

# **Economies of scale and scope in Australian superannuation funds, 2004–2008**

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## Background

- Operating and investment costs per member and as a share of assets appear to vary widely across superannuation funds.
- These costs are important because they reduce the rate of return on investment in superannuation funds for members and have important implications for industry structure and strategy.
- For example, funds may want to know whether they need to expand quickly to obtain economies of scale and a competitive advantage or to engage in product diversification to secure economies of scope.
- My current research in the area has two parts. The first involves the quantitative analysis of fund level data to obtain measures of cost efficiency of Australian superannuation funds.
- The second examines the determinants of these costs, including scale, governance, in-house production versus the outsourcing of functions and decision making, and the range of products and services, amongst others.

# Economies of scale

- A production process exhibits economies of scale when average cost (AC) (i.e. cost per unit of output) declines over that range.
- In most firms, output can increase through a continuum ranging from internal growth, through to strategic alliances, understandings and agreements, and cooperation to formal merger.
- Through this process, firms overcome indivisibilities in factor inputs and the spreading of fixed costs, avoid the costs of inventory stock outs, and gain access to economies in the fixed costs of production including purchasing, marketing and administration.
- If average cost is increasing, then marginal cost must exceed average costs and production exhibits diseconomies of scale.
- Generally, diseconomies of scale are thought to arise from the increase of input prices, the reduction of incentives and the growth of bureaucracy, an increasing lack of specialized resources, and conflicting out.

- Basic theory is that average costs are typically U-shaped in cost–output space, so that the smallest and largest firms should have equally high costs relative to medium-sized firms.
- In practice, much variation is encountered.
- One possibility is that economies of scale are negligible and diseconomies dominate at relatively low levels of output.
- Elsewhere, economies of scale may be extremely important and decline continuously over a wide range until output diseconomies are experienced.
- In yet other contexts, the LRAC may be virtually horizontal over a wide range of output: economies of scale are quickly exhausted though diseconomies are not encountered until very large levels of output are produced.
- These L-shaped cost curves are indicative that small, medium and large-sized firms could operate with an approximately equal level of cost efficiency beyond the point of MES where average costs are either flat or only slightly increasing.

## Economies of scale in superannuation funds

- Superannuation funds are relatively unconstrained by capital in the form of a physical presence (as with banks).
- Major items are information technology (computers and software) to process data flow from members, core administration and marketing expenses, regulatory and reporting compliance, and information acquisition and analysis.
- We could expect these costs decline both as the number of members increases and over time.
- For example, there is possibly a lower cost for existing members than new members as an information relationship has already been established.
- In most financial services, it is usually expected that economies of scale are found at relatively low levels of output and sustained for very high levels of output (often higher than any observed firm).

## Economies of scope

- Once multiple product production arises, the presence or absence of complementarity between outputs in production in a firm becomes important.
- This diversity of products within a single firm, known as ‘scope’, may provide cost advantages in that a single firm producing a given level of output for product may spend less than a combination of several specialised firms.
- In most firms, the production process typically comprises multiproduct attributes because it produces multiple products through the sharing and joint utilization of inputs including staff, equipment, buildings, and so on.

## Economies of scope in superannuation funds

- A superannuation fund can potentially increase scope by product diversification (offering new funds with different objectives).
- Scope economies potentially then arise from the sharing of administration, data processing, marketing, and information and analysis costs.
- Benefits could be offset by different set up, administration and investment costs and the need for additional skills and expertise.
- Unlike a bank whose multiproduct attributes are quite diverse (commercial and retail deposits, commercial and retail loans, investment products, commercial services, etc.) the potential range of scope for superannuation funds is limited (though also potentially less costly).
- Input sharing may be substantial and therefore offset the (lower) costs of product diversification.

## Research on economies of scale and scope in superannuation funds

- Almost no work on superannuation funds but can benefit from lessons obtained using managed funds (though body of literature still small).
- Ang and Lin (2001) examined US funds and found economies of scale for some but not all fund objectives and weak if any economies of scope among products in the same fund family.
- Bauer et al. (2006) found economies of scale (alongside risk and style differences) explained differences in gross and net returns in US pension funds.
- Malhotra et al. (2001) concluded economies of scale existed in Australian retail super funds after \$30 mil. in assets. Bateman and Mitchell (2004) also found evidence of scale economies.

- Bikker and Dreu (2006) concluded that economies of scale dominate the dispersion in investment and operating expenses across Dutch pension funds. Cost efficiency higher for industry defined benefit funds and those with a low percentage of pension members.
- The UK Audit Commission (2006) found that London-based local government pension funds were less cost efficient than non-London funds: partly due to constrained size and higher degree of fund activism and better quality of service.

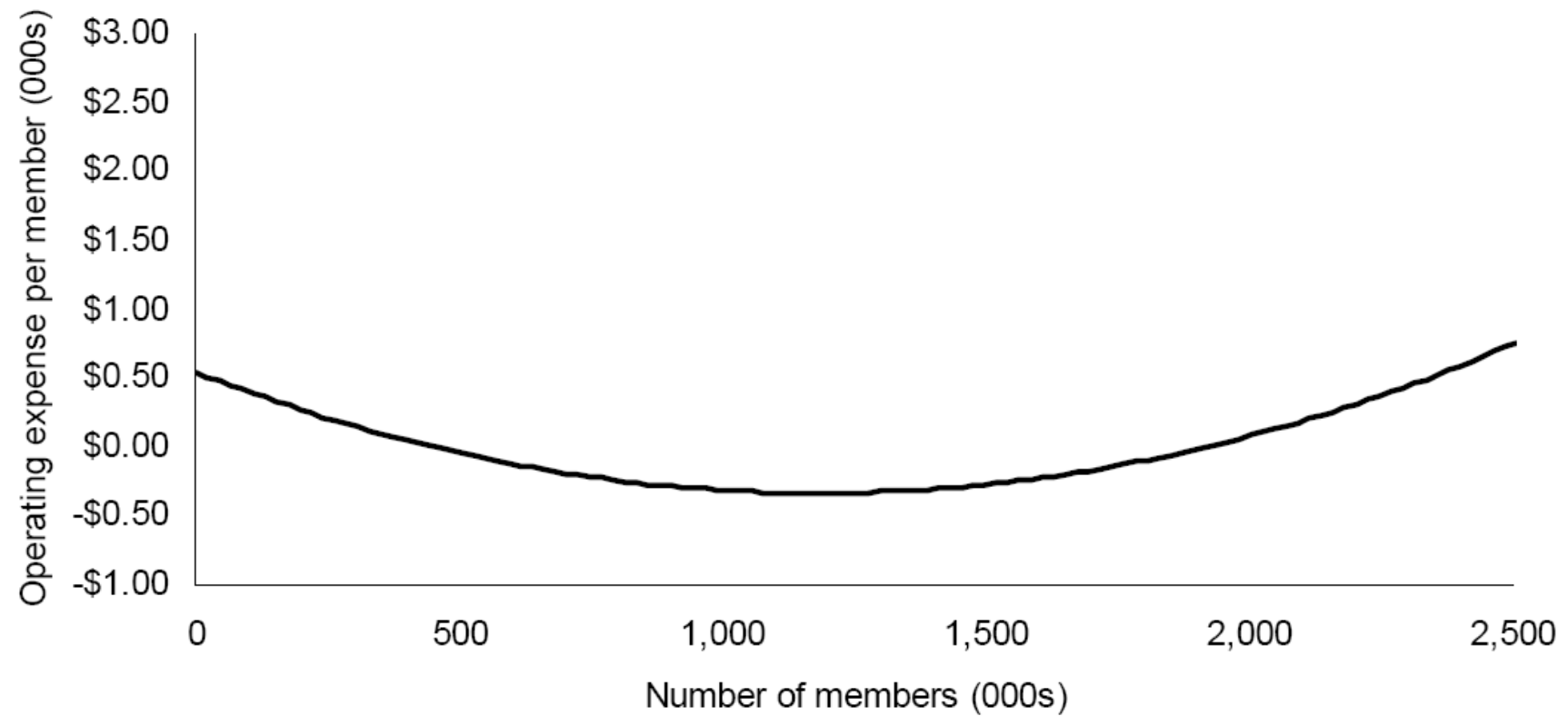
## Disaggregated fund data in Australia

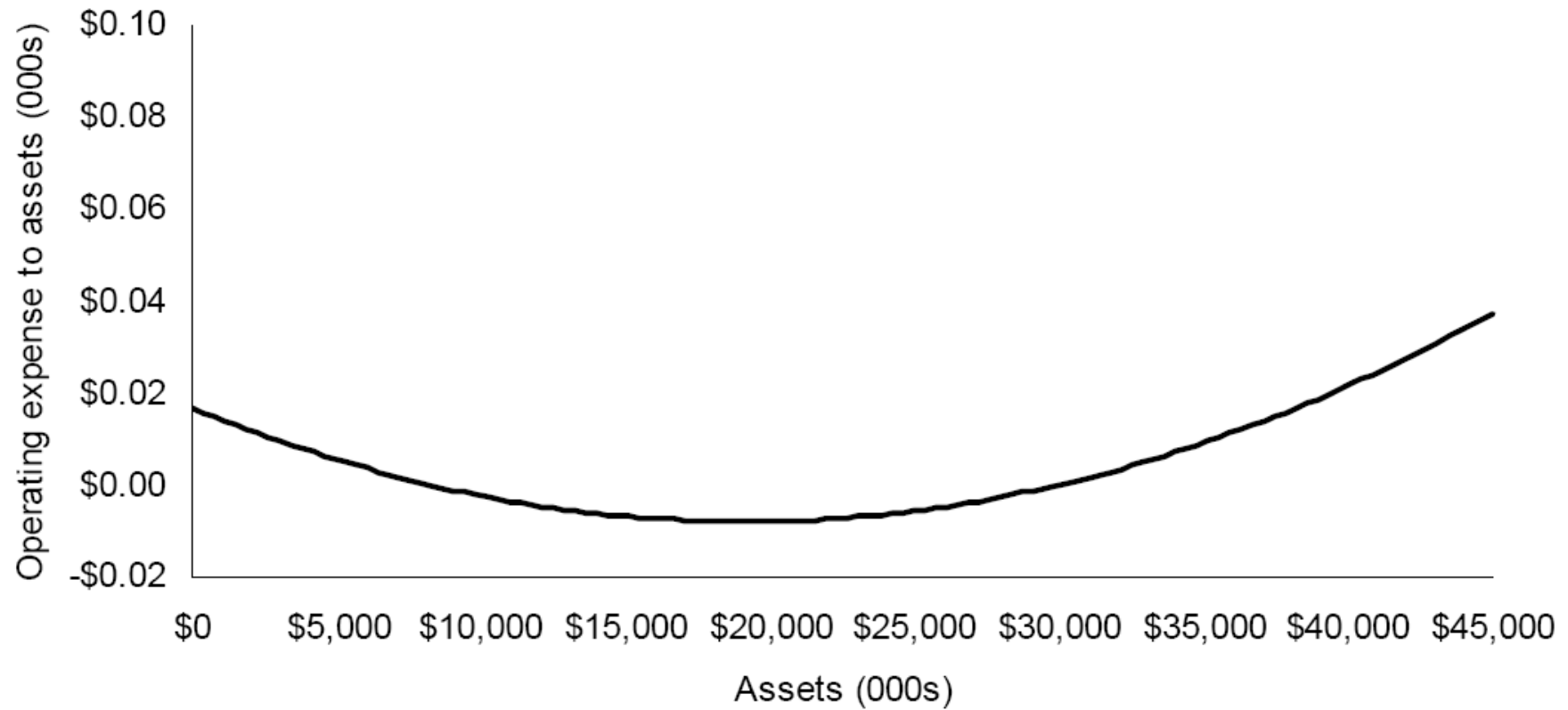
- In 2007, APRA published a statistical overview of super industry. This led to discussion as to the possibility of it producing a wider range of statistics with a greater level of disaggregation.
- APRA began a process in mid-2008, with public discussion. APRA also received a request from the government to consider making public, fund level performance results.
- APRA released a discussion paper in 20 November 2008. This outlined issues to be considered and sought comments and suggestions on the data items to be included.
- Some respondents objected to some items being determined non-confidential were:
  - privacy concerns for individual fund members and directors;
  - commercial sensitivity of data collected on pooled superannuation trusts, membership breakdown, fees and income, and employer contributions; and
  - the potential for the data to be confusing or misleading.

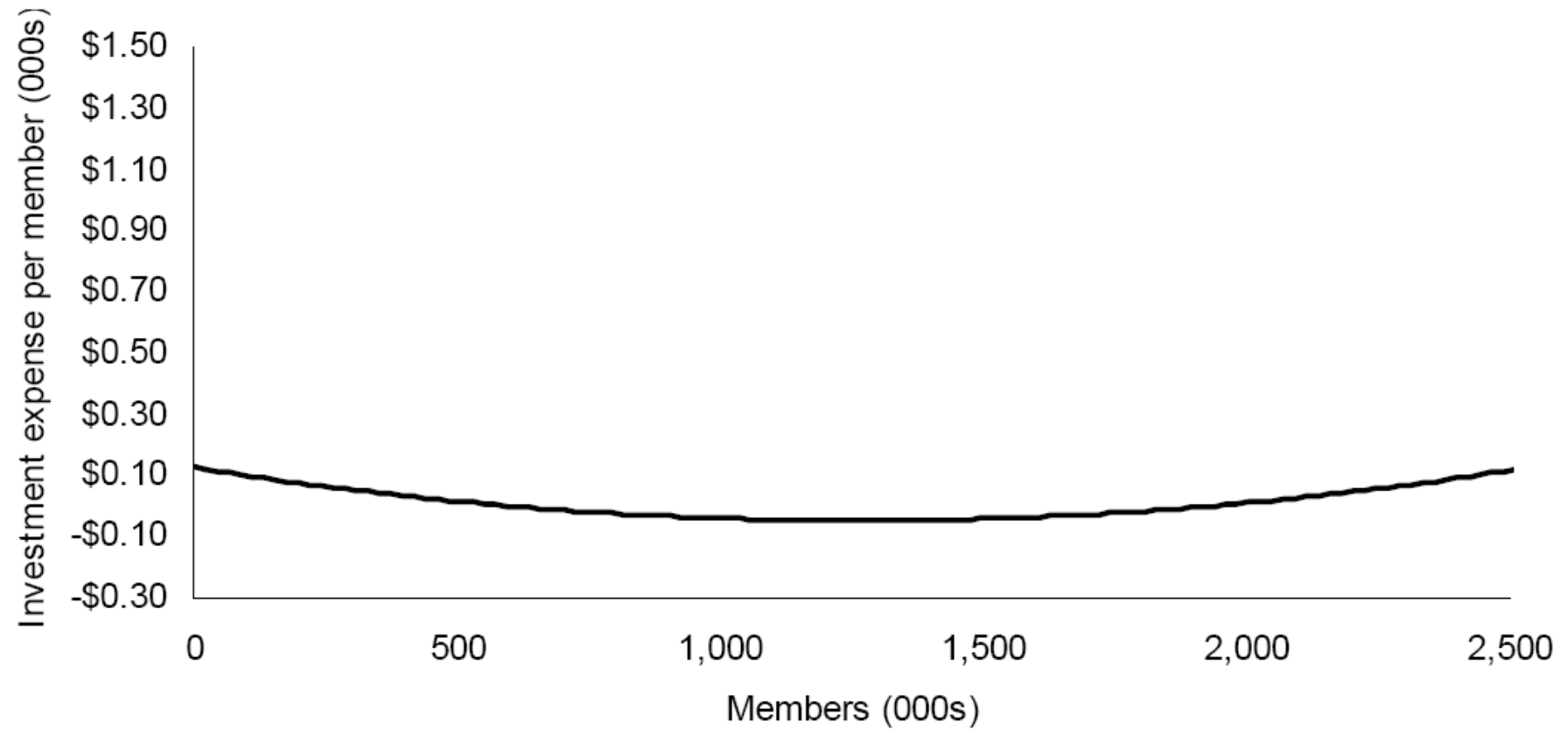
- The first disclosure of entity level data was made in (i) Superannuation Fund-Level Profiles and Financial Performance and (ii) Superannuation Fund-Level Rates of Return released in August 2009.
- The latter covers the 200 largest superannuation funds (by total assets) with at least 20 members. The former contains data on all APRA-regulated superannuation funds with more than four members.
- The former includes information on fund and benefit type, expenses and income, assets and liabilities, default strategy and membership. Many observations are masked for privacy reasons or data is unavailable or unaudited.
- The latter includes one, three and five-year rates of return.

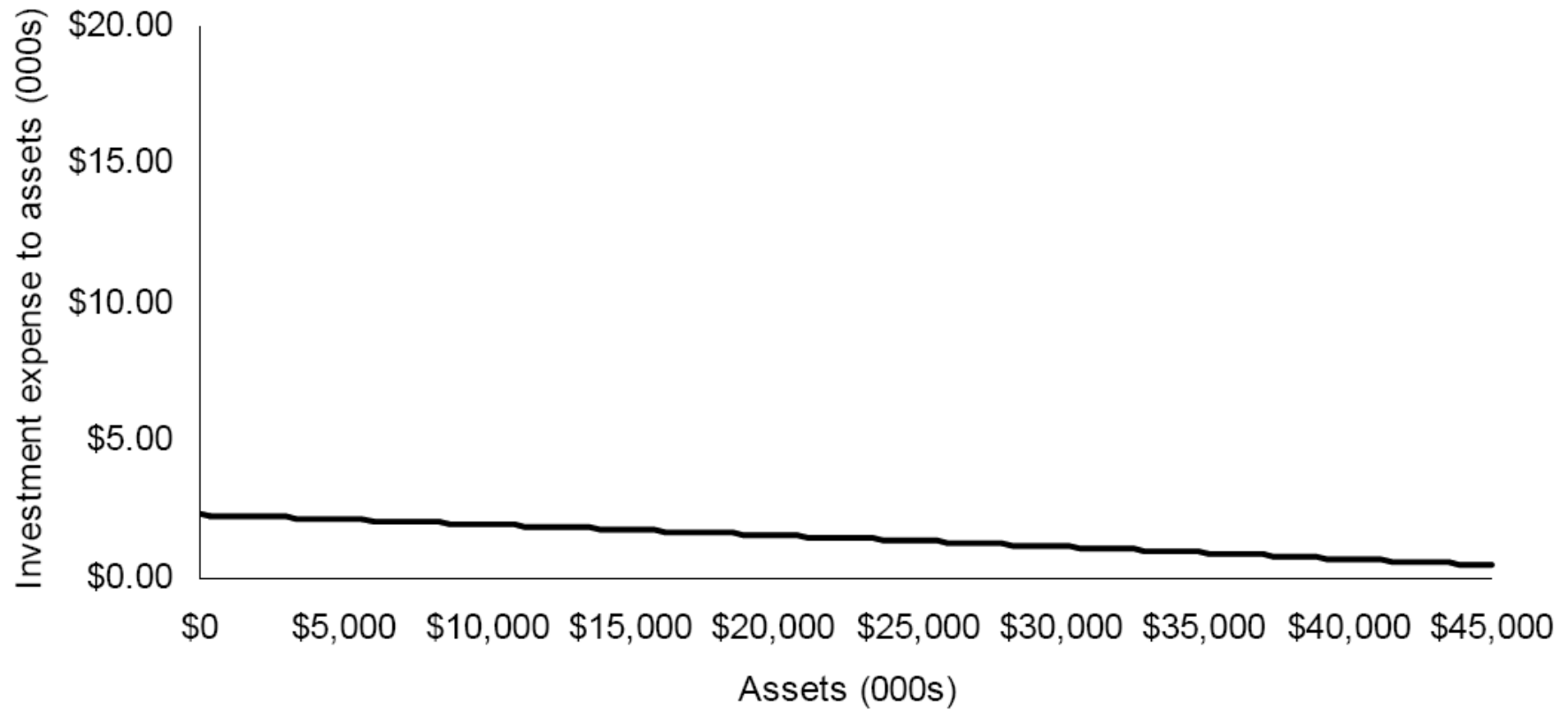
## Problems with available data

- No quantity input measures (labour, physical capital, etc.).
- Measures of output may vary in quality across funds. For example, with operating expenses we may define membership as an output, but the quality of service may vary across funds.
- Need industry input on what outputs most reflect productivity activity, e.g. for operating expenses is it members (pension and other), contributions, rollovers, benefit payments, etc.
- With investment expenses, do the number of investment options, the % in the default strategy and the rate of return make a difference to costs?
- Analysis assumes that funds are at some equilibrium point along their respective long-run cost functions.
- In fact, they may be at different stages of development. The empirical absence of diseconomies of scale may simply be because no funds are large enough for these diseconomies to apply, not that they do not exist.









# Operating expenses

Variable	Coefficient	Std. Error	Prob.
Net assets (\$)	0.003107	0.000655	0.0000
Members (n)	-0.004103	0.004374	0.3483
Net contributions (\$)	0.010676	0.005799	0.0658
Net rollovers (\$)	0.001605	0.002382	0.5005
Retail fund (=1)	4676.946	590.2743	0.0000
Industry fund (=1)	-295.5287	787.5546	0.7075
Accumulation benefit (=1)	9159.451	2371.761	0.0001
Hybrid benefit (=1)	6576.643	2136.470	0.0021
Constant	-7984.921	2252.433	0.0004

Reference groups for funds are corporate funds and defined benefit for benefits.

# Investment expenses

Variable	Coefficient	Std. Error	Prob.
Net assets (\$)	0.001282	0.000254	0.0000
Investment options (n)	1.460570	9.701687	0.8803
% assets in default strategy	2.646555	6.550885	0.6863
% in equity	-10.24147	6.869203	0.1361
Rate of return (%)	-17.02499	18.76710	0.3644
Retail fund (=1)	-597.6875	669.4820	0.3721
Industry fund (=1)	3328.245	584.9560	0.0000
Accumulation benefit (=1)	-1142.665	892.5192	0.2006
Hybrid benefit (=1)	496.8572	851.3421	0.5595
Constant	1328.586	1101.553	0.2279

Reference groups for funds are corporate funds and defined benefit for benefits.

# Questions and comments

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