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Manager Skill: Does High Active Share Make a Better Portfolio?

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Introduction

Active share is useful in evaluating whether an active manager has a portfolio that is positioned to exceed the benchmark. Higher active share may represent an increased opportunity for larger excess returns. However, in many cases a high active share may also be more inclined to severe drawdowns.¹ Previous seminal academic research has shown that active share is positively correlated to tracking error but there has been no evidence to suggest that a high active share gives any indication of manager skill.² This can be seen from the formulae of the two metrics with active share defined as half of the sum of absolute active weights and manager skill defined as (i) the hit rate of correct calls or (ii) the correlation of a manager's expected returns with observed returns. If we, however, control for skill, a relationship naturally occurs. For example, if a manager has a decent amount of skill – ie expected hit rate >50% – then the manager can harvest more alpha by increasing the size of active bets which in turn increases active share. If the skill is not decent, then reducing active share will be the preferred action from the manager as this will reduce the level of negative alpha.

Relying on active share as a standalone metric is not sufficient as an indicator of whether or not the manager will deliver alpha. Combining active share with other metrics such as tracking error and information ratio can help indicate whether a manager has positioned the portfolio strategy within the designated mandate to deliver on portfolio objectives.

In our analysis we look at what the active share should be (if an optimal level exists) for an actively managed portfolio with a given portfolio objective. We also assess the distribution of active share over a number of metrics.

Analysis

Previous research has shown that certain factors could limit active managers from achieving a high active share,² such as the choice of benchmark and the concentration level of the benchmark. The effects of both include:

Managers who are benchmarked against concentrated cap-weighted indices tend to have lower active share than those benchmarked against less concentrated indices for the same level of tracking error.¹

To remove the choice of benchmark factor, the analysis is based on the Capped SWIX benchmark as at the end of September 2019 and considers the

past five years for our risk & return calculations. We run a Monte Carlo to simulate a universe of possible portfolios vs the Capped SWIX. The only restrictions on the simulation are:

- i. The portfolio weights must sum to 100%
- ii. Only stocks that have a 52-week average daily value traded above R30m are included
- iii. The maximum active position that can be taken in any single stock is 5%

The analysis is run on a large cap biased portfolio and a small cap biased portfolio. This allows us to control for portfolio concentration since the Capped SWIX index is concentrated in large cap stocks. The

bias towards large cap is created by ordering the allocation of weights to large stocks first, thereby limiting the possible maximum allocations to small cap stocks since the sum must be 100. The small cap bias is created in the same way.

Portfolio mandates will usually give a return objective and a risk tolerance. For this exercise let's consider the objective to be an alpha of 2% and a tracking error limit of 6%.

The simulation gives us a range of possible active shares a portfolio can have vs the Capped SWIX and allows us to see the full distribution of active share at each unit of measured analytic.

Figure 1: Large cap bias portfolios – Active Return

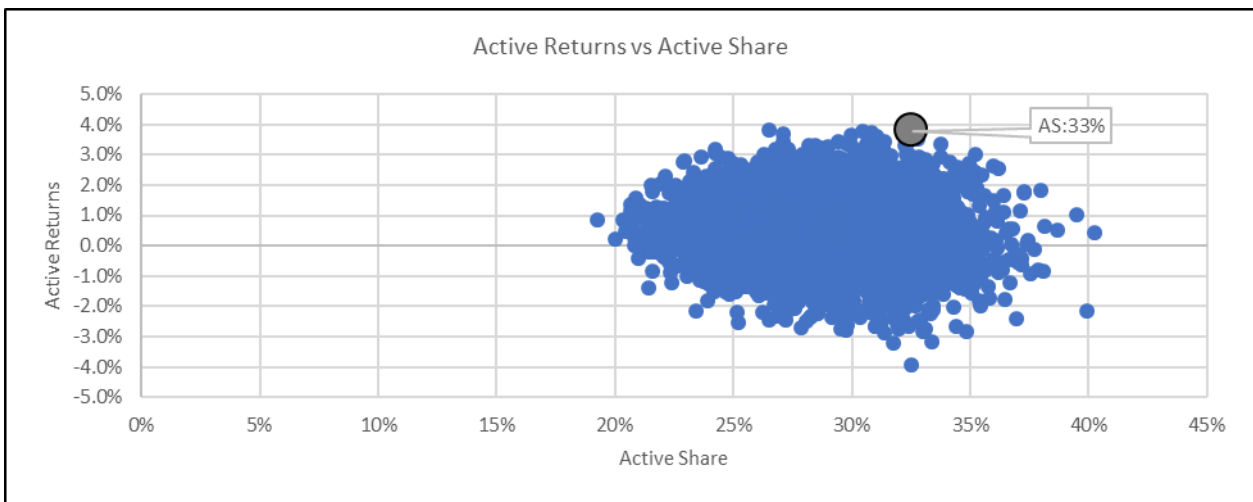
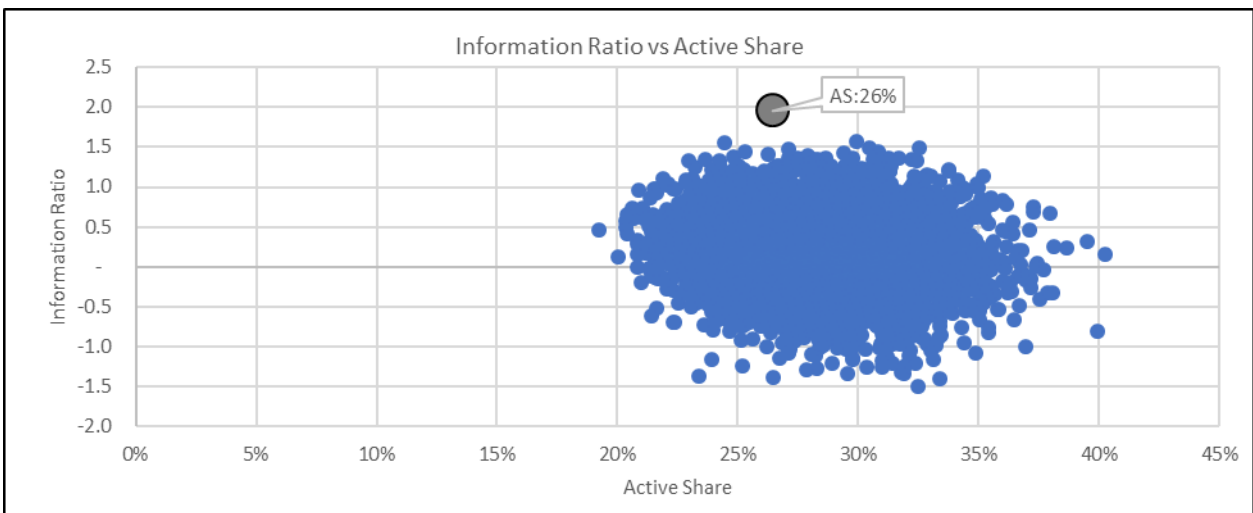


Figure 2: Large cap bias portfolios - Information Ratio



In the above figures, active share ranges between 19% and 41% with possible alphas between -4% and +4% and information ratios between -1.5 and +2.

Looking back, the portfolio with the highest performance or risk adjusted performance can be seen from the highest points on Figure 1 and Figure 2 respectively. The

active shares are 33% and 26% respectively. However, the plots clearly indicate that there is no relationship between active share and active return

or information ratio. In fact, a number of portfolios with a negative active return and information ratio have an active share of 33% and 26% respectively.

Figure 3: Small cap bias portfolios - Active Returns

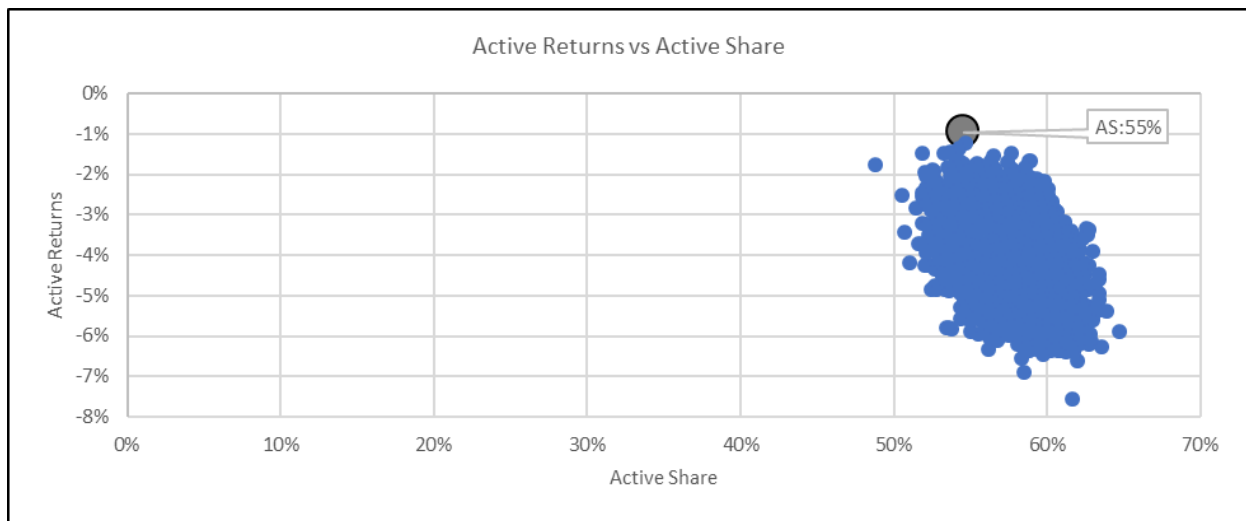
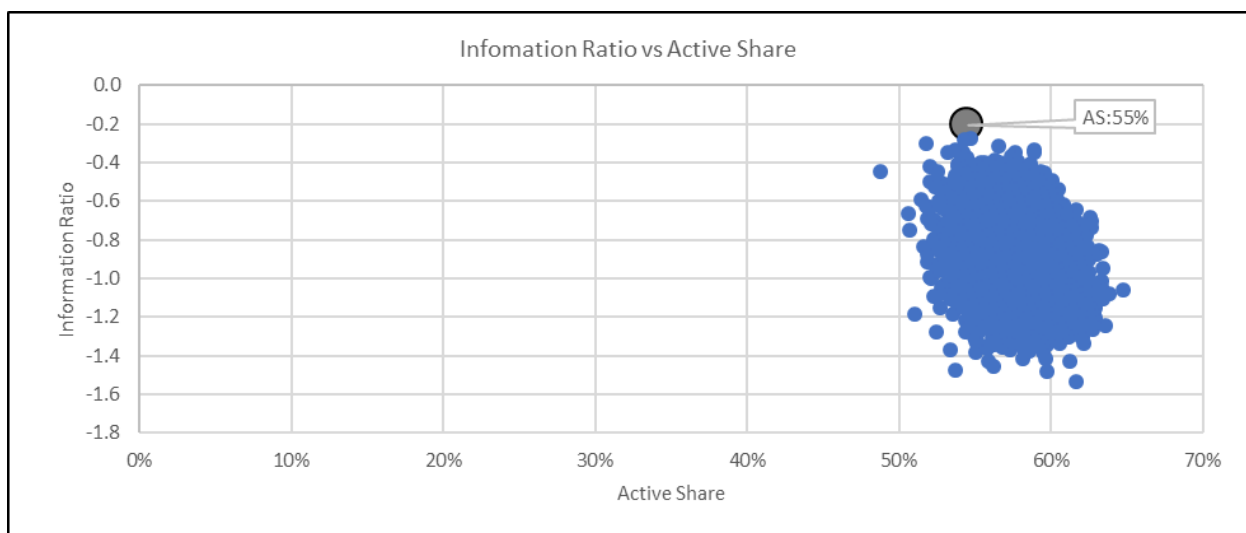


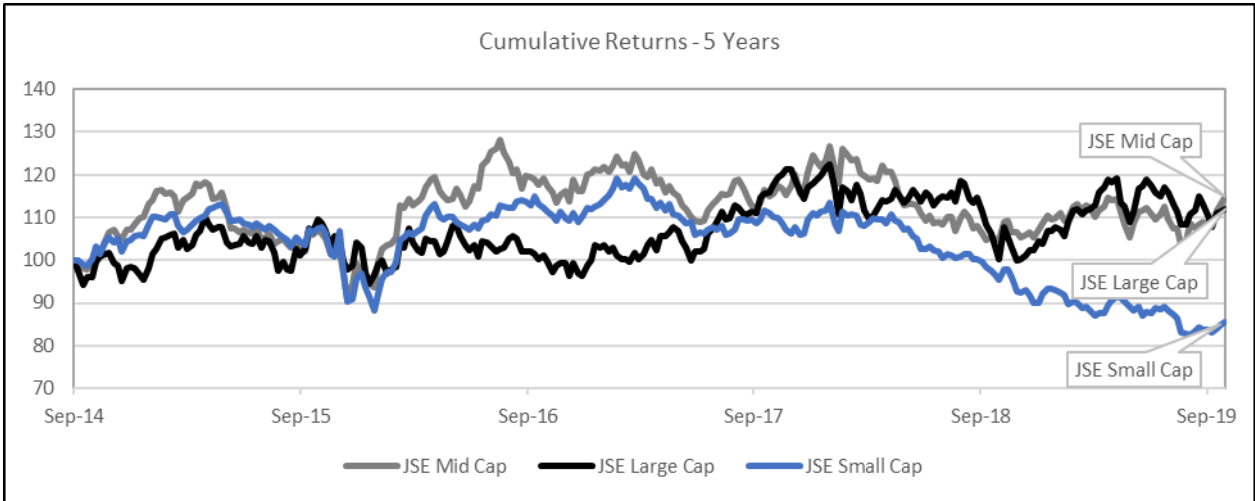
Figure 4: Small cap bias portfolios - Information Ratio



The active share relationship to active return and information ratio is similar in the small cap bias portfolios – ie there is no significant relationship between active share and the y variables. However, the values for active share in the small cap bias portfolios are much higher (49% to 65%). This is due to the difference of the weight composition in the Capped SWIX and small cap bias portfolios given that the Capped SWIX Index is naturally biased and concentrated towards large cap stocks. It is this misalignment between the portfolio and the index that allows for higher potential active share.¹

The general location of the plots for active return are much lower than the expected zero line compared to what we saw in the large cap plots. The reason for this is due to the performance of these small cap stocks over the analysis period (See Figure 5 below). Furthermore, the location will always be more volatile around zero compared to the large cap plots since the large cap bias portfolios and the capped SWIX index will always have a greater overlap leading to a lower tracking error and smaller active return differences.

Figure 1: Large Cap vs Mid Cap vs Small Cap returns



Next, we consider the distribution of active share over a tracking error range.

Figure 6: Large cap bias portfolios - Tracking Error

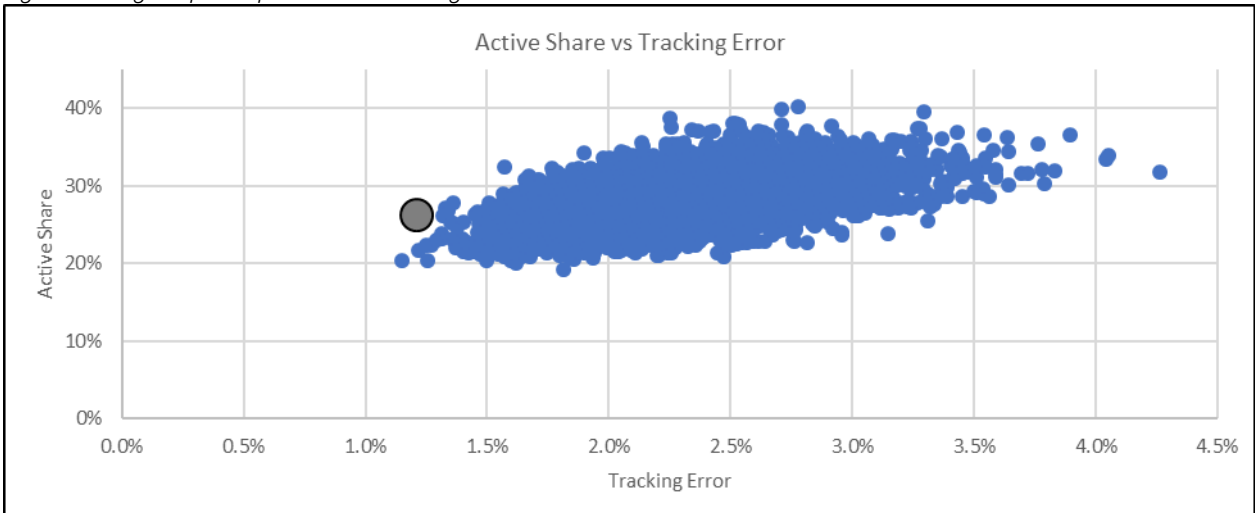
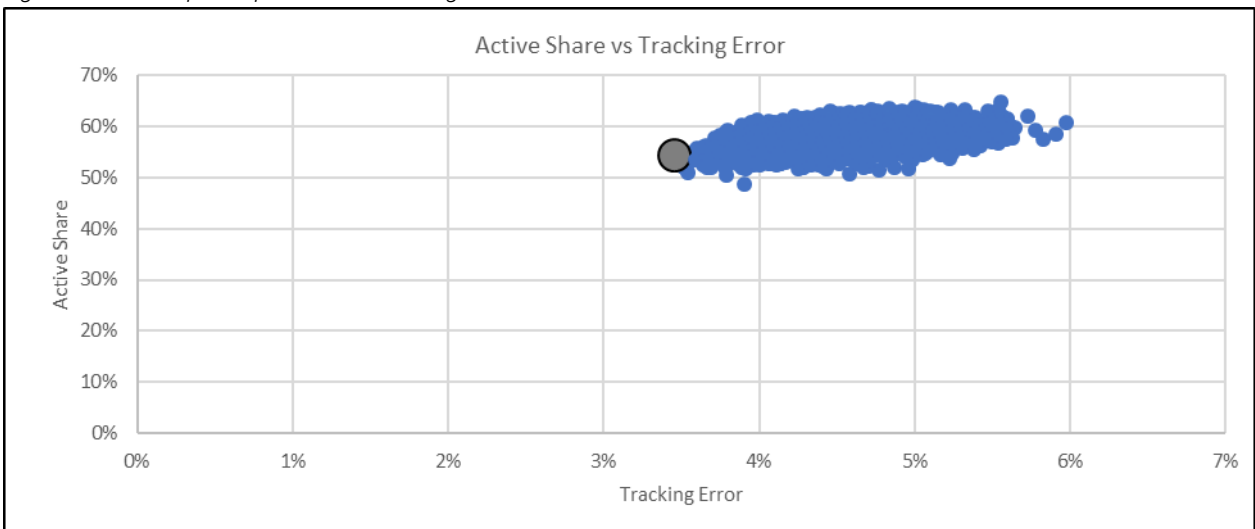


Figure 7: Small cap bias portfolios - Tracking Error



There is a relationship between active share and tracking error. The higher the tracking error, the higher the active share. An MSCI study further explains that the relationship is with respect to specific tracking error for a given risk model with systematic factors.² For investors with a low-risk tolerance, active share will be limited by the tracking error portfolio risk objective.

The marked portfolios above are the ones with the largest active share per unit of tracking error. Since there exists a positive relationship between active share and tracking error, the optimal active share would be the highest possible active share for an

acceptable level of tracking error assuming the portfolio manager has skill. This is drawn from our introduction in that skilful deviations from benchmark are what add alpha and doing so at a lower tracking error can make the portfolio more efficient.

A more appropriate way to understanding what the optimal active share should be is to optimise the portfolio based on portfolio objectives, then observe any relationship between these optimal portfolios and active share. Figures 8 and 9 below illustrate this point.

Figure 8: Large cap bias portfolios – Risk vs Return

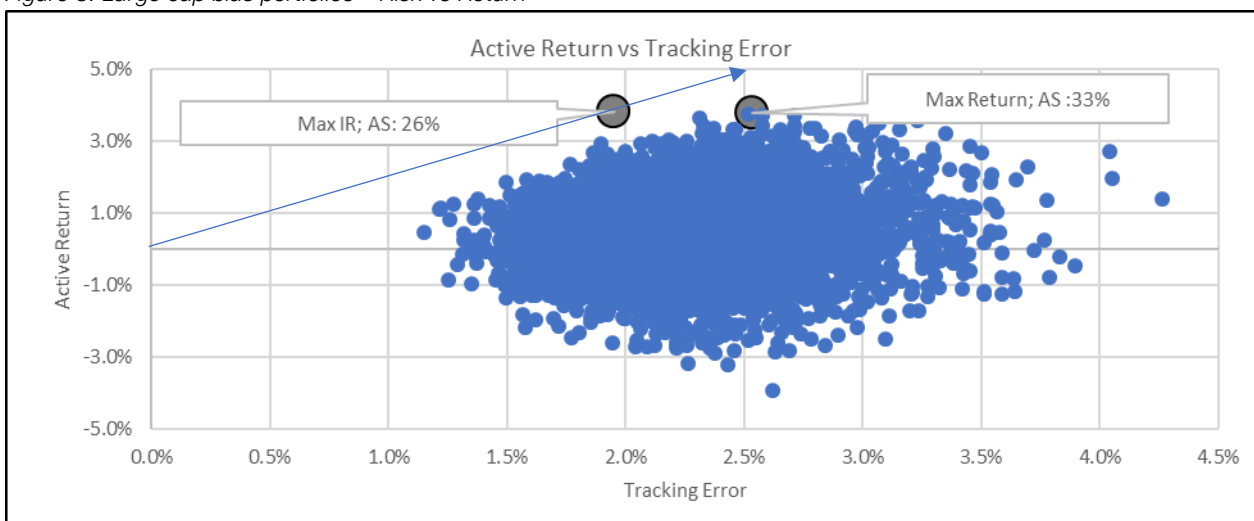
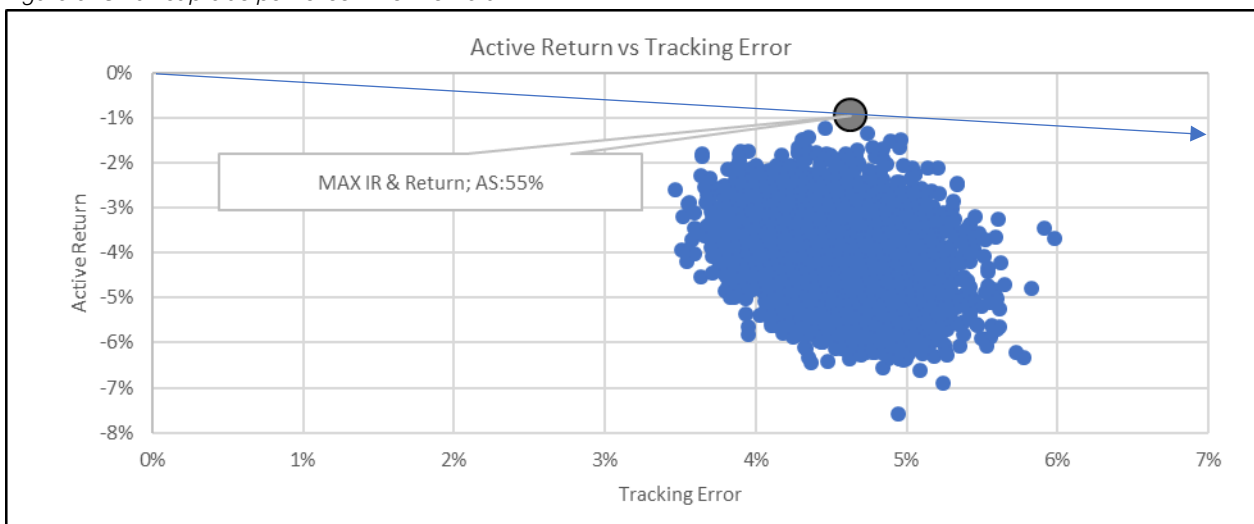


Figure 9: Small cap bias portfolios - Risk vs Return



As described by Grinold and Kahn in Active Portfolio Management 1995³, the optimal portfolios are those with the highest information ratio. These are the portfolios that

lie on the above lines and cut the max IR portfolio in the above. The max return portfolios give a higher return but are inferior on a risk adjusted basis.

Portfolios on the line between 0 and the Max IR portfolio can be obtained by a combination of the benchmark portfolio and the max IR portfolio and those beyond the max IR portfolio by shorting the benchmark portfolio and investing more than 100% in the max IR portfolio if gearing is feasible.

For the small cap bias portfolios, even the most optimal portfolios do not meet the portfolio return objective versus a Capped SWIX benchmark over this specific analysis period. This illustrates the pitfalls of chasing a high active share through a small cap tilt where the tilt ends up being an incorrect call.

As seen in the above figures, optimal portfolios do not necessitate a high active share. If we consider our portfolio objective once more, the minimum acceptable forward-looking return is 2% and the maximum forward-looking tracking error is 6%.

This gives us a minimum expected forward-looking information ratio of 33% that would be acceptable for our portfolio objective. If an active manager believes they can achieve this information ratio, then a higher active share portfolio should only be targeted for a higher risk tolerant investor in return for higher active returns.

Conclusion

In summary

- Active share is not linked to the investor's ability to forecast asset returns
- High active share may be accompanied by severe drawdowns in excess returns
- Diversified high active-share managers tend to improve alpha while minimising drawdowns associated with high active share
- Active share is highly dependent on benchmark concentration and portfolio strategy (size tilt); a more concentrated benchmark usually leads to lower active share for the same level of tracking error, thus greater stock convictions are required to achieve higher active share
- For active managers benchmarked to cap-weighted indices, high active share favours tilts towards small cap stocks

Given the results of our analysis, it can be observed that there are enough portfolios that meet the portfolio objectives (active return >2%; tracking error <6%) over the analysis period without having to stretch active share. The decider here is manager skill, not high active share. Active share is still a powerful metric in analysing possible portfolio outperformance (or underperformance) and should be used together with other metrics.

References:

¹*Imre Balint, Altaf Kassam 2015. Should you care about active share? MSCI Research Insight*

²*Cohen et al. 2014. Active Share: A Misunderstood Measure in Manager Selection, Fidelity Leadership Series*

³Grinold and Kahn 1995. Active Portfolio Management