WORLDWIDE
ASSET MANAGEMENT

From Diversification to Distortion: The Impact of Passive Investment Flows

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Key Insights

- *Passive investment flows have led to increased market concentration and self-inflated returns, making it both a challenge and an opportunity for active managers to outperform, as returns are concentrated in a few large stocks.*
- *As passive investment continues to rise, market concentration and high valuations are expected to increase, leading to potential risks when trends reverse.*
- *We do not believe the current market dynamics are sustainable in the long term. We remain true to our core beliefs and internal compass. This means staying active and selective, even when passive strategies and market concentration headwinds prevail.*
- *This paper will discuss how passive investment strategies have driven this market narrowness and increased equity markets' price inelasticity.*

Over the last 10 years, we have written about the impact of passive investment flows in equity markets, most recently in 2020, see link here. Our contribution to the discussion at that time was to emphasise that although passive investment products provide cost-effective broad diversification, they also function as a momentum strategy that can ultimately lead to capital misallocation and valuation bubbles. Allocating capital based on market cap (and not risk-adjusted return expectations) is dangerously close to the operating system of the former Soviet Union, where capital was allocated to the most significant (employers) to support the system's stability, not to grow the system. We know how that ended.

A few years have passed since we wrote this, and passive investments have continued to gain market share to around 50%, with a trendline growth of around 2-3% per year. See Figure 1 below.

Recent research into the effects of passive investment flows has started focusing on their potential distortionary effects, such as self-inflating returns and accelerated market concentration.

In recent years, increasing market (benchmark) narrowness has created headwinds for active managers, with returns increasingly concentrated in a few very large stocks. Market narrowness makes it more challenging for the median active manager to outperform because an active portfolio is less likely to own all the few winning stocks.

One way to express the market's narrowness is to compare the relative performance of an equal-weighted index to a cap-weighted index.

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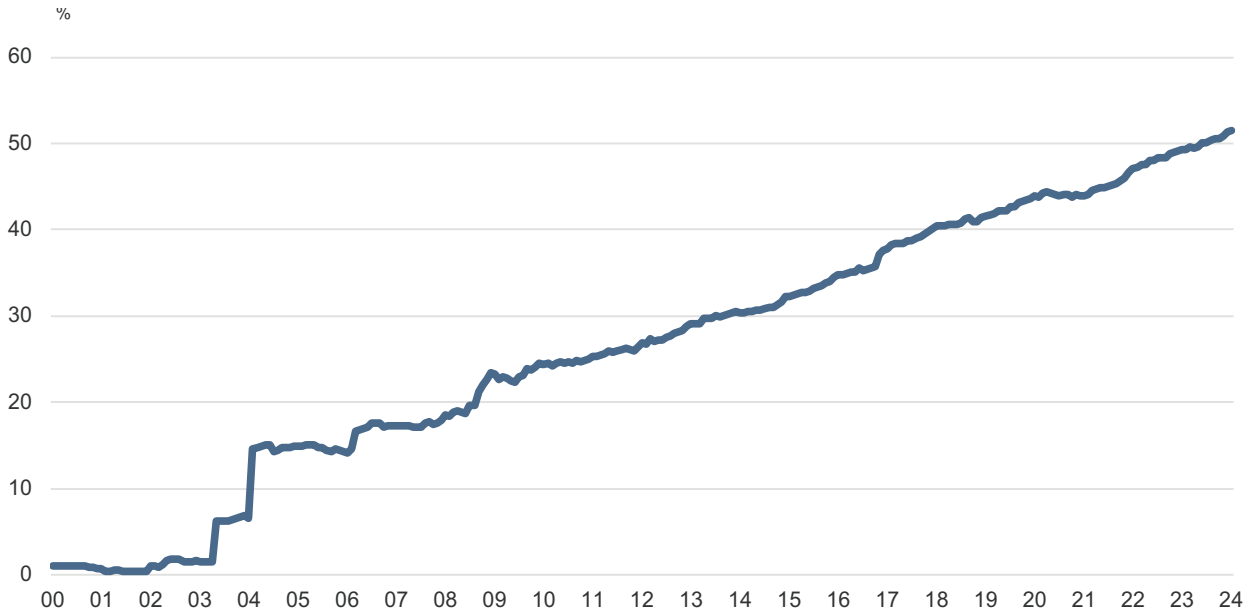
Figure 1
Investments in index Funds Globally of Total Equity Funds



Source: Bernstein Research as of February 2024.

Figure 2 below shows the three-year rolling relative return of the Equal-Weighted MSCI World Index (EW) and Cap-Weighted MSCI World Index (CW). The blue bars show the excess returns of the top decile global equity managers during the same period. When the EW index outperforms the CW index, the market has more breadth. Conversely, larger-cap stocks dominate when the CW index outperforms the EW index, and the market is narrow.

Today, we have the most concentrated market, and fewer active managers have outperformed cap-weighted indices in recent years.

This paper will discuss how passive investment strategies have driven this market narrowness and increased the price inelasticity of equity markets. We will also discuss what Ark Invest, Green Technology ETFs, and Passive investment strategies have in common: self-inflated return characteristics.

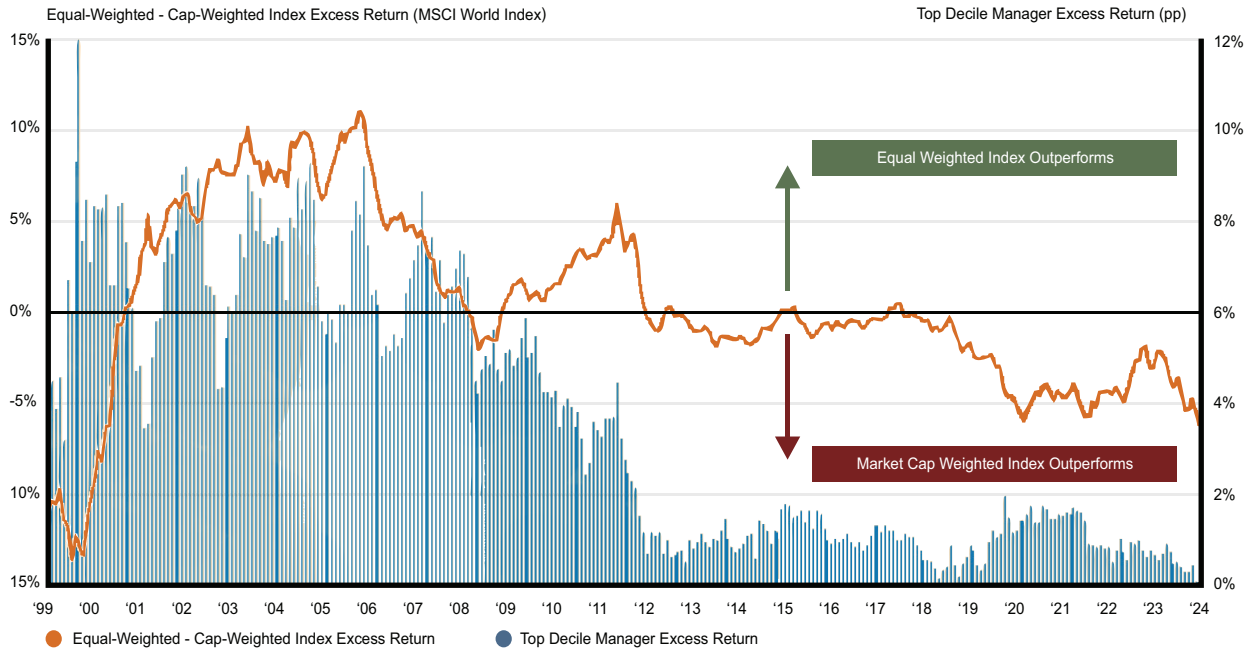
The significant rise in passive investments

In a well-known 1991 paper, "The Arithmetic of Active Management," William F. Sharpe defined passive investors as investors holding every security in the market, while an active investor was defined as not being passive and actively selecting and trading the market. According to William F. Sharpe, a passive investor does not affect the market like active investors, and their trading activity is

"Passive investors are indeed active and influence the market. The assumption that passive investors do not transact is inappropriate."

Figure 2

Equal-Weighted – Cap-Weighted Index Excess Return



Source: J.P.Morgen, October 2024. Rolling 3-year excess returns (net of fees) of the top decile actively managed Global Large Cap Blend funds domiciled in Europe, compared to the MSCI World benchmark, as of June 30, 2024.

isolated to the initial purchase and the eventual realisation of the investment.

Contrary to Sharpe's view, we believe that passive investors are indeed active and influence the market. The assumption that passive investors do not transact is inappropriate because of the constant bid in the market from passive inflows. Every day, billions of dollars are passively allocated to the market[1]. As the security price increases,

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it becomes more attractive and is allocated even more flows. Because these flows only have one decision rule, "if positive flows, then buy," these passive flows have increased the market's inelasticity, which will continue to grow as passive gains market share.

Recent academic work has tried to quantify the effects and concluded that today, it is less relevant to talk about markets in the framework of "The Efficient Markets Hypothesis" and more pertinent to discuss a new model of "The Inelastic Markets Hypothesis":

"When an investor buys $1 worth of stocks, what happens to the valuation of the aggregate stock market? In the simplest "efficient markets" model, the price is the present value of future dividends, so the valuation of the aggregate market should not change. However, the market's aggregate value increases by about $5 (estimates between $3 and $8, $5 used for simplicity). Hence, the stock market turns an additional $1 investment into an increase of $5 in aggregate market valuations. Put another way, if investors create a flow of 1% as a fraction of the value of equities, the model implies that the equity market's value goes up by 5%. This is the mirror image of the low aggregate price elasticity of stock demand. If the price of the equity market portfolio increases by 5%, demand falls by only 1%, so the price elasticity is 0.2. In contrast, most models would predict a minimal impact, about 100 times smaller, and a price elasticity about 100 times larger. This high sensitivity of prices to flows has large consequences: flows in the market and demand shocks affect prices and expected returns quantitatively. We refer to this notion as the "inelastic markets hypothesis."[2]

1 Vanguard alone saw inflows of $126 bn, or $1 bn. per day in 1. Half, 2024: Vanguard YTD Net Inflows Top $126 Bln: ETF League Tables as of July, 2024 | etf.com.
2 In Search of the Origins of Financial Fluctuations: The Inelastic Markets Hypothesis Xavier Gabaix and Ralph S.J. Koijen, December 23, 2023.

Of course, prices would also be pushed up by active flows. However, since buy-at-any-price passive flows are replacing valuation-based active flows, the market no longer mean-reverts. Instead, this results in a positive drift, where the drift component is positively correlated to the stock size in the index.

The above-estimated market price elasticity of 0.2 is the average across different types of investors. The price elasticity of passive investors is 0. Theoretically, therefore, as passive grows, this elasticity will approach zero as passive approaches 100%. Imagine the implications for equity valuations as the share of passive goes higher!

Liquidity scales differently

In addition, liquidity scales differently across the continuum of market capitalisation in that there is an inverse relationship between the liquidity of a stock and the market capitalisation.

As flows are increasingly being allocated to market cap-based investment structures and because the bigger the market cap, the lower the relative liquidity, this will have a more significant pricing impact for larger companies, where the inelasticity is greatest, see Figure 3 below.

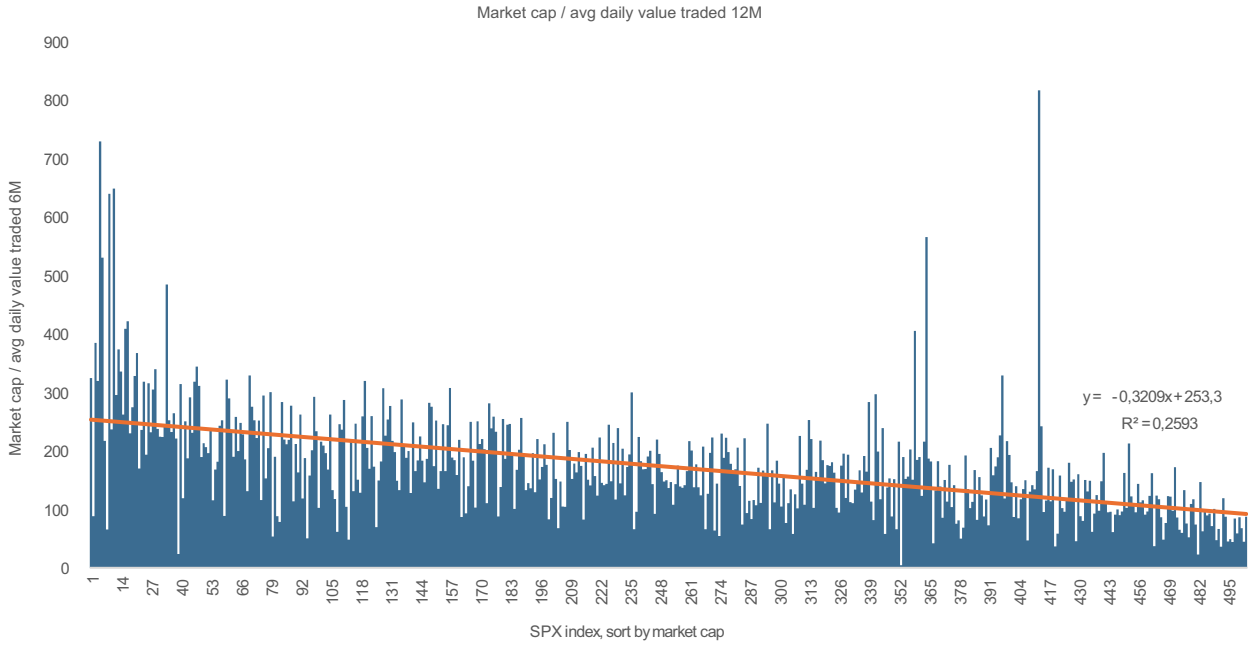
"When passive (free float-adjusted) market cap flows hit the market, they impact the largest stocks the most."

This needs to be repeated because we were amazed when we learned this: the relative liquidity of large market capitalisation stocks is lower than that of lower market cap stocks. For example, Apple's market cap is 187 times larger than Clorox's. Still, the difference in average daily traded volumes is only 35 times, i.e., in relative terms, Clorox is 5 times more liquid than Apple.

This is an essential explanation for the rising concentration of indices in the US. When passive (free float-adjusted) market cap flows hit the market, they impact the largest stocks the most.

Figure 3

Market cap relative to Avg daily value traded



Source: Bloomberg, December 2024.

From an empirical perspective, most flows into passive are intra-equity flows from active managers being liquidated, see Figure 4.

The net effect is cumulative fund flows increasing for passive strategies and decreasing for active ones. This is another driver of the rising concentration in markets, in that active-manager liquidation results in selling pressure in, on average, lower market capitalisation stocks. In contrast, passive index buying, on average, buys more mega-cap stocks than what is being sold because active managers tend to underweight the largest stocks. The switch from active to passive will likely magnify the upward pressure on demand for large and mega-cap stocks and decrease demand for smaller-cap stocks.

Self-inflated returns

A recent academic paper, "Ponzi Funds[3]," considered the impact large flows into active ETFs can have. The study focused on an active concentrated ETF, anonymised but easily identifiable as the ARK Innovation ETF.

This paper decomposed realised fund returns into price pressure and fundamental components, showing it was impossible to differentiate between managerial skill and price pressure; investors equally chased realised returns from price impact and fundamental determinants.

The dynamics are that when funds trade based on flows, they exert price pressure on the securities in their portfolios. Building on this mechanism, it was shown that the

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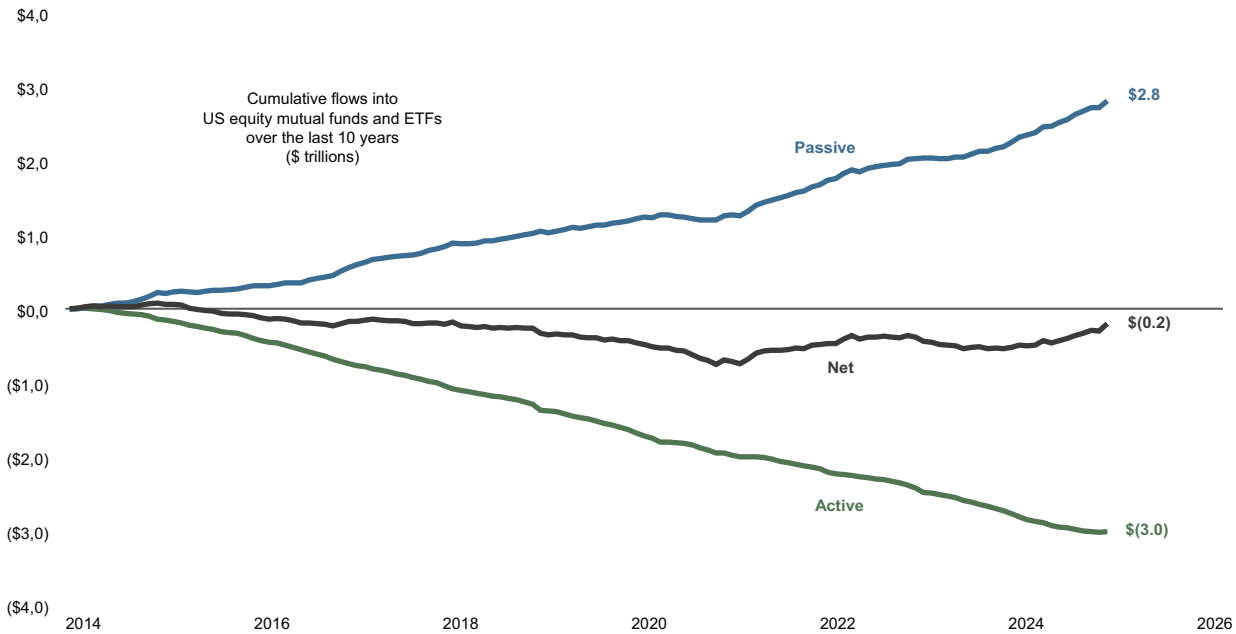
Figure 4

Cumulative Flows into US mutual funds and ETFs



Source: Goldman Sachs Global Investment Research, Daniel Chavez, as of April 2024.

3 Ponzi Funds, Philippe van der Beck, Jean-Philippe Bouchaud, Dario Villamaina. May 21, 2024.

"Via their price impact, funds effectively reallocate capital from late to early investors and therein lie the Ponzi characteristics."

flow-performance relationship caused endogenous price spirals when future fund flows chased price pressure. The price pressure is a realised return to earlier investors in the affected securities, resulting in what the authors labelled 'self-inflated returns.' The inability of investors to differentiate between fundamental and self-inflated returns leads to flows chasing past price impact, which causes further price pressure and an endogenous capital re-allocation across investors. Via their price impact, funds effectively reallocate capital from late to early investors and therein lie the Ponzi characteristics.

As the authors noted:
"...the thematic ETF's positions were 20 times larger than the daily dollar volume in those securities. This implies that whenever the thematic ETF received a 1% inflow on a certain day and proportionally rescaled its positions, it bought 20% of the daily volume of the underlying stocks. Because its portfolio was heavily concentrated in these individual securities... a large portion of its portfolio return was driven by its price impact."

Unfortunately, for active, concentrated ETFs like ARKK, the same dynamics play out once inflows reverse to outflows. Outflows lead to selling, which drives down returns, leading to more investors selling out.

The larger and more concentrated the fund, the more significant the impact.

ARKK and other concentrated active ETFs in areas like Green Tech, which in recent years went through similar boom-bust cycles as ARKK, are perfect illustrations of the impact of flows.

Turning to broad market ETFs like SPDR S&P500 and iShares S&P500, they have low concentration, so one should expect a minor impact and consider it less of a problem.

However, across the S&P500, a very similar dynamic is taking place to ARKK. With S&P500 funds (ETFs, index funds, and other kinds of passive investors, such as institutional investors with internally managed index portfolios and active managers who are closet indexing) holding close to 50% of the overall market, the price impact of flows in aggregate is significant on the constituents in the index. So, while more muted because of the broader and less concentrated holdings, we should expect to see the same dynamics of inelasticity and self-inflated price impacts in the broader market because of the constant passive bid.

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The macro story of passive flows

The US runs massive twin deficits, which, by definition, are financed by capital inflows from abroad. These inflows include foreign direct investment (FDI), portfolio investment, and other financial activities. In recent years, foreign central banks have lost their appetite for and reduced their purchases of treasury securities. The financing of US twin deficits has increasingly shifted towards private portfolio flows targeting the US equity market. We cannot prove it, but this has most likely been an essential driver of the outperformance of US equities in recent years. If accurate, this suggests a precarious relationship where increasing deficits boost demand for US equities. This is part of a more complex dynamic in which deficits, through foreign portfolio inflows, amplify the impact of passive investment flows even further. Contrary to consensus expectations, if Elon Musk, Vivek Ramaswamy and the new Treasury Secretary Scott Bessent manage to reduce the US budget deficit significantly, an unexpected adverse effect could be a decrease in the US financing requirements. This might subsequently reduce inflows into the US equity market. In our view, this scenario is worth considering.

Conclusions regarding passive versus active

The Efficient Equity Market Hypothesis assumption of near-perfect price elasticity is incorrect because of the growing proportion of "buy at any price" investors.

The inelasticity is positively correlated to market capitalisation. This means the growth of passive has contributed to the rising concentration in the market.

Rising allocations to passive have created self-inflated returns in the broader market. The high valuations of the US equity market are not only the result of superior quality businesses but also the consequence of indiscriminate price-insensitive buying by passive investors.

Inflows into passive investment vehicles are a function of income, while outflows are a function of the overall value of savings. A significant portion of the inflows into passive investment vehicles is pension flows into, for example, retirement plans. These are proportional to income. Future outflows will be proportional to the value of the savings pool and typically much more significant than the inflows. When the boomer generation begins real dissaving, it will significantly impact the US equity market.

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This is an unstable situation. The unravelling of concentrated active ETFs portrays what happens once flows turn negative.

We have a fallacy of composition; for the individual, it is entirely rational to allocate to inexpensive, broad, diversified passive structures, but if everybody does it, it will eventually create a negative outcome for everyone.

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Equity market concentration has not been higher since the Great Depression[4]. Investing passively is now an active decision that could introduce less obvious but impactful risks into portfolios.

Calling the peak in concentration and the peak in the growth of passive versus active allocations is impossible. But trees don't grow into the sky. There are real concerns when current trends in market concentration reverse and the growth rates in passive allocations abate. This could potentially result in adverse outcomes for enormous pools of capital.

We believe the way to beat the market is to have a diversified portfolio of companies that can compound their earnings faster than the overall market over the longer term. Our current focus is to avoid being too exposed (and, in our view, too vulnerable) to the concentrated indices that increasingly are becoming unbalanced tech-proxies.

The relentless rise of index investing is a challenge and opportunity. We expect that the stock-specific concentration risk in indexing and the choice of the index will move up on the priority list among institutional investors. Significant wealth and flows of pension funds worldwide depend on Nvidia, Apple, and Microsoft. We can help balance that and help investors understand these risks.

4 Global Strategy Paper Updating our long-term return forecast for US equities to incorporate the current high level of market concentration Goldman Sachs (paywall protected), Oct. 2024.

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