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Retirement system begging for reform

Patricia Pascuzzo

Much attention has been drawn recently to the high cost of the Australian superannuation system compared with pension systems overseas. The industry response has been that our defined contribution superannuation system, with its high exposure to risk assets and included features such as insurance and financial planning, is built for high performance and can't be compared with 'no frills' defined benefits systems overseas.

Missing from the debate however has been proper consideration of outcomes – what do we get from this so-called 'high performance' superannuation system? I argue that performance of Australia's costly 'bespoke' superannuation scheme should ultimately be judged on its ability to deliver sustainable and higher living standards in retirement.

Critique of current assessment

The 2014 [Melbourne Mercer Global Pension Index](#) (MMGPI) released recently compares the retirement income systems of 25 countries on the basis of adequacy, sustainability and integrity. According to the MMGPI, Australia is ranked first in terms of retirement income adequacy and third in terms of sustainability. Overall, Australia's retirement saving system was "ranked second best in the world beating the Netherlands for the first time in five years and falling just short of Denmark".

What is remarkable about the MMGPI ranking is that it stands in marked contrast to other global aged living standard rankings. In particular, the UN/World Bank's Global AgeWatch Index ranks Australia 57th in the world for income security for the aged. The OECD ranks Australia 32nd out of 33 for aged poverty and last for net replacement rates (the ratio of post-retirement income to pre-retirement income). This raises the question of how can the highly positive results of the MMGPI be reconciled against the negative assessment of the United Nations, OECD and World Bank. The answer lies in the way the MMGPI is measured.

First, the MMGPI adequacy index relies heavily on a projected measure of net replacement rates for the median income earner 40 years from now rather than actual replacement rates. That means these projections are based on the hypothetical assumption that the current design of the pension and superannuation systems has been in operation for the full working life of the retired population which is of course not the case for current retirees. The methodology provides an unrealistic picture of the adequacy of retirement incomes in Australia today given that it will be many years before all retirees have been through the superannuation system. Evidence on actual (rather than projected) replacement rates presents a totally different picture. According to OECD estimates, Australia's replacement rate (retirement income as a proportion of median earnings) is the lowest among 34 OECD countries and it was even lower for retirees over 75 years of age.

Second, the MMGPI excludes a measure of poverty as a key indicator of income adequacy. A common poverty measure is the proportion of the population with incomes below 50% of median income (Burnett, Davis et al 2014). Using this well-established measure, the OECD estimates that Australia has one of the highest aged poverty rates in the OECD region (35% compared with an OECD average of 12.8%), second only to Korea (47%). While the living standards of the aged across the world are generally lower than those of the broader population, this disparity is greater in Australia than in almost all OECD countries. This is a perverse finding for such an expensive system.

Third, the MMGPI includes 25 countries at various stages of economic development while the OECD analysis includes 33 advanced economies all at comparable levels of economic development.

Superior assessment of adequacy

While the MMGPI provides a technical and assumption-driven assessment of the design of various retirement income systems and how well they are likely to perform in the long term, it is much less useful as a tool for the more important task of evaluating actual retirement outcomes. An alternative global index, the Global Sustainable Retirement Income (GSRI) Index, has been developed by the author to enable a comparative assessment of living standards in retirement. This index, covering a broad range of indicators for sustainability and adequacy, incorporates actual rather than hypothetical replacement rates and aged poverty rates in its calculation. For an explanation of the methodology, click on the link at the end of this article.

Using this index, the pension system performances of 33 OECD countries were evaluated with scores assigned to each country on the basis of their performance against each indicator. According to this index, Australia ranks 25th in terms of adequacy and second in terms of sustainability. Overall, Australia comes in at a modest 13th place in contrast to second position based on MMGPI.

The low level of income adequacy for Australian retirees compared with their counterparts overseas cannot be explained away by higher rates of home ownership. Many other OECD countries have similar or even higher rates of home ownership. While publicly-provided services are estimated to enhance elderly incomes for Australian retirees by 35%, this rate is lower than the OECD average benefit of 40%. Taking into account in-kind benefits of housing and publicly-provided services does not change the overall conclusion that retirees in Australia are less well off than their OECD counterparts.

Even if the comparison is restricted to OECD countries with high-financially sustainable pension systems, Australia's retirement system performance is still left wanting. Three fiscally sustainable pension systems stand out as having significantly higher living standards for the aged – Canada, Denmark and the Netherlands – with both Canada and the Netherlands achieving these outcomes despite more significant demographic pressures than Australia.

Policy implications

The relatively low level of income adequacy provided by the Australian retirement system raises fundamental questions. Given the significant level of national resources devoted to retirement in Australia, including superannuation fund assets equal to GDP and public expenditures on superannuation tax concessions and pension payments, should Australians be content with the low level of financial security offered by the retirement income system?

Given the mounting budget pressures associated with the projected growth of superannuation tax concessions and expenditures on aged care resulting from population aging, can we afford to be complacent about the inefficiencies and poor value for money of the retirement income system?

The policy debate is ill-served by glib references to Australia's 'world class pension system' and calls for increasing the flow of compulsory contributions into the superannuation system. Such statements contribute to a sense of complacency about the effectiveness of the system that is not supported by the evidence. Rather than arguing for increasing the contribution rate, we should be asking ourselves how can we deliver better retirement outcomes with the national resources already committed to the retirement system.

Increasing the adequacy of retirement incomes without consideration of budgetary consequences is clearly not an option. The priority is therefore to identify reforms that would improve the level of retirement income adequacy without compromising, and indeed improving, fiscal sustainability. There is no silver bullet. A multi-pronged approach addressing the lack of integration between the public pension and superannuation systems, competition and governance is needed. While such reforms are complex and may take time to deliver outcomes, a good place to start is to address the undeveloped post retirement system given its very direct relationship with retirement outcomes. These issues are exercising the minds of both the Murray Inquiry and Treasury's Review of Retirement Income Regulation, which are running concurrently.

Patricia Pascuzzo is Principal of Superannuation Policy and Research, and was formerly a Treasury Official and co-author of the Financial System Inquiry 1997. Her most recent report, "[An International Comparison of Pension Systems Performance in Delivering Adequate Retirement Incomes \(2014\)](#)", was commissioned by Challenger Limited, and forms part of that institution's second submission to the current Financial System Inquiry.

Our industry has a problem

Graham Hand

"It is difficult to get a man to understand something, when his salary depends on his not understanding it." Upton Sinclair, Author and Journalist (1878-1968)

Towers Watson is a global consulting company with over 14,000 associates. A few months ago, they published the results of a survey which had some jaw-dropping conclusions. The publication was called '[Our industry has a problem: the investment industry has been built by the intermediaries for the intermediaries](#)'.

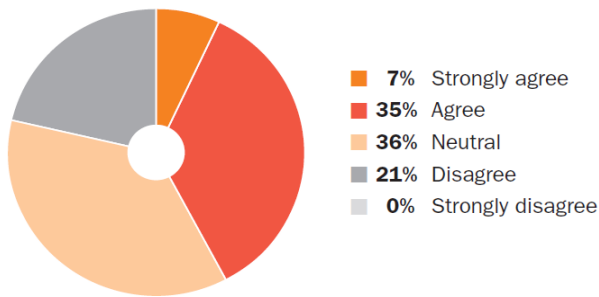
My interview with the author of the report, Tim Hodgson, appears in the next article in Cuffelinks.

It is worth reading the full report as it is only a few pages, but here are some highlights. To many Australians involved in the superannuation industry with fiduciary obligations of acting as a trustee, the results are disturbing.

Is the industry for the intermediaries or the end investors?

In the survey, the first statement (which is repeated in this week's poll on our website) was:

Figure 01. The investment industry is primarily designed to help the ultimate beneficiaries rather than the agents working within it



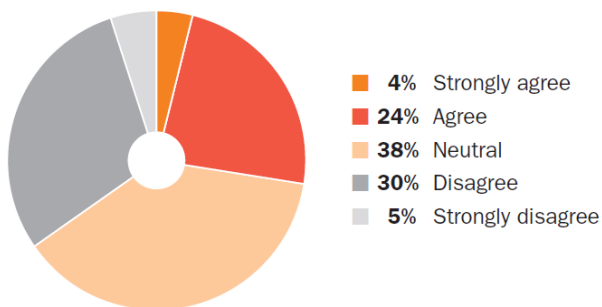
Source: Towers Watson. 212 responses to our iX Investment Manager update pre-conference surveys, 2014.

These are the responses from 212 employees in UK- and US-based asset management organisations. Amazingly, a minority of only 42% agreed that the investment industry is designed to help the end customers. This low level of agreement is a terrible indictment on the perceptions of certain people in the US and UK, and let's hope it would be much higher in Australia. As Towers Watson says, other surveys show financial services is the least trusted industry (for example, the 2014 Edelman Trust Barometer), showing the end saver knows what industry thinks of them.

In searching for the reasons the industry has a problem, Towers Watson also asked whether too much effort is spent searching for alpha (performance above the market), and only 18% agreed with this, with 14% neutral.

Then an interesting question followed that is not often discussed by the industry:

Figure 04. Too little effort is spent trying to improve market returns



Source: Towers Watson. 212 responses to our iX Investment Manager update pre-conference surveys, 2014.

So 28% agreed the industry does not put effort into improving market returns (not alpha), with a large 38% neutral. That leaves only 35% who disagreed.

This is worth pondering. How could the industry improve market returns (this is not a question on market outperformance)? After all, this is what sustainability and fiduciary responsibilities are supposed to achieve. Some ways to improve market returns include ensuring as much of the market return goes to end investors as possible rather than intermediaries, minimising other leakages such as transaction costs, and greater constructive engagement with corporate management (which might in turn include reducing excessive compensation of executives).

Short-termism

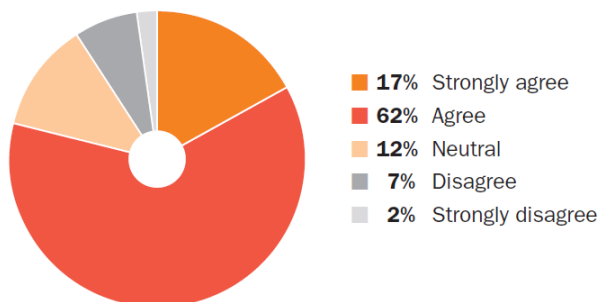
The other reason for the industry's problems is short-termism, which is value destructive because it leads to higher costs and over-reaction to noise. According to New York Stock Exchange data, the average equity holding period has fallen from 100 months in 1960 to 6 months now.

Figure 05. Excessive short-termism

	1960	1970	1980	1990	2000	2010
Average equity holding period (months)	100	63	33	26	14	6

Source: NYSE Factbook

Figure 06. There is too much short-termism, and this is due to the behaviour of asset owners



Source: Towers Watson. 212 responses to our iX Investment Manager update pre-conference surveys, 2014.

A surprising 79% of responses said there is too much short-termism, but blamed the asset owners (not the asset managers). This might be managers on the receiving end of being fired after a period of poor performance. But it's interesting to see such a high proportion criticise short-termism, when the daily reporting of prices and immediate market responses is endemic in the industry.

Conclusions

Towers Watson makes a chunk of its living from the investment management business, and yet it reports this most critical and damning of positions:

"In our opinion, the value proposition that customers need is well-structured, fairly priced, and honestly and skilfully delivered investment outcomes. We believe the industry is falling short on all of these aspirations."

It is not due to one problem. Asset managers work for themselves not their end customers, there's too much focus on alpha and not enough on improving market returns, and the industry is obsessed with short-termism. We have a lot to answer for while we pay ourselves so well.

Graham Hand was General Manager, Capital Markets at Commonwealth Bank; Deputy Treasurer at State Bank of NSW; Managing Director Treasury at NatWest Markets and General Manager, Funding & Alliances at Colonial First State.

Tim Hodgson: how a profession became an industry

Graham Hand

Tim Hodgson has probably spent as much time as anyone in the last decade thinking and writing about investing and funds management, and his conclusions about the industry are far from flattering. With Roger Urwin, Tim set up the Thinking Ahead Group at Towers Watson in 2002, and this has recently morphed into the Thinking Ahead Institute, a not-for-profit ideas forum with external sponsors that has already attracted 20 major institutions managing US\$5.6 trillion in assets.

A couple of months ago, I was at the Research Affiliates conference with Tim in Los Angeles where some of the best minds in the industry, including Nobel Laureates, spent two days discussing how little we knew about markets. How do we value stocks? What do asset consultants add? Why bother with the fees for active management? Tim presented at the Conference and shared these concerns.

I sat down for a chat with him in Sydney last week. He has not worked as a consultant at Towers Watson for many years, and he brings his ideas to his colleagues and their clients by writing research papers and making presentations.

I asked him what happens when one of his opinions, such as the merits of 'smart beta' rather than active management, is not in the best interests of one of Towers Watson's institutional clients. "If you do the right thing, it will have relevance," he replied.

Alpha is a negative sum game

He argues an articulation of beliefs by a client or investor is the first step in the investment process. For example, it is a truism that 'alpha is a negative sum game'. That is, the sum of all investment decisions is the market, and after fees, the active performance (the alpha) must be negative. But there are many managers both above and below the market benchmark. One belief might be that it is possible to identify the better managers, while another belief might be that outperformance cannot be done consistently over time.

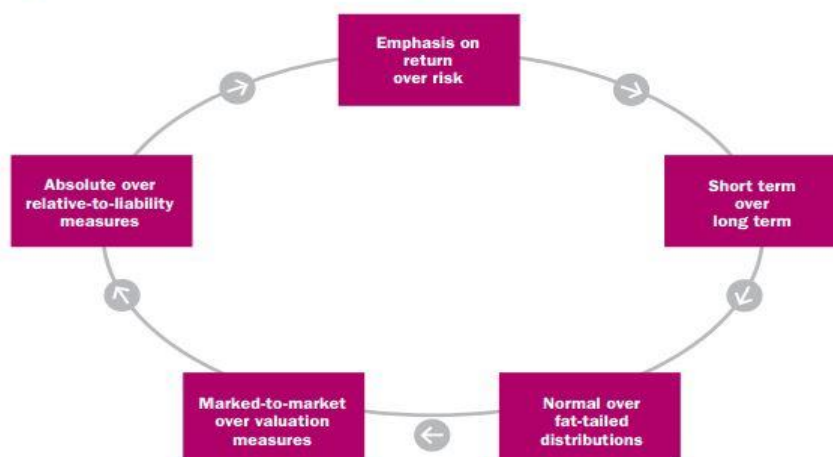
Hodgson falls in the camp that identifying the best managers is very difficult, and we probably spend far too much time searching for outperformance. It's no use recognising Warren Buffett's skill now, you need to identify the Warren Buffett of the next 20 years. He advocates moving away from the majority allocation to active managers to perhaps 70% in various types of passive management. The market still needs active managers for efficient price discovery, but it does not need to pay the fees for so many active relative value managers.

Passive does not necessarily mean the usual cap-weighted index investing. Hodgson was an early supporter of what is now known as 'smart beta' but which he called 'beta prime' in research papers going back a decade. He supports the view that cap weighting leads to larger allocations to the most expensive stocks, and an index which weights by factors other than price can remove this drag. How have his colleagues taken this view? "It's my job to initiate ideas. It can sometimes take a long time for them to be appreciated." Such a move across the industry would remove over \$100 billion of management fees from the estimated \$350 billion paid globally at the moment, not something which many in the industry would enjoy. It will only happen through bottom-up change from asset owners, who control the mandates they offer.

Risk as permanent impairment of goals

Hodgson defines risk as "a permanent impairment of mission goals or expectations" rather than the more commonly used volatility. He believes risk models struggle in the five ways described in Figure 1. Risk management needs to find a way to overcome these tensions as investors go on a 'journey plan' through their lifetime. Funds should be more concerned about impacts that impair long term plans than short term Value at Risk measures or tracking errors.

Figure 1. Five tensions in current risk modeling practice



He supports dynamic or tactical asset allocation, using valuation techniques that measure when markets are expensive or cheap. When I suggested it seems inconsistent to say you cannot pick good active managers but you can pick when markets are cheap, he quoted from F. Scott Fitzgerald in 1936:

"The test of a first rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function."

He drew out the comparison to active versus passive investing in a fascinating way. "Is there aggregate added value from market timing' is a similar question to 'Is there aggregate added value from active investing'. Probably no to both, but we are dealing with highly complex, adaptive systems, and the answers are not simple. Which is why we always start with our beliefs."

In other words, investing is not like practicing medicine, where an experienced surgeon can become an expert over time because the human body does not change and he knows what to expect when he goes into it. Markets change depending on the actions of others in a highly adaptive way.

We have morphed from a profession to an industry

The Thinking Ahead Group has long championed the need to focus on the ultimate beneficiary, and Hodgson riles against the self-interest of many finance executives. His colleague, Roger Unwin, has seen investment management morph from a profession to an industry. There used to be more focus on stewardship and long term perspectives.

One of his hopes for the new Institute is that by changing behaviour at the top of the investment pyramid among major asset owners, it will improve retail products and client interactions. He likes the analogy of a Formula 1 car and the research impact on the family sedan. "By having better working partnerships, we hope the investing equivalents of antilock brakes and airbags trickle down from the Institute to the end investor."

(To read some of Tim's most recent work on the attitudes of investment managers, see the related Cuffelinks article, "Our industry has a problem").

There's more to risk aversion than most planners realise

David Bell

Risk aversion defines our attitudes and preferences regarding risk taking. While risk aversion is commonly associated with the finance industry, risk aversion is everywhere: our daily activities, the major decisions we make in life, our respect for the rules and laws of society and even the choices we make in our personal relationships. In this article I focus on financial risk aversion.

Finance industry and academic research are polarised

Financial risk aversion defines our attitudes to taking financial risk. It is an area where industry and academia are poles apart, and in my opinion not well understood by industry in particular. The academic definition of risk aversion is specific, namely the reluctance of a person to accept a bargain with an uncertain payoff rather than another bargain with a more certain, but possibly lower, expected payoff.

Research into risk aversion requires many different skillsets: economists, finance specialists, psychologists, actuaries and behavioural science experts, just to name a few specialties which have a role to play in better understanding risk aversion.

Relative versus absolute risk aversion

Many in the industry summarise the risk aversion of an individual as a single number based on the answers to a questionnaire; I believe this is a dangerous approach. Risk aversion is much more than a numeric measure of a risk attitude: the form of our risk preferences is also crucial to understand.

In the academic literature risk preferences can take many forms, including absolute risk aversion and relative risk aversion. Absolute risk aversion means that we have an aversion to losing a certain dollar amount. Relative risk aversion means that we have an aversion to losing a certain percentage of our portfolio. So as a portfolio grows in size, all else equal, an individual whose risk preferences take the form of absolute risk aversion would ideally roll into a less aggressive portfolio while an individual whose risk preferences take the form of relative risk aversion would not change their investment strategy.

Many academics and industry practitioners claim that relative risk aversion (that is, percentage-based) is intuitively more appropriate and there is some support for this from research experiments. However there are also experiments and case studies that reveal that people express absolute risk aversion preferences. Bringing this back to industry, a relative risk aversion assumption is evident in the design of many basic default super funds (constant risk exposure regardless of account balance), whereas lifecycle funds have some sympathy to the concepts of absolute risk aversion (the risk of the fund decreases with age which is broadly related to account balance).

The theory of measuring risk aversion has been a highly detailed area of research for many years. Examples include lottery style tests and qualitative questionnaires. The better quality questionnaire approaches have been calibrated alongside lottery style tests for consistency. A lottery style test offers an individual the choice of two lotteries with varying payouts and risks. By running a number of permutations across the same individual, an estimate of risk aversion can be derived.

Research findings on risk aversion

The academic literature has revealed some novel findings on risk aversion. For instance:

- Men are generally less risk averse (more risk seeking) than women
- We tend to become more risk averse as we age
- Tall people are on average less risk averse than short people
- Financial risk aversion has some consistency with our overall 'life' risk aversion
- An individual's self-assessment of their own risk aversion is more accurate than the informed opinion of their financial planner.

In theory, particularly in academia, risk aversion is often assumed to be exactly known and is used as a direct input into determining how an individual should optimally invest their savings. This is done to illustrate an important research question, rather than in ignorance of the uncertainties in measuring risk aversion.

Industry uses inadequate risk tolerance tests

In industry, attempts are made to measure risk aversion. These generally take the form of a risk tolerance questionnaire. Answers are aggregated and mapped into a recommended portfolio allocation. Many of the approaches I have seen are too simplistic. In particular no attempt is taken to measure the form of risk aversion. Many financial planners account for this by using the risk aversion estimate alongside a consideration of an individual's capacity to take financial risk (the status of their personal balance sheet and income profile) and their financial objectives, to determine an appropriate investment strategy.

The industry seems to make some simplifications which could have a great cost to individuals. Specifically, many portfolios appear to be constructed using a mean variance framework, whereby one designs a portfolio which maximises expected return for a determined tolerance to investment volatility. Portfolios designed using this approach are only optimal for an individual whose preferences take the special form of relative risk aversion where the pain of a loss is equal to the pleasure of an equivalent sized gain. Is this really an appropriate assumption? Many behavioural science experiments would suggest not: the pain of a loss is often greater than the pleasure of an equivalent sized gain.

Understanding the risk aversion of individuals is an important issue for all industry participants. The obvious area is financial planning where, as stated previously, my opinion is that risk profiling practices can be improved. The other area is the design of the investment strategy for a super fund where effectively there are embedded assumptions built into the design of default funds. For both groups there is a lot of powerful science about how risk aversion can be measured and how it should be translated into portfolio construction that is largely untouched by industry.

David Bell is Chief Investment Officer at AUSCOAL Super. He is working towards a PhD at University of New South Wales.

Good active managers are hard to identify

Les Goldman

Standard & Poors' undertakes a semi-annual review of the performance of actively-managed funds compared with S&P indexes, and the June 2014 'SPIVA Australia Scorecard' was recently released. The Scorecard measures both equal weighted (where every active fund is given the same weighting) and asset weighted (where a fund's weight depends on its assets) returns from actively-managed funds.

It's important to know some limitations of the SPIVA Scorecard. Actively-managed fund returns are measured after expenses, whereas index returns have not had investment fees deducted, which exaggerates the returns achievable from following a hypothetical index. Also, some indexes used in the scorecard, such as bond indexes, may not be easily replicable. The Scorecard only utilises five highly aggregated fund categories that can be lined up with available comparator benchmark indexes.

Overall, active funds struggle to beat index

The Scorecard finds that the majority of actively-managed funds failed to beat their comparable benchmark indices over a one, three or five year period. In Australian equities, the mainstay of most Australian portfolios, the underperformance of actively-managed funds against the comparator index was reasonably consistent across one, three and five year periods at 66%, 66% and 75% respectively.

The only exceptions in performance versus index are actively-managed small cap funds, the clear majority of which beat their comparable indexes across all time periods.

Summary Table: Percentage of actively-managed funds outperformed by their comparable index

Fund Category	Index S&P	1 Year	3 Year	5 Year
Australian Equity General	ASX 200 Accumulation	66%	66%	75%
Australian Equity Small Cap	ASX Small Ords	8%	8%	17%
International Equity	Developed Ex-Aust. LargeMidCap	79%	88%	86%
Australian Bonds	ASX Australian Fixed Interest	80%	87%	67%
Australian A-REITS	ASX 200 A-REIT	55%	80%	79%

Index versus fund performance and survivorship

Taking a look at the percentage returns across the five asset categories:

a) Australian Equity General Funds

Fund Category	Weighting	1 Year	3 Year	5 Year
ASX 200 Accumulation	Benchmark Index	17.41%	10.37%	11.19%
Australian Equity General	Equal Weighted	16.83%	10.17%	10.59%
Australian Equity General	Asset Weighted	17.21%	11.13%	11.40%

Contrary to popular belief, the findings suggest large funds in Australian equities have better returns than smaller ones, because the asset weighted returns were higher than the equivalent equal weighted returns across one, three and five years by 0.38%, 0.96% and 0.81% respectively.

81% of managed funds in this group survived the five year period.

b) Australian Equity Small-Cap Funds

Fund Category	Weighting	1 Year	3 Year	5 Year
ASX Small Ords	Benchmark Index	13.12%	(2.94)%	3.43%
Australian Equity Small Cap	Equal Weighted	20.40%	7.93%	13.38%
Australian Equity Small Cap	Asset Weighted	20.00%	8.75%	13.71%

Only 8% of small cap funds failed to beat their comparator indexes across a one or three year period, and 17% across a five year period. Over all periods the investment returns from actively managed small cap funds held a massive lead over the comparator index.

83% of funds in this group survive the five year period, the highest of all the groups used in the Scorecard.

c) International Equity General Funds

Fund Category	Weighting	1 Year	3 Year	5 Year
Developed Ex-Aust. LargeMidCap	Benchmark Index	20.85%	17.23%	12.12%
International Equity General	Equal Weighted	18.39%	14.69%	10.46%
International Equity General	Asset Weighted	18.38%	15.83%	10.92%

The first Summary Table above showed the percentage of actively-managed international equity funds failing to beat the index was the highest of any asset class across one, three and five years at 79%, 88% and 86%. When 8 or 9 out of every 10 managed funds fails to beat their index, it suggests the markets are so well researched that it's tough to gain an edge after fees.

Only 78% of funds in this group survived more than five years, the lowest survivorship recorded of the groups used in the scorecard.

d) Australian Bond Funds

Fund Category	Weighting	1 Year	3 Year	5 Year
Australia Fixed Interest Index	Benchmark Index	6.33%	7.27%	7.12%
Australia Bonds	Equal Weighted	5.62%	6.37%	6.99%
Australia Bonds	Asset Weighted	5.79%	6.85%	7.35%

The Summary Table above showed the percentage of managed bond funds failing to beat their index respectively across one, three and five years was 80%, 87% and 67%.

Bond indexes are also not truly replicable which limits the useability of the data. Over a five year period the performance return difference of around 0.2% between a bond fund and a hypothetical bond index is extremely small, considering fees have not been deducted from the hypothetical bond index. Managed bond funds had a survivorship rate of 82% for a five year period.

e) Australian Equity A-REIT Funds

Fund Category	Weighting	1 Year	3 Year	5 Year
Australia Equity A-REIT	Benchmark Index	11.05%	15.27%	14.32%
ASX 200 A-REIT	Equal Weighted	11.26%	14.48%	13.42%
ASX 200 A-REIT	Asset Weighted	12.52%	14.96%	13.86%

The Summary Table showed the percentage of actively managed A-REIT funds that failed to beat their comparator index across one, three and five year periods was 55%, 80% and 79%.

The A-REIT index recorded the strongest investment return over a five year period of all the asset classes at 14.32%. Asset weighted returns were above equal weighted returns suggesting that larger A-REITS perform better than smaller ones. Over a five year period 79% of A-REIT funds survived, which is lower than the survivorship rates of either domestic equity or bond funds.

Tough finding good active managers

The SPIVA numbers once again demonstrate how difficult it is to identify active managers who justify their fees, other than in the small cap space. While no doubt there are talented asset managers who do outperform their index, by far the majority do not. The challenge for the investor who wants alpha above the market beta is to find a way to identify the minority of managers who add value over time. Many can do it for a short period, but investing is a long term activity.

Les Goldmann has over 20 years' experience as a Chartered Accountant, and his roles have included freelance journalism, shareholder advocacy for the Australian Shareholders Association and senior roles in the commercial and non-profit sectors.

Set yourself early to benefit from compounding

Noel Whittaker

Recently I wrote that a person aged 25 and earning \$35,000 a year may accumulate \$4 million in superannuation at age 65 just by relying on the employer compulsory contribution.

This resulted a flood of emails asking if I had made a mistake in the calculations as the outcome seemed too good to be true.

There was no mistake – it was just compound interest doing its work. To put it simply, how much you will have at the end of a given period depends on the time the money is invested and the rate you can achieve. If the term is short, the rate matters little, but as time lengthens it matters enormously.

To get an estimate of how much a 25-year-old could expect at age 65 we need to make certain assumptions. They are the rate of growth of salary, inflation, and a reasonable earning rate. In the example, I assumed inflation was 3% per annum, wages growth was 4% per annum, and the rate of return was inflation plus 7% (historically reasonable but perhaps a tad optimistic now). This gives a nominal return of 10% per annum. I also assumed the employer contribution would rise to 12% by 2020.

An important step for understanding the buying power of the \$4 million is to convert those future dollars to today's dollars. If inflation was 3% per annum, \$4 million in 40 years would have a value of just \$1,212,000 in today's dollars. Yes, still a hefty sum, but doesn't sound nearly as much as \$4 million.

Massive impact of term and earning rate

The big lesson here is the way the rate and the duration of the investment dramatically affect the end balance. Suppose a person invested \$1,000 a month towards their retirement. If they started at 25 they would have \$6.3 million at age 65 if they could achieve 10% per annum. However, the final sum would be just \$2 million if they only achieved 6% per annum.

If a person waited until they were 45 to start the programme, and still managed to invest \$1,000 a month they may have \$760,000 at 10% and \$462,000 at 6%. Because the term is much shorter the lower earning rate does not have such a dramatic effect.

The importance of getting the best return on your superannuation is particularly important now that employer contributions are not going to increase as fast as originally planned. Recently the media have been focusing on the effect a reduction in the employer contribution would have on their final balance, but it's small bikkies in the scheme of things. For a person earning \$80,000 a year the net employer contribution after the 15% entry tax would be \$6,460 at 9.5% of salary and \$8,160 at 12% of salary. The difference is just \$1,700 a year.

Engage with your super early

I regularly receive emails from young people whose superannuation is all in the capital stable or balanced area. This is inappropriate for anybody under 50. To make matters worse the majority of SMSFs have no exposure to international funds at all. Obviously the trustees have never bothered to check out funds like Magellan (Global Fund) and Platinum (International Fund), which have strong track records of delivering good returns.

A major finding of the [Cooper Review](#) into superannuation was that 80% of Australians were 'disengaged with their super'. If you find yourselves in that 80%, my advice to you is to start to get engaged. You've just seen how a small difference in the rate of return or starting earlier can make a huge difference to the amount you will have when you retire.

Noel Whittaker is the author of Making Money Made Simple and numerous other books on personal finance. His advice is general in nature and readers should seek their own professional advice before making any financial decisions. His website is www.noelwhittaker.com.au.

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