Index: Boring or bountiful?

Where are the active returns from Australian bond funds?

Research by DAVID R. GALLAGHER and ELVIS JARNECIC suggests that institutional actively managed Australian fixed-interest funds did not outperform the market in the period analysed. Further, most retail actively managed domestic bond funds significantly underperformed over the same period.

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Australia's domestic investment management market was valued at $A589 billion at 31 December 1999, with Australian fixed-interest investments accounting for $110 billion or 18.7% of the total. In terms of pooled diversified superannuation funds, a study by Gallagher (1999) using data provided by Towers Perrin Australia found the average strategic benchmark allocation to Australian bonds was about 20%, and therefore roughly in line with the segment statistics of the total market. The Australian debt market is therefore a significant asset class.

FIGURE 1 **Top 10 Australian fixed-interest managers, 30 September 1999**

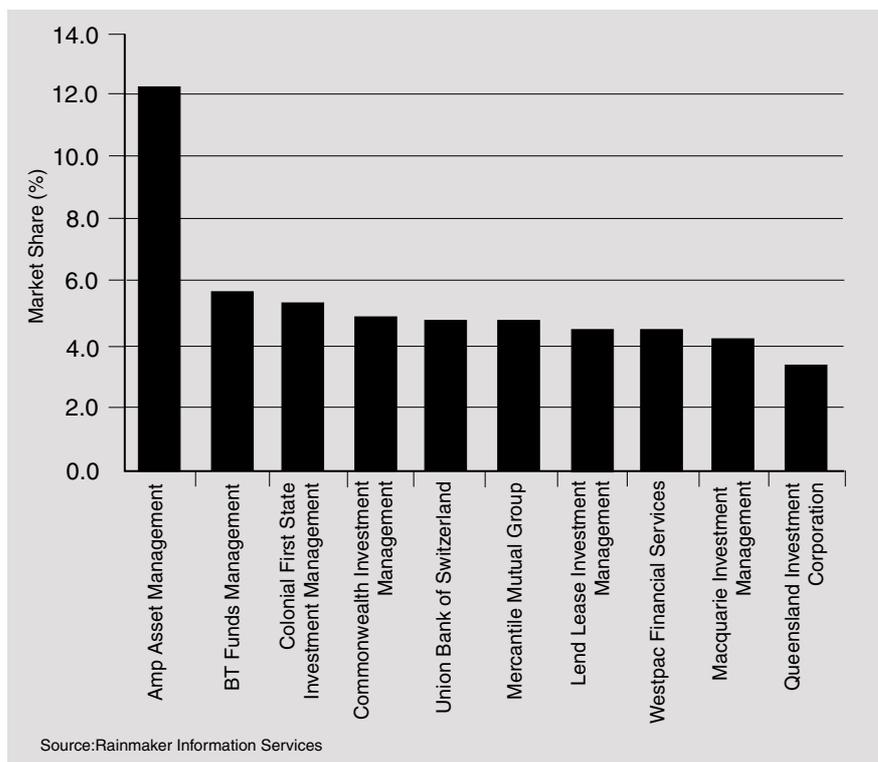
Source: Rainmaker Information Services

Figure 1 documents Australian fixed-interest fund manager statistics for the 10 largest institutions, using data provided by Rainmaker Information Services. The market is highly concentrated; these 10 institutions control more than 53% of sector assets. AMP Asset Management dominates the sector with more than twice the assets of the second largest manager, BT Funds Management.

This study examines the performance of 66 institutional and 94 retail active Australian fixed-interest funds in the 10-year period to September 1999. Two asset consultants (Towers Perrin and William M. Mercer) provided the wholesale fund performance data (reported before investment management expenses) and retail bond fund performance was obtained from Assirt (performance reported after management costs).[1] The wholesale dataset does not contain survivorship bias (ie, the sample includes both surviving and non-surviving funds); however, the Assirt database of retail funds is survivor-biased and the extent of the potential bias is unknown. It is likely that if bias exists, investment performance will be skewed toward the more successful funds.

The market index most widely referenced by investment managers and investors when evaluating the performance of the Australian debt market is the Warburg Dillon Read Composite Bond Index. This is a market capitalisation-weighted benchmark comprising commonwealth government bonds (CGB), semi-government bonds (SGB) and corporate issues, where the minimum credit rating issued by Standard and Poor's (S&P) is A-.

The minimum market-cap of bond securities included in the index is $100 million for all securities. The S&P ratings on the basis of credit quality are (in descending order): AAA, AA+, AA, AA-, A+, A, A-. The highest S&P rating indicates an issuer exhibiting an *extremely strong* capacity to meet its financial obligations. An A rating represents an issuer with a *strong* capacity to meet its financial commitments but possibly a greater sensitivity to changing (adverse) economic conditions. BBB- is the lowest investment-grade rating but these bonds are not included in the index.

| TABLE 1 | **Institutional and retail active Australian bond fund performance (% per month after expenses for overall and α (SS) components)** |

	Mean	*t*-stat	SD	Min	Q1	Q2	Q3	Max
Panel A: Wholesale or institutional funds (before fees)								
Overall	0.009	1.10	0.065	-0.365	-0.015	0.011	0.035	0.154
α (SS)	0.020	1.83	0.089	-0.500	-0.008	0.024	0.054	0.265
γ (MT)	-0.006	-1.92	0.027	-0.057	-0.015	-0.007	0.002	0.152
Panel B: Retail or mutual funds (after fees)								
Overall	-0.279	-11.46*	0.236	-0.926	-0.293	-0.179	-0.135	0.005
α (SS)	-0.285	-10.54*	0.262	-0.907	-0.351	-0.188	-0.134	0.091
γ (MT)	0.003	0.70	0.048	-0.105	-0.018	-0.006	0.026	0.256

*Statistically significant at 0.05 level

RESEARCH METHOD

The study uses two models to measure risk-adjusted returns in excess of the returns derived from risk-free securities (or Reserve Bank treasury notes). These models are explained in the appendix. The first approach measures overall risk-adjusted performance, and the second separates the performance of funds into security-selection and market-timing components.

Security selection evaluates each fund manager's ability to buy (sell) underpriced (overpriced) securities through the collection and analysis of information. Market timing refers to the portfolio manager's ability to forecast market movements and thereby position the portfolio to take advantage of market rises or falls. The risk adjustment of fund returns accounts for each portfolio's sensitivity to changes in the benchmark index. Abnormal or superior performance (known as "alpha") is defined as the incremental return above or below the return derived from an index investment strategy after consideration of risk. The risk-adjustment procedure does not credit fund managers with superior performance where returns are attributable to portfolios that exhibit higher sensitivity to changes in the benchmark index. Alphas that are significantly positive indicate superior portfolio-management skills and therefore added value on behalf of clients.

EMPIRICAL RESULTS

The findings concerning the active fund performance of Australian fixed-interest managers are largely consistent with an efficient market, where funds on average do not earn superior returns. Table 1 shows that

risk-adjusted excess returns on average for institutional funds, while positive, are insignificantly different from zero. Indeed, institutional funds provide returns before expenses in line with the WDR Composite Bond Index.

Retail funds, on the other hand, analysed after management expenses, significantly underperform the market index. While the average expense ratio in the sample for retail funds is around 0.136% per month, only funds in the top quartile are capable of earning active returns on a before-expenses basis (see Figure 2b). Given that retail funds charge higher fees than institutional funds, one would expect retail funds on average to have lower post-fee returns. In the institutional universe, most bond funds earn "small" amounts of value for clients before management costs are deducted.

While direct comparisons between institutional and retail universes are difficult due to the pre-expenses and post-expenses data used, it is relatively clear that retail investor assets have performed extremely poorly and universally across the market. The security-selection and market-timing results documented in Table 1 also show retail funds, on average, significantly underperforming in security selection. While institutional funds are more successful in their stock-picking than their attempts to "time" the market, as a group they do not differentiate themselves from what would be expected of an index manager.

Table 2 evaluates the individual performance of active Australian bond funds for both the institutional and retail universes. The evidence again shows the majority of retail

FIGURE 2a **Institutional Australian bond funds – alpha distribution**
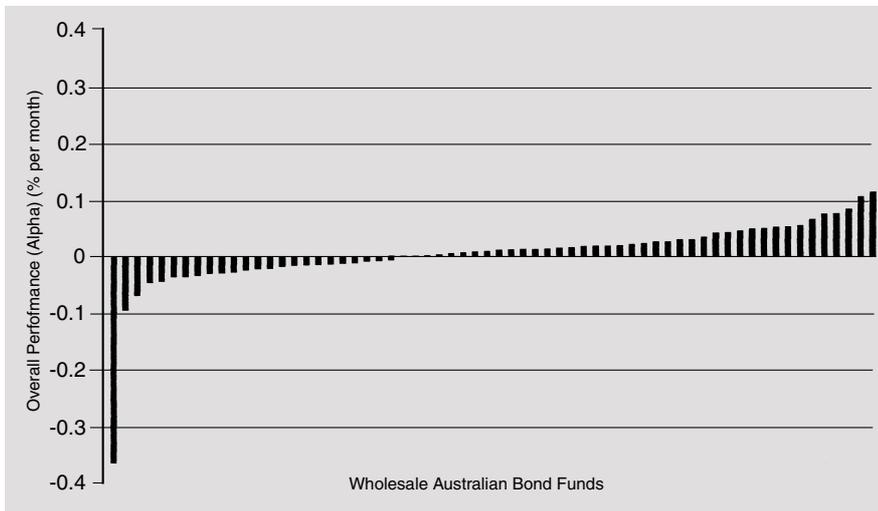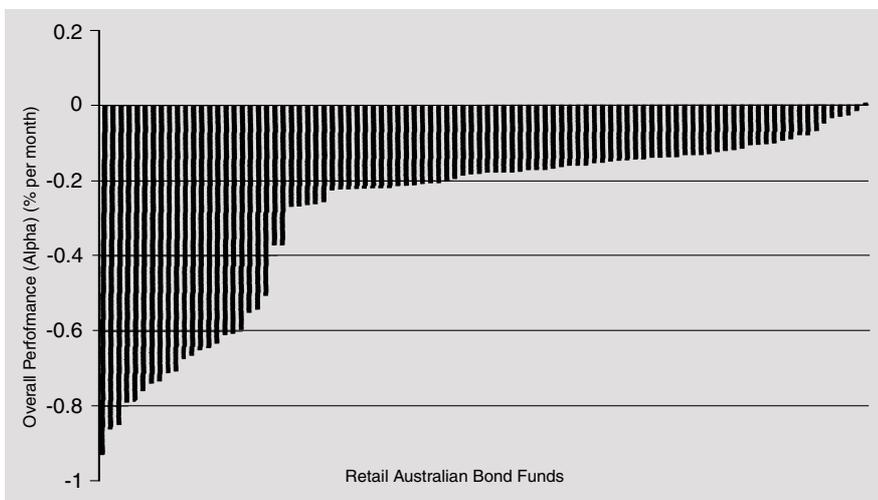

FIGURE 2b **Retail Australian bond funds – alpha distribution**

funds in the sample earning significantly negative risk-adjusted returns overall. In the institutional sphere, while some funds exhibit superior returns before expenses, most funds cannot differentiate themselves from the performance of the underlying benchmark index. The institutional funds earning superior returns do so through their stock-selection of bonds, rather than their ability to anticipate movements in the bond market.

SUMMARY
The evidence suggests that active Australian bond funds, on average, are unable to earn risk-adjusted excess returns that make them

superior to index funds. Active institutional funds, overall, earn returns in line with the index before expenses, while retail funds on average significantly underperform the index. In light of these results, retail investors in particular are justified in giving consideration to lower-cost index funds.

The authors acknowledge data provided by Rainmaker Information, Towers Perrin, William M. Mercer and Warburg Dillon Read.

NOTES
1. The retail data include funds classified by Assirt as retail trusts, retail superannuation

and allocated pension funds. The agreements entered into with the asset consultants covering the institutional funds prevent disclosure of the investment managers and the funds.

2. The 90-day Reserve Bank of Australia treasury note is used and adjusted to reflect a monthly yield. See Jensen (1968) for further information concerning the application of the model.

3. See Treynor and Mazuy (1966).

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APPENDIX
Analysis of the overall risk-adjusted excess return (alpha) of active funds is measured using the CAPM framework, where the model (1) is estimated using ordinary least squares regression. Active Australian bond fund performance and the benchmark index return are measured in excess of the equivalent one-month treasury yield:[2]

(1)

$$R_{pt} = \alpha_p + \beta_p R_{mt} + \varepsilon_{pt}$$

where:
R_{pt} = the return of Australian bond fund p in period t;
α_p = the average risk-adjusted excess return

of Australian bond fund p in the period;

β_p = systematic risk of Australian bond fund p;

R_{mt} = the return on the WDR Composite Bond Index in period t; and

ε_{pt} = the residual return of fund p not accounted for by the model.

Active Australian bond funds attempt to outperform the WDR Composite Bond Index through the use of security selection and/or market timing strategies. Decomposition of risk-adjusted excess returns into these two components can be achieved using the following attribution model:[3]

(2)

$$R_{pt} = \alpha_p + \beta_p R_{mt} + \gamma_p R_{mt}^2 + \varepsilon_{pt}$$

where α_p measures the performance attributable to stock selection only and successful market timing skill is present

TABLE ② Individual performances of active Australian bond funds			
	Active Australian bond funds		
	Overall performance	Security selection	Market timing
Panel A: Institutional bond funds			
Negative & significant*	2	2	6
Positive & significant*	7	11	0
Insignificant*	**57**	**53**	**60**
Funds in sample	66	66	66
Panel B: Retail bond funds			
Negative & significant*	**69**	**63**	**1**
Positive & significant*	0	0	6
Insignificant*	25	31	87
Funds in sample	94	94	94
*Significance level = 0.05			

where the coefficient γ on the quadratic term is significantly positive. The other variables are defined as in equation (1). The quadratic term in (2) assumes bond funds hold a greater (smaller) proportion of their portfolios in the market portfolio of risky assets (ie, the WDR Composite Bond Index) when there is an expectation of a market rise (fall). That is, successful market timing occurs when funds increase systematic risk prior to a market increase while reducing risk in anticipation of a market downturn. **J**