other disruptive businesses emerge to break their dominance, or that the huge debt-fuelled investments they are making to buy data centre capacity, often in circular loops with one another, could come unstuck.

It is also true to say that whilst we can find much reassurance on the valuation of AI stocks, looking at a wide range of metrics, we cannot escape the point made by the Bank of England that the sheer concentration of stockmarket

indices in a few stocks means that any bump on the road here will have a huge effect everywhere.

Concentration risk is associated with periods of higher stockmarket volatility, and we must be prepared for this.

Should technology earnings disappoint at these stretched valuations, it could quite plausibly cause a significant market correction, but we should understand this as very different from the bursting of a speculative bubble.

Amongst the venture capitalists' bets in AI there will be inevitable failures. The chief executive of Salesforce speculated in the Financial Times that these firms may create \$10 trillion of value but see \$1 trillion wiped out by failures. This is impossible to know, but some failures will come and that will lead to volatility for listed markets.



Could all this AI spending go wrong, and if so, how?

The answer to this question is surely yes. Capital expenditure on implementing generative AI by companies across the economy today is huge. UBS estimates that in 2025 it will be \$375 billion, rising to \$500 billion next year.

It is also true to say that for most businesses, outside those actually selling the AI chips or pouring cement into data centres, it remains speculative spending. The Massachusetts Institute of Technology estimates that 95% of US enterprises have yet to see any profit benefit from their investment in generative AI, with most of the gains so far being made in the experience of their employees doing their jobs.

Data centre spending in particular rests on a key assumption around how much power is needed to get an answer from an AI. The belief that this will be a huge number is very reasonable. OpenAI, for example, will consume over one year around 14.5 billion kWh of electricity to power its ChatGPT app. This is as many as 117 less developed countries. Keeping all those power-guzzling servers cool also consumes a vast quantity of water, enough for 1,780 Olympic-sized swimming pools each month for ChatGPT alone.

Yet energy consumption per AI query is falling, and the biggest wobble from AI stocks so far came when Chinese AI large language module DeepSeek announced earlier this year huge leaps forward versus its US counterparts for a fraction of the energy and capital consumption.

So as the world races to build data centres, we have to bank on key long-term assumptions being correct and that the technologists will not find a way to serve a ChatGPT answer for a fraction of the energy consumption. A major change in these assumptions could create, over the next five years, hundreds of billions of dollars of credit risk for those who have backed the building of data centres if they prove less vital.

This would follow a pattern similar to the 1990s technology bubble, when infrastructure businesses rushed to invest in fibre optic cables only to discover they became redundant. The Federal Communications Commission estimates that between 1996 and 2000, the miles of fibre optic cable in the United States went from one million to 10 million. Yet as these companies raced to own the infrastructure, the

competition forced prices down so that by 1994 the cost of bandwidth was 90% below its peak.

We know that financing problems can be a key canary in the coal mine, warning us of problems ahead when bubbles do emerge, and so it is understandable that investors have been highly focused on recent failures within private credit markets linked to the collapse of companies in the auto financing area. We must watch these areas closely.

However, here too we should be cautious about guessing where such credit risk could crystallise. There is a strong argument that it is unlikely to be in the largest technology companies themselves, and rather amongst secondary industries scrambling for AI exposure to keep up. This is because the largest spenders on AI, like Microsoft, do so largely out of free cash flow. To be sure, we should question the sustainability of this spending, and whether the debt it issues is so low risk that it should trade nearly as a US Treasury bond, but this is not the dynamics of a company facing a credit crunch. The same pattern is true for much of the technology sector.

We should also remember that to worry about this, you need to make a key assumption; namely, that human appetite for intelligence is 'satiable'. In other words, this worry is driven by the belief that if energy consumption halves, we will use the same amount of artificial intelligence just at a lower cost. In reality, it could well be that human nature leads us to simply double our consumption of intelligence for the same amount of data centre capacity.

There are good arguments on either side of this. The most persuasive bear case argues that large businesses must adopt AI and are inflexible to change; therefore, the amount of time it takes them to absorb an exponentially increasing amount of intelligence is longer than people think. It is this institutional constraint that leads people to believe that, at least in the next decade, appetite for artificial intelligence may be 'satiating'. The alternative argument makes a base point. Human beings always want more, and if they can get more for a lower price, they simply will. The need for artificial intelligence is huge, and there remain thousands of untapped avenues for its deployment across the global economy. If the price comes down, we will just consume more.



How do we position portfolios for this environment?

We will be implementing three key principles in the current months as we meet this moment of unparalleled opportunity and elevated valuation risk.

1. Let the data diversify you

Our investment process uses a mixture of historical returns and forward-looking estimated returns to arrive at the strategic asset allocations that anchor portfolios throughout the year.

Higher valuations in areas like the United States should pull down these estimated returns, but the historical focus roots the overall assessment in the strong profit growth the United States has seen. We hope this process will evidence a measured approach to the higher overall valuations in the United States, but valuations that are not yet, in our view, reflected in a bubble in the best-performing technology

stocks. We will remain highly diversified because in reality it is notoriously hard to predict where problems will occur.

2. Don't lend money you're not paid to lend

This economic cycle is, to be polite, rather long in the tooth. There is some help coming in the form of falling interest rates, but at times like this, when we know shares are more highly priced, it is important for us not to take risks with the bond holdings we use to diversify portfolios.

The amount of additional money, or spread, that investors are now paid to lend money to companies rather than governments is at historically low levels.

ICE BofA US corporate index option adjusted spread



Source: Ice Data Indices, LLC (via FRED®)

Past performance is not a guide to future performance

3. Be long-term on correction risk, but vigilant on bubble risk

Old adages tell us to stay invested through the ups and downs of the stockmarket cycle. There is much to be said for this. We believe that following market trends and riding out the short-term corrections invariably rewards investors in the long term. We do not believe that an overall portfolio strategy should be changed because valuations have become stretched, and a correction could temporarily interrupt markets. This is especially true during a period of falling interest rates, which render such a correction a possibility but by no means a certainty.

We use a signal-based approach to make tactical asset allocation decisions. This alerts us to the market spotting emerging problems in markets but is designed to be long-term enough in scope that it does not overreact to every short-term piece of noise.

However, bubble risk must be understood differently. Bubbles can damage investor outcomes for the long term, and so our vigilance around valuation risk in areas like technology stocks remains constant. On balance, we do not see clear evidence of a bubble yet, but if that evidence builds, we can and will act decisively to introduce resilience to portfolios.



Reference list

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aspim.co.uk

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