

## Does active share equal good performance?

---

Ido Eisenberg & Piera Elisa Grass | JP Morgan Asset Management | 10 August 2015

Active share is an important manager evaluation tool but it does not necessarily translate into superior returns. It is one of several risk measures which can help assess a manager, but it gives no indication of manager skill. High active share is often profiled as "better" but it creates a dilemma – portfolios can exhibit risk concentrations which may lead to volatile return streams for investors. Low active share funds should not be excluded from asset allocators' tool kit. Investing in low active share, diversified portfolios can deliver consistent alpha without overriding the investor's equity allocation decision. Combining passive and active approaches in a low active share solution can be an effective and efficient way of accessing equity markets.

### INTRODUCTION

Active share has been getting a lot of attention in recent years from investors. While fully support the notion that investors should not pay high fees for funds with a low active share, this paper raises concern with two aspects of the active share debate: first, the assumption that active share is a measure of skill when in fact it is not even a complete measure of risk; and, second, that high active share is a pre-requisite in manager selection (i.e. that low active share funds should not be on the investor's radar).

Active share is a measure of the active money a manager invests compared to benchmark. It is calculated by taking the sum of the absolute value of the active stock weights versus the benchmark, divided by two. Undoubtedly, the power of this measure is that it is simply defined and simply calculated. Note, however, that conceptually this is simply a distance from the benchmark and hence a measure of active risk. There is no reason why a high active share would be any signal of a manager's skill. It certainly signals that the manager has conviction – but conviction does not equate to skill.

### NOT ALL ACTIVE SHARE IS CREATED EQUAL

Petajisto and Cremer (2009) and Petajisto (2013) make the point that active share is a better measure of the amount of stock selection or idiosyncratic risk in a fund than realised tracking error, as tracking error contains covariance information, being a measure of total portfolio behaviour. While in agreement with the authors on the difference, the conclusion is faulty. Not having covariance information embedded in active share is precisely its limitation. Not all active share is created equal. The active exposures embedded in a portfolio could be

fully correlated or fully uncorrelated, having the same active share. Active share does not help assess total risk – and that's why it's an incomplete measure, compared to tracking error.

In Petajisto (2013), there is an example of tracking error versus active share in which portfolio 1, populated with only technology stocks (generating a high tracking error even when active weights are low) is compared to portfolio 2, which samples one stock from each sector (generating high active share but low tracking error). Consider two further portfolios based on portfolio 2. In the first, the smallest stock in each sector is selected. In the second, only Japanese stocks within each sector are selected. The resulting two portfolios would have high active share, but large factor tilts (whether it be size or country) and the excess return of the portfolio would be largely determined by the factor return rather than asset selection. If the portfolio manager was careful to minimise factor exposures to the benchmark when selecting stocks, it could be said that the portfolio return was driven mainly by stock selection – but, of course, this is not known *ex ante* unless a risk model is used to analyse the holdings. And, in any case, active share will not help with this analysis.

By way of example, using Barra, the authors analysed some of the largest global funds marketed in the UK with high active share (Figure 1). All had an active share of over 90%. Not one had more than 50% of its risk budget in specific (or idiosyncratic) risk. Tracking error ranges from 3% to more than 6%. Some funds were underweight the US by more than 20%, some had a beta of 1.13. Some had one sixth of the portfolio in cash. None of these characteristics have to do with stock selection – but all would have a great effect on returns. Yet, all of the funds had approximately the same active share.

**Figure 1: Sample of large global equity funds high active share**

| FUND     | # Holdings | TE (%) | Active share (%) | SR (%) | Systematic Risk Concentrations    |
|----------|------------|--------|------------------|--------|-----------------------------------|
| Fund I   | 60–80      | 3.77   | 90               | 27     | US –20%, Europe +20%              |
| Fund II  | 40–60      | 3.06   | 94               | 44     | 14% GBP cash                      |
| Fund III | 80–100     | 3.53   | 90               | 44     | BETA 1.13                         |
| Fund IV  | 20–40      | 6.37   | 98               | 45     | US –25%, UK +20, Japan +20        |
| Fund V   | 40–60      | 4.39   | 94               | 47     | 20% of risk budget in Switzerland |

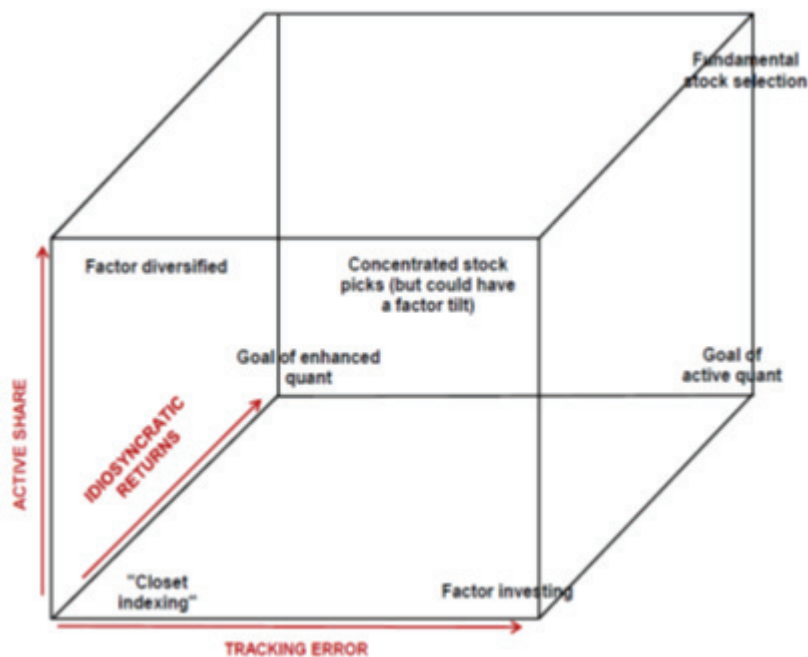
Sources: J.P. Morgan Asset Management, Barra, Bloomberg, June 2015. TE = Tracking Error. SR = Specific Risk.

It is entirely possible that the managers of these funds are very adept at selecting regions or cash allocations or time betas. But these are all factor exposures, invalidating the claim that active share is a proxy for stock selection.

Looking at Petajisto's framework for fund classification raises two issues. The first is the claim that a high tracking error combined with high active share equals concentrated stock picks. This can be correct – but high active share can certainly lead to carrying high factor tilts as well. In fact, a lower tracking error could signify that factor tilts are not present and the proportion of idiosyncratic risk is higher.

The second issue is that the framework is missing a dimension – it needs to incorporate idiosyncratic risk to give a fuller measure of the type of investment. Fraser–Jenkins and Harmsworth (2015) present a more complete framework (Figure 2).

Figure 2: An alternative framework for fund classification



Source: Fraser–Jenkins and Harmsworth (2015)

## EMPIRICAL EVIDENCE: FROM THEORY TO PRACTICE

Petajisto posted the data underlying the 2009 & 2013 papers online, allowing further analysis.

First, and in line with the criticism set out in Frazzini et al (2015) of the original methodology, the analysis here looks only at those portfolios which are benchmarked to the S&P 500. This removes benchmark selection bias from the results and avoids the possibility that different universes might afford different alpha opportunities (for example, large cap

funds tend to have lower active share than small cap funds). This left a universe of nearly 1000 funds. Over the entire sample period, higher active share translated to lower average returns in this fund universe (Figure 3).

Figure 3: Full dataset

|          | Average Active Share (%) | Average return (%pa) | # Funds |
|----------|--------------------------|----------------------|---------|
| Passive  | 2                        | -0.21                | 70      |
| Enhanced | 50                       | -0.23                | 182     |
| Core     | 70                       | -0.32                | 445     |
| High     | 87                       | -0.42                | 270     |

Sources: <http://www.petajisto.net/index.html>, J.P. Morgan Asset Management

Second, due to concerns that the original methodology contained return data streams that were not aligned (that is, the funds in the sample did not all have return data for the entire sample period) the authors created a more homogeneous sample of funds, consisting of funds that had:

- stable active share over the measurement period (defined as standard deviation of active share of less than 10%);
- data in the three years to 2004; and,
- a 10-year track record from 31 December 2004 to 31 December 2014.

The results were inconclusive (Figure 4 over page). Over ten years, the best performance on average was from the Enhanced category, which the authors defined as funds with active share of 30% to 60%. Over five years, High (>80%) and Core (60% to 80%) active share funds performed best – however, it is important not discount the positive performance of the Enhanced category over all time periods, and the fact that the portfolios with highest active share did not outperform those portfolios in the Core active share category. This also supports a view that there is room for low active share products in the investor's tool kit (providing the price is right, of course).

Figure 4: Adjusted dataset

|          | Active Share<br>(%) | Return<br>2004 – 2009<br>(%pa) | Return<br>2004 – 2014<br>(%pa) | # Funds |
|----------|---------------------|--------------------------------|--------------------------------|---------|
| Passive  | 1                   | -0.36                          | -0.34%                         | 26      |
| Enhanced | 50                  | 0.21                           | -0.25%                         | 38      |
| Core     | 70                  | 0.91                           | -0.29%                         | 74      |
| High     | 84                  | 0.81                           | -0.44%                         | 25      |

Sources: <http://www.petajisto.net/index.html>, J.P. Morgan Asset Management, Bloomberg, 2004–2014

Two observations arise from the data. First, the association of benchmarks to portfolios is very noisy in the sample data. Many examples were found of portfolios associated with the S&P 500 that were in effect benchmarked to different indices (for example, to the Russell Midcap Value fund). The implications are clear – the misattributed portfolios will have extremely large active share versus the wrong index. In addition, their active return will be misattributed. Over a period in which a small cap tilt was rewarded handsomely, this may have affected the results.

In addition, choice of period is, as always, of paramount importance. As an example, some of the funds in the high active share category exhibited strong outperformance during the dot com bubble. Further investigation shows that these were high yielding dividend funds or value funds. Being in high dividend stocks or value stocks would certainly have helped a fund to weather the dot com bubble however but this appears to be an example of a well-timed factor tilt rather than superior stock selection.

Finally, global fund data was collated from two sources (Morningstar and eVestment) to check the predictive ability of active share in a global context. The analysis concentrated only on those funds benchmarked to the MSCI World or MSCI AC World indices. The funds were divided into three active share categories: Low (under 60% active share), Core (60% to 80% active share) and High (>80% active share).

Looking at the prior five years of data, those portfolios with the lowest active share outperformed those with the highest active share, and, on average, achieved a superior information ratio (Figure 5 over page).

Figure 5: Global fund data, performance (2010 – 2014)

|                       | Return<br>(%pa) | 5-year TE<br>avg (%) | 5-year IR<br>avg | # Funds |
|-----------------------|-----------------|----------------------|------------------|---------|
| High (AS > 80%)       | -0.72           | -0.36                | -0.092           | 75      |
| Core (60% < AS < 80%) | -0.53           | 3.36                 | -0.108           | 31      |
| Low (AS < 60%)        | -0.23           | 1.51                 | 0.012            | 18      |

Sources: Morningstar, eVestment, J.P. Morgan Asset Management. AS = Active Share.  
TE = Tracking Error. IR = Information Ratio

These findings challenge Petajisto's claim that active weight shouldn't fall under 60% for active management. Rather, this should hinge on the type of mandate.

#### ACTIVE SHARE: ONLY ONE PART OF THE STORY

Building a framework for manager selection is a complex exercise and, as seen, active share is a blunt tool for assessing managers. There are no shortcuts for in-depth research, and no single measure can stand for detailed due diligence.

A variety of techniques should be considered when gauging how portfolios behave and whether they are loyal to their investment strategy. Actual portfolio performance should be an expression of the combined investment philosophy and processes. In order to assess this, one should analyse the strategy's past results (time-series) and how the portfolio is structured at a point in time (cross-section). Active share can only tell part of the story. It is one of several risk measures that can help assess a manager, but it gives no indication of manager skill, portfolio biases or measure concentration.

The analysis of risk is therefore a critical element in assessing superior investment performance. The goal of risk analysis is not solely to minimise risk, but rather to accurately weigh risk against returns. In short, risk assessments must employ a wide variety of quantitative and qualitative measures to gather information about the risk characteristics of a portfolio. This analysis should be conducted at a variety of levels, including a historical analysis of the pattern of excess returns and a structural analysis of specific securities and positions within a portfolio.

Cross-sectional analysis provides a snapshot of the individual components that make up a portfolio at a specific time. Such analysis helps to establish the portfolio risk profile, and explain the relationship between returns and the macroeconomic, fundamental, and statistical factors that affect them.

Active share is a form of cross-sectional analysis – however, it is a crude measure of active management that should not be used in isolation, as it does not give a full picture of portfolio risks. Ex-ante tracking error analysis and its decomposition is an effective way to understand a portfolio's positioning and exposures, either systematic or idiosyncratic.

The study of the historical pattern of excess returns through time can put a spotlight on the risk issues that require further attention, allowing the analysis process to be focused on the most important risk characteristics in a given portfolio. Measures such as historical beta, realised tracking error, hit ratio and information ratio can help paint a picture of a strategy. Together, these statistics can help determine the right space for the strategy under consideration within an overall asset allocation framework.

#### **LOW ACTIVE SHARE, HIGH DIVERSIFICATION AND PERSISTENCE OF ALPHA**

As shown above, high active share is not necessarily a predictor for future performance and not a standalone way to evaluate a strategy. Low active share fund should therefore not be automatically excluded from the asset allocator's toolkit. Investing in low active share, diversified portfolios can deliver consistent alpha without overriding the investor's equity allocation decision. Combining passive and active approaches in a low active share solution can be an effective and efficient way of accessing equity markets.

Enhanced index strategies are a highly effective alternative to passive investing. Like passive investing, enhanced indexing is designed to maintain risk characteristics that are similar to the benchmark while keeping management fees attractively low. However, unlike passive investing, enhanced index strategies aim to outperform the benchmark.

The advantages of passive investing are well understood. Indexing is cheap, maintains the diversification benefits derived from individual asset allocation decisions, and holds few surprises beyond the returns delivered by the market. However, to benefit from these advantages, investors have to accept that performance will never exceed the benchmark, essentially giving up any opportunity of excess returns. Moreover, passive investors tacitly accept that index providers will manage stock selection while the market determines the weight of those stocks in the index.

Besides its low cost and low relative risk (low tracking error), one of the unsung benefits of passive management is that it does not override a client's asset allocation decision. One of the greatest harms any portfolio manager can do is to neglect the asset allocation framework determined by the client. Diversification, and the corresponding reduction in risk, is the bedrock on which asset allocation decisions are made. While active managers may be able to outperform a given index, one always needs to assess the "risk" cost paid in terms of the overall asset allocation. Enhanced index portfolios look like the index in terms of risk, but are designed to offer excess return potential to investors over time.

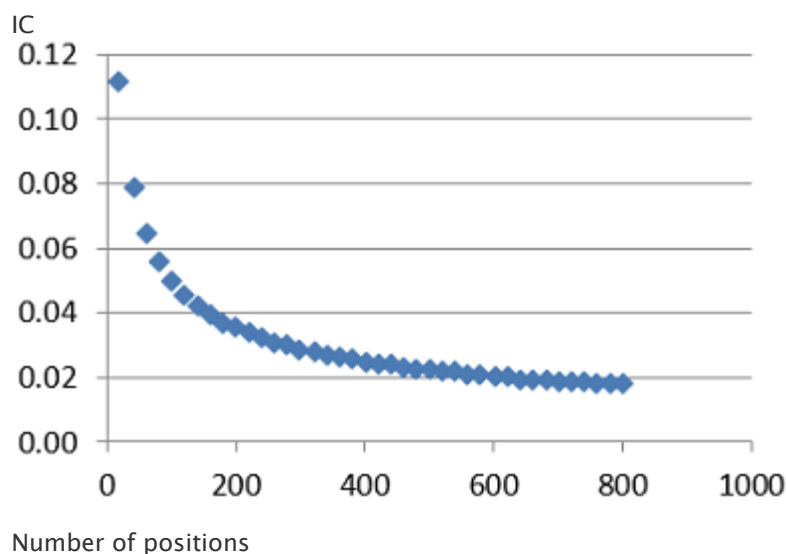
As noted in the above analysis (Figure 4), strategies with lower active share can deliver higher information ratios (IR). IR measures the risk efficiency with which a manager delivers excess returns. Managers with higher information ratios deliver, all other things being equal, more active return for a given level of active risk.

As outlined in Grinold (1989), and then extended in 2002 by Roger Clarke, Harindra de Silva, and Steven Thorley, IR is a function of the portfolio's information coefficient (IC), the transfer coefficient (TC, the ability of the manager to implement ideas) and the number of independent bets in the portfolio (breadth). Hence, for a given level of IR (say 0.5), IC needs to be much higher if taking a smaller number of positions.

$$IR = IC * \sqrt{\text{Breadth}} * TC$$

A portfolio of only 40 positions needs to have an IC of 0.08 to achieve an IR of 0.5 versus an IC of just 0.02 for a portfolio of 500 positions (Figure 6). While having so many positions places a constraint on the level of tracking error in the portfolio, it is certainly conceivable for an enhanced indexing portfolio.

**Figure 6: Information coefficient needed to achieve an information ratio of 0.5**



Source: J.P. Morgan Asset Management

This is a very important observation as it means that constructing an enhanced indexing portfolio is, in a sense, easier than constructing a highly concentrated portfolio.

The law of large numbers is similarly relevant. Having identified a manager that can add value (no small task in itself), accessing that information advantage through a product that

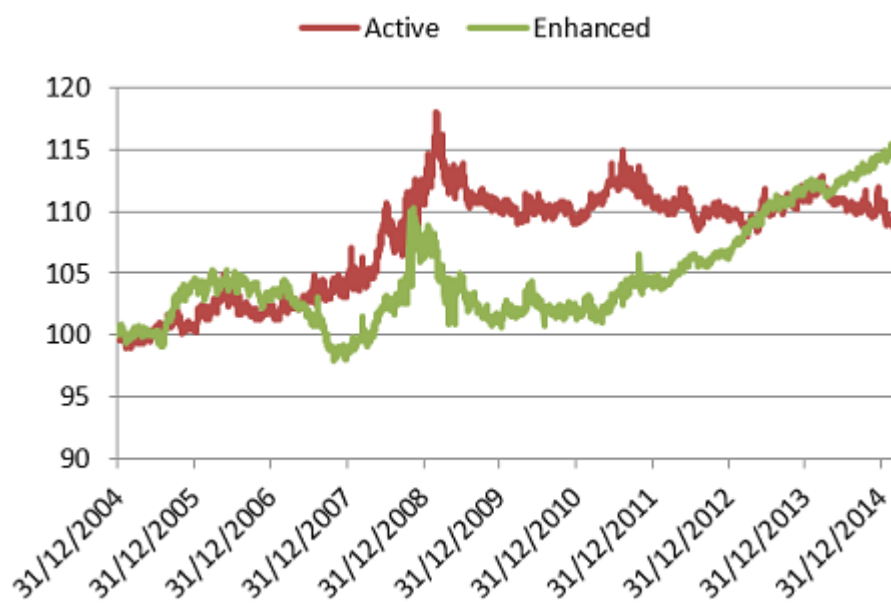


depends on a larger number of independent decisions means there is a greater chance for the realised hit rate being closer to the potential hit rate of the manager.

As seen previously, a concentrated manager can build a substantial amount of factor risk into a portfolio. In addition, the transfer coefficient will actually deteriorate as the concentrations in the portfolio grows. This might seem counterintuitive at first, but consider the manager that buys the top idea in each of sector, funded entirely by the other stocks within each sector. The negative exposure to the highly ranked stocks in the sector (remember stocks ranked 2->n are not held) will affect the transfer coefficient negatively compared to an enhanced indexing strategy, which will typically overweight a large set of attractive stocks from the investment universe, achieving a higher transfer coefficient.

Data that tracks global fund performance according to level of active risk (Figure 7) also supports the belief that the enhanced equity approach can deliver superior risk-adjusted returns (Fraser-Jenkins and Harmsworth, 2015). Investors who are looking for consistency of performance over time may therefore find this type of lower active share solution appealing.

Figure 7: Performance of active vs enhanced funds over time



Source: Fraser-Jenkins and Harmsworth (2015)

## CONCLUSION

Active share is often viewed in a simplistic way – higher equals better. Analysis of the existing research and the additional analysis in this paper suggests this is not the case. The relationship between higher active share and higher performance appears to be based on a noisy data set, and to be driven by specific market conditions in the research period. As shown in this paper, using global fund data highlights that funds with lower active share outperformed.

This does not mean that active share isn't a useful evaluation tool. However, it should be used with caution. This paper demonstrates that it is possible to achieve a high active share without taking high levels of idiosyncratic risk, so active share cannot be viewed as a measure of stock selection. Ultimately, no single measure can serve as a substitute for detailed due diligence.

Given that low active share does not mean poor performance, investors should not exclude low active share, diversified portfolios from their tool kit. Combining passive and active approaches in a low active share solution can be an effective and efficient way of accessing equity markets.

## REFERENCES

- Petajisto, A. & Cremers, M., 2009. "How Active is Your Portfolio Manager? A New Measure That Predicts Performance, Active Share and Mutual Fund Performance", *Review of Financial Studies*, 2009, 22(9):3329–3365
- Frazzini, A., Friedman J., & Pomorski, L., 2015. "Deactivating Active Share", AQR White Paper.
- Bálint, I., Kassam, Al, 2015. "Should You Care About Active Share?", MSCI White Paper.
- J.P. Morgan Asset Management, 2004, "'Reach for More Return — But Don't Hurt Yourself.", *Equity Insights*
- Grinold, Richard C., 1989. "The Fundamental Law of Active Management." *Journal of Portfolio Management*, vol. 15, no. 3 (Spring): 30–37.
- Clarke, R., de Silva, H., & Thorley, S., 2002. "Portfolio Constraints and the Fundamental Law of Active Management." *Financial Analysts Journal*, September–October 2002.
- Fraser–Jenkins, I., & Harmsworth, A., 2015. "The Future of Fund Management: An Essay", Nomura Asset Management White Paper.

## IMPORTANT INFORMATION

The views contained herein are not to be taken as an advice or recommendation to buy or sell any investment in any jurisdiction, nor is it commitment from J.P. Morgan Asset Management or any of its subsidiaries (collectively identified as "JPMAM" ) to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without previous notice. All information presented herein is considered to be accurate at the time of writing, but no warranty of accuracy is given and no liability in respect to any error or omission is accepted. This material should not be relied upon by you in evaluating the merits of investing in any securities or products mentioned herein. In addition, the Investor should make an independent assessment of the legal, regulatory, tax, credit, and accounting and determine, together with their own professional advisers if any of the investments mentioned herein are suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yield may not be a reliable guide to future performance. Exchange rate variations may cause the value of investments to increase or decrease. Investments in smaller companies may involve a higher degree of risk as they are usually more sensitive to market movements. Investments in emerging markets may be more volatile and therefore the risk to your capital could be greater. Further, the economic and political situations in emerging markets may be more volatile than in established economies and these may adversely influence the value of investments made. The information presented herein is for the strict use of the recipient who has requested such information and it is not for dissemination to any other third parties without the explicit consent of J.P. Morgan Asset Management.

The value of investments and the income from them may fall as well as rise and investors may not get back the full or any of the amount invested. Recipient of this communication should make their own investigation or evaluation or seek independent advice prior to making any investment. It shall be the recipient's sole responsibility to verify his / her eligibility and to comply with all requirements under applicable legal and regulatory regimes in receiving this communication and in making any investment. All cases studies shown for illustrative purposes only and should not be relied upon as advice or interpreted as a recommendation. Results shown are not meant to be representative of actual investment results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide. This communication is issued in Australia to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Cth) by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919) which is regulated by the Australian Securities and Investments Commission.



*Ido Eisenberg and Piera Elisa Grassi are is a Portfolio Managers with J.P. Morgan Asset Management*