

Tracking error causes short-termism

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What is tracking error? How is it measured? What are the goal posts that active managers aim for? Tracking error constraints on active management focus on short-term outcomes and don't align with most investor goals, which are longer term. So how else can portfolios be designed? A benchmark unaware approach gives the portfolio the opportunity to invest or indeed not invest across the entire benchmark universe. The long and short of it is that investors don't want to be exposed to just a few companies – they need diversity to manage risk in an increasingly uncertain environment.

This paper discusses:

- What tracking error feels like for investors;
- How active managers experience tracking error;
- How active managed funds really are; and,
- How tracking error impacts portfolio positioning.

Tracking error has an official definition but what is it – really? It measures how different the portfolio returns are from the benchmark returns.

- Tracking error or active risk is a measure of the risk in an investment portfolio that is due to active management decisions made by the portfolio manager; it indicates how closely a portfolio follows the index to which it is benchmarked.

Is tracking error good or bad? Do investors want their returns to be different from the benchmark or not? If their objective is to match the benchmark return, then tracking error is very important. In this case, a higher tracking error is bad.

When it comes to active management, what is tracking error used for? Manager skill has traditionally been judged using a ratio of excess returns over tracking error, otherwise known as information ratio.

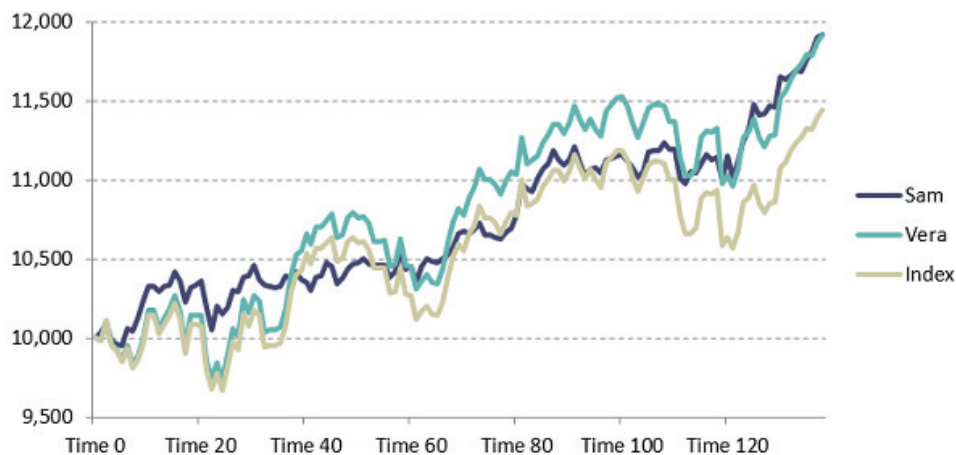
- The information ratio (IR) is a ratio of portfolio returns above the returns of a benchmark per unit of tracking error of those returns (see above).

The rationale – if a manager can beat benchmark returns consistently, then they are highly skilled. One of the seminal books on active management, Grinold & Kahn's Active Portfolio Management, titles an entire section, "The Information Ratio Is the Key to Active Management". But how much truth is in this?

HOW DO INVESTORS EXPERIENCE INFORMATION RATIO?

Figure 1 shows growth of \$10,000 over a period for two different actively managed funds. Which series would you prefer as an investor? Let's call the two managers Sam and Vera. Who's fund would you prefer?

Figure 1: Growth of 10,000 in two hypothetical managed funds



Sources: SSGA for illustrative purposes only. Sample portfolio returns shown above are hypothetical. The sample portfolio performance is not intended to represent the performance of any particular fund or product. Actual performance may differ substantially from the hypothetical performance presented. Past performance is not a reliable indicator of future results.

I would prefer Sam's fund. Why? Because my investment has experienced the same growth (ending at almost \$12,000) as if I'd invested with Vera, but my return path is a lot smoother. Vera takes the investor on more of a roller coaster ride than Sam – bigger ups and downs. For example, during Time 20 to Time 60, Vera takes the investment down to \$9,700, then way up to \$10,800 before dropping down to \$10,350. At the same points in time, Sam has kept the investment above \$10,000, steadily rising to \$10,500. Sam's returns are smooth; Vera's returns are volatile.

Another way investors may focus on short-term outcomes is by looking at daily unit price movements, as this information is often at their disposal. While this transparency can be helpful to understand short-term performance outcomes, it can also be a distraction from investors' longer term objectives.

Figure 2 shows the large negative total return days for Vera's fund and Sam's fund. Vera had more days of sharp negative total returns than Sam.

Figure 2: Large negative total return days – 2 hypothetical managed funds

	Information Ratio	Return	% of days total return was worse than:		
			-0.50%	-1.0%	-1.5%
Sam	1.4	20.5%	20%	8%	3%
Vera	3.6	20.5%	27%	14%	7%

Source: SSGA for illustrative purposes only. Sample portfolio returns shown above are hypothetical. The sample portfolio performance is not intended to represent the performance of any particular fund or product. Actual performance may differ substantially from the hypothetical performance presented. Past performance is not a reliable indicator of future results.

The point of this example is in the punchline. The annualised tracking error for Vera's fund over the period was low at 2.2% while for Sam's fund, it was high, at 6.0%. Yet Sam's fund is preferred over Vera's because the return from Sam's fund was smoother. But judged purely on information ratio, Vera (with an information ratio of 3.6) would be seen as more "skilled" than Sam (with an information ratio of 1.4), because in the information ratio calculation, the consistency of the relative performance is preferred, not the consistency of total returns.

HOW DO THE MANAGERS EXPERIENCE TRACKING ERROR?

In addition to helping investors achieve their long-term wealth objectives, active managers are also judged on their performance relative to a benchmark, and against other active managers. While their end-to-end point return was the same, Sam's and Vera's interim numbers were quite different during the period (Figure 3). Sam experienced many more underperformance days than Vera. All other things equal, it is possible that Sam could have been more anxious than Vera about her job security and whether her investors would redeem from her fund.

Figure 3: Large underperformance days – 2 hypothetical managed funds

	Excess return	Tracking error	% of days total return was worse than:		
			-0.20%	-0.50%	-1.0%
Sam	7.8%	6.0%	27%	13%	4%
Vera	7.8%	2.2%	13%	0%	0%

Source: SSGA for illustrative purposes only. Sample portfolio returns shown above are hypothetical. The sample portfolio performance is not intended to represent the performance of any particular fund or product. Actual performance may differ substantially from the hypothetical performance presented. Past performance is not a reliable indicator of future results.

This simple example shows that, on one hand, investors can have smooth total returns, but not without tracking error. If they want to have lower tracking error, they need to give up seeking smoother returns than the market. We can't have our cake and eat it too.

TRACKING ERROR AT PLAY

How do active managers minimise tracking error? How does this impact portfolio positioning?

The Australian equity market is highly concentrated. Banks represent more than 26% of the S&P/ASX300 Index.¹

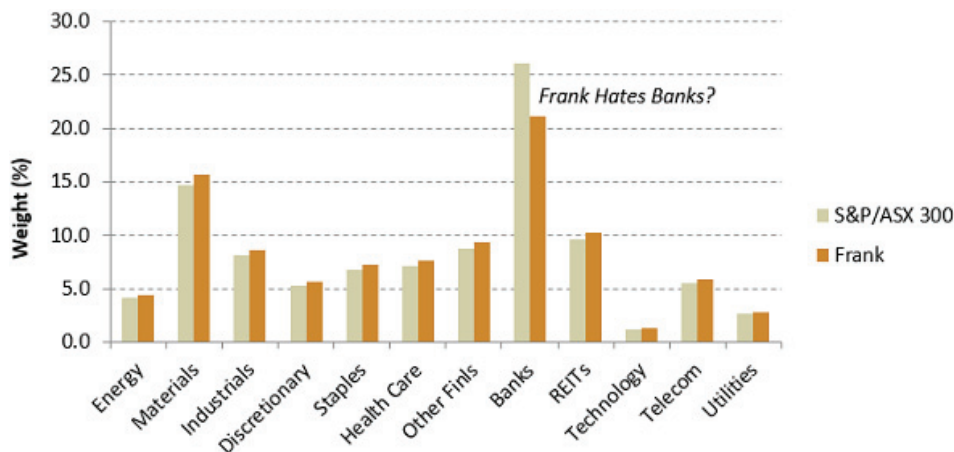
Stating the obvious, active management is the process of identifying the most and least preferred stocks, or themes, or sectors, and positioning towards, or away from them.

The effects of tracking error on portfolio construction are exemplified if we consider how a manager – call him Frank – with an extremely negative view of Australian banks would position a portfolio. Frank likes to limit tracking error in his fund, and he hates the banks.

Minimising tracking error means minimising deviations in performance relative to the market index. This means minimising the difference in positions between the portfolio and the performance benchmark. A negative view on the banks in this world of tracking error reduction would be implemented via an "underweight" position in the banks. The smaller the desired tracking error, the smaller the deviation or underweight. It's a reasonable scenario that Frank might have a 5% "underweight" position in the banks, which would still be a total exposure of more than 20% in that sector.

If his highest conviction view on the market was that Australian banks were destined to significantly underperform the rest of the market, then why hold them at all? The answer is the possibility of being wrong, and underperforming the performance benchmark. If the deviation is minimised, then the cost of being wrong is more tolerable.

Figure 4: Theoretical positioning a negative view on banks in a constrained portfolio



Sources: SSGA for illustrative purposes only. Sample portfolio weights shown above are hypothetical. The sample portfolio weights are not intended to represent the actual weights of any particular fund or product. Index Weights are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

During the most recent large market drawdown between April 2015 and Feb 2016, the S&P/ASX300 Index was down more than 13%, and the Australian banks contributed more than half of that negative return.²

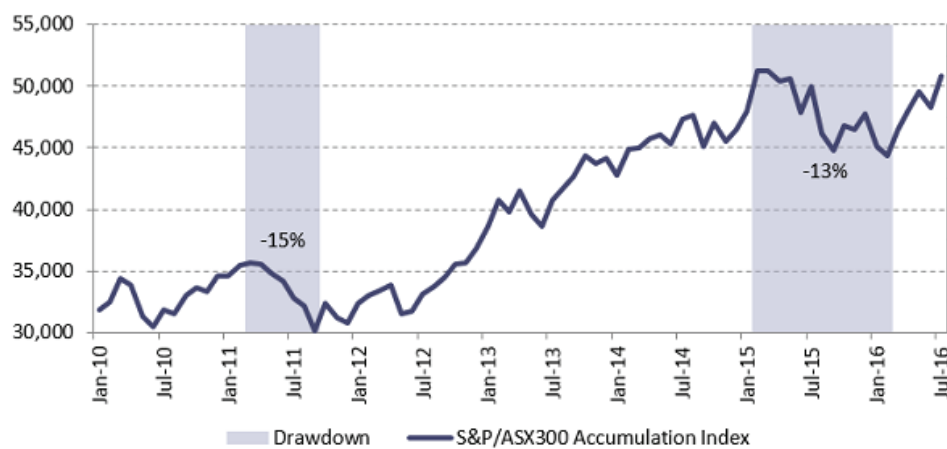
Do investors want this exposure? Should their wealth objective be so dependent on the outcome of only a few companies? Drivers of returns in the future for Australian banks are likely to be limited mainly to the direction of interest rates (Net Interest Margin), the housing market (bad debts), and unemployment in Australia.

While the S&P/ASX 300 Index is an appropriate performance hurdle to measure whether active management has been worth paying for over appropriate time horizons, it doesn't need to be the anchor to portfolio construction.

ANALYSIS OF THE FUND UNIVERSE

The examples in the sections above are illustrative only. Other insights can be gained by looking at actual managed fund net returns in Australia over longer horizons. Over the last five years, there have been multiple instances of market volatility and sharp negative returns. The market return has looked something like Figure 5.

Figure 5: S&P/ASX 300 Accumulation Index, with major drawdowns shaded



Sources: Bloomberg, as at 24 July 2016. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect capital gains and losses, income, and the reinvestment of dividends.

Ideally, active management could assist investors navigate these volatile periods with some of Sam's attributes of smoother returns, so the market volatility would be felt less acutely. Figure 6 looks at the two large market drawdowns highlighted by the shaded area in Figure 5 and monthly returns net of fees of the Australian equity managed fund universe in the Morningstar Australian Large Blend category.

Figure 6: Morningstar Australian equity universe – drawdowns

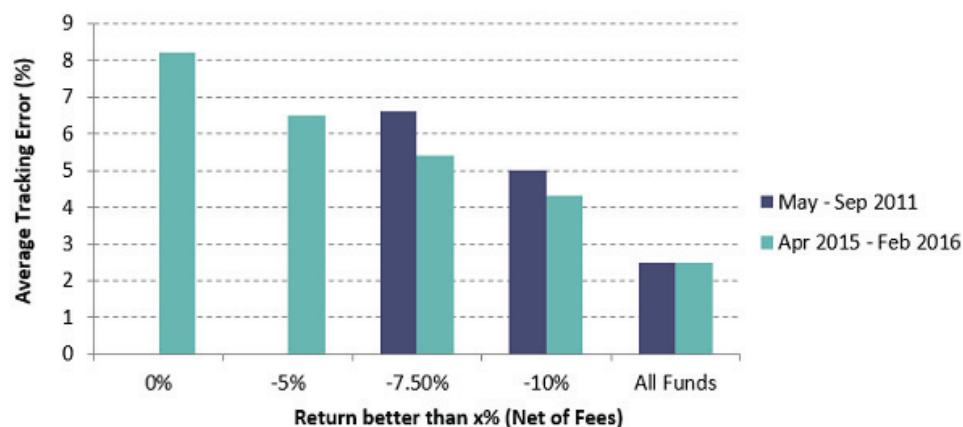
Period	Market / Index Return	# Funds / Total	#Funds with return better than: 0%	-5%	-7.5%	-10%
May – Sep 2011	-15%	0/299	0/299	2/299	16/299	
Apr 2015 – Feb 2016	-13%	3/334	12/334	22/334	47/334	

Source: Morningstar as at 31 May 2016

Figure 6 shows that during the Euro crisis in 2011, only two funds out of 299 were able to halve the market drawdown and beat a return of -7.5%. Further, during the worst 10 months, the average market return³ was -5.3%. On average, only 3% of funds managed to halve the drawdown in these negative months.

Why weren't more active funds able to cushion against these market sell-offs in a meaningful way? The only funds that were able to cushion against the drawdown were those with high tracking error (Figure 7). Without the ability to deviate significantly from the market portfolio, fund returns would simply fall with the market. While common belief might be that high tracking error equals high risk, on average, it was the low tracking error funds that produced the lowest return outcome during these market declines, not the high tracking error funds. The only way the drawdown could have been meaningfully reduced is without tracking error constraining the ability to position the fund differently from the benchmark.

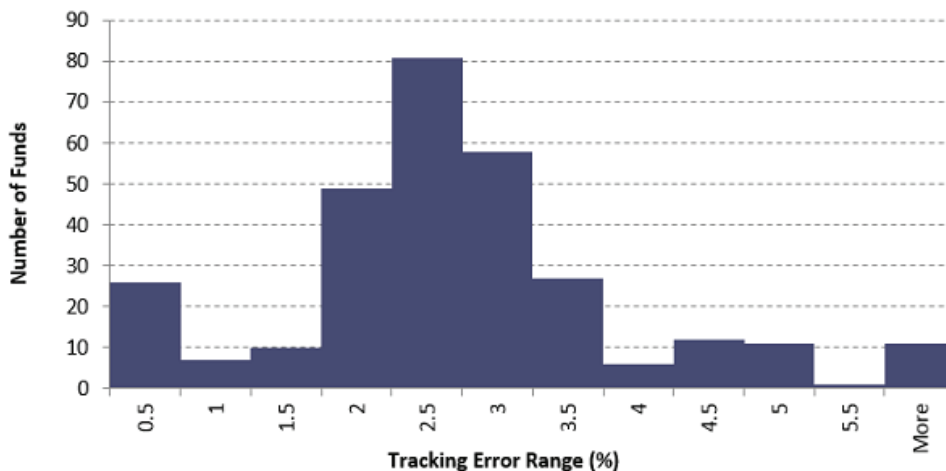
Figure 7: Morningstar Australian Equity Universe – five year tracking Error



Source: Morningstar, as at 31 May 2016

The average realised tracking error of the managed funds in the universe is shown in Figure 8. Most active funds had realised tracking error between 2.0% and 3.5% per annum. Why is it so low?

Figure 8: Histogram of realised Tracking Error of all funds in the Morningstar Large Blend Universe with a five-year track record ending 31 May 2016



Source: Morningstar, as at 31 May 2016

WHY DO SO MANY ACTIVELY MANAGED FUNDS HAVE LOW TRACKING ERROR?

Daily calculation of unit prices is commonplace for managed funds in Australia. Daily unit prices mean daily performance. It is possible to use market-linked tools to monitor performance minute by minute. Active managers worry about underperforming the benchmark return, but over how short a period should they be judged?

In a world where investors can see the returns of their managed funds over shorter time horizons, investment managers feel the heat of market relative performance on shorter periods. This means investment managers are forced to focus on shorter term horizons for making investment decisions which doesn't necessarily align with the end investor's objective. This short-term fear of underperformance is a key driver of low tracking error active funds. While the fear may be rational from the fund manager's perspective, ultimately it is not the same fear the end investor has.

Lower tracking error funds also have higher capacity than higher tracking error funds. As active manager's assets under management grow, the ability to build positions in small companies is limited and they are forced to hold more of their portfolio in larger names, making their portfolio appear more like the benchmark.

SHORT TERMISM AND INVESTOR OBJECTIVES

Investor objectives are most often described as growing assets and protecting them. These objectives often span years, even decades, not months or days. Information ratio as a portfolio objective is not linked to these investor objectives. If information ratio was an investment objective, then it would be the same as saying the investor wanted to outperform the market, but not experience returns that were too different from it on a month by month basis. In order to link portfolio objectives with investor objectives, a more robust measure of success would be the Sharpe Ratio. This is a measure of the ratio of total returns to the total variability of those returns. A higher Sharpe ratio indicates high returns (growing assets), and low variability of returns (protecting assets) and links more directly with an investor's long-term objective.

- The Sharpe Ratio is a measure for calculating risk-adjusted return. It is the average return in excess of the risk-free rate per unit of total risk.

THE BOTTOM LINE

Maintaining a low tracking error portfolio can often lead to an unfavourable return outcome for end investors. Therefore, a certain level of "tracking error tolerance" must be given if investors wish to achieve meaningfully smoother returns than the benchmark (and, in turn, reduce portfolio risk). While achieving a higher tracking error does not guarantee longer-term outperformance or capital preservation, at least managers hold the "opportunity" to outperform their performance benchmarks.

Unfortunately, short-term fear of underperforming the benchmark is often a key driver of tracking error constraints on active management. In order to link portfolio positions to investor objectives, it is the exposure from an absolute sense that matters, not the positioning relative to a benchmark. A benchmark unaware approach gives the investor the opportunity to exploit the best opportunities in the investment universe, without regards to benchmark weights.

ENDNOTES

1. As at 25 July 2016, source: Bloomberg.
2. Source: Bloomberg
3. As measured by S&P/ASX 300 Accumulation Index

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