

THE AI (H)EDGE

PART I

THE BUBBLE

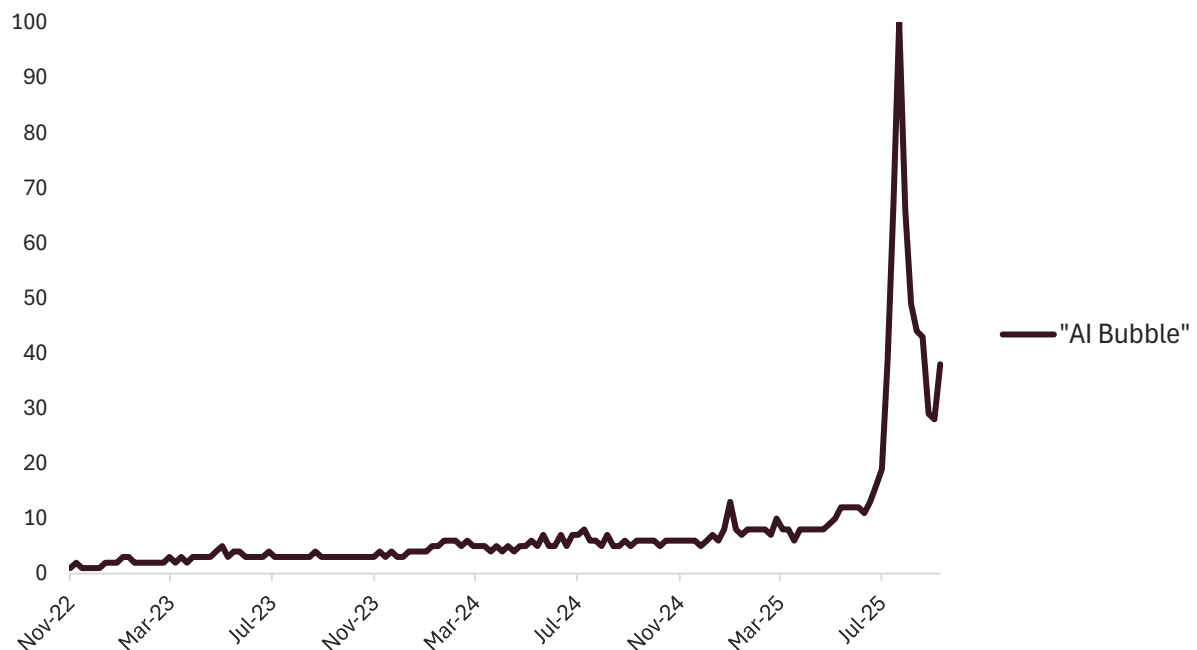
My inbox and my podcast feed of late have been full of relentless talk of an *AI bubble*.

It seems this isn't just me in my own bubble; the numbers back it up.

Since the launch of OpenAI, interest in this term peaked on the 17th of August and remains high.

EXHIBIT 1

Interest Overtime: Google Trends for the search term "AI Bubble", 30/11/2022 – 7/10/2025¹



The concerns of an AI bubble tend to cluster around some combination of the following three areas.

1. Valuations

I remember when Apple crossing the one trillion dollar market cap was a massive deal. Now we have Nvidia creeping towards \$5T and the **top eight companies in the S&P 500 all related to AI and all over \$1T**.

We'll use the term "**AI8**" for these firms from now on; in order of market cap: Nvidia, Microsoft, Apple, Alphabet, Amazon, Meta, Broadcom, Tesla.

Not only are they huge in size, but they're all relatively huge in cost. The average price-to-earnings ratio (P/E) of these eight companies is 70.63 (43.22 if we exclude Tesla). P/E is simply the price tag divided by last year's profits. Which means you're paying \$71 for an AI8-machine that spits out \$1 a year.

It would take 71 years to recover your investment. Unless of course their earnings increase. But this set-up takes the idea of "growing into your multiples" to the extreme.

There is a range of metrics you can use to judge whether a stock is cheap or expensive. For tech stocks it makes sense to look at price-to-sales (P/S) as, even if profits are tiny or negative (where P/E becomes somewhat meaningless), P/S tells us how many dollars we're paying for each dollar of revenue the company generates.

Also, I can always compare today to just after that tech bubble burst in 2002 when Scott McNealy, CEO of Sun Microsystems had his famous "*What were you thinking?*" interview:



*2 years ago, we were selling at **10 times revenues** when we were at \$64.*

At 10 times revenues, to give you a 10-year payback, I have to pay you 100% of revenues for 10 straight years in dividends.

That assumes I can get that by my shareholders. That assumes I have zero cost of goods sold, which is very hard for a computer company. That assumes zero expenses, which is really hard with 39,000 employees. That assumes I pay no taxes, which is very hard. And that assumes you pay no taxes on your dividends, which is kind of illegal. And that assumes with zero R&D for the next 10 years, I can maintain the current revenue run rate.

Now, having done that, would any of you like to buy my stock at \$64? Do you realize how ridiculous those basic assumptions are? You don't need any transparency. You don't need any footnotes.



What were you thinking?²

10 times revenues feels quite toppy having read that, no?

EXHIBIT 2

Richly Valued: S&P 500 Companies Price-to-Sales, 8th October 2025³



These AI8 have an average P/S of 14.58 today (7th Oct 2025).

So, what are we thinking?

2. Concentration

AI8 make up ~40% of the S&P 500, which makes up ~80% of the US stock market, which in turn accounts for ~65% of the entire investable equity universe.

All of that to say, even if you think you're massively diversified across all global stocks, using the MSCI ACWI as a proxy, **these eight companies are ~20% of your portfolio.**

The key warning sign of a bubble, and often the precursor to a market crash, is everyone crowding into a small subset of the economy.

US markets have become concentrated on the back of tech advances before. Both the 60s (Nifty Fifty) and the 90s (Dot-com) saw heavy investment in this sector and subsequent severe market crashes.

Fast-forward to today and the first thing to note is that **the earnings of these tech giants are strong.**

These are some of the best and most profitable companies in the world. We hear about the Fed printing money...

In the last 12 months, the AI8 have made \$400B in free cash flow (FCF).

I like looking at FCF for these behemoths instead of profits as FCF is the leftover cash after taking into account, not only how much it costs to run the business (rent, tax, insane comp packages, etc.), but also what they need to keep running and growing (capex in the form of servers, equipment, factories, etc.). [Caveat, I'll sanity-check FCF with a glance at SBC (Stock-Based Compensation) as this is non-cash and boosts FCF on paper.]

A mountain of cash, revenues growing at ~20%, and average net margins nearly 30%.

Google alone brought in more in net income over the last 12 months (\$115B) than Toyota, ExxonMobil, Visa, Walmart, and Disney did, combined.

This is a big difference compared to the previous concentrated-tech crashes, where a lot of the valuation wasn't backed by such dominant global positions and profits.

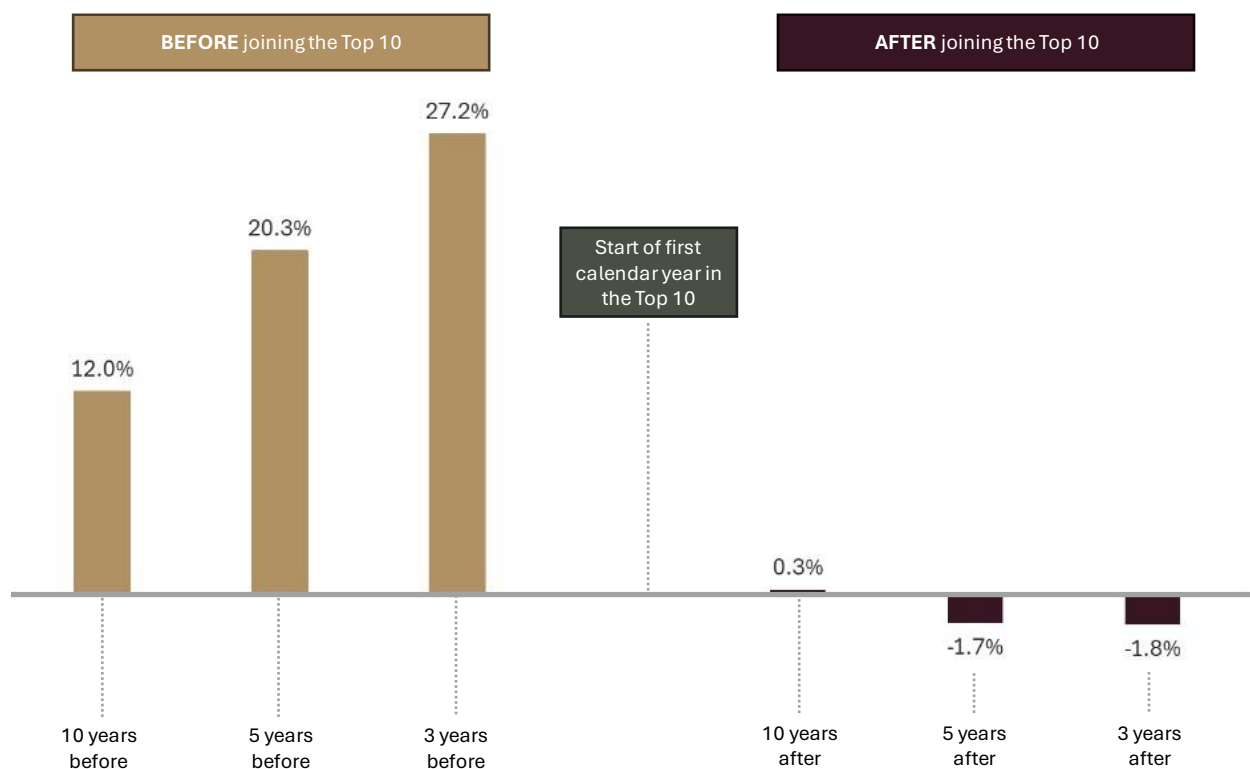
Despite valuations and concentrations looking stretched, a market correction from here may not be as disastrous as the previous two.

Nevertheless, one could argue these companies are priced to perfection and cannot continue to grow at such pace with such scale.

Trees don't grow to the sky, and the world imposes natural limits on companies too.

EXHIBIT 3

Top-Down View: Average annualised returns in excess of the US market before and after joining the top 10 largest US stocks, Jan-1927 to Dec-2024⁴



What will be the stabilisers to prevent these companies from continuing to eat the world?

3. Catalysts

Market downturns are extremely difficult to predict and sometimes, even looking back with perfect hindsight, it can be unclear as to what exactly caused corrections.

I distinctly remember 2018 when I was working in a hedge fund and we had *Volmageddon* early in the year and rounded it out with a *Red Christmas*. Columbia instead of Patagonia gilets under the trees the world over. There's still no consensus as to what triggered these corrections.

If we can't always know what causes crashes after the fact, it's unlikely we'll be able to know what will cause them before they even happen.

Catalyst contenders today include:

- **Macro** (rate changes, tighter financing, inflation)
- **Geopolitics** (Taiwan/TSMC risk, supply chains)
- **Regulations** (antitrust, privacy, copyright, export controls, AI safety legislation)
- **Market structure** (index concentration changes, systematic unwinds from CTAs/vol-targets/options funds amplifying market downturns)
- **Investor sentiment** (cyclical rotation, profit-taking, fundamentals too rich)
- **Consumer sentiment** (disappointment in products or pricing, creative blowback)
- **Demand and unit economics** (inadequate monetisation, lower return-on-capex forecasts, service cannibalisation, opex inflation)
- **Unsustainable circular investments** (OpenAI and AMD, Nvidia and CoreWeave, Oracle and OpenAI and Nvidia)
- **Unsustainable energy demands** (unrealistic energy demands, blowback for increased electricity costs for households)
- **Competition** (open source, hardware obsolescence, and let us not forget that a rival Chinese architecture in *DeepSeek* wiped the equivalent of Mexico's entire stock market off the market cap of Nvidia 400 years ago, on the 27th Jan 2025)

This list is fairly exhaustive, but incomplete. Sometimes the catalyst is unforeseen (Covid) or unknown (the bonus-flattening December of 2018).

The bubble (if it is one) could pop due to an accounting change that reclassifies AI credits and slashes "profits" overnight, a zero-day exploit in a ubiquitous inference library, a solar storm, an earthquake in Taiwan, a quantum decryption, or simply a letter from Warren Buffett saying AI companies are overpriced.

We can't forecast the unexpected, but we can prepare for it...

PART II

THE HEDGE

There are really two outcomes to this [potential] bubble: either AI excels, or it disappoints.

In both cases, we believe it makes sense to have an exposure to smaller, cheaper, more profitable companies. And an overweighted exposure at that.

AI EXCELS

As Chris Dixon of a16z wrote at the start of 2010, “*The next big thing will start out looking like a toy*”⁵.

AI thus far has mostly been driven by funny words, then funny pictures, now funny videos, plus a whole lot of hype, at least from a retail consumer perspective.

If AI excels, and the products become more reliable for reports, more efficient for media, and more user-friendly for agentic work, the AI8 may indeed grow into their multiples.

And if AI does transform the economy, its benefits will extend far beyond the technology sector, just as the electrification of the economy didn't solely benefit energy companies, nor did the internet only boost tech stocks, nor did the mobile transition only pump telecoms.

In this optimistic scenario, **the productivity gains should filter through industries, down to the smaller and the overlooked companies of the world**; those with the most to gain from producing more with less.

Long the AI8, but at an average P/S of 14.5, this is the outcome the market is already pricing in, so long too those that benefit from them succeeding (small, value).

AI DISAPPOINTS

AI expectations are high. And not just yours and mine.

The Apollo program cost NASA ~\$250B in today's terms.

The AI8 have spent ~\$400B on this new tech race this year⁶. This represents a significant investment, which they would only make if they expected to make a significant return on it.

If AI fails to live up to expectations, both the top and bottom of the P/S ratios of the AI8 will be hit and their multiples will compress. Sales down, stock price down more.

But the billions of dollars of capital won't just go under the mattress; those outflows have to find a new home. A rotation out of US tech and into global, shorter-duration, more resilient sectors like healthcare and finance would make sense and follow precedent.

Long the equity flight-to-safety and low-cost (small, value).

Joe Davis, the global chief economist of Vanguard, puts probabilities on these two outcomes in his latest book⁷.

45-50% for AI excelling and 35-45% for AI disappointing.

We're not trying to forecast here.

If it's roughly a 50/50 call, what we're trying to understand how we should position our equity investments so we simultaneously avoid excessive risk exposure while harvesting better-than-market returns.

PART III

THE LESSONS

LESSON 1: POSITION, DON'T PREDICT

If growth is richly priced to perfection and value is beaten down to historic lows, why don't we push all our chips onto the low price-to-book table?

Firstly, bubbles tend to last longer and go further than you might expect.

In 2008, during just six months of summer, Zimbabwe's stock market delivered one of the wildest rides in history. The local currency collapsed tenfold, yet the stock market surged five hundredfold – meaning that, in USD terms, it rose roughly fiftyfold.

If you had shorted the market with a modest 2% position because the economy was clearly heading for the graveyard, you would have been bankrupt within six weeks. And you would have been proven right just eight weeks later, when the market effectively went to zero and stopped trading altogether.

Timing bubbles is next to impossible. Countless investors have tried and failed over the years. The handful of investors that nailed it can build a career on the call – George Soros/Stan Druckenmiller and Japan, Howard Marks/Warren Buffett and the Dot-com, John Paulson/Michael Burry and the GFC. These people are so famous they've raised billions of dollars in their funds and have had books and movies based on their timing of a market peak.

Bubbles are dangerous as they persist and they pop.

We don't want to chase this potential AI bubble, but we also don't want to miss out. The AI8 are amazing companies, not Dot-com junk, and, as Peter Lynch said "*Selling your winners and holding your losers is like cutting the flowers and watering the weeds.*"

The best play is to continue owning everything but fade the froth; take some weight out of the current AI8 and put it into the future basket of mega winners. We don't know which companies they'll be, but **we'll own them (small cap exposure), be overweight them (value exposure), and tilt the odds in our favour (profitability exposure) along the way.**

LESSON 2: STOCK PRICES FOLLOW COMPANY EARNINGS

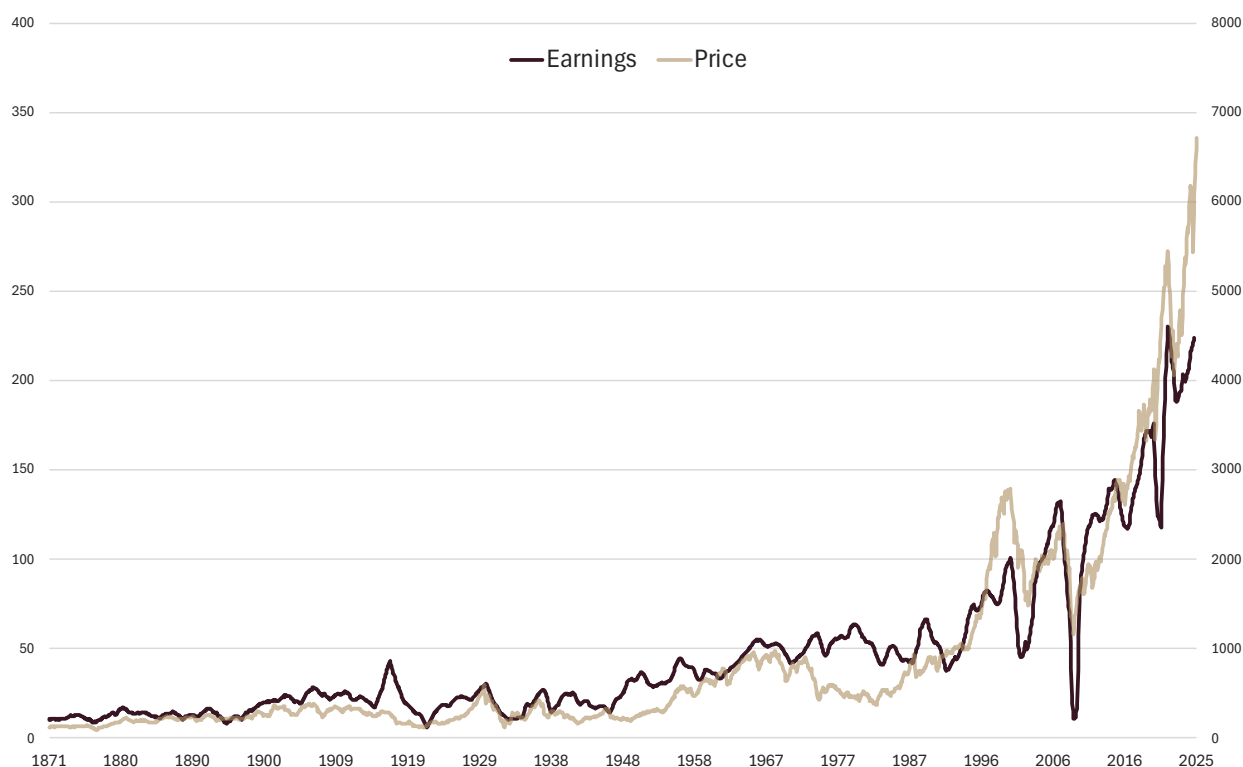
Stock prices move randomly in the short-term, but predictably in the long-term.

Wobbly with an upward drift.

If you give your investment time, the noise that determines the unpredictable short-term movements is replaced by a sensible trend – stock prices increase as company earnings increase. The companies that don't increase earnings are favoured by the ones that do.

EXHIBIT 4

In a Long-Term Relationship: Real S&P 500 Composite Earnings vs Real S&P Composite Stock Price Index, Jan-1871 to Sep-2025⁸



As we discussed earlier, a company's price-to-earnings (P/E) tells us how expensive each dollar in earnings costs us to buy today.

Although price tends to track with earnings most of the time, there are times, like right now, when P dislodges from its long-term shadowing of E.

This is known as **wide valuation spreads**.

LESSON 3: WE'RE AT EXTREMES

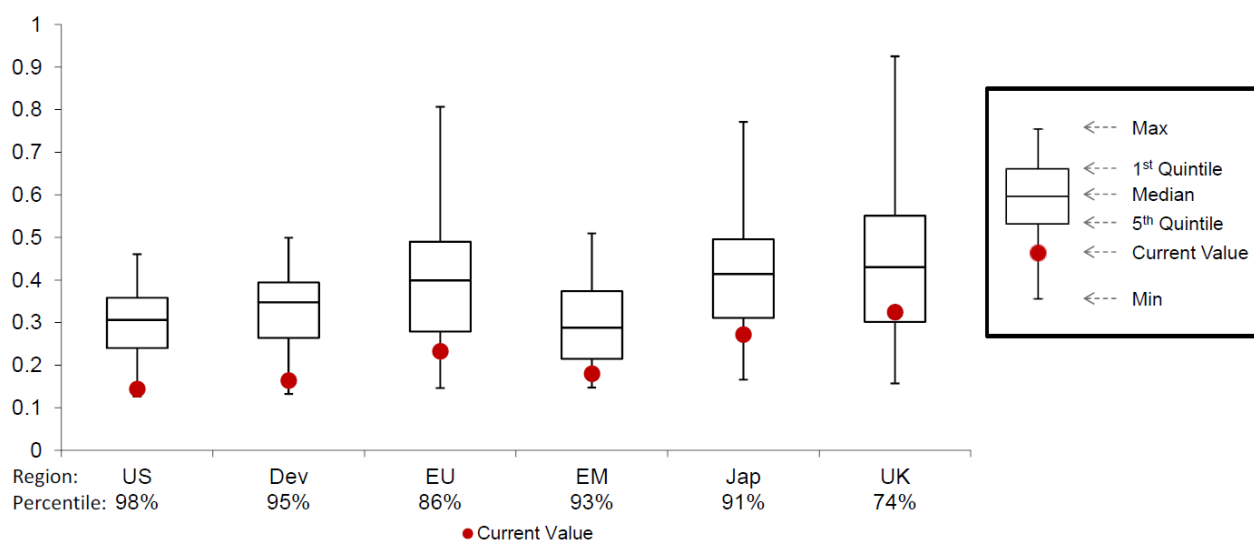
Over the past 20 years (through to Sep-25), the S&P 500 Growth Index has returned 12.7% compared to the S&P 500 Value with 8.7%⁹.

This unexpectedly strong performance from growth stocks has led to the wide gap between the Price and Earnings lines in Exhibit 5.

This gap is extreme in the US on the back of AI expectations, but it's not unique globally.

EXHIBIT 5

Global Bargain Basement: Value is still remarkably cheap relative to growth based on composite fundamentals¹⁰



Around the world investors are paying up for the expensive stocks, meaning value stocks are at their bottom decile for most markets.

This near-record cheapness signal is driven mostly by growth's expensiveness, not by value collapsing.

LESSON 4: EVERYTHING REVERTS

The value factor has disappointed over the last 20 years. Low price-to-book stocks are now about as low compared to high price-to book stocks as they've ever been. We've put up with the pain, time for some pleasure?

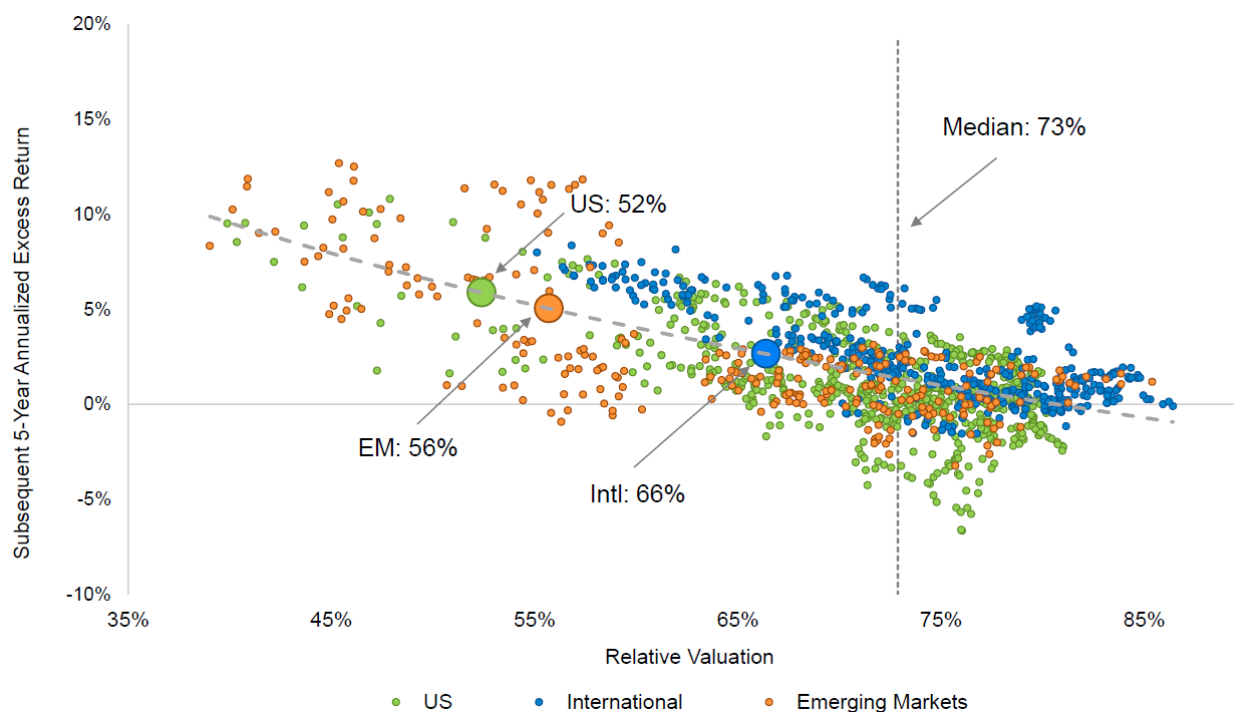
The chart below shows the subsequent 5 years' excess return for value stocks versus the index (y-axis) depending on how cheap you bought in at (x-axis).

Assuming we want higher returns (up on the y), then we want to buy when the relative valuations are low (left on the x).

This chart is mean reversion in action.

EXHIBIT 6

Generous Reversion: Steep discounts suggest higher subsequent returns¹¹



Notice that for the US, there are no green dots cheaper than where we are now that are not positive.

There are also no blue (international) or orange (emerging) dots that have seen negative excess returns from a starting point of lower valuations than where we are today.

All of that is to say, **the whole world is priced at levels that historically have led to a 100% reliability of value beating the market.** This does not imply a 100% probability of this going forward. This is just the history, but it's a reassuring history.

For the size premium, Vanguard's capital markets forecasts suggest that valuation differences have grown too wide:

“We expect small-caps to outpace large-caps by an annualized 1.9 percentage points over the next decade.¹²”

When size and value spreads have widened to extreme levels historically, they have tended to compress (and do so quickly).

The 1990s saw similar outperformance from large, growth stocks until the tech bubble of the time popped. The 10 years of value-premium underperformance was wiped out in 18 months.

If, as with Zimbabwe, you reasonably thought things were a bit off and you tried to time your exit, and were off by a couple of years, months, or even weeks, it would have had a severe negative impact to your return.

Maybe you'll get a movie based on your call today, but it is highly, highly unlikely and certainly a risk not worth taking.

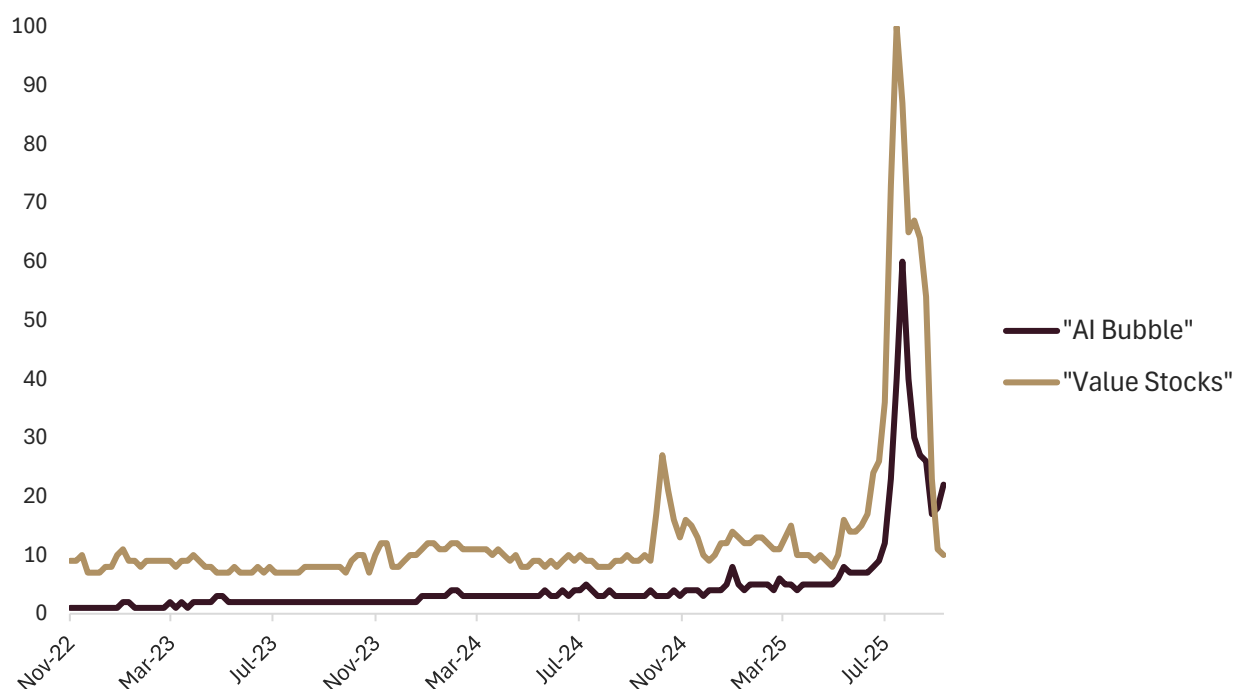
LESSON 5: DIVERSIFY EVERYWHERE

We saw Google Trends confirming my personal belief that every talking head is talking the same thing these days.

What might be interesting is if we overlay the opposite of this topic.

EXHIBIT 7

Opposites Attract: Google Trends for the search terms "AI Bubble" and "Value Stocks", 30/11/2022 – 7/10/2025



Why would interest in cheap, out-of-favour, non-tech stocks spike with AI bubble?

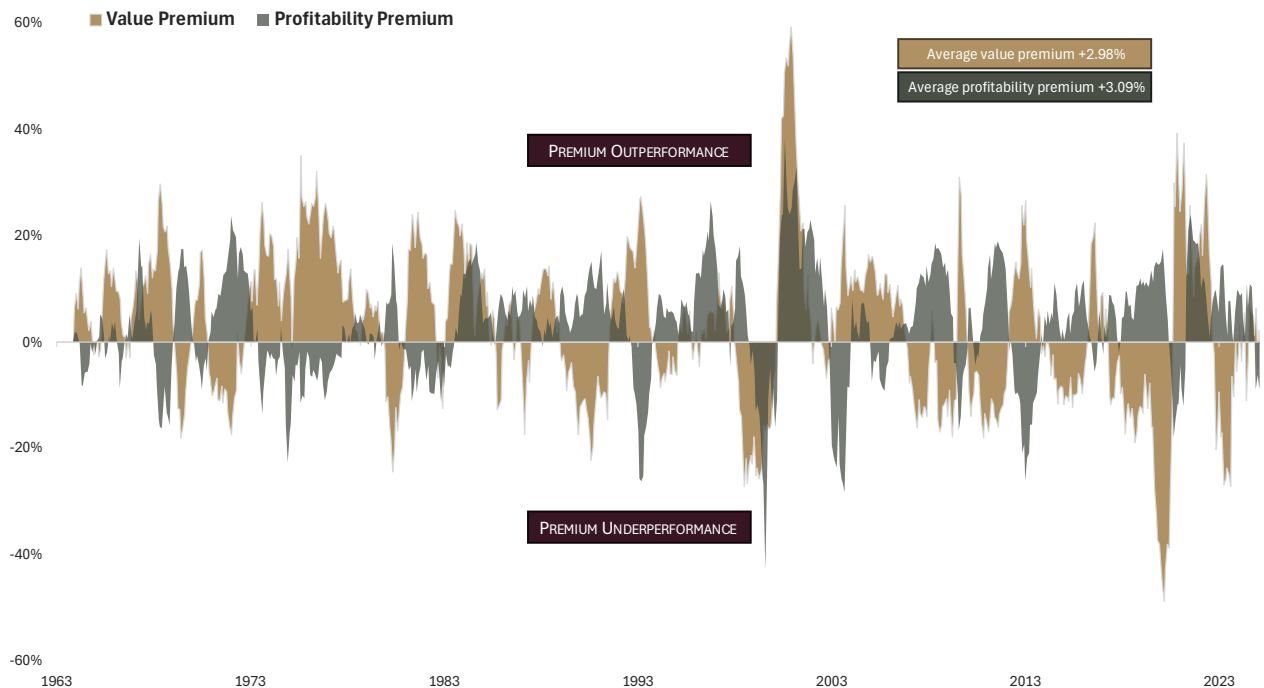
The reason comes from *The Hedge* and *The Lessons* we've explored. Investors know that value stocks tend *not* to move in tandem with the more profitable stocks. And who are the most profitable companies in the world? The AI8.

As these eight companies get more and more expensive, theory and data tell us that value companies get more attractive. Therefore, investor interest in value rises.

This chart shows the kind of correlation we want in our portfolios and is the reason diversification works.

EXHIBIT 8

NSYNC: Rolling 12-month US value and profitability premiums, Jul-1963 to Aug-2025¹³



When the value premium underperforms (look at the most extreme period of 2017-2021), the profitability premium reduces the impact, as it tends to move in the opposite direction.

Integrating profitability with value has been shown to reduce volatility and increase returns. It also weeds out the value traps (some stocks are dirt cheap for a reason, and we can use screens to exclude them).

Diversification is essential – across countries, industries, and even premiums.

The lessons we've learned from the data tell us how to approach the market in its current state:

- 1. We might be in a bubble, but timing it is difficult and risky**
- 2. Stock prices are currently above expected levels based on earnings**
- 3. Global value stocks are broadly as cheap as they ever are**
- 4. Buying in at a low price point has historically led to higher returns**
- 5. Integrate the premiums to tilt the odds in your favour**

We bring these lessons together into a portfolio that maintains some exposure to the AI8 (the bubble might go on and they're still important and profitable companies) but balances that risk with an overweight to the companies that should stand to benefit whether or not AI meets the high expectations.

PART IV

THE INVESTMENT

To bring it all together: the AI8 is made up of huge, profitable companies with global dominance and moats. However, our research suggests that we should avoid overweighting these companies for the following key three reasons:

- **High valuations**

Tech stocks are relatively very expensive and much of their potential is already reflected in their prices.

- **Mixed performance**

The tech sector doesn't tend to outperform during periods of technological transformation. During the Dot-com bubble, for every Amazon, there were dozens of companies that failed.

- **AI's influence will extend beyond tech**

If AI has significant positive economic outcomes, its influence will likely extend beyond the tech sector into areas such as finance, healthcare, and manufacturing. If AI disappoints, investment is likely to rotate out of the expensive companies and into the cheaper ones.

To position ourselves in an intelligent way for the current market conditions, our equity portfolio should therefore tick the following boxes:

- ✓ **Globally diversified** (don't just rely on the US)
- ✓ **Own everything** (the AI bubble could persist, if it even is one)
- ✓ **Weight according to the research** (underweight large growth and overweight small value, while integrating the profitability premium)

Our Biograph 100% equity portfolio ticks these three boxes, as we can see via its aggregate fundamental characteristics.

EXHIBIT 9

Tilting the Odds: Dimensional World Equity Fund (Biograph 100 Portfolio) characteristics comparison, as of Oct-2022¹⁴

Fundamental	Number of Companies	Weighted Average Market Cap (millions)	Aggregate Price-To-Book	Weighted Average Profitability
Biograph 100	13,840	£328,271	2.40	0.41
S&P 500	500	£1,017,203	5.20	0.61
MSCI All Country World Index	2,441	£674,230	3.48	0.49

Box Ticked	Diversification	Size Premium	Value Premium	Profitability Premium

You could call how to best handle the AI bubble a well-informed hedge, but it's simply (a) broad diversification mixed with (b) an overweight to the long-term drivers of return while ensuring (c) discipline to harvest these risk factors by not changing approach in the face of changing market conditions.

With this investment structure we're in the best position to capitalise on AI, whether it continues to flood my media feed or not.

References

¹ <https://trends.google.com/trends/explore?date=2022-11-30%202025-10-07&q=AI%20Bubble&hl=en-GB>

² Bloomberg Businessweek , April 2002

³ <https://finviz.com/map.ashx?t=sec&st=ps>

⁴ Dimensional, using data from CRSP. Includes all US common stocks excluding REITs. Largest stocks identified at the end of each calendar year by sorting eligible US stocks on market capitalisation. Ten largest companies by market capitalisation. Returns after joining the 10 largest are measured as of the start of the first calendar year after a stock joins the Top 10. Annualised excess return is the difference in annualised compound returns between the stock and the S&P 500 Index over the three-, five-, and 10-year periods, before and after each stock's initial year-end classification in the Top 10. Three-, five-, and 10-year annualised returns are computed for companies with return data available for the entire three-, five-, and 10-year periods, respectively. The number of firms included in measuring excess returns prior (subsequent) to becoming a Top 10 stock consists of 44 (58) for the three-year period, 43 (55) for the five-year period, and 34 (49) for the 10-year period.

⁵ <https://cdixon.org/2010/01/03/the-next-big-thing-will-start-out-looking-like-a-toy>

⁶ <https://www.wsj.com/tech/ai/tech-ai-spending-company-valuations-7b92104b>

⁷ Davis, J. H. (2025). Coming into view: How AI and other megatrends will shape your investments. (Hardcover ed.). Penguin Random House.

⁸ <https://shillerdata.com/>

⁹ Data sourced from <https://returnsweb.dimensional.com/>.

¹⁰ Research Affiliates, LLC, using data from CRSP/Compustat and Worldscope/Datastream.

The value-to-growth discount is calculated as the ratio of the price-to-fundamentals ratio of the value portfolio to the corresponding ratio of the growth portfolio. We simulated the value and growth cap-weighted portfolios by defining value as the top 50% of stocks, and growth as the bottom 50% of stocks (by count of the corresponding number of stocks for each region) by valuation composite of P/B, P/S, P/CF and dividend yield. The starting universe consists of the largest stocks by market-cap: 1,000 stocks in each of the United States, Developed Markets, Europe ex UK, and Emerging Markets; 400 stocks each in Australia and Japan; and 100 stocks in the United Kingdom. Value-to-growth discounts are based on year-end price-to-book ratio, year-end price-to-sales value ratio, year-end price-to-cash-flow ratio and year-end-dividend-yield relative to historical levels. Historical period for the United States is 1962–6/2025; for the Developed Markets, Europe, United Kingdom and Japan is 1982–6/2025; and for the EM markets is 1994–6/2025. The box plot shows the minimum and maximum values over the historical period as well as the first and fifth quintiles and the median.

¹¹ Research Affiliates, LLC, using data from CRSP/Compustat and Worldscope/Datastream.

As of 6/30/2025. US Median is 73%. International Median is 73%. Emerging Markets Median is 64%. Index returns represent the subsequent five-year excess return for RAFI Fundamental vs Cap. Index returns and characteristics for both RAFI Fundamental and cap-weighted indices are simulated prior to 1/31/2017. Please see important information at the end of this presentation regarding simulated data.

¹² <https://corporate.vanguard.com/content/corporatesite/us/en/corp/vemo/fading-small-cap-premium-softer-us-labor-market.html>

¹³ Data pulled from <https://returnsweb.dimensionalcon.com/>.

In USD. The Fama/French indices represent academic concepts that may be used in portfolio construction and are not available for direct investment or for use as a benchmark. The annual value premium in the US is the return difference between the Fama/French US Value Research Index and the Fama/French US Growth Research Index. The annual profitability premium in the US is the return difference between the Fama/French US High Profitability Index and the Fama/French US Low Profitability Index. Indices are not available for direct investment. Index returns are not representative of actual portfolios and do not reflect costs and fees associated with an actual investment. Source: CRSP and Compustat data calculated by Dimensional. Fama/French data provided by Fama/French.

¹⁴ <https://my.dimensionalcon.com/>

Risk Warning

The value of units can fall as well as rise, and you may not get back all of your original investment.

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