

EXAMINING THE EQUITY HOLDINGS *of Australian superannuation funds*

JUSTIN WOOD, Vinva Investment Management

Australian superannuation funds have a high exposure to equities and growth assets by international standards, raising some concern that members face too high a level of investment risk. The asset mix reflects members' risk appetite on average and trustees' design choices. This paper argues that industry allocations to equities and growth assets may not be too high considering the defined contribution nature of schemes, the preference for allocated pensions rather than annuities and the design of Australia's taxpayer-funded age pension.¹

Most superannuation assets in Australia are held in defined contribution (DC) schemes in which members rather than a sponsor directly bear the consequences of investment risk.² In addition, most members retain investment risk through to the pension phase, with the majority of retirees choosing an allocated drawdown approach or lump sum rather than the purchase of an annuity. With members as the primary risk bearer, their other assets are important to their risk appetite and the optimal asset mix of the superannuation component of their wealth. In particular, the taxpayer-funded age pension allows superannuation funds to carry more risk than would be the case without this support.

Risk is an emotive issue for investors, particularly for retirees who can be very averse to losses in even one component of their portfolio, irrespective of the impact on their total wealth. While Australians have the ability to select their superannuation provider and to select the investment strategy which they employ, the majority fail to exercise this choice and are invested in 'default funds' where the asset mix is determined by trustees and not the member.^{3,4}

New trustee obligations apply from 1 July 2013 for providers of default funds under new MySuper legislation. The legislation provides that, 'in determining the risk appetite for the investment of its MySuper assets, a trustee may consider the age of members *as well as other relevant factors*' (emphasis added).⁵ This paper argues that a member's pension withdrawal plan, their assets outside super and the characteristics of the age pension are all *other relevant factors* that trustees might consider in meeting their obligations.

The remainder of the paper provides a framework in which asset allocation can be determined by risk management or hedging objectives in addition to wealth maximisation. The hedging objective is influenced by the nature of the pension contract and we consider the asset allocation implications of alternative retirement preferences. The other assets of the risk bearer are important for overall risk management. In DC schemes where members choose an allocated pension in retirement, the members' other assets and their claim on the age pension can have an impact on their risk appetite and overall asset mix. We provide estimates of the value of the age pension and the other assets of Australian retirees and compare the asset allocation approaches within several countries to show how the framework above could explain the higher level of equity exposure in Australia.

A proposed framework

The principles of asset-liability management indicate that the asset mix of any fund will depend upon how the funds will be used. For example, a defined benefit (DB) superannuation fund may plan to provide an inflation-protected lifetime pension. A DC fund may plan for the purchase of a life annuity at retirement or the member may plan to draw down the savings via an allocated pension over their retirement period.

Portfolio theory indicates that the risk and return of the total portfolio is more important than outcomes of specific assets or sub-components of the total portfolio. For this reason, the superannuation asset mix should take into account the other assets of *the risk bearer*. Hence, retiree outcomes will depend on their total wealth and not just their superannuation. DB and

annuity outcomes will depend on the sponsor's total resources and not just their pension or annuity fund assets. Consistent with this, many DB systems prevent funds from investing in the company's own equity. Some other assets are non-tradable but nevertheless represent important resources that can be used to support the member in retirement. Scherer (2012) outlines an asset allocation framework with shadow assets, which he defines as '(mostly) nonfinancial and nontradable assets that are exogenous to the investor's asset allocation decision'.⁶ This perspective poses several problems for trustees. First, it is often not possible to get reliable data on other assets for members such as the value of their human capital. Second, even for financial assets, individual member data is seldom available, so in fund design we consider the extent to which broad industry averages might be used. Third, some non-superannuation assets are tradable and hence members can change their wealth risk profile outside the superannuation fund as their personal circumstances change. Fourth, even in DC schemes, members are not the sole 'risk bearer' to the extent that fund providers and taxpayers carry some risk. Nevertheless, we believe that ignoring these other assets entirely leads to an inferior outcome for members and a misunderstanding of the dynamics of the industry.

Given this framework members, or trustees acting in their best interests, will set the asset allocation in the superannuation fund with two objectives in mind: wealth maximisation; and hedging or risk management. Risk management will favour assets that hedge uncertainties in the liabilities or that complement the risk of non-traded assets and even traded assets of the risk bearer that are held outside the superannuation fund.

Asset allocation implications of alternative retirement preferences

The framework above indicates that two objectives, wealth creation and/or hedging, will determine the mix of superannuation assets. The wealth creation objective will cause some demand for assets that can be expected to offer risk premiums for broad economic risks. This is a key reason why the industry holds equities and other growth assets.

The risk management or hedging objective depends on the identity of the risk bearer, the nature of the spending plans and the other assets of the risk bearer. We consider the asset mix implications of three alternative superannuation schemes and retirement plans.

1. A DB scheme paying a lifetime pension

Here the primary risk bearer is the sponsor of the DB plan even though the member is the prime beneficiary. In the case of a corporate DB scheme,

a non-fund asset of the sponsor is the market value of the company's equity that can be used to support increased contributions if the fund should experience a deficit. For risk management reasons, the asset mix of the DB fund might be expected to recognise company equity as a shadow asset and hence the pension fund may reduce exposure to equity and increase exposure to defensive assets. However, many other factors can have an impact on asset allocation, some of which may tend to increase equity exposure in DB funds. For example, if the corporate sponsor has a greater risk tolerance than individual members in a DC fund, the corporate DB fund may have higher exposure to equities and other growth assets. If the pension commitment is to pay a lifetime inflation-protected pension, the present value of the promise is interest rate sensitive and hence asset-liability factors will favour exposure to defensive assets to immunise against interest rate risk.

2. A DC scheme where members draw down their savings throughout retirement via an allocated pension plan

Here the primary risk bearer is the member. The member's other assets include their income-earning potential, their non-superannuation assets and their claim on the age pension. If these other assets have significant equity risk, the superannuation fund may favour defensive assets but if these other assets have the characteristics of defensive assets, the superannuation fund may favour growth assets and equities. An allocated pension makes withdrawals from the accumulated savings over the full retirement period. To hedge economic uncertainties over this full period, the fund might be expected to hold a diversified balance of assets with exposure to broad economic risks.

3. A DC scheme where members purchase a lifetime annuity at retirement

Here the primary risk bearer in the accumulation phase is the member, with the risk being transferred to an insurance company when the lifetime annuity is purchased. Hence, initially, the asset mix of the accumulation fund will be similar to (2) above. However, as the date of retirement approaches, the member will seek to reduce the risk of adverse interest rates movements and the asset mix will reduce equity and growth asset exposure and increase exposure to interest rate sensitive instruments. After the annuity is purchased, the insurance company is the risk bearer and the asset mix might be similar to a company paying a lifetime pension under a DB scheme. The asset mix is expected to have limited equity exposure and greater exposure to assets that immunise the fund against real interest rate risk.

This analysis suggests that the asset allocation to hedge the purchase of an inflation-protected life

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annuity will have more interest rate sensitive assets and less equity exposure than the asset allocation to support an allocated pension throughout retirement. It also indicates that since the shadow assets of a company DB scheme are equity-like, the superannuation fund might invest in more debt assets while the shadow asset of Australian workers who receive the age pension are debt-like and their superannuation fund might invest more in equities. Both for liability hedging and shadow asset reasons, countries with predominantly DB pension plans or where the majority of retirees purchase annuities will tend to hold more fixed income securities and less equity than countries with DC funds, an allocated pension plan in retirement and a basic taxpayer-funded age pension support scheme. Most Australians belong to a defined contribution scheme and choose an allocated pension or a lump sum withdrawal rather than the purchase of an annuity.⁷ This makes scenario (2) above the most applicable to Australia while (1) or (3) is most applicable in many other countries.

The characteristics of other assets of Australian retirees

The other assets of Australian members of DC superannuation funds include their human capital (income earning ability), the equity in their own home, household assets and durables, non-superannuation financial assets, the net asset value of any investment property and the present value of their future claim on the age pension. For the purposes of this analysis we exclude members' human capital, their own home and household assets, and we consider only non-super financial assets, investment property and the value of the age pension. Home ownership is high for retirees, with 84 per cent of households owning their own home, where the reference person is aged 65–74 years and 85 per cent where the reference person is aged 75+ years.⁸ This secure base provides extra capacity to bear risk in the superannuation fund and hence omitting the member's own home from the other assets is unlikely to bias the analysis towards equities and, in fact, makes the total wealth exposure to equities appear even higher than it is.

Valuing the age pension

The age pension is currently paid to eligible retirees aged 65 years and older.⁹ The full pension plus basic

supplement is \$20,088 p.a. for a single retiree and \$30,285 p.a. for a retired couple. Eligibility is means-tested through both an income and an asset test, and retirees with incomes or assets above set thresholds receive only a part pension. At some maximum threshold, retirees are no longer eligible for any age pension. For example, a retired couple owning their own home can have \$273,000 in assets in addition to their home before losing access to the full pension and \$1,050,000 in assets in addition to their home before losing access to the part pension.

Rice Warner estimates that in 2011 approximately 46 per cent of retirees received the full pension, 31 per cent received a part pension and 23 per cent of retirees were self-funded.¹⁰ As retirees age, their reliance on the age pension increases with 51 per cent of retirees aged 75 years receiving the full pension compared with only 26 per cent of retirees at age 65. A government pension is the main source of income for 58 per cent (75 per cent) of households in the age 65–74 (75+) bracket and a government pension represents >90 per cent of gross income for 35 per cent (51 per cent) of these households, respectively.

To place an estimate on the present value of the full age pension for a single female, single male or a couple requires inputs on the probability of surviving another year from the current age, the current level of age pension, the assumed real growth in age pension payments and the real discount rate appropriate for the risk of the pension promise by the Federal Government. Table 1 provides estimates of the values for retirees aged 65, 69, 75, 81 and 85 years.

TABLE 1: Present value of age pension (\$'000)¹¹

AGE	FEMALE	MALE	COUPLE	COUPLE PER PERSON
65	436	377	678	339
69	293	346	542	271
75	268	226	424	212
81	152	181	292	146
85	132	113	219	109

Other financial assets

ABS statistics indicate that the average other financial assets of households, where the reference person was aged 65–74 years at 2009–10, was \$116,000. This can be compared with the average amount of \$176,000 in superannuation for the same households. Wealth is not evenly distributed across the whole population, with the top 20 per cent of households holding 70 per cent of the total household net worth excluding their own home. Hence the bottom 50 per cent of households in the 65–74 year age bracket are likely to hold less than the \$116,00 average in financial assets. For households with the reference person aged 75+ years, the average holdings of other financial assets were \$150,000 compared with only \$64,000 in superannuation.¹²

The average age of the representative person and the average number of adults in each household is: 69 years and 1.9 for households aged 65-74 years; and 81 years and 1.4 for households aged 75+ years. Using the estimates for the values per person for a couple with ages 69 and 81 from Table 1, we can estimate the value of the full age pension to households aged 65-74 years as \$515,000 and for households aged 75+ years it is \$204,000.

Investment property

The average holding of investment property net of investment loans at 2009-10 was \$125,000 for households where the reference person is 65-74 years and \$62,000 where the reference person is 75+ years.

This summary shows that, for retirees with below-average wealth who are likely to represent the majority of members in default funds, the following summary facts will apply:

- > they will tend to claim the full age pension
- > the value of this claim on the age pension will dominate their private assets in superannuation and outside superannuation excluding their own home
- > the value of non-superannuation financial assets and net investment property will, as a first approximation, roughly equal the value of their superannuation savings.

ABS statistics indicate that retirees, for whom government pensions represent > 90 per cent of gross income, have only 12 per cent of their non-superannuation financial assets in equities and their own incorporated business. In contrast, more wealthy retirees for whom government pensions represent less than 1 per cent of gross income have 60 per cent of their non-superannuation financial assets in equities and their own incorporated business. This indicates that the other assets of less wealthy retirees are mostly invested in defensive assets.

Asset allocation across selected countries

Asset allocation data, prepared on a consistent basis across countries, is hard to obtain.¹³ In Table 2 below, the percentages in equities and in bills, bonds and

cash (i.e. defensive assets) for five selected countries are shown using data from a Towers Watson global pension asset study published in 2013.¹⁴

We have argued above that shadow assets of the primary risk bearer and the nature of the liability or pension drawdown will influence the asset allocation. For countries with high levels of DB, the primary risk bearer is not the member and hence fund asset mix will not be influenced by the nature of any taxpayer-funded basic pension. For example, Canada has an Old Age Security pension and Guaranteed Income Supplement that is similar in size to Australia's age pension but these are assets of members and not the DB sponsor and hence are not relevant to the asset mix of the pension funds in that country.

In the US, the DC component of the pension industry is a relevant comparison for Australia. The US Social Security support acts in a similar fashion to Australia's age pension and the other assets and home ownership of US residents are likely to be similar to those of Australian residents.¹⁵ The USD 3 trillion US 401(k) market at the end of 2010 has a relatively high equity exposure with 20-year-olds having a 74 per cent equity exposure and even 60-year-olds having a 49 per cent equity exposure.¹⁶

Conclusion

Australia has relatively high levels of equity in super when compared with most other countries. Australia also has a relatively high commitment to DC schemes. Differences across countries as to who bears the risk and the nature of the other assets of the primary risk bearer make asset allocation comparisons between countries complex. Even countries that have a similar commitment to DC schemes can have a very different level of annuitisation at retirement to Australia. Overall, Australia's relatively high level of equity holdings appears justified when the large preference for DC schemes, the low level of annuitisation at retirement and the nature of the taxpayer-funded inflation protected life annuity, termed the age pension, are taken into account.

Most members of default funds, where trustees set the asset allocation, are likely to have a claim on

TABLE 2: Asset allocation across selected countries 2012

COUNTRY	AUSTRALIA	USA	CANADA	JAPAN	NETHERLANDS
% Equity	54	52	43	35	27
% Bills, bonds and cash	23	27	35	58	57

TABLE 3: DB/DC split across selected countries 2012

COUNTRY	AUSTRALIA	USA	CANADA	JAPAN	NETHERLANDS
% DC	81	58	4	2	6
% DB	19	42	96	98	94

Source: Global Pension Assets Study 2013, Towers Watson.

the age pension that will swamp the value of their superannuation savings. They will also tend to have other assets with low equity exposure. This implies that despite a relatively high proportion of equity exposure in default funds, the overall equity exposure measured across the total resources available to support retirees, excluding their own home, is much more modest. ■

Notes

1. I would like to thank Andrew Jackson, Adrian Looi, Danny Lo, Ciaran McBride, Rob Reeves, Allan Wood and Graham Wood for useful comments and suggestions on earlier drafts. A version of these ideas was distributed to clients of Vinva Investment Management in November 2012 and was also presented at the Conference of Major Super Funds (CMSF) in Brisbane in March 2013.
2. The Towers Watson *Global Pension Assets Study 2013* puts the proportion of DC assets in 2012 at 81 per cent. This study is available at <http://www.towerswatson.com/en-ZA/Insights/IC-Types/Survey-Research-Results/2013/01/Global-Pensions-Asset-Study-2013>
3. Then Senator and Minister for Superannuation and Corporate Law Nick Sherry indicated that over 80 per cent of members do not exercise choice. Sherry, N 2008, *Launch of the Australia Institute Report, Choice Overload: Australians Coping with Financial Decisions*, Melbourne Conference Unit Consumer Law Action Centre, Melbourne.
4. For more on the important debate regarding default design, see Gallery, N, Brown, K and Gallery, G 2004, 'Superannuation choice: The pivotal role of the default option', *Journal of Australian Political Economy*, vol. 53, no. 2, pp. 44-66 and Basu, A and Drew, M 2009, 'The appropriateness of default investment options in defined contribution plans: Australian evidence', *Pacific Basin Financial Journal*, vol. 18, no. 3, June, pp. 290-305.
5. *Superannuation Legislation Amendment (Trustee Obligations and Prudential Standards) Act 2012*, Explanatory Memorandum paragraph 1.29 (Schedule 1, item 9, paragraph 29VN(d)).
6. Scherer, B 2012, 'Asset allocation with shadow assets', *The Journal of Wealth Management*, winter, pp. 30-5.
7. While current numbers may be slightly higher, only 3 per cent of retirees were estimated to purchase life annuities. See, Doyle, S, Mitchell, OS and Piggott, J 2004, 'Annuity values in defined contribution retirement systems: Australia and Singapore compared', *The Australian Economic Review*, vol. 37, no. 4, pp. 402-16
8. Australian Bureau of Statistics, Catalogue 6554.0, *Household Wealth and Wealth Distribution, Australia, 2009-10*, available at www.abs.gov.au
9. Eligibility for women is currently 64.5 years of age. From 1 January 2014, eligibility will rise for both men and women to age 67 by 2022.
10. RiceWarner Actuaries 2012, 'Reforming the age pension', *Touchstone*, August, pp. 1-16. This ignores Department of Veterans' Affairs pensioners and pensioners over 65 who are still working.
11. Calculations use ABS *Life Tables Australia 2009-11*, age pension payments at March 2013, a real interest rate of 1.5 per cent p.a. and an assumed real growth in the age pension of 1.6 per cent p.a.
12. This suggests that many retirees take their superannuation as a lump sum, depleting their superannuation and increasing their other financial assets.
13. The OECD 2012, *Pension Markets in Focus*, no. 9, September, indicates that for 29 selected OECD countries in 2011, Australia had the highest allocation to equities across all countries.
14. Towers Watson, *Global Pension Assets Study 2013*, available at <http://www.towerswatson.com/en-ZA/Insights/IC-Types/Survey-Research-Results/2013/01/Global-Pensions-Asset-Study-2013>
15. Fraser, SP, Jennings, WW and King, DR, 'Strategic asset allocation for individual investors: The impact of the present value of social security benefits', *Financial Services Review*, vol. 9, no. 4, pp. 295-326.
16. Investment Company Institute 2012, 'Retirement and Education Savings' in *Investment Company Fact Book*, 52nd edition, available at http://www.icifactbook.org/fb_ch7.html