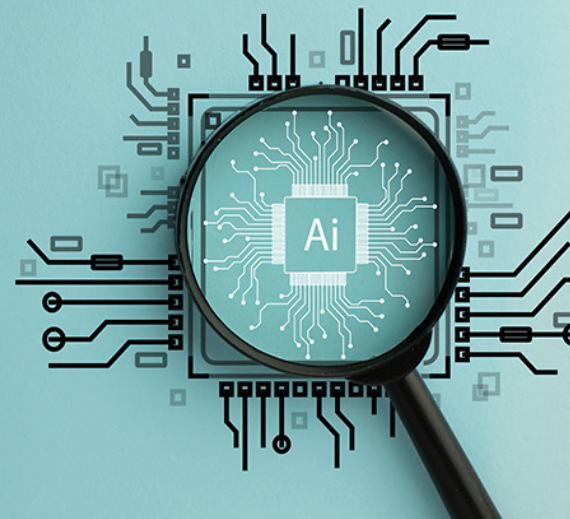


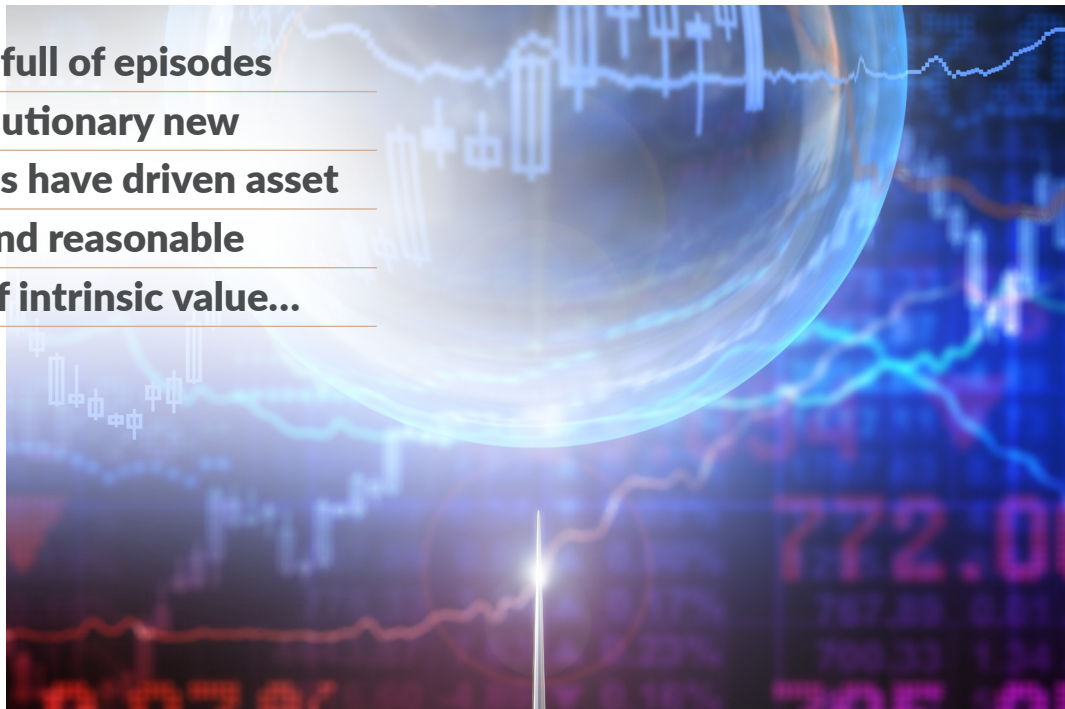
# focus

## Bubble or No Bubble? That is Not the Question



Since OpenAI launched ChatGPT in late 2022, artificial intelligence has dominated markets and driven excellent returns. Today, with AI investment surging and market valuations at historically elevated levels, many investors are asking: are we in a bubble? In our view, framing the debate as simply 'bubble or no bubble' is unhelpful — this is neither a time for panic nor a time for complacency. Investors need to take a balanced view, recognising that some parts of the market warrant caution while others still present robust long-term opportunities.

**...History is full of episodes where revolutionary new technologies have driven asset prices beyond reasonable estimates of intrinsic value...**



### The AI Boom

In November 2022, OpenAI (whose largest shareholder is Microsoft) launched ChatGPT, the first publicly released large language model (LLM). Its ability to generate detailed human-like responses to natural-language questions sparked widespread public interest and ignited an AI-investing gold rush.

Building LLMs is complex and expensive, requiring vast amounts of data, computing power, and energy. The scale of investment is staggering. Microsoft, Amazon, Alphabet, and Meta are expected to collectively spend over US\$300 billion on AI infrastructure in 2025, up 50% on the year before, growing to over US\$400 billion in 2026. (To put that in perspective, each year those four companies are investing more than New Zealand's annual GDP of around US\$250 billion.) Nvidia estimates AI-related capex could reach US\$3-4 trillion by the end of the decade.

The AI wave has also been a major driver of markets. Nvidia, the dominant supplier of graphics processing units (GPUs) used to train and run LLMs, is currently the most valuable company in the world. Global tech leaders have led markets to new highs. Network and infrastructure companies have benefited from increased traffic from data centres, while energy companies and electrical equipment manufacturers have gained from the growth in electricity demand.

### What's a Bubble?

According to Wikipedia, a bubble is defined as 'a period when current asset prices greatly exceed their intrinsic valuation, being the valuation that the underlying long-term fundamentals justify'.

We think this definition is as good as any. However, it also underscores the difficulty of identifying a bubble before it bursts. For a bubble to exist, current valuations must exceed intrinsic value, but intrinsic value depends on future outcomes. As the saying often attributed to Yogi Berra goes: 'It's tough to make predictions, especially about the future.'

Because intrinsic value depends on an uncertain future, distinguishing between legitimate optimism around a new technology and a speculative bubble is not straightforward.

### Stages of a Bubble

History is full of episodes where revolutionary new technologies have driven asset prices beyond reasonable estimates of intrinsic value — from the canal mania of the late 1700s to the railway boom in the UK and US in the 1800s, to the electricity and radio hype in the early 1900s, and the dot-com bubble of the late 1990s.

**Historically, investment bubbles typically evolve through several stages:**

**1. INNOVATION**

A new technology captures investor attention.

**2. GROWING INVESTMENT AND ENTHUSIASM**

The new technology gains commercial traction. Investment accelerates, and the number of new industry entrants grows. Media attention heightens awareness and excitement. Prices start to rise steadily as more investors buy in.

**3. EUPHORIA**

'Fear of missing out' (FOMO) spreads among investors. Speculation replaces analysis. Prices soar rapidly and become disconnected from intrinsic value.

**4. PROFIT-TAKING**

Some investors believe prices cannot be sustained and take profits. The market may become volatile. Potentially there are signs that optimistic expectations won't be fulfilled, e.g. earnings disappoint, investment pulls back, companies fail.

**5. PANIC**

Confidence evaporates. Rapid price declines as investors rush to sell.

It's important to recognise that the presence of a bubble does not diminish the transformative nature of paradigm-shifting innovations. But the fact that a technology changes the world—as all the examples on the previous page did—does not mean investors are immune to painful losses along the way.

**AI Bubble Concerns**

Given the strength of markets in recent years and the vast AI investment commitments, it's understandable that many are now asking: are we in a market (or at least AI) bubble?

**There are several signs fuelling these concerns:**

**AI-driven market boom:** Global markets have soared, with the MSCI All Country World Index (ACWI) and the US S&P 500 up roughly +93% and +97% respectively since the October 2022 trough (which came just weeks before the launch of ChatGPT). AI-related stocks have been the dominant force behind this rally, contributing around 75% of the S&P 500's total returns, 80% of its earnings growth, and 90% of its capital spending growth.

**Market concentration:** A handful of global tech giants now dominate markets, with ten companies accounting for nearly 40% of the S&P 500 and around 25% of the MSCI ACWI, the highest concentration in half a century. If investor sentiment in these few companies falters, the effects will be felt across virtually all investment portfolios.



**...It's important to recognise that the presence of a bubble does not diminish the transformative nature of paradigm-shifting innovations...**

**Elevated valuations:** Valuations, particularly in the US and in tech, are elevated versus historical levels. The S&P 500 currently trades at around 22 to 23 times forward earnings, well above its 20-year average of about 16.

**Circular capital flows:** Some observers have raised concerns about the increasingly circular nature of AI-related financing. For instance, when Nvidia invests in OpenAI, which purchases compute power from Microsoft, which in turn holds stakes in other AI ventures that buy Nvidia chips — does this represent sustainable demand or artificial growth?

**Increased debt financing:** As tech firms increasingly supplement internal funding with external debt, financial stability risks rise, especially if anticipated AI-driven returns fail to materialise or asset valuations decline.

### Bubble or No Bubble: Not a Helpful Debate

We don't find the 'bubble or no bubble' debate particularly helpful. It frames the issue in overly simplistic terms — either there's no bubble and everything is fine, or there is one and investors should panic. In reality, markets are rarely this clear cut.

Discussions about a possible AI bubble inevitably lead to comparisons with the last major technology mania, the dot-com bubble of the late 1990s. Many who argue that we are not yet in a bubble today point out that the current environment has nowhere near the speculative and valuation extremes seen 25 years ago.

We think this view is partly right, but also dangerously complacent.

Taking comfort in the idea that 'it's not as bad as last time' offers false reassurance. While it's true that the leading AI players today are large, profitable, and well-capitalised, and that valuations have not reached the extremes of the dot-com era, other aspects of the current market point to elevated risk — notably the heavy market concentration in a handful of tech giants.

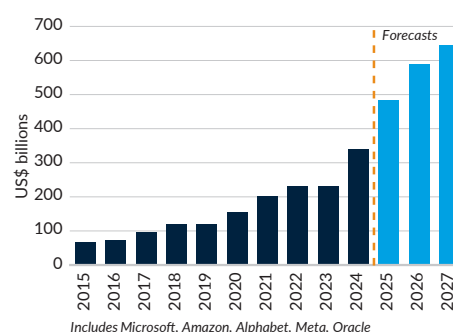
### Beware the Froth

The fact that markets haven't yet matched the extremes of one of history's biggest bubbles doesn't mean today's risks are not significant.

Signs of speculation and market froth — even if they have eased somewhat in recent weeks — still warrant caution. Beyond the surge in AI-related stocks, speculative behaviour has been evident in other segments and asset classes such as pre-revenue and unprofitable tech, as well as gold and crypto. Retail investors' use of margin lending (buying stocks with debt) and derivatives has spiked, pointing to short-term, speculative behaviour.

Within AI, the signals are subtler. Much of the rally has been underpinned by strong earnings growth. The durability of that growth, however, is a question. The capital required to realise current AI investment ambitions is enormous. Where will the trillions of dollars projected to be spent over the coming years actually come from? The financial arithmetic to justify such investment is also challenging. The likes of JPMorgan and venture capital firm Sequoia have estimated that roughly US\$600-650 billion in annual revenue is required to earn a return on the planned AI investments out to 2030. Consultancy Bain & Co estimates it is higher still, at around US\$2 trillion. In contrast, current AI revenues remain relatively modest. OpenAI, the leader in LLM uptake, is projected to generate around US\$13 billion in revenue this year, while research by McKinsey, Deloitte, and the Massachusetts Institute of Technology (MIT) concludes that most companies that have adopted AI are struggling to achieve satisfactory returns on their investments.

### WILL THE PLANNED AI INVESTMENT BE REALISED? US HYPERSCALER CAPEX



Source: Bloomberg, Forsyth Barr analysis





...AI may well redefine industries and reshape economies, but its path will be uneven...

### What Should Investors Do?

In a perfect world, an investor would spot a bubble early and exit at the top. Unfortunately, that is not a realistic expectation. Identifying a bubble in advance is inherently difficult, and timing the market with precision is, at best, extraordinarily hard. Even if we are living through an AI bubble, it could still expand further. In December 1996, then Federal Reserve Chairman Alan Greenspan famously warned of 'irrational exuberance' in what he saw as an overvalued US stock market – yet the dot-com bubble continued to grow for more than three years before it finally burst.

**In our view, the best an investor can do is to remain disciplined, take a prudent view, and focus on managing risk rather than predicting the peak. This includes:**

**Avoiding the hype:** Focus on companies with sustainable earnings, strong balance sheets, clear business models, and genuine competitive advantages.

**Prioritising fundamentals:** Evaluate valuations, cash flows, and clear paths to AI monetisation, rather than relying solely on narrative or aggressive forecasts.

**Diversifying:** Ensure your portfolio includes exposure across sectors, geographies, and asset classes. While AI and technology leaders may continue to perform strongly, concentration in one theme increases risk.

**Maintaining perspective:** Align your investments with your risk tolerance and time horizon. Long-term investors can generally withstand greater short-term ups and downs, while those with shorter timeframes should take a more conservative approach to protect capital.

AI may well redefine industries and reshape economies, but its path will be uneven – characterised by bursts of enthusiasm and periods of disillusionment. What distinguishes successful long-term investors is not their skill in predicting market swings, but their ability to stay disciplined when markets inevitably oscillate between greed and fear. An investor's goal should not be to predict the market's next move but to build portfolios that can weather future volatility, capture genuine opportunities, and compound wealth across market cycles. In times of heightened speculation, that discipline is your greatest advantage.

If at any time you want to discuss investment options and opportunities, your Forsyth Barr Investment Adviser is available to provide you advice and assistance.

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