

SPACEX, OPENAI AND ANTHROPIC: AN AI TRIFECTA IN THE S&P 500?

Investing in the age of Index Funds!

TO INCLUDE OR NOT TO INCLUDE? THE INDEXING QUESTION

- While much of the discussion in the last few weeks has been about what SpaceX, Anthropic and OpenAI are worth (and will be priced at, **there has been another heated debate about indices and index inclusion criteria**, a usually bland topic, but one that has become heated on the questions of whether these new mega-cap additions to the market should be included in the S&P 500.
- I am skeptical, since I see a **combination of hidden agendas and misguided views** about investing behind each of the three groups that are most vehemently against inclusions.
 - First, you have a **cadre of active investors**, losers in a battle against index funds and ETFs, arguing that **inclusion is a risk to passive investing and an argument for paying these active investors significant portions to avoid that risk**.
 - Second, you have **investing experts and academics** who claim to be looking at for retail investors and retirees and view including inclusion as **dangerous for the savings and retirement funds of the "small" investors and retirees**.
 - Third, you have **politicians piping up about how including these large companies in government pension funds will reward billionaires**, who at least in their playbook, are the villains in the storylines.

INDEX CONSTRUCTION: MECHANICS

- **Constituents:** the first and perhaps most critical determinant of an index **are its constituents, and what determines their inclusion.** Take, for instance, the S&P 500, which Standard & Poor's (its creator) describes as the "gauge of large-cap US equities", and is without doubt the most widely tracked and followed index in global market.
- **Weights:** The first is to **weight every company in an index equally**, with the benefit being simplicity but the cost being a skew away from weighted performance. The second, and one used by some older indices like the Dow 30, is **price-weighting**, where the companies with the highest price per share are weighted more than companies that have lower priced shares. The third and most widely used mechanism for construction indices is **market capitalization**, with tweaks sometimes added on for float (traded shares). The S&P 500, as I noted earlier, uses market capitalization, based on free float, and as a consequence, Meta punches in below its true weight, since the bulk of class B shares (which are voting shares held by Zuckerberg) are not counted, as does Walmart, where family-controlled holdings are treated as non-traded.

INDEX LEVELS AND CHANGES

- Once constructed, an index has to be measured, and to the extent that these indices are designed to capture market prices, the first step is **creating a mechanism for converting market prices on the constituents to an index level**.
- Consider, for instance, the S&P 500 which **ended trading on June 15, 2026, at 7554.29**, and relating that number to the market capitalization of the companies that make up the index. At close of trading on June 15, 2026, the **cumulative float-adjusted market capitalization of the 500 companies in the index was \$63,498.44 billion** and the index units for the conversion can be computed as follows:

Index units = Index level / Float-adjusted market capitalization = $7554.29 / 63498.44 = 0.1190$

- **Indices of assets that are not continuously traded**, most notably real estate (like the S&P Case-Shiller home price index), try to overcome the absence of price data on the assets by extrapolating from the pricing of the **subset of assets that get traded, leading to noisier estimates and lags in price adjustment**.
- Even the best constructed indices have to confront change and have mechanism to deal with that change that is transparent and quick to put into practice. Since you do not want abrupt changes in the index level coming just from replacing a company with a low market cap with one with a much higher market cap, **the adjustment has to come from changing the index units**. Thus, assume that a company goes public with a trillion-dollar market cap and that it will be replacing a company with a one-billion market cap, the adjusted index units for the S&P 500 will be as follows:

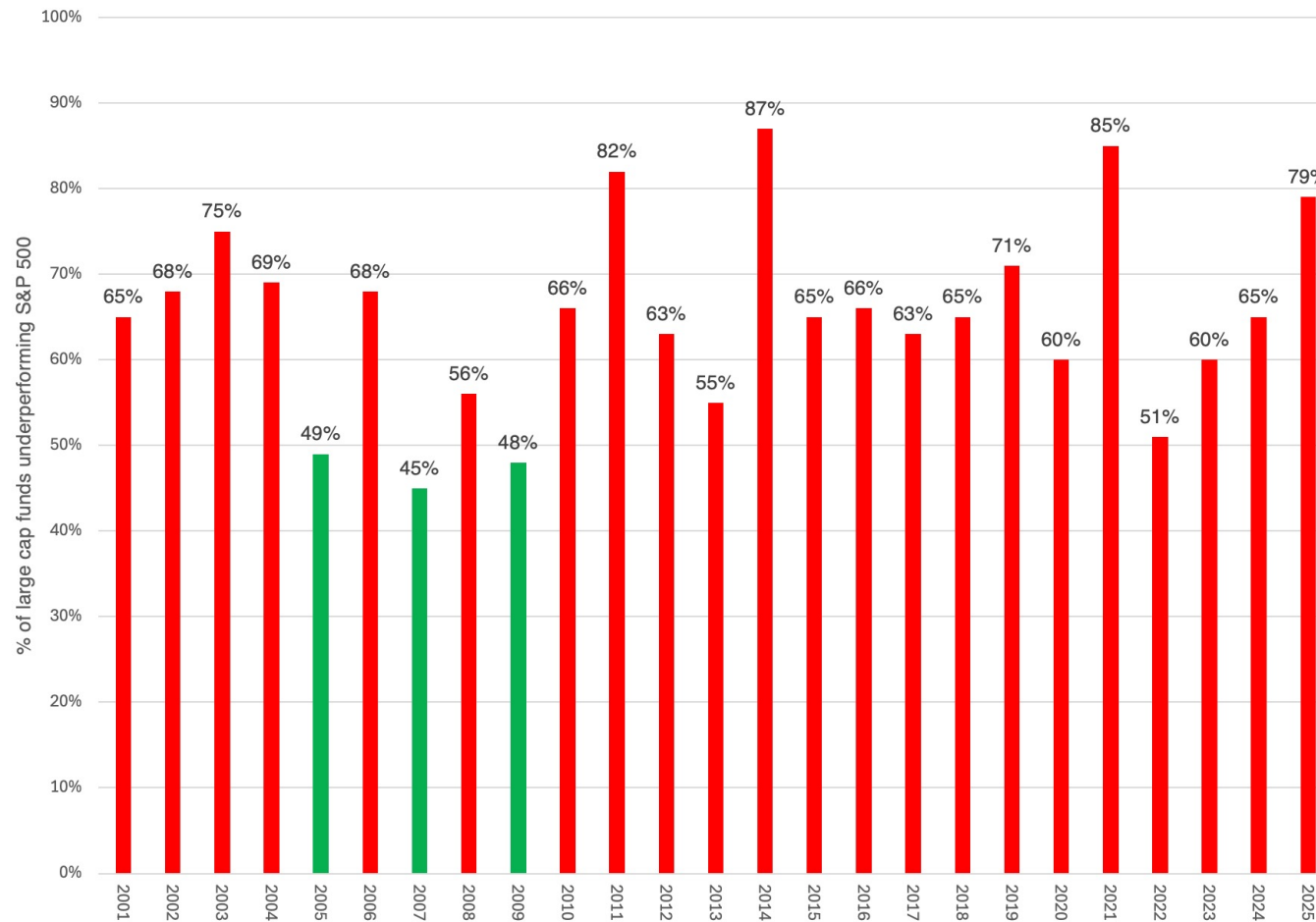
Index units = Index level / Float-adjusted market capitalization + Market cap of added firm - Market cap of eliminated firm = $7554.29 / (63498.44 + 1000 - 1) = 0.1170$

THE INDEX END GAME: MARKET MEASURE

- **When I started in equity markets in 1981, and at that time, indices were primarily measures of market performance.** Indices continue to perform that role, though our access to data has changed dramatically, with real time updates on our devices occurring all through the day.
- From the measurement perspective, it is worth **looking back at index construction and asking questions about the indices that best capture what you are trying to measure.** The reason that the S&P 500 has acquired primacy is that while it includes only 500 companies in a US equity market that has almost 6000 publicly traded companies, the fact that these are the companies with the largest market capitalization means that the index represents more than 80% of the market capitalization of all US equities, and as a result, it is the single best proxy for aggregate equity market performance in the index.
- That said, a **different framing of the measurement question can lead you to a different index choice.** Thus, if you are trying to measure how the average US equity did during a period, you may be better served using an equal-weighted equity index for that measurement.

INDEX AS PERFORMANCE EVALUATOR: THE S&P 500 AS ONE SIZE FITS ALL...

% of large cap managers underperforming S&P 500



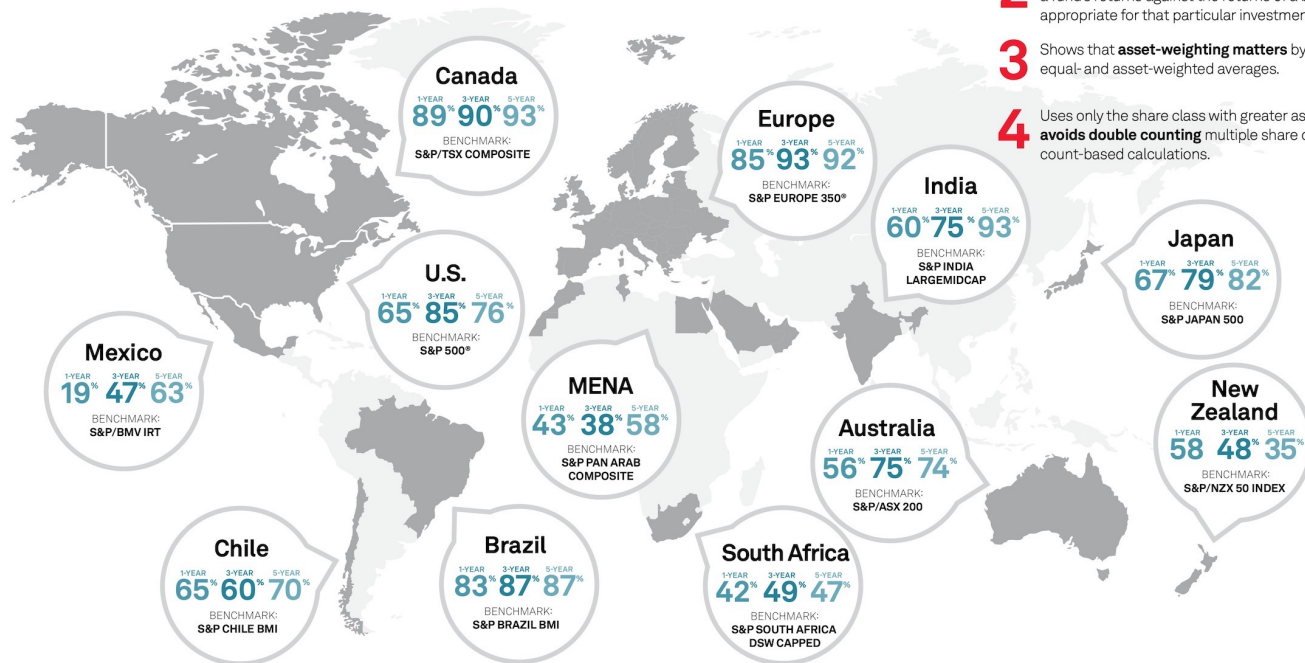
A MORE REFINED COMPARISON: A STYLE-SPECIFIC INDEX

	1-year	3-year	5-year	10-year	15-year	20-year
All Domestic Funds	79.83%	80.40%	91.47%	90.43%	93.15%	95.01%
All Large-cap Funds	78.78%	66.84%	88.96%	85.59%	89.93%	92.89%
All Mid-cap Fnds	55.41%	62.93%	72.32%	81.14%	84.49%	89.74%
All Small cap Funds	40.65%	42.18%	62.67%	75.95%	89.90%	90.28%
All Mult cap Funds	68.03%	80.20%	90.03%	89.13%	92.25%	93.64%
Large-Cap Growth Funds	95.51%	56.33%	95.26%	91.67%	97.82%	99.55%
Large-Cap Core Funds	82.51%	83.12%	85.33%	93.40%	96.52%	94.81%
Large-Cap Value Funds	41.30%	80.51%	83.03%	88.45%	93.29%	87.01%
Mid-Cap Growth Funds	65.12%	58.14%	86.23%	65.79%	75.66%	86.76%
Mid-Cap Core Funds	46.02%	72.48%	59.79%	92.74%	90.00%	94.35%
Mid-Cap Value Funds	50.00%	67.86%	64.81%	84.48%	92.86%	90.11%
Small-Cap Growth Funds	34.08%	38.46%	79.70%	65.84%	87.91%	90.09%
Small-Cap Core Funds	42.57%	49.03%	50.00%	80.47%	91.58%	93.07%
Small-Cap Value Funds	44.90%	38.98%	47.30%	80.00%	95.28%	93.14%
Multi-cap Growth Funds	85.04%	70.13%	93.55%	93.64%	93.75%	94.61%
Multi-cap Core Funds	72.46%	84.00%	89.77%	95.88%	96.05%	94.92%
Multi-cap Value Funds	30.18%	72.35%	74.59%	88.33%	94.07%	91.76%
Real Estate Funds Funds	83.58%	88.61%	97.44%	84.04%	90.10%	91.14%

AND ACROSS GEOGRAPHIES...

SPIVA® Around the World

Percentage of active funds underperforming their assigned benchmarks* over 1-, 3-, and 5-year periods



The SPIVA Difference

- 1 Accounts for the entire opportunity set — not just the survivors — thereby **eliminating survivorship bias**.
- 2 Applies an **apples-to-apples comparison** by measuring a fund's returns against the returns of a benchmark appropriate for that particular investment category.
- 3 Shows that **asset-weighting matters** by using both equal- and asset-weighted averages.
- 4 Uses only the share class with greater assets, which **avoids double counting** multiple share classes in all count-based calculations.

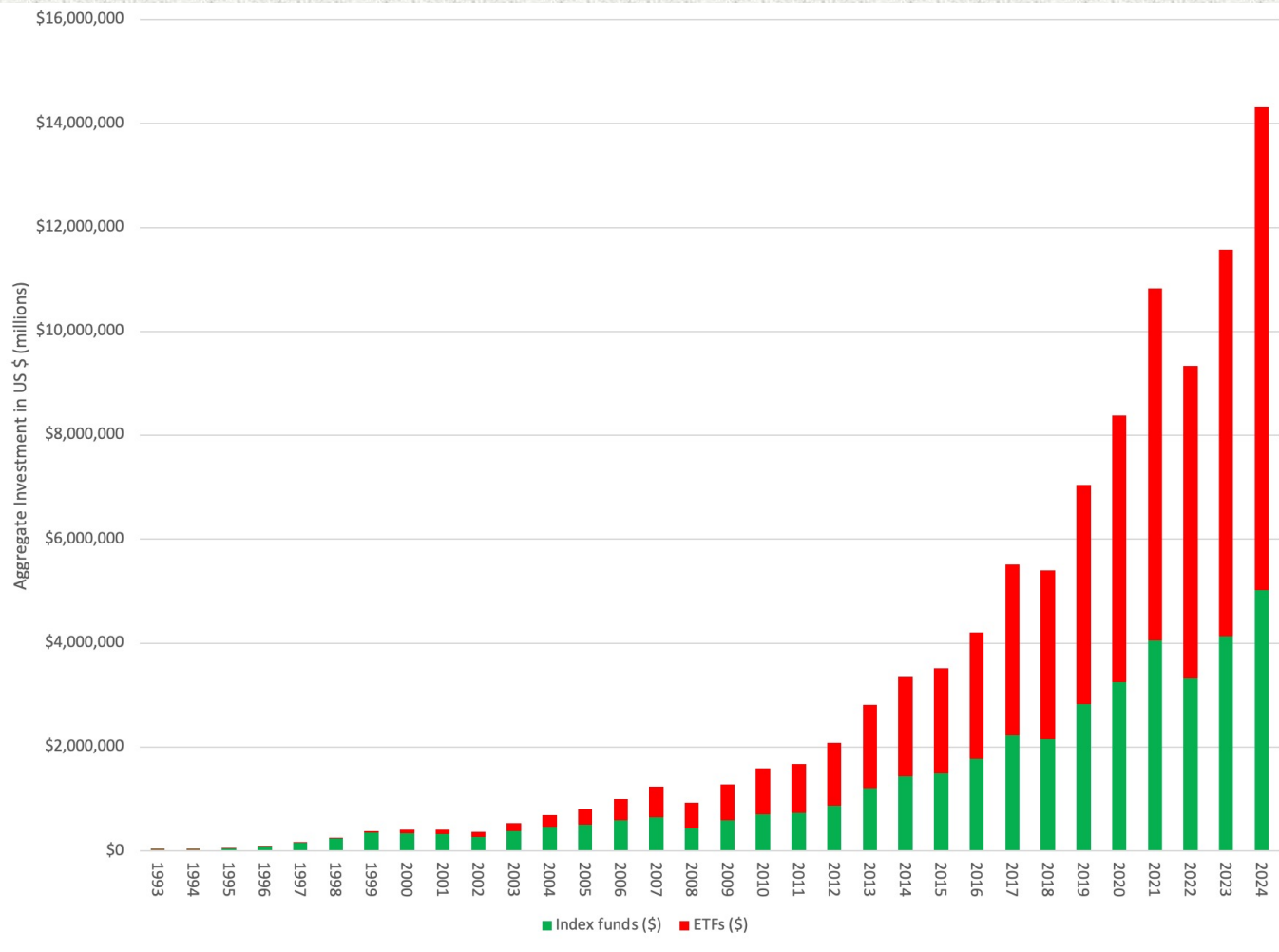
* Regional benchmarks included here are large cap, with the exceptions of Brazil, Canada, Chile, MENA, and New Zealand, where SPIVA results displayed reflect regional broad-market indices. Multiple benchmarks exist in all regions tracked by SPIVA. For more information on SPIVA methodology, including a full list of regional benchmarks and results, visit <https://www.spglobal.com/spdji/en/research-insights/spiva>.
Sources: S&P Dow Jones Indices LLC, Morningstar, Funddata, CRSP. Data as of Dec. 31, 2024.
Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

SPIVA: S&P Indices Versus Active

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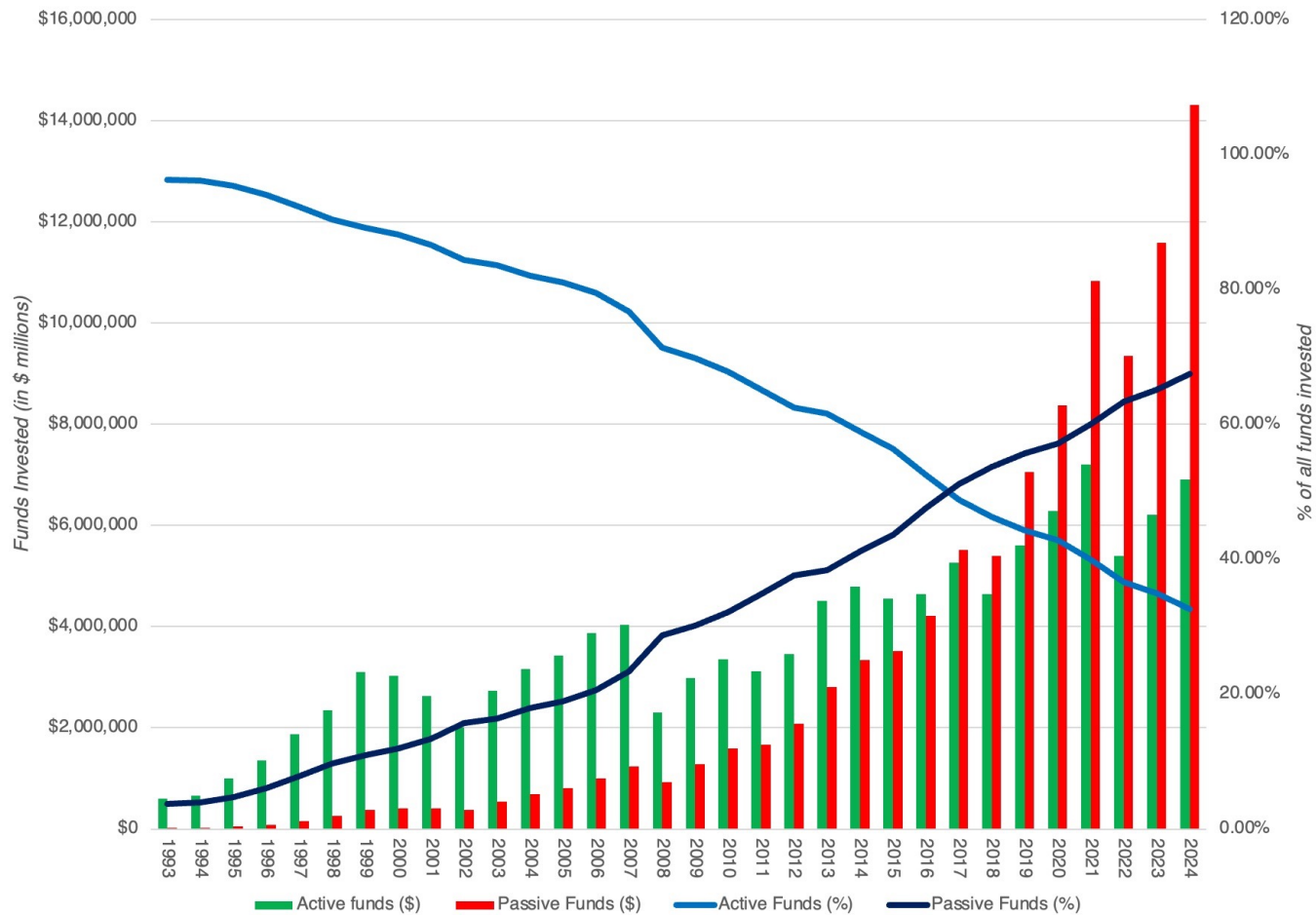
alternate route, with slightly higher costs (than index funds) and more liquidity.

INDEX AS INVESTMENT VEHICLE



INDEXING AND PASSIVE INVESTING: THE PINCER EFFECT

Active versus Passive Investing in the US



1. THE INDEX INCLUSION BOOST

<i>Time period</i>	<i>Additions to S&P 500</i>			<i>Removals S&P 500</i>		
	<i>1995-1999</i>	<i>2000-2010</i>	<i>2011-2021</i>	<i>1995-1999</i>	<i>2000-2010</i>	<i>2011-2021</i>
21 days before announcement date	0.61%	1.92%	2.30%	-0.99%	-6.69%	-1.76%
Announcement date to Effective date	8.32%	3.64%	-0.04%	-9.58%	-6.99%	0.06%
21 days after effective date	-4.49%	-1.69%	-1.69%	6.31%	4.59%	-2.15%
Total effect	4.09%	3.84%	0.53%	-4.83%	-9.23%	-3.81%

- **Pre-inclusion run up:** Most companies that get added to the S&P 500 have had a pre-inclusion run up in stock prices. That can cause tests to be skewed or biased.
- **Inclusion bump:** There has historically been a bump in stock price on the date when it is announced that a company will be added to or deleted from the index.
- **Changes over time:** The index inclusion effect has weakened over time, and more recent studies are hard pressed to find any effect.

EXPECTING A INDEX INCLUSION BOOST? A TESLA LOOKBACK!

Growth of \$100 Invested in TSLA, AIV, and S&P 500,
December 18, 2020–June 18, 2021



Source: Research Affiliates, LLC, using data from Bloomberg.

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2. MOMENTUM VERSUS FUNDAMENTALS

- As the funds invested in index funds and ETFs has surged, the argument that some are making is that **being added to an index gives you a boost, largely because of index fund flows to companies in that index, and more of a boost if you are a large cap company.**
- Since the money flows from other stocks, this line of thought also suggests that **fundamentals will receive less attention and more disconnect from prices**, especially because there are fewer people doing research and looking for market inefficiencies. In addition, they note that since indices are mostly market cap weighted, **this momentum benefits larger market cap companies**, in effect allowing them to become larger.
- As evidence in favor of this argument, they point to the fact that **markets have become top heavy**, where a few winners are carrying the entire market, that **the small cap premium, an enduring feature of equity markets in the twentieth century, has largely disappeared** in this one and the **dominance of momentum in investing success** in the last decade. I concede that these phenomena are consistent with the "passive investing feeds momentum" story, but I am skeptical for the following reasons.

WITH PUSH BACK...

- Momentum can cut in both directions: It is true that **funds flowing into index funds flow into the companies in that index**, with more flowing into large cap companies, but it is also true that funds can flow out of index funds, and when that happens, **the momentum can cut in the other direction**.
- Winner-take-all economics: If momentum is the reason for the big companies winning, **there should be divergence between small and big companies on how fundamentals get priced**. Put simply, you should see the pricing metrics (PE ratios, EV to EBITDA) for large cap companies increasing relative to small cap companies, as passive investing surges. Looking back at the fading small cap effect and top-heavy markets of the last decade or two, I would note that not all large cap companies have been winners, and **the ones that have won have delivered a disproportionate portion of increased earnings**.
- Active investing and equity research: In my view, **the notion that most analysts and active investors are looking for market inefficiencies and seeking out information strikes me as delusional**. Much of active investing is built around **publicly available information and a belief in the power of mean reversion**, not original research and seeking information. It is true that there is a subset of active investors and equity research analysts who contribute to making prices more informative, but it is a small one, and one that is better equipped to survive the passive investing shift.

AND EVEN IF IT IS TRUE...

- Even if the argument that passive investing is making markets less efficient and more momentum-driven is true, I am unsure about the implications for investing.
 - **Asking individual investors, retirees and endowment funds to pay fees to professionals to manage their money while underperforming indices, in service to the larger cause of market efficiency is tone deaf and a non-starter.** In fact, any endowment or pension fund manager who uses this argument to steer endowment funds to active money managers would be in violation of his or her fiduciary responsibility.
 - Perhaps, **the argument is being made to regulators to restrict index funds** (on which indices they can index, how much money they can manage), I can see why active money managers may be in favor, because I understand that they are trying to protect their livelihood, but they should dispense with any talk about protecting individual investors.

3. HIDDEN RISKS

- An undercurrent in some of the opinion pieces that I have read about why SpaceX should not be included in the S&P 500, written by investment experts and academics, is that **it will expose retail investors and retirees to risks that they are unaware they are taking, or even if made aware of the fact, should not be taking in the first place.**
- These opinion-writers seem to be arguing that **the risks associated with investing in a big, money-losing companies (like SpaceX, and presumably OpenAI and Anthropic, when they go public) are so large that individual investors and retirees would not invest in these companies, and even they would, they should not be allowed to do so.**
- I find this chain of reasoning to be both **misguided, and insulting to individual investors**, and reflective of misconceptions that are deeply and widely held in the investment expert class:

MY COUNTERS

- Risk and Diversification: Investing just in a portfolio of a few companies like SpaceX would be imprudent, but **an investor in a S&P 500 index fund is far less exposed to underperforming the market than the typical active money manager who either over invests in SpaceX (if it goes down) or chooses not to invest in it (if it goes up).**
- Smart and Stupid Money: **The belief that small investors are uninformed and naïve and will be exploited by smart money is misplaced.** Much of what is labeled smart money is not only not that smart but more driven by herd following and momentum than what is labeled naïve or stupid money.
- Good businesses and good investments: The weakest link in the argument against putting your money in money-losing companies is the **implicit belief that money-making companies are good (safe) investments and that money-losing companies are bad (risky) ones.** I will wager that an investor who was constrained to invest only in money-making businesses in the last two decades would have under performed an investor operating without those constraints, and without paying a **risk penalty.** At the right price, a money-losing company can be a good investment and at the wrong price, a company with solid and stable profits can be a bad investment.

CONCLUSION

- In the week prior to the SpaceX IPO, **S&P removed some of the suspense in the question of whether the company would be included in the index by announcing that they would stick with their requirement that a company be listed and traded at least a year** before becoming eligible for index inclusion. That decision also means that OpenAI and Anthropic, if they do go public this year, will also have to wait a year for consideration.
- I am glad that S&P is not changing the rules to allow these companies to jump the queue to get into the index, but **I hope that it is not framed as a decision that was taken to protect investors or in the hope that these companies would become magically money making, better governed and working business models.** The truth is that S&P needs the time to manage the transition of three trillion-dollar companies into the index, even as it confronts the challenge of claiming to be a large cap index that does not include three of the largest market cap stocks in the market.
- As for the companies (SpaceX, OpenAI and Anthropic), **I will wager that they will lose little in market momentum from not being included in the index,** and that their price paths will be determined by how the AI story continues to play out in terms of both substance (growth, unit economics, reinvestment) and perception (hype and momentum).
- The bottom line is that **S&P needs these companies in its index more than they need to be in the index,** with the consequence that the companies will not go out of their way to meet index requirements that they feel are costly to them.