

# An Investigation into the Smart Money Effect in Australian Superannuation Funds

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## Background, Aims, Significance and Innovation

The Australian managed funds industry is the fourth largest in the world based on funds under management. Superannuation funds dominate the industry, accounting for 70% of total funds under management. Over the past two decades, the growth in superannuation funds has resulted in a five-fold increase in total assets under management.<sup>1</sup> The size of Australia's superannuation funds pool and its prospects for substantial growth, driven by the Australian government's mandated retirement scheme, suggest that growth in superannuation funds will continue to be considerable. Moreover, the demographical shift in the Australian population indicates that the importance of superannuation will continue to grow. Therefore, the performance of superannuation funds and investors' ability to predict the performance of these funds is of vital importance to the national interest.

The aim of this proposed project is to examine whether investors can identify superannuation funds whose subsequent performance is superior. Additionally, the supplementary aim of this project is to identify which variables influence cash flows into superannuation funds.

If it is found that the performance of funds that realised positive net cash flows is superior to those that realised negative net cash flows, then the conclusion is that superannuation fund investors are 'smart'. Hence, our focus is not just on fund performance, but also on investor behaviour. Smart money research has been performed in the US by Gruber (1996), Zheng (1999) and Sapp and Tiwari (2004). These papers all focused on domestic equity funds. The innovation of our approach is that we are focusing on superannuation funds. Similar to Sapp and Tiwari (2004), we employ both the Fama-French (1993) and Carhart (1997) models to assess fund performance. However, unlike Sapp and Tiwari (2004) we partition our sample based on fund size to identify if fund size influences any observed smart money effect.

The only Australian paper that examines the smart money effect, Sawicki and Finn (2002), focuses on which variables influence cash flows to funds. Our proposed analysis goes much further as we intend to assess the performance of fund portfolios partitioned on cash flows into funds. The proposed project will advance the knowledge base on superannuation funds in the following ways: (1) by examining whether superannuation funds outperform the equity market, (2) by testing whether superannuation fund investors are smart, (3) by investigating which variables influence cash flows to funds, and (4) by identifying whether fund size influences fund performance and any observed smart money effect.

## Description of Approach

The smart money portfolios are formed at the beginning of each quarter based on the Net Cash Flows (NCFs) experienced by the fund during the previous quarter. The first portfolio includes all funds that realized a positive net cash flow during the previous quarter and the second portfolio includes funds with negative net cash flows. NCFs are calculated as:

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<sup>1</sup> Axiss Australia, "Australia – A Global Financial Services Centre – Benchmark Report August 2005".

$$NCF_{i,t} = TNA_{i,t} + TNA_{i,t-1} * (1 + r_{i,t}) \quad (1)$$

where  $TNA_{i,t}$  and  $TNA_{i,t-1}$  are the Total Net Assets of the fund at the end of quarter t and t-1, respectively;  $r_{i,t}$  is the fund's return for quarter t.

The performance of the fund portfolios is assessed using the Jensen (1968), Fama-French (1993) and Carhart (1997) models. The Carhart model is:<sup>2</sup>

$$r_{p,t} = \alpha_p + \beta_{1,p} RMRF_t + \beta_{2,p} SMB_t + \beta_{3,p} HML_t + \beta_{4,p} UMD_t + e_{p,t} \quad (2)$$

where  $r_{p,t}$  is the excess return on fund portfolio;

$RMRF_t$  is the excess market return;

$SMB_t$ ,  $HML_t$  and  $UMD_t$  are the returns on the size, book-to-market and momentum factors, respectively.

Fund portfolio returns will be measured using both equal and cash-flow weighting to identify if performance is particularly sensitive to the method of portfolio construction. Fund performance is assessed based on the significance of the estimated portfolio alphas from the performance models. If alpha is zero this implies that the model explains the returns on the fund portfolios. If alpha is positive/negative for the positive/negative NCF portfolios, this implies that the model does not explain the returns on the test portfolios and that smart money exists. The performance of the fund portfolios will also be assessed using conditional versions of the asset pricing models listed above. The conditioning variables will be the same as those employed by Holmes and Faff (2004). Additionally, the fund portfolios will be partitioned based on fund size and the analysis repeated.

A cross sectional regression framework is used to examine which variables influence cash flows to funds. The cross-sectional model is expressed as:

$$NNCF_{i,t} = \{R_{i,t-1}, UMD_{i,t}, \ln(TNA)_{i,t-1}, NNCF_{i,t-1}, MER_{i,t}, ENTRY_{i,t}, EXIT_{i,t}\} \quad (3)$$

where  $NNCF_{i,t}$  is the normalised net cash flow for fund i at the end of quarter t;

$R_{i,t-1}$  is the return on fund i in the previous quarter;

$UMD_{i,t}$  is the momentum factor loading for fund i in quarter t;

$\ln(TNA)_{i,t-1}$  is the logarithm of TNA;

$NNCF_{i,t-1}$  is the previous quarter's net cash flow;

$MER_{i,t}$  is the expense ratio charged by a fund during quarter t;

$ENTRY_{i,t}$  and  $EXIT_{i,t}$  are the entry and exit fees (in %), respectively charged by a fund;

The cross-sectional model specified above is estimated each quarter. The significance of each variable is inferred by analysing the time-series of regression coefficients on each variable.

### Nature of Expected Outcomes

The results of our proposed analysis will indicate either that a smart money effect exists in superannuation funds or that it does not. If our findings are consistent with Sapp and Tiwari (2004), the results will indicate that after risk-adjustment using the Fama-French model, a smart money effect exists, but after risk-adjustment using the Carhart model, the smart money effect will disappear. If this is the case, our conclusion will be that momentum explains the smart money effect and that the superior performance of superannuation funds with positive net cash flows is due to persistence in equity returns. If we find that a smart money effect exists, then this implies that investors are displaying fund selection ability.

<sup>2</sup> The Fama-French model does not include  $UMD_t$ . The Jensen model does not include  $SMB_t$ ,  $HML_t$  and  $UMD_t$ .

However, if a smart money effect is not observed, then we conclude that investors are not displaying fund selection ability; this finding will have policy implications for legislators. If investors in superannuation funds are not outperforming the equity market, then they should invest in passive funds which charge much lower fees. If investors are not displaying fund selection ability, then more emphasis should be placed on educating investors. We intend submitting the results of the proposed project to “Journal of Business Finance and Accounting” for consideration for publication. The findings will be presented at prestigious finance conferences such as The Financial Management Association Annual Meetings, The Australasian Banking and Finance Conference etc. We also intend submitting an ARC Linkage application in 2007.

### **National Benefit**

Superannuation is a perennial focus topic of the Australian Government and the nation’s financial sector. It is an increasingly important concept in Australia with the demographical shifts that are occurring and also the increasing life expectancies of our country’s citizens. The Government offering significant incentives such as tax benefits and the rising concern that Government-led retirement provisions such as the aged pension will not be sufficient for sustaining a reasonable lifestyle are the primary factors that encourage the population to invest funds in superannuation.

It is imperative to study the performance of superannuation funds in Australia for several reasons, the most important being that many rely heavily on superannuation funds to survive through their retirement. Hence, it is crucial that extensive empirical research be done in this area to study the returns on such funds, the factors that influence these returns and also the features which affect cash flows into/out of the superannuation funds. This aim of this research is to study the superannuation industry particularly by focusing on the managed fund sector. Due to the dominating role that superannuation funds play in the managed fund industry, it is insightful to study the performance of managed funds that invest superannuation assets. Our findings have serious and important implications for the funds management industry in general and fund managers in particular.

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