



Cheap market beta is not the end of active investing

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- The active versus passive debate often focuses on mutual funds and ETF flows
- In reality, the passive universe is highly diverse and even broad market indexes incorporate discretionary elements
- The shift towards ETFs is likely to happen mostly on the back of pseudo-active management
- Investors should embrace systematic market and factor exposure as a portfolio cornerstone and complement it selectively with truly differentiated active strategies

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With the seemingly unstoppable rise of Exchange Traded Funds (ETFs), index oriented investing has been gaining more and more attention. While ETFs undoubtedly deserve praise for providing investors with cheap exposure to market beta, some market participants have raised concerns about their impact on asset prices and financial stability. If an ever growing share of assets is managed "passively", what are the implications for market efficiency? Our paper has a look at the interesting history of index investing and highlights how far the industry has come since then.

1 A very brief history of index investing

It will probably be surprising for many to hear that the first stock index will soon turn 140 years old. On July 3, 1884. Charles Dow, a talented financial journalist and co-founder of Dow Jones Company, had the revolutionary idea to publish the world's first stock market index, called the Dow Jones Transportation Average (DJTA). Railroading was by far the most important industry in the US and a good indicator of the overall health of the economy. It therefore made sense for Jones, known for his capability of breaking down and conveying complex financial information, to group the large companies inside this crucial sector and report their performance on aggregate. The formation and pricing of this index was still very simple. As indicated by the name, it was constructed by adding the stock price of each constituent and dividing the sum by the number of stocks (price weighted methodology). At initiation the index was composed of 9 railroads (including the New

York Central and Union Pacific) and 2 industrial companies (Pacific Mail Steamship and Western Union). However it soon got outshone by the index that Charles

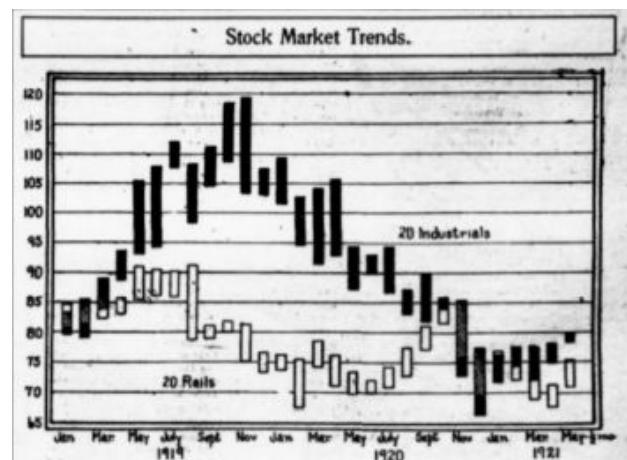


Figure 1: *The humble beginnings of stock market indexes and the birth of the Dow theory[13]*

Dow launched two years later, the famous Dow Jones Industrial Average (DJIA), or "the Dow". Even though industrial companies still represented a relatively small percentage of the economy in the late 19th century, this sector was growing fast. The first calculation of the DJIA included the average price of 12 companies, representing the major industries including leather, steel, tobacco, gas, rubber, coal and iron sugar. The index started at a level of 40.94 points and was considered highly speculative in comparison to the transportation index. It is interesting to see the parallels to the more recent rise of the NASDAQ as the new index setting the tone in the US. After having made its path inside the canyon of Wall-Street, the Dow quickly became popular

among retail investors during the "Roaring Twenties". In 1928 the number of components was increased to 30 stocks and the index reached a value of nearly 400 points just before the crash in 1929 from which it only recovered almost 25 years later. Despite their simple structure, the two first indexes became hugely influential as they managed to capture the development of the still infant industrialized economy pretty well. This inspired the well known "Dow theory" published 1922 by Jones' successor William Peter Hamilton in "The Stock Market Barometer". The theory promoted the idea that "industrials make, and transports take"[12] and described the phenomenon that both indexes could be used in combination to assess market trends and broad economic health[11]. An upwards trend should be confirmed by both the transportation and the industrial index within a reasonable time frame. If the two indexes diverged it signaled potential problems such as overproduction or supply shortages. Some financial professionals overwhelmed by the abundance of information in today's modern economy would probably love to return to this two index world. According to research from the Index Industry Association, there were a whopping 3.288 million indexes in 2018 with 95% of them tracking baskets of stocks[2]. This compares to only 41.000 listed corporations. It is clear that this corner of the investment industry has little in common with its precursor 100 years ago.

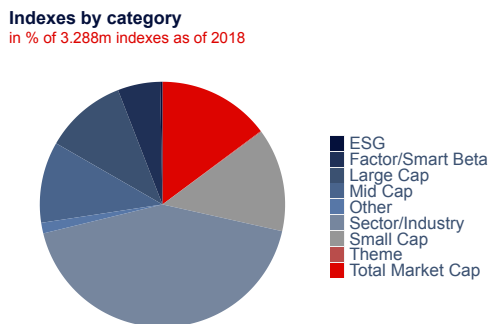


Figure 2: Sector and industry benchmarks dominate the index universe[2]

2 The great shortcoming of the active vs passive debate

Investment approaches are often very broadly classified as either active or passive. There are various definitions of the terms but we find it easiest to analyse it through the Markowitz lense and define that a passive investor is an investor who holds the market portfolio while an active investor tries to generate a higher risk adjusted return by over- or underweighting selected assets or groups of assets. To simplify things a bit we focus on equities and state that the ideal passive investor would hold a market cap weighted portfolio consisting

of all investable stocks while the ideal active investor would hold a completely unconstrained portfolio containing only the stocks he or she expects to perform best based on thorough research. In this ideal world

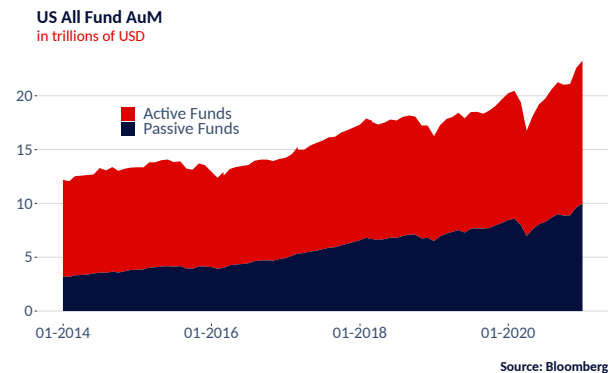


Figure 3: A chart most investors are certainly familiar with but its informational value is debatable. How many "active" funds live up to the name and how passive are their "passive" siblings?

the diligent research of active investors would enable markets to function efficiently and price-in new information quickly and as a reward generate an excess return sufficient to cover the cost of this research and associated trading. The marginal price of each security should eventually be determined by informed active investors. However, if passive investors simply hold the market portfolio active investors will end up trading with other active investors, by definition turning it into a zero sum game. This results in the well known free-rider problem. Passive investors benefit from market efficiency achieved grace to active investors without paying for it. In reality though, hardly any investor falls completely on one side of the active/passive scale and the often assumed dichotomy between active = mutual fund and passive = ETF is hardly accurate. We find that what is regularly called "passive investing" in aggregate statistics and market commentaries often resembles fairly sophisticated rules based processes. To elaborate further on this topic we focus on two aspects:

- the construction of broad market indexes and the degree of discretion involved using the S&P 500 as an example
- the variety of index based investing that has evolved around topics such as smart beta, sector, thematic ETFs and even relative value or arbitrage strategies previously pursued exclusively by hedge funds

3 Discretion in broad market index construction

The S&P US index family can be broadly divided into two groups:

- the S&P Total Market Index (S&P TMI), designed

to track the broad equity market, including large-, mid-, small-, and micro-cap stocks

- and the S&P Composite 1500, which includes all the stocks in the S&P 500 (Large Cap), the S&P 400 (MidCap) and the S&P 600 (SmallCap). This composite index is a subset of the TMI and follows much more restrictive eligibility constraints.

Obviously, the most iconic index is the S&P 500, which measures the performance of the large-cap segment of the US equity market. This index, as indicated by its name, has 500 constituents, and is considered a good proxy for the total US equity market. The construction of the index however is impressively sophisticated and involves discretionary elements which makes it worth having a closer look at it[9].

- First of all, only companies domiciled in the US that publish a 10-k annual report are eligible. At the same time, the US portion of fixed assets and revenues must not exceed 50%, with fixed assets making the difference in case of doubt. Further criteria to determine country of domicile include among others the location of officers, directors and employees, public perception, ownership information. This domicile criteria can be ambiguous. Historically, index providers and investors were relying on the country of incorporation. However, some companies choose a "country of convenience" for tax purposes (e.g. Bermuda, Channel Islands, Gibraltar, Island in the Caribbean). In the scenario, where the solely factor suggesting that a company is not domiciled in the US is its location chosen for tax-related reasons, the S&P committee usually considers it to be an US corporation anyway. Beyond this, the company is required to have its primary listing on one of the following US exchanges: NYSE, NASDAQ or CBOE.
- The second important criterion is related to the company's organizational structure and its share type. To be considered, companies need to be a corporation, defined as a legal entity that is "separate and distinct from its owners" (unlike Limited Partnerships) and issue common shares. Interestingly, during a committee meeting in August 2017, it was decided to no longer add corporations with multiple share classes to the S&P Composite 1500 (which includes the S&P 500 as well as the S&P 400 and the S&P 600). The main reason cited for the ban was "entrenchment and poor long-term economic return"[1]. However, this rule is not applied retroactively, which is why S&P 500 still includes 505 securities from 500 different companies. Some companies such as Alphabet had a dual share class structure prior to the rule change and have not been excluded from the index. Many technology companies such as Snap though are not eligible for the index anymore.
- Additionally, the S&P committee defines thresholds, such as size, liquidity, and financial viability.

For example, as of March 2021, the committee required a minimum unadjusted market capitalization of \$11.8 billion, a minimum trading volume of 250,000 shares in each of the six months leading up to the evaluation date and positive earnings during the four most recent consecutive quarters. As the example of Tesla showed the latter can be quite controversial. The company objectively fulfilled the criteria of positive net income over four quarters. However, its poor earnings quality posed a dilemma for the SP committee which therefore decided to postpone the index inclusion, upsetting market participants who had tried to play the index inclusion effect [5].

- The rules outlined above yield a set of eligible companies, from which the S&P committee chooses the stocks it considers most suitable. However there is another element of discretion involved in the process as companies already included that do not meet the inclusion criteria are not automatically excluded. The S&P committee tries to limit turnover and the exclusion of corporations is again subject to its judgement. Another important discretionary element is related to sector balance. The committee generally avoids excessive deviations between the GICS sector allocation of the S&P Composite and the S&P TMI. Again there is no clear mechanism behind this.

While they usually attract little attention, these ambiguous rules and discretionary judgements are highly significant. Research has shown that roughly a third (142 out of 500) of its constituents would need to be replaced if the S&P committee mechanically selected the 500 largest US-based public corporations. This example already gives an impression of the degree of sophistication of modern index construction and also indicates why the term "passive" does not adequately describe even a benchmark like the S&P 500. Robertson (2019) even called the index landscape "passive in name only"[8].

4 Slicing and dicing the investable universe with smart beta

We have outlined that the construction of broad market indexes is already closer to active stock selection than often assumed. However, the "passive" space has evolved beyond this and become way more diversified with the rise of products such as smart beta. Smart beta ETFs follow alternative selection and weighting methodologies based on fundamental or technical characteristics such as low volatility, high dividend yield or momentum. The strategies attempt to achieve superior risk-adjusted returns (like an active stock picker?) by harvesting systematic risk premia or behavioral market inefficiencies. It can be considered a middle way between active and passive investing, trying to com-

bine the best from both worlds. It is often feared that the rise of "passive" investing leads to subdued market efficiency because broad market indexes like the S&P 500 do not consider the valuation of companies. This leads to the criticism that if more and more investors decide to simply track such a benchmark, fund flows put upwards pressure on the valuation of the companies included in the index resulting in greater performance divergence. In front of this background

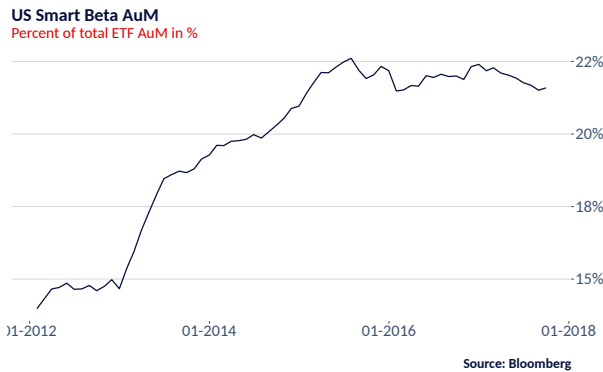


Figure 4: Smart beta's market share hit a ceiling in 2015 but represented more than a fifth of all US ETF investments in 2017

it is interesting that the largest smart beta ETF in the world is actually the Vanguard Value ETF, which tracks the performance of the CRSP US Large Cap value index. The CRSP US Large Cap value index is part of the CRSP family and uses the CRSP US Total Market Index as its eligible universe. Subsets are formed according to the market cap of its constituents: Mega, Mid, Large, Small-Mid, Small, and Microcap indexes. Then for each of these market cap-based indexes, stocks are sorted into value and growth. The index construction process and the eligibility factors underlying the CRSP US Total Market, are very similar to those used for the SP indexes. Companies need to be US domiciled and have their primary listing on NYSE, NASDAQ, BZX and The Investors Exchange. Whether a company is considered to be domiciled in the US is determined based on the incorporation country, the HQ localization, the origin of revenues, the percentage of shares held by US funds and the presence or absence of an Employer Identification Number. Again, these criteria are relatively ambiguous, as no minimum thresholds are given. The process for instance grants an "inclusion bias" to corporations with more than 5% shareholding by US public funds. However, eventually the index committee takes the final decision. Further eligibility criteria include market capitalization (>\$15m), freefloat (>12,5%) and minimum trading volume. The committee applies slightly lighter minimum thresholds (e.g. market cap >\$10m) for the exclusion of stocks and implements concentration limits to ensure diversification and compliance with IRS rules. The distinction between value and growth is made based on dividend yield, price/book and P/E ratio. Unlike the formation of the eligible universe involves it is purely mechanical.

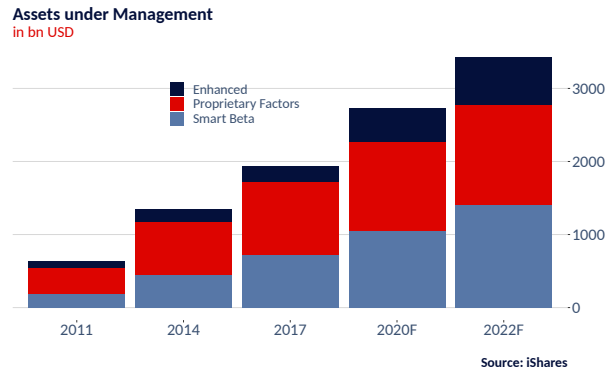


Figure 5: The factor ETF industry is still growing strongly [7]

Stocks are sorted based on an average aggregate value and growth score. The first includes the future and historical earnings/price ratio, the book to price ratio, the sales to price ratio and the dividend to price ratio. The latter is composed of future short-term and long-term earnings growth derived from consensus estimates as well as the historical three year growth in sales and earnings, the investment to assets ratio and the return on assets. All underlying ratios are standardized using winsorized z-scores and combined to form the aggregate value and growth score following a three step process that implicitly assigns different weights to the variables. Obviously style indexes can be constructed using a sheer infinite number of eligibility criteria, scoring, ranking and optimization procedures resulting in a highly granular slicing and dicing of the investable universe and giving investors a lot of opportunities to express their beliefs and expectations.

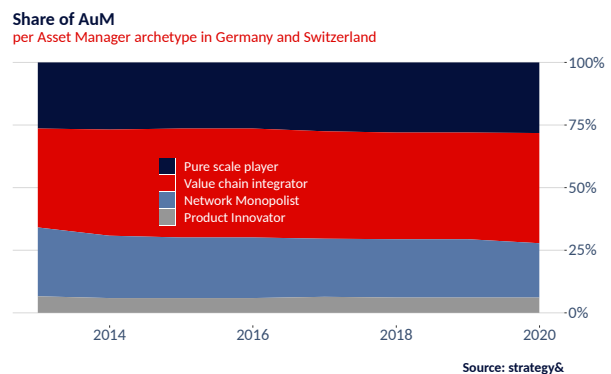


Figure 6: Differentiated products have held market share [6]

Pure Scale Players: Holistic offering and coverage coupled with relatively low costs

Value chain integrator: Aggressive extension of existing businesses into additional, profitable parts of the value chain

Network monopolist: Captive, part of FS network group and thus have close relationship with specific clients

Product innovator: Niche, innovative product positioning

5 Conclusion - a blurred line and lots of grey zones

Robertson (2019) reviewed the methodology descriptions of the 600 most popular equity indexes and found that none of them follows a fully transparent process or applies entirely mechanical rules[8]. Furthermore, as shown using the S&P 500 as an example, methodologies are never carved in stone but can be subject to change based on the beliefs of the investment committee developing them. Simply contrasting ETFs/passive investing with mutual funds/active investing vastly understates the complexity, sophistication and diversity in the index world and most likely overstates how active many allegedly active investors really are. Between expensive closet indexing and stock pickers who merely buy the largest or most well known companies in their universe, a well defined systematic strategy looks like the more attractive choice. Of course this puts a lot of pressure on funds that claim to be active but lack a truly differentiated investment process. It also has implications for style oriented "active" managers who merely reap well researched risk premia that can also be harvested by a rules based process. Investors can easily hold managers accountable not only against the broad market benchmark but also against relevant smart beta, sector and thematic ETFs.

Truly active investing is crucial for market efficiency but the shift from mutual funds to ETFs does not imply that it is really on retreat[3]. Niche strategies and hedge funds, including activist strategies, have roughly held their share in global assets under management [4][10]. As Figure 6 shows at least in Germany and Switzerland, the great shift towards cheaper, systematic products happens on the back of financial services network groups that rely heavily on their distribution channels but lack a differentiated, cost competitive offering. After all, end investors can get market beta almost for free but the the demand for excess return (alpha) or more customized exposure (smart beta, thematic...) is intact. Discussions about the implications of increasing ETF market share for market efficiency, market stability and corporate governance should focus less on the investment approach and more on the high level of concentration in the scale driven ETF industry. At Amadeus we embrace low cost, broad market ETFs as a cornerstone of our allocation but complement it with selected internally managed or externally sourced smart beta products. Differentiated niche strategies such as Merger Arbitrage and selective, well researched single stock investments represent the cherry on the cake. As we have shown, the line between active and passive is rather blurred and the golden mean can be found in a cost efficient and effective integration of both worlds.

References

- [1] Nicole Bullock. *Companies with multiple share classes blocked from joining SP 500*. URL: <https://www.ft.com/content/993e4c11-8729-3168-a280-69e1d400b1bc>. (accessed: 02.06.2021).
- [2] businesswire. *Index Industry Association Surveys the Index Universe*. URL: <https://www.businesswire.com/news/home/20180122005183/en/Index-Industry-Association-Surveys-Index-Universe>. (accessed: 02.06.2021).
- [3] Jason Voss C. Thomas Howard. *Active Equity: "Reports of My Death Are Greatly Exaggerated"*. URL: <https://blogs.cfainstitute.org/investor/2021/04/15/active-equity-reports-of-my-death-are-greatly-exaggerated/>. (accessed: 02.06.2021).
- [4] EurekaHedge. *Global Hedge Funds Infographic August 2018*. URL: <https://www.eurekaHedge.com/Research/News/1798/Global-Hedge-Funds-Infographic-August-2018>. (accessed: 22.03.2021).
- [5] Vildana Hajric. *Tesla's SP 500 Inclusion Hinges on Earnings Quality: DataTrek*. URL: <https://www.bloomberg.com/news/articles/2020-08-24/tesla-s-earnings-quality-could-pose-dilemma-for-s-p-overseers>. (accessed: 02.06.2021).
- [6] Dr. Utz Helmuth. *Cost and Growth in Asset Management*. URL: <https://www.strategyand.pwc.com/de/de/industrie-teams/finanzen/cost-and-growth-in-asset-management.html>. (accessed: 02.06.2021).
- [7] iShares. *Factors Making Waves*. URL: <https://www.ishares.com/ch/intermediaries/en/themes/smart-beta/factors-making-waves?switchLocale=y&siteEntryPassthrough=true>. (accessed: 02.06.2021).
- [8] Adriana Z. Robertson. "Passive in Name Only: Delegated Management and "Index" Investing". In: 36 (2019).
- [9] SP. *SP U.S. Indices Methodology*. URL: https://www.google.com/search?q=s26p+500+index+methodology&rlz=1C1CHBF_en&oq=s26p+500+index+methodology&aqs=chrome.0.012j0i22i30l8.4487j1j4&sourceid=chrome&ie=UTF-8. (accessed: 02.06.2021).
- [10] Statista. *Value of assets managed by hedge funds worldwide from 1997 to 2020*. URL: <https://www.statista.com/statistics/271771/assets-of-the-hedge-funds-worldwide/>. (accessed: 22.06.2021).
- [11] Alok Kumar Stephen J. Brown William N. Goetzmann. "The Dow Theory: William Peter Hamilton's Track Record Reconsidered". In: *The Journal of Finance* (Dec. 2002). URL: <https://doi.org/10.1111/0022-1082.00054>.
- [12] TheDowTheory.com. *Basics of Dow Theory*. URL: <https://thedowtheory.com/resources/traditional-dow-theory/basics/>. (accessed: 02.06.2021).
- [13] Angel Vu. *Dow Jones Industrial Average First Published*. URL: <https://www.loc.gov/rr/business/businesshistory/May/djia.html>. (accessed: 02.06.2021).