

## Rankings for Australian Managed Funds: A case of Performance Index Failure?

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### ◆ Background and aims of project

Keith Ambachtsheer, the Director of the Rotnam International Centre for Pension Management, has recently lamented on the lack of initiative of pension funds. He asks: Where were they in the recent financial crisis? (*International Journal of Pension Management*, vol. 2, issue 2, 2009).

In a similar vein, this project asks: To what extent were performance indexes for Australian managed funds as conventionally calculated able to effectively capture the exposure of a fund to an eventual down-period in the market?

The monitoring of mutual funds continues to rely on the application of traditional performance indexes. Such indexes rely either on portfolio beta (either directly through the Treynor index, or indirectly through Jensen's alpha) or on portfolio total variance (through the Sharpe index) or the bench-mark corrected measure (MM index).

Methodologically, a number of issues are relevant to the calculation of the indexes. Firstly, as indicated by Dempsey (2009) in research supported by the MCFPS, conventional computations of the standard indexes (Sharpe index, Jensen's alpha, Treynor index, MM index) likely lead to a bias in favour of *under* performing funds (and a bias against *over* performing funds). This is because in calculating the standard measures for portfolio performance, occurrences of *high* performance for the portfolio generate both higher betas and higher variances (since all else being equal, higher numbers have higher variances). So what is of itself desirable creates higher attributes of risk. A related problem is that the calculation of the ratios is typically made over a sub-set of the market cycle. To see the implication, consider two fund managers: Fund Manager A who successfully manages risk in the up-cycle – achieving high returns with necessarily an increase in their variance, and Fund Manager B who achieves a much lower return performance on average with a correspondingly lower variance. The implicit assumption of conventional indexes is that Fund Manager A *necessarily* underperforms Fund Manager B in the down-cycle - exactly as indeed would be the case if return performances for the funds were constrained to be normally distributed over the up- and down-cycle. In other words, the indexes do not allow for the possibility that Fund Manager A who competently out-paces Fund Manager B in the up-cycle might also succeed in out-pacing Fund Manager B in the down-cycle.

Thus we observe that in order to be a reliable proxy for risk measurement, beta and standard deviations measured over a restricted period must be invariant to the state of the market, whether the market is up or down. But this is not necessarily the case (cf, Pettengill, Sundaram, and Mathur, 2002; Faff and Brooks, 1998; Bhardwaj and Brooks, 1993). And it is certainly unreasonable to *assume* that it must detrimentally be the case for the fund that is successful in the up-periods. That is to say, we should not assume that a fund's up-performance is symmetrically related to an eventual down-performance. Similar arguments apply to the use of standard deviations in calculating the Sharpe Index.

## ◆ Significance and innovation

The above noted biases are largely ignored by practitioners. The proposed project will first investigate historical performances across different market conditions to expose the extent to which conventional measures have in fact been misleading. To this end, we shall observe the extent to which traditional measures of the indexes taken over a restricted period are likely to differ when applied over a cycle of up- and down-market periods. The outcome will be a recommendation as to how most effectively to proxy a full market cycle with the data available (one possibility, for example, would be to weight up- and down-market periods consistent with a perceived risk premium). A particular contribution here will be an assessment of fund performances over the period of recent financial crisis in relation to their prior performance indexes as calculated both conventionally and following our proposed methodologies. The outcome will be that the project suggests new and relevant industry performance measures for assessing mutual funds - Jensen's alpha, Sharpe index, the Treynor index and the MM index – in relation to betas and standard deviations computed in terms of a justified combination of upside and downside market movements, and which can be expected to off-set to a large extent the above discussed biases.

A second concern is that performance indexes generally relate fund performances to regularly updated measures of the fund's risk exposure. An investor for whom switching funds is costly, however, requires to know the likely relevance of a fund performance index *at the time of entry* to the subsequent *long-term* performance of the fund. The project is also aimed at addressing this issue.

A third significance of the project is the recognition that the risk-return trade-off may ultimately be subjective. In which case, what is required by investors is a meaningful *range* of indexes for the predictability of a fund's performance based on historical performance – which allows thereby for intelligent choices.

## ◆ Description of Approach

In seeking to relate risk measures to downside market outcomes, various approaches are open. For example, in considering the input risk measure, a valid approach would be to measure the standard deviation of returns as the standard deviation of the monthly returns weighted appropriately between the up- and down-periods. Alternatively, the standard deviation might be assessed simply in relation to a single up-period return and a single down-period. Thereby, average indexes will be calculated for each fund along with the variability (standard deviation) of the index across time. Similarly, a Treynor index is computed for each fund. And for each fund, a regression is made on excess fund return against excess market return to calculate the fund's Jensen's alpha for that period. Thus, the indexes would be aimed at representing unbiased performances over the market cycle. The performance of each fund is then observed over subsequent (i), 3-year, 5-year, 10-year, and 20-year windows (to capture the fund return performance with no rebalancing over such investment horizon). The whole process is then repeated at the start of the next year, and so on. In this manner, we are able to assess the robustness of the conventional benchmark indexes and to make recommendations as to how the indexes might most meaningfully be calculated.

### **References:**

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