

Superannuation asset allocations and growth projections

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0 Key points

- The superannuation system will inevitably become the channel through which a large part of Australia's savings are directed
- The pool of superannuation assets will grow faster than the economy, and decisions about how it is invested will play an important part in shaping the economy
- Compulsory superannuation will add to national savings reducing our dependence on net foreign capital inflow
- Lower reliance on foreign capital will occur and deliver higher levels of domestic ownership
- As superannuation grows larger, it will create demand for non listed equity investment. This demand is likely to drive the supply of securitised assets
- The superannuation sector had \$215b in deposits at banks by September 2013. That constitutes some 14.2 per cent of the funds in the super system
- Compulsory superannuation will change the flow of funds within the economy, and by diversifying investments raise returns and lower risks
- Three types of funds – industry, retail and self-managed (SMSFs) – will absorb almost all the growth
- The rapid growth in SMSFs seems likely to slow to keep pace with the system
- As they mature, SMSFs are likely to rotate their allocations closer to those of the other funds although, since they have older clients, their allocations will always be more domestic-focussed
- This switch is important because of differences in the SMSF asset allocations, particularly the high allocation to cash and low allocation to offshore
- Home country bias is likely to fall across all fund types
- Superannuation funds will continue have a strong demand for Australian equities
- Demand for Australian assets should be met by an increase in the supply of suitable assets in which funds can invest
- There are two obvious sources of additional investable funds:
 - From governments, which own many mature assets suitable for fund investment. Budgetary pressures make it probable this will occur
 - From banks, which hold many assets on their books which could be on-sold. Basel III regulation makes this more likely
- Funds will also seek alternative assets to take advantage of their status as long term, patient investors
- As they grow, funds will need to acquire additional skills to manage large positions and a wider spread of assets.

1 Introduction

The funds under management held by the superannuation sector have grown much faster than the economy. The Super System (Cooper) Review put this in perspective, suggesting that the pool had been equivalent to 47 per cent of GDP in 1996, was 90 per cent of GDP in 2009 and was expected to reach 130 per cent of GDP by 2035.

This is a somewhat unfair comparison since the superannuation pool is a stock of wealth while GDP is a flow of income. However the stock of superannuation funds under administration/management has also grown faster than some other stocks although the comparison is far more equal.

The total stock of wealth of the society is a very broad concept, and extremely difficult to measure given the importance of human capital, intellectual property etc. To some extent we all trade off financial capital for human capital for example, and quite explicitly, through the HECS scheme. This paper abstracts from those effects. Our focus is limited to the accumulation of financial assets and other assets which are easily transformed into financial wealth.

For our purposes, the comparison of the stock of funds in the superannuation system is the value of the housing stock, the stock of banks assets, the market capitalisation of the ASX, and the value of government bonds on issue. Clearly there are overlaps between the categories but they provide some feel for the size of the different pools in a way which is more relevant than comparing them to income.

Figure 1.1: Size of different pools of assets (\$t, June 2013)

Super	Housing	ASX	Bank assets	Govt bonds
1.62	4.56	1.35	3.28	0.48

Sources: APRA Superannuation Bulletin June 2013; RBA statistical database

For some purposes the absolute size of the sector is important. Cooper for example, was particularly focused on economies of scale so that much of his report is concerned with the twin effects, of increasing the volume of funds and on the ongoing process of consolidation, in order to derive trends in costs. This concern was fundamental to his final recommendations.

Regulators too have clearly been concerned about the growing size of the self-managed sector. Much of the sector is prudentially regulated by APRA but the most rapidly growing element is outside its regulatory ambit. One question which the Murray Inquiry will consider is whether there are issues of systemic concern arising from the increasing size of the SMSF sector.

The focus too of this paper is on size. The central question we ask is what is the likely impact on the financial sector of the projected growth in the funds in the superannuation pool? Essentially where does superannuation fit into the structure of the financial system in the long term?

2 Projections of superannuation assets

Production is the most important driver of potential wealth, and the rate of accumulation out of income the most important factor shaping how much of its potential any cohort actually accumulates. There are three ways of achieving security in old age. Essentially they all involve storing current production for future use.

2.1 Three ways to fund retirement

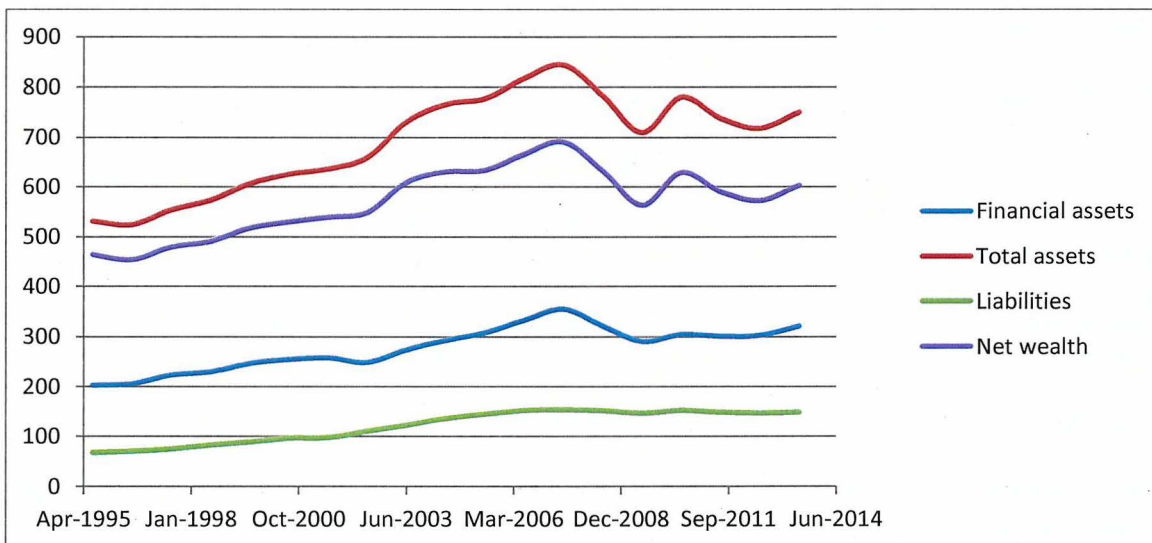
The purchase of a house which then produces a stream of benefits into the future has been a fundamental choice of Australians. Current taxation arrangements which exempt one's principal residence from capital gains favour this form of saving and seem likely to do so into the future. Any analysis of the accumulation and use of stored wealth must address the issue of the extent to which wealth is accumulated in the form of housing.

However housing wealth is not enough. Most importantly it is not easily accessible for the purchases of goods and services. It is lumpy, indivisible and expensive to transact for.

The second method of securing spending and consumption into one's old age is through a social contract, wherein each cohort promises to fund its predecessor's retirement. This is the essence of pay-as-you-go pension schemes (but also of more traditional models where support was provided within the family). It seems probable that Australia will retain an element of the PAYG model, with the public pension providing an annuity-style minimum pension subject to quite strict income and asset testing. We will not address public pensions in this paper but logically the terms and conditions applied to this annuity should logically impact on individuals' savings choices.

The third option is to accumulate a pool of assets which can be exchanged as necessary to fund one's future consumption. Australia has mandated this model and some of the success of the model is apparent from the Figure below. Net assets have clearly grown much faster than income, with financial assets having made an important contribution.

Figure 2.1: Households' net wealth positions (as % of disposable income)



Source: RBA statistical database (June)

2.2 Projections of size (with caveats)

There are a wide range of estimates of the size of the mandated superannuation system. Again taking Cooper as the starting point we get a figure of about \$6t by 2035, or about \$3.2t in 2009 dollars.

Figure 2.2: Cooper projections of size (including SMSFs)

	1996	2009	2035 nominal	2035 current
Overall industry scale	\$245b	\$1100b	\$6100b	\$3200b
Ratio of accumulation to post-retirement assets		4:1	3:1	3:1
Biggest fund		\$41b	\$350b	\$187b
Number of large funds	4734	447	74	74
Average large APRA fund	\$0.04b	\$1.5b	\$53b	\$28b
Average accumulated member balance	\$15,000	\$70,000	\$335,000	\$180,000
Proportion of GDP	47%	90%	130%	130%

Source: Cooper Report

The projection of the size of the sector is particularly difficult. Even to arrive at a reasonable ballpark estimate one needs to consider the returns achieved, contribution rates, labour force participation including retirement rates, the forms of benefits paid, tax rates at various stages, and fund expenses, with a fundamental additional difficulty being the propensity of the government to change the rules.

It is quite notable in this context to consider Knox's estimates from the mid-nineties (Knox 1995). In a very careful piece of work he estimated that the pool of superannuation assets would reach \$750 billion by 2010, and be equal to some 66 per cent of GDP. He then extended this to 2030 when he expected the pool of assets would be worth \$2.4 trillion and at 65 per cent of GDP. His forecasts were undermined by changes to government policy, and by better asset performance than expected. This should serve as an important learning about how difficult it is to forecast the accumulation of superannuation assets into the future.

The risk is reflected in the diversity of forecasts made recently.

Figure 2.3: Various alternative projections

	Forecast date	Assets	Assets to GDP %
Deloitte	2033	\$7.6t	180%
Deloitte (5yr longer working)	2033	\$8.6t	198%
Cooper	2035	\$6.1	130%
Treasury (2008)	2030	\$5.1	140%
Rice Warner	2028	\$3.3	

Source: Cooper Report, Deloitte (2013), Treasury IGR Paper, Rice Warner

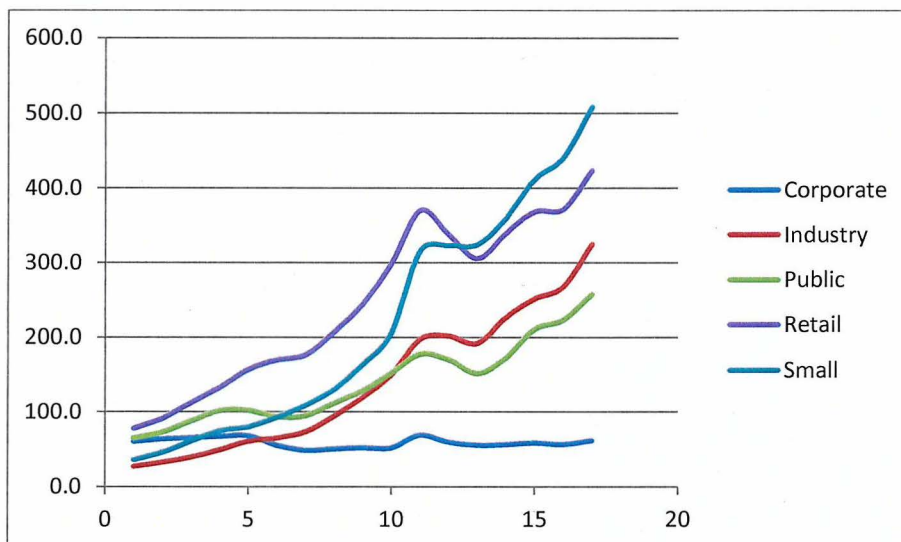
The clear consensus is of course that assets within the superannuation sector are going to continue to grow faster than the economy.

It is important to remember that these are relatively mechanistic projections. The superannuation pool is a set of claims on the underlying assets, a set which individuals have accumulated with the primary intention of consuming in the post-retirement phase of their lives. As such the pool of assets should reach a plateau if the population structure is stable. The very rapid phase of growth we have seen to date is a reflection of the immaturity of the system with most retirees not having had access to the system for the whole of their working lives. With the system having become widespread in the early 1990s, we can expect 'excessive' growth to continue until about 2040 when most new retirees will have had access to (a fairly mature form of) the system for all of their working lives.

2.3 The particular role of SMSFs

While there have been a number of attempts to project the size of the superannuation pool into the future, less effort seems to have been put into projecting its composition. The dominant question arising from Figure 2.4 concerns how will the growth of the self-managed sector (SMSFs, 'Small' in the Figure) evolve?

Figure 2.4: Growth of different fund types (\$b)



Source: APRA statistical database (June)

The reasons for the growth of the self-managed sector are not completely clear. The reasons usually cited include: control, cost, performance and the ability to borrow within the fund. SMSF operators tend to be older and richer than other fund members.

The cost advantage of SMSFs should decline. Cooper found that the costs of SMSFs were about 1 per cent of funds under management, comparable with industry funds, and clearly putting pressure on the rest of the industry to match that level. Such convergence seems likely over time so the cost advantage will disappear, with MySuper investment options potentially coming in well below that cost level. Consequently SMSFs may finish up being more expensive than some default options which will reduce their appeal although this will be offset to some extent as businesses find ways of reducing the cost of SMSFs as well.

SMSF performance is also likely to deteriorate as SMSFs have been fortunate to date in their portfolio allocations. The period when the Australian dollar was rising relative to other currencies, and when other markets were badly hit by the GFC, removed most of the benefits of having an internationally diversified portfolio of the sort run by professional managers. We now appear to be entering the phase when the reverse is likely to be true. The Australian dollar is falling so offshore assets become relatively more valuable, and foreign markets seem likely to outperform Australia, reinstating the advantages of diversification.

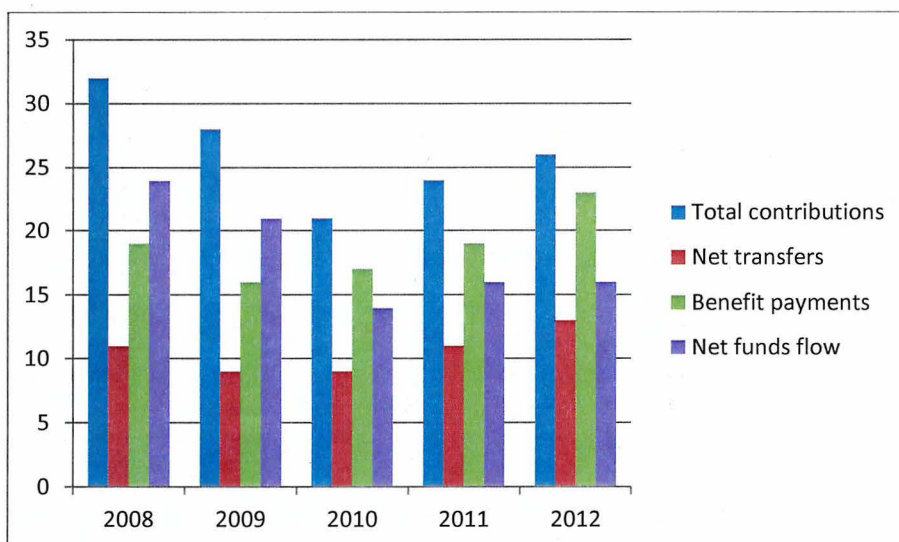
Demography too works against them. Since most SMSF owners are older than other fund members, the SMSF pool of assets is likely to be reduced as funds are run down in the retirement phase. Indeed older trustees may prefer to roll their funds back to professional managers as they age and lose confidence in their ability to manage the funds themselves. There is an offsetting tendency here as well as younger people have started to set up such funds.

Policy has also shifted against SMSFs as it becomes harder to put funds into them as limits have been tightened, and the window created by Peter Costello in the 2006 budget, and which accelerated contributions, seems unlikely to be repeated.

While these forces are difficult to evaluate, and we have no data with which to assess them, it seems sensible to assume that the growth rate of funds managed within SMSF structures will slow to about the same size as the overall pool, stabilising their share of the pool.

The recent ATO data (Figure 2.5) tends to support this view. While net flow into SMSFs is positive, the rate of growth has slowed and benefit payments have risen sharply. This slowdown is also reflected in the Deloitte (2013) model. It sees the share of funds inside SMSFs as falling slightly from 33 per cent in 2012, to 30 per cent in 2022, and finishing at 31 per cent in 2032.

Figure 2.5: Breakdown of SMSF fund flows



Source: ATO (2013)

Obviously this is not the only possible outcome for the evolution of SMSFs. It is possible that the desire for control of one's superannuation will continue to drive above-system growth. My central point is that the SMSF sector has operated with strong tailwinds over the last decade and that a wide range of factors are now likely to operate against the sector's continuing rapid growth. Nobody knows how the different forces will balance out but it does not seem appropriate to project growth to continue at the same rate we have seen over the last decade.

2.4 Role of ageing

There is a widely shared view that older investors will generally prefer a less volatile portfolio, usually thought of in suggesting a move away from equities and towards bonds. There is little evidence of this in Australia to date, and some international evidence that there is little difference between allocations in the accumulation and the pension phase.

The Australian Tax Office data for example suggests that SMSF funds in the accumulation phase hold 28.6 per cent cash and 29.2 per cent listed shares, while in pension model they allocated to 28.8 per cent to cash and 34.3 per cent to listed shares. This is a very general observation; households are very slow to change the allocations of their funds.

The structure of MySuper schemes seems likely to build-in an age bias, whereby portfolios are deliberately tweaked to become more conservative with age: gradually moving allocations towards more defensive stances with age. This effect too will be very gradual. Most of the recruits into MySuper are likely to be young and so the portfolios they are put into initially will be quite aggressive.

There is however a separate issue which concerns the extent to which the changing demographic structure will impact the returns to different asset classes, most particularly the returns to housing. Since a large part of the Australians' assets are in housing, a change in its relative price could have broader concerns. Empirically however there is very little evidence for this effect. Brooks (2006) finds that "evidence does not point to a strong historical link between demographics and financial markets" and that "[For] Australia, Canada, New Zealand, the UK and the US ... households build up financial wealth well into old age and then do little to run it down in retirement".

The evidence thus does suggest the changing demographic structure will have a limited impact on relative asset prices.

2.5 Trustee responsibilities and directed investment

As the pool of superannuation assets has grown, so has the call for the funds to be forced to allocate more of their funds into favoured asset classes – infrastructure, venture capital, social housing etc. Such rules are both unnecessary and inappropriate.

The very fact that the funds will grow significantly means that the volumes of funds invested in most of these activities will rise automatically. The share may also rise as funds seek to exploit their role as patient investors, willing to reap the benefits of illiquidity. For example, the range of funds available for investment which specialise in start-ups seems likely to broaden and deepen without any need for additional regulation. Scale, and the pursuit of excess returns, should ensure that.

The funds have proven quite comfortable investing in infrastructure, and again the proportion invested is likely to rise. The difficulty with infrastructure lies in the government sector. Mature assets with steady income flows, like electricity business, ports etc, are particularly suitable investments for superannuation funds but many are still owned and controlled by governments. On the other hand, green-field investments, without any track record which can be used for valuation, are more problematic investments for funds. These are the investments government should concentrate on developing (Maddock 2013). Even with such green-field investments we can gradually expect greater involvement from the funds as their funds under management grow relative to the amounts of money required for major infrastructure investments.

A similar process is likely to work with lending to smaller businesses. While it is not clear that funds will or should invest in developing their credit skills to allow them to compete with banks, there is a natural specialisation which will allow funds to compete for more vanilla parts of the lending spectrum and banks will specialise more in place where they have an informational advantage such as small business lending.

The idea that funds should be forced to make investments in areas like social housing is inappropriate. The funds are managing the retirement savings of individual Australians as trustees for those individuals. Any policy which forces funds to invest in low return businesses breaks the trust aspect of the contractual arrangement and works to undermine community support for superannuation. If the investment is attractive on its own terms, then there is no need for compulsion; if not, compulsion will depress the returns to savers and devalue the system. The redistribution of income is best achieved through the tax and transfer system, not by artificially diverting retirement savings to those ends.

3 Superannuation asset allocations

Figure 3.1 Current superannuation asset allocation

	Equities	Overseas	Deposits	Life	Property	Short-term securities	Bonds	Other
	<i>Percentage of FUM allocated to each asset class</i>							
2013	41.2	16.4	14.2	11.2	6.0	5.2	3.6	2.3
	<i>Dollars (t) of FUM allocated to each asset class</i>							
2013	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.0
	<i>Percentage of GDP in each asset class</i>							
2013	42.0	16.7	14.5	11.4	6.1	5.3	3.7	2.3

Source: ABS Managed Funds 5655.0, Table 4, September 2013.

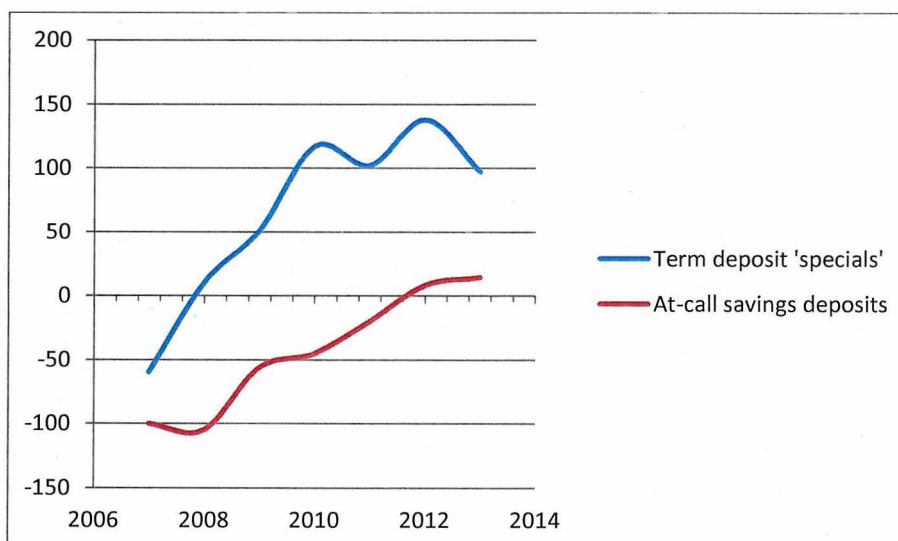
3.1 Explaining the trends in overall allocations

The underlying investment logic is clear. Domestic equity has been a strongly performing asset class for a very long time and the market is both large and liquid (Brailsford et al 2012).

The increasing allocation to overseas is part of a worldwide phenomenon since the liberalisation of global financial markets in the 1980s and 1990s, and reflects a search for the benefits of diversification, particularly as more money is in the hands of profession managers.

The allocation to deposits had been quite stable for much of the period. The advent of the financial crisis saw banks scramble to raise deposits to secure a more stable funding base in place of short term wholesale borrowing. In the process they raised the interest rates they offered quite considerably, so that term deposits returned more than money market funds and hence became a more attractive investment for funds.

Figure 3.2: Deposit pricing relative to BBSW (over money market rates of equivalent maturity)



Source: RBA Financial Stability Review (2013), June.

The declining role played in the pool by life fund reserves however suggests the importance of looking below the top line. The institutional structure of the industry has been changing, and to the extent the different fund-types make different allocation decisions, the nature of the overall impact of the sector on Australian capital markets will change.

Two features stand out from Figure 2.3 in the previous section. First is that small (SMSFs) are growing much faster than the system, and the second that corporate funds are growing much slower than system. The other categories are growing at roughly similar rates – discussed in detail below. That section of the paper, Section 2.3, argued that the rate of growth of SMSFs was likely to slow to a rate comparable with the other two major fund categories.

3.2 Allocations of superannuation funds

Different sorts of funds are making different allocation decisions. Most clear again is the difference between the allocations made by the SMSFs and the institutional funds particularly in relation to their offshore diversification, and in their allocations to cash.

Figure 3.3: Differences in asset allocation by different fund types 2013 (%)

	Industry	Retail	Corporate	Public	APRA Funds	SMSFs	Super Total
Australian shares	29	26	30	22	26	32	29
International shares	25	22	28	27	25	0	17
Listed property	1	4	1	4	2	4	3
Unlisted property	10	2	7	6	7	15	10
Aust. fixed interest	6	15	14	7	9	1	6
Int. fixed interest	5	7	6	7	6	0	4
Cash and TDs	6	14	6	9	8	30	15
Other	19	9	8	18	16	16	16

Sources: APRA Annual Superannuation Bulletin default allocations multiplied up to allow calculation of Total; ATO SMSF database. The numbers are approximate only due to different description of assets. The main issues with SMSFs are allocating unlisted trusts (9%) and managed funds (4%) to 'Other'.

The key point to take from the table is that to understand the way the sector might evolve, and hence how it will interact with the rest of the financial system, we will need to understand

- how the different funds types are likely to grow through time; and
- how these allocations are likely to evolve.

It is clearly difficult to form views as to how the sector will develop when it is subject to such substantial changes as with MySuper and FOFA, but the Deloitte (2013) study conjectures that the proportion of public sector funds and corporate funds will continue their long term decline, losing much of their share almost equally to industry funds and retail funds, while the SMSFs will stabilise their share. For reasons discussed in Section 2, I think this is a reasonable conjecture.

Figure 3.4: Future composition of the industry

	Corporate	Public	Industry	Retail	SMSF
2012	4	16	20	27	33
2022	2	11	25	32	30
2032	1	6	27	35	31

Deloitte (2013)

If this is correct and the growth is shared between the three big fund types, so that they all finish up with roughly equal shares of the system, the overall allocation will depend fundamentally on whether and how the major fund types change their allocations over time.

The current allocations as suggested in Figure 3.4 suggests that the key differentiators are

- The small allocation to offshore equities by the SMSFs

- The heavy allocation to cash by SMSFs and low allocation to bonds
- The investment in unlisted property and alternatives by industry funds relative to retail funds
- The investment in domestic and international fixed interest by retail funds relative to industry funds.

The next section discusses likely future trends in allocations.

4 Commentary on the future asset allocations of superannuation funds

The key factors which will drive the allocations choices made by different types of managers are

- Changes in returns
- Changes in the availability of assets in different classes
- Changes in preferences of clients, particularly as they age
- Changes in scale and hence capabilities of the managers
- Learning.

The largest allocations across the range of manager types are to equities, and particularly to Australian equities. There are really two underlying issues: what is the appropriate allocation to Australia versus offshore, and what is the appropriate allocation to equities.

4.1 Correlations across asset classes

On a risk-adjusted basis, all asset classes should produce quite similar returns. The reason is simply that as soon as investors become aware of any excess return they should divert more assets there, forcing up the price, and bidding the excess away.

Whilst professional investment managers have been instrumental in this outcome, the exception to this has been the self-managed sector which appears to be segmented between sophisticated and rational investors and those who are learning basic investment lessons. As a result it seems probable that SMSFs will gradually converge on an allocation which is much closer to that chosen by professional managers – although the learning and hence the adjustment is likely to take another decade based on the slow adjustment to lower inflation we saw during the 1990s.

The fact that superannuation is a long term investment brings to the Australian market a body of investors who are likely to be more patient. As such we would expect the price of longer term investments to rise relative to shorter ones, normalising the returns. It is not clear that we have seen much of this in the market to date and it may be offset by competition between funds for inflows (and rollovers) when short term performance tends to be excessively influential. The rise in the allocation to alternatives may however reflect part of this effect. This argument suggests the price of alternatives will be more strongly bid in the future.

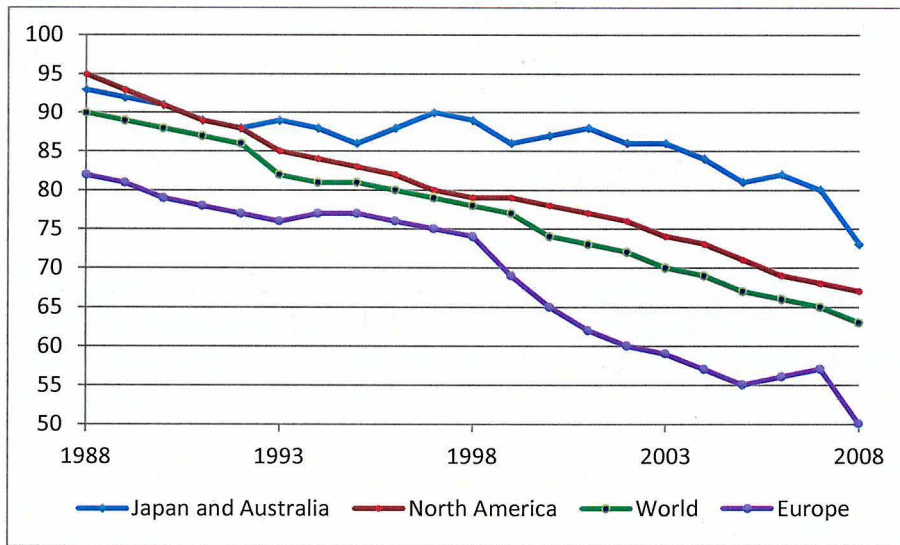
The Towers Watson Global Pension Assets Study 2013 points out that globally there has been little change to the proportion of pension funds invested in equities globally over the last 15 years, but the investment in bonds has fallen to allow a further 14 per cent of the pool to be allocated to alternatives. So the Australian behaviour is consistent with global trends.

4.2 Allocation offshore

The preference for entities to invest disproportionately at home has been something of a puzzle given the standard model of potential gains from diversification. For example, if Australia represents just 1.5 per cent of the world economy, does it make sense for managers to have 84 per cent of their assets invested at home, as suggested by Figure 3.1 above? What is supportive of the standard view is that the trend across a wide range

of countries is for an increased allocation away from home. The trend is widespread (Coeurdacier and Rey 2011).

Figure 4.1: Trend in home country bias (index, % invested at home)



Source: Coeurdacier and Rey (2011)

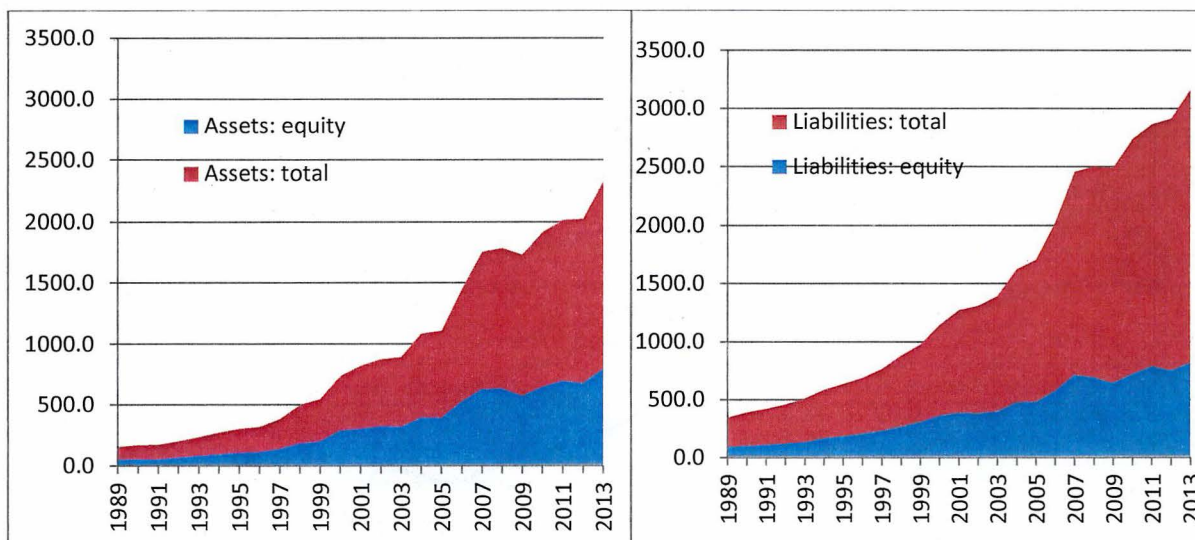
The reasons home bias is still so pronounced are thought to be

- Real exchange rate and non-traded income risks (essentially inflation risk)
- Transaction costs and exchange risk
- Taxation
- Informational reasons and behavioural biases.

Clearly the tendency of each of these factors to impede diversification has declined through time:

- Global inflation rates have tended to move in parallel since the recessions of the early 1990s
- Global currency trading has become considerably cheaper, hedging costs have generally fallen, and the range of products to allow Australians to trade in offshore markets has widened
- Financial globalization has made managers more aware of offshore opportunities and resulted in both learning and familiarization with offshore opportunities (Chin 2005)

Figure 4.2: Financial asset holdings into and out of Australia (\$b)



Source: RBA statistical database

Broadly then, it seems likely that Australians will continue to invest a significant and probably rising proportion of their assets offshore.

As shown above however SMSFs allocate far less outside Australia than do other managers. To the extent that SMSFs grow faster than other manager-types, international diversification will be slower (although as discussed above we expect the rate of growth relative to retail and industry funds to slow). Nevertheless,

- the fall in the Australian dollar will increase the performance of the professional managers (which are usually only partially hedged),
- the normalisation of the world economy will generate the normal benefits of diversification, and
- the rapid development of internationally oriented ETFs and similar products will make it cheaper for SMSFs to diversify their portfolios.

The consequence should be that the SMSF sector gradually increases its international diversification. The likelihood is already clear that larger SMSFs allocate a considerably greater proportion of their funds to equities and far less to cash than do the smaller funds although the allocation offshore is still very limited. Once again the balance for SMSFs is difficult to assess because richer larger funds are likely to diversify more, largely following global trends to diversify internationally, but older members are likely to reduce risks. The outcome may be that the SMSFs, when they do diversify, take up a larger proportion of offshore bonds and less of offshore equities than do funds with younger members.

4.3 Allocation to traded securities

Equities have a number of highly desirable characteristics which put them at the core of most portfolios. They are traded in markets which are relatively deep and liquid; they provide access to the earnings stream of companies and hence are probably a better inflation hedge than fixed interest products; and the market is well regulated. Their appeal would be less if we suffered a bout of deflation but that currently seems unlikely.

The main concern with equities is that their values tend to be more volatile than other assets and these fluctuations are quickly apparent since they are frequently traded.

The recent exaggerated concern about the volatility of equities is likely to prove temporary, since the actual volatility is not far from historical experience with two negative years from the last ten. During the 'great moderation' people tended to forget about and hence ignore volatility, but now that the poor investment

experiences during the crisis are back in consciousness, portfolio analyses which show the risk and return of investments become more credible to investors, and should be taken into account routinely in their decision making. So volatility remains an issue but people are now more attuned to both highs and lows of equity markets so there are really no new issues.

Figure 4.3: Rates of return and volatilities (%) – APRA regulated funds

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004-2013	
											ROR	stdev
All entities	12.2	12.2	13.3	14.5	-8.1	-11.5	8.9	7.8	0.6	13.7	6.0	9.5

Source: APRA, Annual Superannuation Bulletin

In order to reap some of the benefits of their scale and their patience, managers may increasingly focus on equity investments not easily available to other players. For example this is likely to involve providing capital quickly when it is needed (and at a discount) as occurred during the crisis – see Connal and Lawrence (2010).

Nevertheless if the pool of superannuation funds grows to 180 per cent of GDP as Deloitte suggests, and 40 per cent of the pool is devoted to equities, the superannuation funds would be holding some equities equal to 72 per cent of GDP. Whether this is feasible depends on what happens to the market capitalisation of the exchange. The relative size of the various investment pools is discussed below in Section 5.

However the fundamental reason for funds to pursue large allocations to domestic equities is to buy access to domestically based income streams with equity-style excess returns. To the extent that funds find it difficult to meet their goals directly from domestic listed equity, they are likely to move into equity-type products.

Their demand for such product will induce banks and others to create products with the desired characteristics: some of these will be securitised mortgages and other such income streams, and the other will be to buy assets directly in the primary rather than the secondary market.

Essentially this foresees an increase in the supply of assets to meet any excess demand. The most likely sources are from assets held by governments and those held by banks (see below).

Securitisation provides an interesting case. At heart it involves the conversion of non-traded assets into traded ones. Well-designed securitised assets have an important role to play in that they give investors access to markets in asset classes to which they would not normally be able to get exposure with the added benefit of being relatively liquid.

The reputation of this market was damaged during the crisis (and particularly in the US) because many of the products were poorly designed, allowing the product manufacturers to escape any responsibility of the quality of their products. This is a design flaw which is quite easy to rectify, for example by insisting that manufacturers keep skin in the game.

Securitised assets are likely to re-emerge as an important component of the financial system as people become more confident the design issues have been resolved. Some of the earlier demand for securitised product was driven by the funding needs of smaller banks, by SIVs etc, and there were also regulatory problems when banks were allowed to create vehicles to hold securitised assets which were supposedly outside the prudential circle around a bank, but which in the crisis were forced back inside the bank. SIV allowed banks to hold a lot more assets relative to their capital than they reported.

In future the demand is more likely to be driven by long term money managers like superannuation funds in search for appropriate assets to meet their domestic mandates, rather than by regulatory arbitrage.

4.4 Allocation to fixed interest

The Australian super funds allocate considerably less to fixed interest products than do pension fund managers in many other countries (even those dominated by defined contributions schemes). However as discussed above, given the high returns available in Australian equities, and the fact that most Australian superannuants are relatively young, the strong allocation to growth assets is probably appropriate.

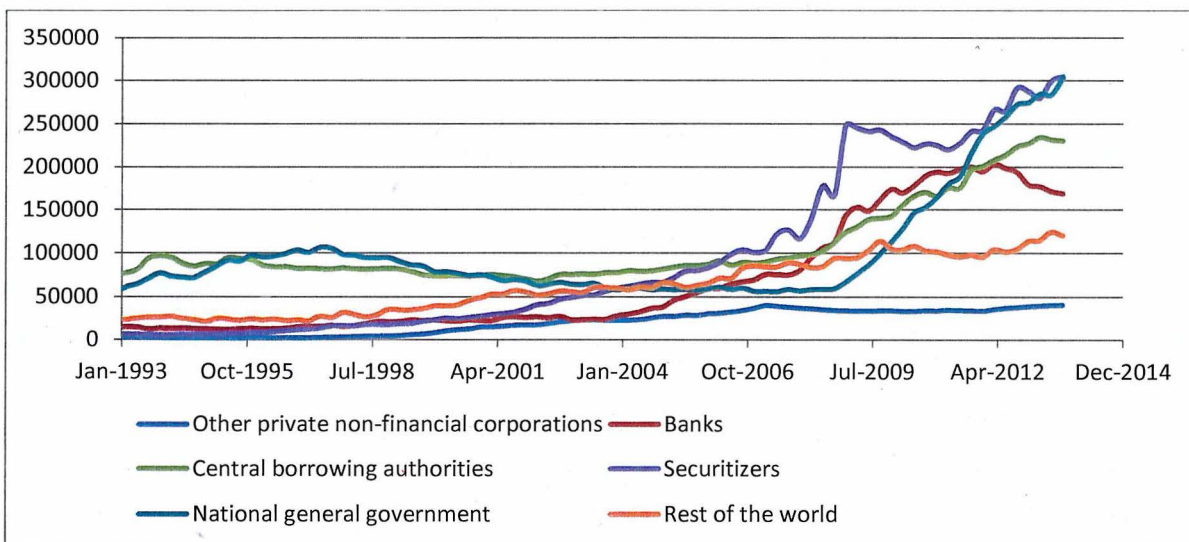
Australia also differs sharply from the US and many other markets in that firms tend to pay dividends with returns not too different from bond yields. Some of this is the result of the franking credit rules. In sum, we are unlikely to see any rapid, early increase in the demand for bonds (unless the franking rules change).

Compared with many countries, government debt is very limited and heavily bid by banks (domestic and offshore) which are required to hold such assets for prudential purposes. Australian fiscal settings are such that it is never likely to become as large as our heavily indebted comparators, so the supply of government bonds is likely always to be small.

The corporate bond market is of modest size, roughly comparable with similar countries (and ignoring the US which has a very different financial system). Much of it involves banks raisings which are then channelled out to corporates. Nevertheless as Black et al (2012) indicates, the market is growing and should continue to do so. With the top 10 listed firms dominated by banks (which already access the bond market) and miners, if the market has capacity for future growth, it seems most likely to develop around mid-sized firms.

Nevertheless to the extent the super funds want to have larger allocation to fixed interest, banks are likely to become the main source. Regulators are incentivising banks to reduce their risk by forcing them to hold additional capital. One way for banks to reduce their capital charges is to sell off their assets – mortgages and credit card debt – most probably bundled as securities with bond-like characteristics.

Figure 4.4: Bonds on issue in Australia



Source: ABS 5232.0 Table 28

The demand for fixed interest assets seems likely to rise as funds build increasingly defensive allocations into their MySuper products. AMP for example reports that the firm

...will have seven lifecycle, or target date, funds that are organised around people's age in 10-year cohorts. ... members will be put on a glide path where the way the portfolio is managed changes through the lifecycle as the member ages. The portfolio will have higher exposure to illiquid assets in the early stages and it will move into volatility management as the member ages.

This transition is likely to be gradual as it is expected fund members will likely spend long periods in retirement, and can also rely on the Government provided added pension as a safety net, encouraging a higher level of allocation to growth assets later in life.

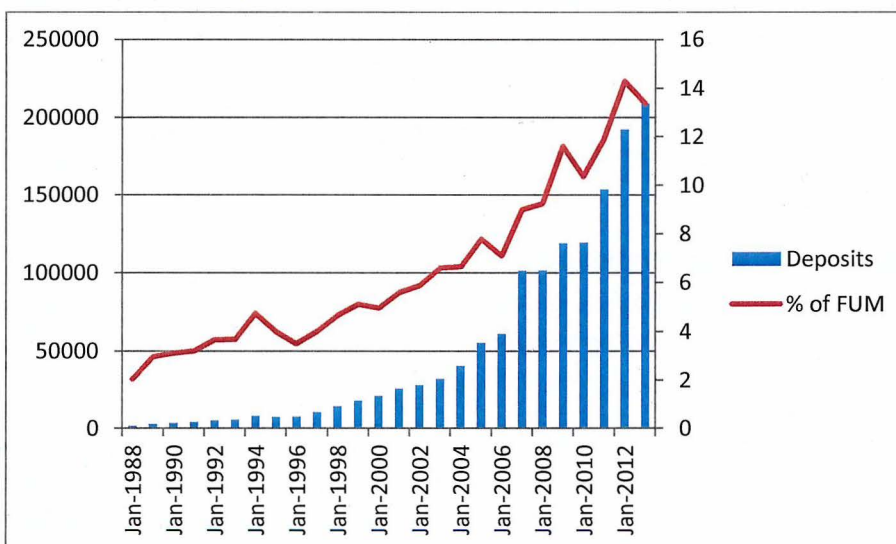
It is not completely clear where this demand will be met from. The chart above suggests that if government is to reduce its borrowing as planned, securitisation is the most likely source but there will also be strong incentives for banks and private non-financial corporations to help meet the increased demand.

4.5 Allocation to cash and highly liquid assets

As is clear from the discussion above, a very significant component of superannuation funds is held in very liquid form, and particularly cash. The motives for this are not completely clear, and particularly the very high allocation by SMSFs. Several points however do stand out. The supply of deposits went up sharply when banks increased the price they paid for deposits, so price will be a factor driving the allocation. It also seems likely that rules around choice of fund introduced in 2005 have led trustees to manage their obligations by maintaining a higher degree of liquidity in their funds than might otherwise be the case. It is noticeable in Figure 4.5 that the allocation to deposits rose sharply at about the same time, breaking the pre-existing trend.

There has been some tension in the past between banks and the superannuation industry, with the former expressing concern that deposits were being channelled away from the banks with the consequence that banks had to take additional (especially offshore) funding risk. Figure 4.5 below shows the steadily increasing volume of deposits which has flowed from superannuation funds towards banks on the left-hand axis, and the steadily rising proportion of superannuation funds which is going to deposits with banks.

Figure 4.5: Superannuation fund deposits with banks (\$m, RHS) and share of funds (% LHS)



Source: ABS Managed Funds 5655.0, Superannuation funds, amounts outstanding at end of period, Column A3581270K

Obviously superannuants will allocate funds to achieve their preferred trade-offs between risk and return. Over time the return on deposits has tended to rise relative to other asset classes, and the security (and

liquidity) offered by deposits has been better appreciated. Deposits can be expected to continue to flow to banks provided they provide a satisfactory return when compared with other assets.

Despite this it is important to note that the superannuation sector had \$215b in deposits at banks by September 2013 according to ABS data. That constitutes some 14.2 per cent of the funds in the super system, roughly one dollar in every seven.

With slower growth in the demand for bank credit over the last year, and banks having improved their stable funding ratios, the relative price banks are paying for deposits has started to fall (Figure 3.2). This appears likely to continue. As a result, managers of assets will have less reason to allocate funds to deposits.

At the same time some of fund trustee's concerns about managing liquidity in an environment where superannuants have the freedom to relocate funds quickly will also be ameliorated. Part of this will arise from a growing understanding of the behaviours of their clients simply from the accumulation of experience. A second driver is likely to be the growing size of funds. As they grow in size, the proportion of their funds they need to hold in liquid form (as an insurance policy) will decline simply as a result of the economies of pooling.

Thus, while we can expect super funds to continue to retain significant allocations to cash, the proportion is likely to fall over time. And though the proportion of funds allocated to cash and liquid assets is likely to fall, the absolute amounts allocated will grow as the volume of funds being managed grows.

4.6 Allocation to defensives

The high proportion of funds allocated to growth assets in Australia is often commented on. For example former Treasury Secretary Ken Henry was quoted in *The Australian* (17 March 2012) as saying "The heavy weighting to equities by superannuation funds is exposing the nation to a dangerous financial instability and the public to excessive risk". Such advice is not very helpful to managers who are trying to make the best long term investment decisions for their clients. The high returns Australian equities have experienced over the past century, and the long term nature of superannuation, provide full justification for the large proportionate allocation.

Nevertheless as the population ages, and as more wealth accumulates, it would be natural for allocations to become somewhat more defensive. The move is likely to be gradual. Someone who retires today, with a life expectancy of another twenty years, is taking a big risk if he or she immediately switches out of equities which average 8 or 9 per cent return, and into bonds which average 3 or 4 per cent. Clearly there is a balance between market risk and longevity risk, but absent legislation, the move towards defensives is likely to be measured rather than precipitate.

4.7 Scale and the allocation to alternatives

The growth of the pool managed will have significant implications for the size of funds: Cooper suggests that the average fund in 2035 will manage \$28b current dollars (Figure 2.2). This raises the issue of whether larger funds are likely to change their allocations simply as a result of size.

Cummings (2012) provides evidence that there are important economies of scale in the sector, and that the main source of these economies lies in the reduction in operational expenses per dollar managed as funds grow. We see the same effect with SMSFs where the ATO data clearly shows that the larger funds have lower unit costs. While strong economies of scale support the case for further aggregation of funds, it is not clear that the rise in average size is likely to change the underlying allocations to different asset classes.

Two issues arise:

- The degree to which decision making is internalised in funds and the extent to which internal managers will make different decisions to external managers
- The extent to which the allocation to illiquid asset classes is likely to rise with scale.

It seems likely that larger funds will choose to manage more of their assets internally although the economic case for internal versus external management is not clear cut. In all sorts of businesses we see swings between managing more activities inside the firm and reversals when outsourcing becomes fashionable (Coase 1937).

Internal management can reduce the transaction costs associated with managing an external supplier, but create its own problems by making internal management more difficult – broadening the management task and distracting managers from core business. External managers can have advantages in reaping economies of scale by providing services to many funds from a single set of analysts, economies that it is hard for a single manager to develop. Nevertheless as funds develop the potential to manage more funds internally they strengthen their bargaining position vis a vis external suppliers and hence negotiate down unit costs.

There is evidence (Cummings and Ellis 2011) that those larger industry funds with a higher degree of internal management allocate more of their funds to illiquid investments – directly held property, unlisted property trusts, infrastructure investments, private equity and hedge funds.

The debate about what proportion of pension fund assets should be allocated to illiquid investments is longstanding. The tradition of the US university endowment managers has been to invest quite heavily in this class but there are clearly risks associated with the difficulty of transacting out of such assets and of valuing them through time, in addition to any underlying risks (Swenson 2000).

The fundamental logic, of long term patient investors like superannuation funds investing a greater proportion of their assets in alternatives, seems inescapable. As they grow larger they will gain benefits from pooling which will lessen their liquidity risk, and hence be able to direct more of the funds into parts of the market where they can gain the excess returns associated with illiquid assets. This will be easier to achieve in default funds, and industry funds, rather than in retail funds where the investment choice depends less on the manager and more on the investor, but there should be a long term trend towards alternatives.

The argument for allocations towards hedge funds is somewhat different. Hedge funds have advantages over normal long-only managers in that they can take advantage of falls in asset prices, and particularly of assets they do not currently own through orthodox long-short strategies. If superannuation funds were to restrict themselves to long-only investments, to eschew hedge funds, they would be ignoring an important source of earnings. Hedge fund managers also require investors to lock themselves in for period, and hence have an illiquidity component where superannuation funds can play more easily than most investors. Hedge fund investments are likely to grow as superannuation funds increase in size albeit for reasons slightly different to the normal patient investor argument.

4.8 Conclusions about trends in allocations

There is little to suggest that we will see major changes in asset allocations into the future.

The most important trends would appear to be

- A move amongst some SMSFs towards an asset allocation that increasingly reflects the allocation chosen by professional managers

- A trend to continue expanding offshore allocations reflecting the benefits of diversification which will become more apparent as the world economy normalises
- Some gradual move towards more defensive allocations as the population ages
- A tendency for the supply of investable assets to increase as managers search for investments other than standard equities which allow them to exploit their scale, the long run nature of their mandates, in the pursuit of excess returns.

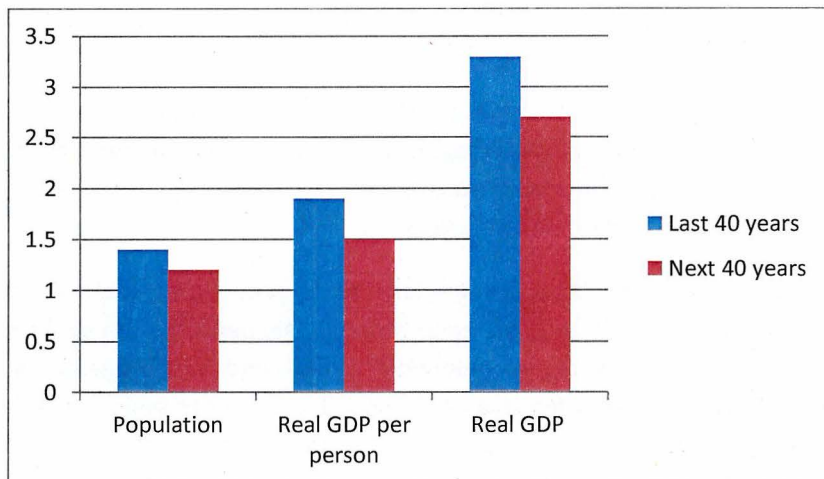
5 Assessment of the relative size of the Australian economy and the superannuation pool at 2030

The size of the economy in twenty years' time depends critically on two issues:

- The rate of workforce growth, and essentially migration and participation
- The rate productivity growth.

The most comprehensive forecasts come from Treasury's Intergenerational Report.

Figure 5.1: Forecasts of the growth of the Australian economy (annual av growth %)



Source: Intergenerational Report 2012

The other variable required to form a view of the nominal value of GDP in 2030 is the inflation rate. Absent any other information it seems appropriate to keep it at 2.5 per cent per year, that is, in the middle of the Reserve Bank's target band. Combined with the Intergenerational Report's forecast of real GDP growth of 2.7 per cent, this leads to a forecast growth rate of nominal GDP of 5.2 per cent. This is a little higher than the rates implied by the Cooper and Deloitte forecasts of the size of the sector.

This should also be the growth rate of nominal incomes.

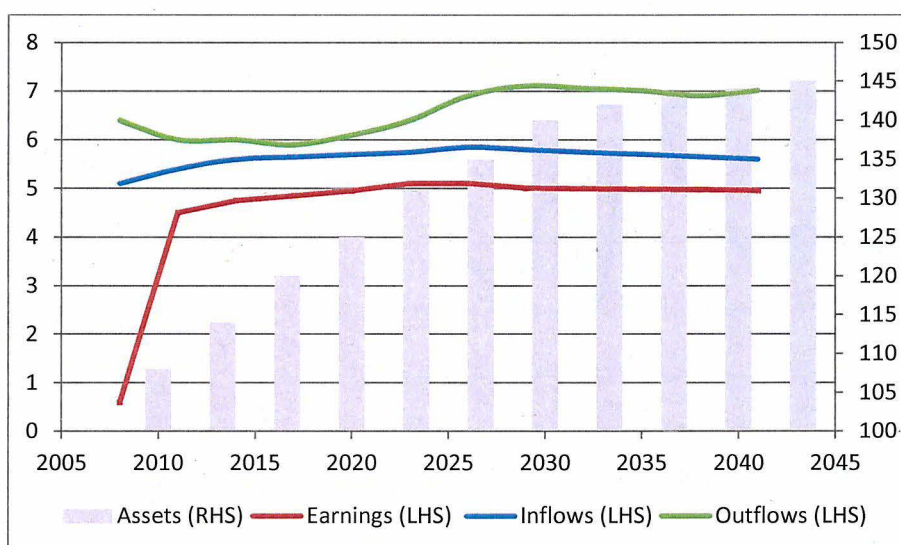
Figure 5.2: Estimates of nominal GDP in the 2030s (\$t)

	For year	Nominal GDP
Cooper	2033	4.69
Deloitte	2035	4.22
IGR	2030	4.39
IGR	2033	5.10

Sources: Described in text

The size of the superannuation pool depends on inflows, which are largely mandated, outflows which depend on retirement rates and life expectancy, plus the inherent growth rate of the assets already in the pool. From the discussion above, with nominal GDP growing at 5.2 per cent per year, the inflow is broadly taken to be 0.5 per cent of GDP. The outflow is much more difficult to foresee but with the population share of the over 65s rising from 13.5 per cent in 2010, to 16.4 in 2020, and then to 19.3 in 2030 outflows are likely to increase significantly although they may be offset as more of the over 65 population continues to work and contribute. As a result net inflows will be somewhat less than 0.5 per cent of GDP per year. Despite this the Treasury modelling shown in the figure below suggests that earnings plus inflows will exceed outflows from the system by a significant large margin, a structure which leads to the large build up in assets in the system. The impact of higher withdrawals as the population ages is also clear in the chart.

Figure 5.3: Treasury modelling of superannuation inflows, outflows and pool (% of GDP)



Source: From Rothman and Tellis (2008)

The assumptions underlying the model are that

- inflation will average 2.5 per cent per year
- wages will grow at 4.3 per cent per year (1.8 per cent in real terms)
- the long term bond rate will average 6 per cent per year (3.5 per cent real)
- funds will earn 7 per cent per year in pre-tax terms
- the effective tax rate on the earnings of 4 per for defined contribution funds.

As might be expected the model is not overly sensitive to fund earnings. A one percentage point higher rate of earnings for 10 years boosts the pool by 8 per cent; a one percentage point higher level of earnings sustained for 30 years boosts the final pool by 15 per cent.

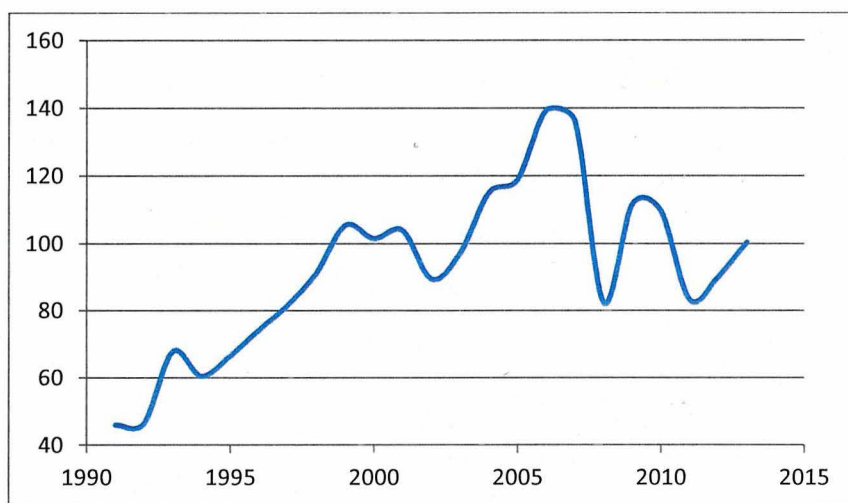
This reduces the central question to one of whether the funds are likely to earn 7 per cent when the economy is growing at 5.2 per cent, and inflation is 2.5 per cent: is a real return of 4.5 per cent per year realistic?

Since the value of national product is paid out as income, to a first approximation we can say that the sum of all national incomes should equal national product. If GNP grows at 5.2 per cent per year, then GNI should grow at the same rate. GNI is basically just compensation to individuals plus the gross operating surplus of firms, more or less wages plus profit. If the split of earnings between wages and profits is relatively stable over

long time periods, the value of companies' earnings and hence their value should grow at the same rate as nominal GDP.

Despite this, it is well known that stock prices and GDP are not highly correlated even over long periods of time and across wide country samples. Some of this will be the result of swings in the profit/wages split, some to do with survivor bias in the market indices, and some to do with the non-reinvestment of dividends. Nevertheless the chart below suggests that after a period of strong growth in the capitalisation of the Australian market in the 1990s, the series has fluctuated around 100 per cent of GDP since 2000. This later period thus reflects what one would expect if the market capitalisation reflects earnings, and earnings reflect growth in national income.

Figure 5.4: Stock market capitalisation versus GDP (%)



Source: World Federation of Exchanges database, and ABS.

The figure above makes it clear that the stock market capitalisation had a period of strong growth in the 1990s and has since averaged the same growth as GDP. The period of strong growth is interesting in itself, since this is the period when significant assets – government owned corporations like CBA, and mutuals like AMP – moved onto the ASX. The overall inference from the Figure is thus that market capitalisation is likely to rise when new sorts of assets are moved into the market, but otherwise is likely to track close to the rate of growth of nominal GDP. It may grow somewhat faster for periods if listed firms take share from unlisted ones (supermarkets versus corner stores), or with changes in the share of national income going to wages.

Dealing first with the returns question, the argument above suggests that a sustained return of 7 per cent seems strong when nominal income is tracking at 5.2 per cent. Given the portfolio mix, this implies that equities must earn an annual return of 9 or 10 per cent. While that rate is not inconsistent with the long run return on equities (with an equity premium over bonds of about 6 per cent), the historical returns were generated in a period when the equity market was small relative to the economy.

If the funds are about 140 per cent of GDP by 2030, and investing about 40 per cent of their funds in Australian equities, the forecast is expecting them to have funds equal to about 56 per cent of GDP in the Australian equities market: if the pool is 180 per cent of GDP, the figure rises to 72 per cent. With such strong demand from superannuation fund mandates for Australian assets, plus the demand from other Australian investors, plus the demand from offshore for Australian exposures, it seems probable that equity prices will be bid up and returns fall unless there is a corresponding increase in the supply of assets.

6 The impact of the allocation of capital by superannuation funds

The assets of the various financial entities demonstrate the fundamental importance in the current system of the banks.

6.1 Asset holdings of the financial system

Clearly from the table below much of the growth in share of the superannuation sector has been at the expense of the 'Life' and 'Managed Fund' categories.

Figure 6.1 Asset holdings of different institutions (ex-SMSFs)

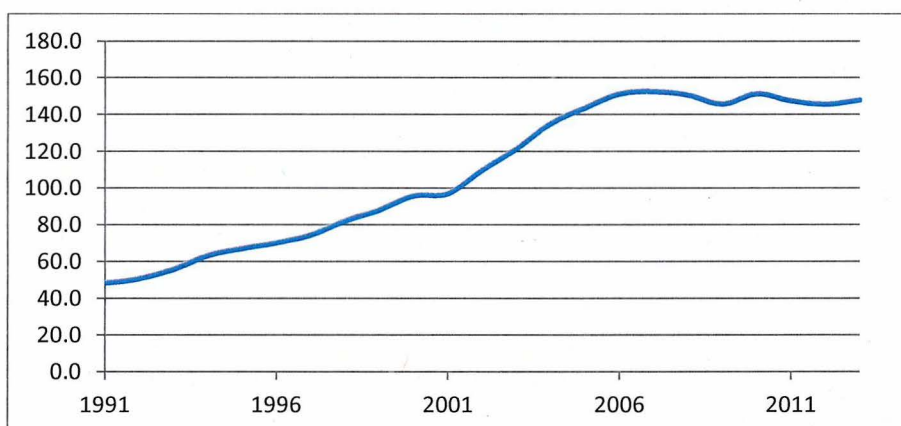
	Banks	Super	Life	Managed funds	Financial corporations	General insurance	Securitization vehicle
1999	46	16	10	9	8	4	3
2005	49	18	6	9	5	3	6
2007	51	19	5	8	5	3	6
2010	59	20	4	6	4	3	3
2012	60	22	4	5	5	3	3

Source: Deloitte

The most obvious point is that the banks and superannuation sectors have grown roughly in parallel. Much of the growth of banks has been the consequence of households increasing their gearing over the last twenty years, and of banks holding those loans on their own books.

There are strong reasons to believe that this business model will not persist into the future. Most fundamentally households seem far less willing to continue to increase their leverage, with the recent data suggesting that the debt to income ratio has stabilised. The level at which it has stabilised is well above historical norms, and towards the upper end of debt to income ratios globally. The most obvious working hypothesis is thus that household debt will grow at the same rate as incomes (and hence as nominal GDP). This implies that at most, bank assets will grow at the same rate as nominal GDP and this is likely to be considerably slower than the rate of growth of the asset pool within superannuation.

Figure 6.2: Household debt to disposable income ratio (%)



Source: RBA statistical database

Regulation is also making it expensive for banks to hold assets on their own balance sheets. If banks hold assets then they need to hold capital against it, and the amount of capital is being forced upward by regulation. While superannuation funds may be required to hold more reserves than they have in the past, the burden will inevitably be far less than that of banks for two reasons:

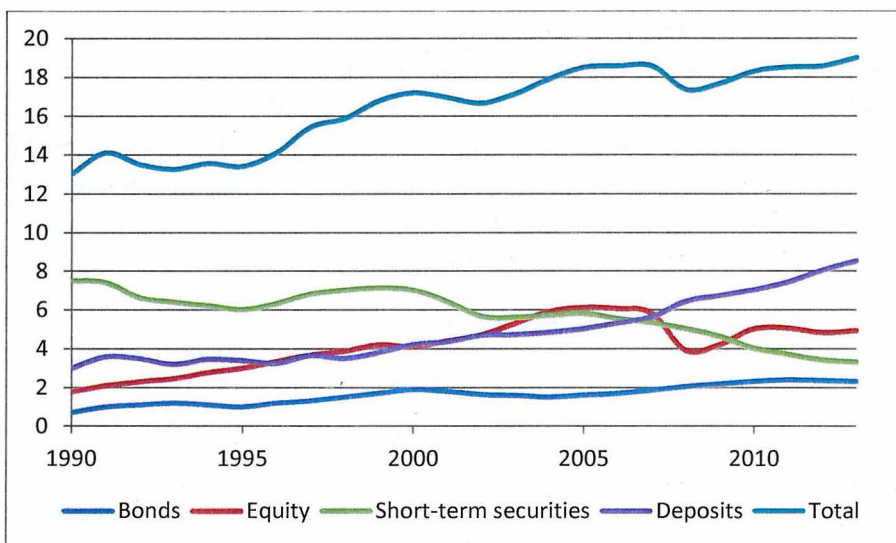
- individual superannuation funds do not operate with high levels of leverage and hence are less susceptible to runs, and
- the rate of withdrawal of funds from the superannuation funds collectively is tightly controlled by law.

The result is that banks are likely to shift more of their assets into other institutions. One is likely to be the private market, as more assets are securitised. Banks are likely to retain their roles in credit analysis, and in managing the loans, but the right to the income stream and the associated risks will largely be shifted off to other parties. While securitisation suffered reputation risk during the crisis, the fundamental model is sound and should rebound significantly.

Superannuation funds have advantages over banks as repositories of long term assets. They may access the assets through the market, so that they will become important holders of residential mortgage backed securities and other securitised assets, but they may also buy bundles directly from banks reducing intermediation costs. It thus seems very likely that we will see banks and superannuation funds developing strong and direct links with each specialising in part of the value chain – banks initiating, credit scoring and managing, with the super funds holding the assets and taking the income risk.

The increasingly symbiotic relationship between banks and superannuation funds is also apparent in the extent to which the banks now depend importantly on the funds for their deposits.

Figure 6.3: Funds' claims on banks – share of unconsolidated bank liabilities



Source: Chart from RBA Financial Stability review, smoothed

The routing of deposits through the superannuation system has had several consequences. While households were comfortable leaving lazy balances in their bank accounts, professional managers have been far more concerned with the return they get on deposits relative to alternative investments. Like all investors they do certainly want to have ready access to liquidity but recognise it comes at a cost to returns. The result is that banks have to pay more for deposits, and savers are getting a better return.

Figure 6.4: Superannuation funds' claims on banks (\$m)

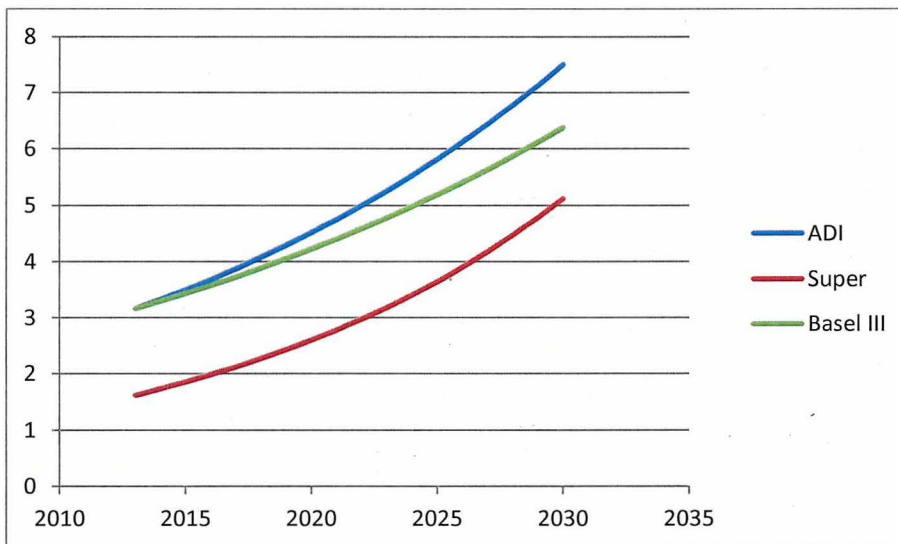
	Deposits Including CDs	Deposits as % of all bank deposits	Equity	Equity as a % of all bank equity	Bonds	Bonds as % of all bank bonds
September 2003	39493	7.8	28044	16.6	2885	2.5
September 2008	121274	12.6	61719	27.0	9961	2.9
September 2013	266531	16.8	105209	25.1	20442	5.1

Source: ABS Managed Funds 5655.0, Data Table 4 Australian National Accounts Data 5232.0 Table 8.

This trend has been exacerbated by the financial crisis after which banks have realised that domestic deposits provide them with greater certainty of funding than does offshore wholesale borrowing (Figure 3.2).

Assuming that bank assets grow in line with national income at 5.2 per cent per year while superannuation assets grow at 7 per cent per year, it would take 40 years for the superannuation pool to be equal to the stock of banking assets. The Figure below tracks the growth of the two stocks on that basis to show the continuing strength of the SDI asset pool despite its gradual loss of share. (The 'Basel III' line is drawn on the assumption that bank assets grow more slowly than national income, at 4.2 per cent per and is provided just for illustrative purposes.

Figure 6.5: Potential growth of ADI and Super assets 2013 to 2030



Source: Author's calculation; source data from ABS, APRA and RBA statistical databases.

APRA is quite determined to slow the rate of growth of the banks believing that any benefits outweigh any costs. It has been very explicit in its determination to slow the growth in lending by ADIs: "[under Basel III] borrowers increase their aggregate borrowings more slowly" (*APRA Insights*, which provides a lengthy justification).

A recent IMF Working paper developed a model of how banks are likely to adapt to the new regulations (De Nicolo et al 2012). The central finding of that paper is that "Overall, our results suggest that implementing non-trivial increases in capital requirements, liquidity requirements and taxation may be associated with costs significantly larger than what proponents of these policies may have thought".

Their simulations for US banks suggest that adjusting from the pre-Basel III to a post-Basel III world will involve a reduction in lending by about 7 per cent. The paper also finds that if regulators implement tighter capital

requirements and a strict liquidity ratio (net stable funding ratio), bank lending could be more than halved. Importantly they find that tight liquidity ratios reduce the maturity transformation function of banks at considerable social cost.

If this model is roughly correct, the new rules on capital APRA is imposing will have a chilling effect on bank lending and lead to the possibility that it might grow more slowly than nominal GDP, in stark contrast to the projections of superannuation sector growth.

6.2 Potential size and shape of the superannuation sector in 2020 and 2030

The preceding discussion suggests the likely size and shape of the superannuation sector. Of course any forecasts are highly problematic and the lesson from Knox's work in the mid-1990s (discussed above) should serve as a warning.

Figure 6.4 sets out some implications of the rapid overall growth of the superannuation sector and of shifts in various allocations, viz, a continuing rise in offshore allocations, a slow rise in alternatives and fixed interest, balanced by a reduced share in deposits and an ongoing relatively decline in the life sector.

Figure 6.6: Possible shape of the superannuation sector in 2020 and 2030

	Equities	Overseas	Deposits	Life	Property	Short-term securities	Bonds	Other
	<i>Percentage of FUM allocated to each asset class in each pool</i>							
2013	41.2	16.4	14.2	11.2	6.0	5.2	3.6	2.3
2020	42.3	18.0	12.0	8.0	7.0	5.0	4.2	3.5
2030	42.3	20.0	10.0	5.0	7.0	5.0	6.0	4.5
	<i>Dollars (t) of FUM allocated to each asset class in each period</i>							
2013	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.0
2020	1.2	0.5	0.4	0.2	0.2	0.1	0.1	0.1
2030	2.2	1.0	0.5	0.3	0.4	0.3	0.3	0.2
	<i>Percentage of GDP in each asset class in each period</i>							
2013	42.0	16.7	14.5	11.4	6.1	5.3	3.7	2.3
2020	54.1	23.0	15.4	10.2	9.0	6.4	5.4	4.5
2030	59.2	28.0	14.0	7.0	9.8	7.0	8.4	6.3

Source: Authors' projections anchored by Treasury projections for totals, see Rothman and Tellis (2008) and initial allocations from Table 3.1. Securitised assets are treated as bonds.

7 Commentary on the resulting funding mix and implications for the economy

Compulsory superannuation has two main effects:

- It boosts the overall level of saving by Australians
- It shifts decisions about how those savings are managed.

7.1 Impact on the level of savings

The boost to savings seems likely to increase the overall level of savings within the economy, increasing the savings rate by about 1.5 per cent of GDP from the current level (Gruen and Soding 2011). This may or may not increase domestic investment and hence growth. It seems quite probable that the increase to Australian savings will reduce the (net) inflow of capital Australia has experienced for most of its history. Either foreign inflow will fall or Australian outward investment might rise to achieve this end.

Given the strong tendency for increasing global diversification and a reduction in home country bias, it seems likely that much of the additions to the savings pool will flow offshore.

It may also reduce foreign ownership of Australian assets, and boost local investment. There will clearly be some tendency for Australians to rely less on foreign inflows thereby increasing domestic resilience. It may also lead to an increase the price of local assets or more probably call forth an increase in their supply.

7.2 Impact on the flow of funds

The second main effect is to change the allocation of savings within the economy, to alter the flow of funds. Ignoring SMSFs for the moment, professional managers have increased the share of savings being directed offshore (reducing risk), and invested more of it in higher yielding assets such as alternatives (increasing earnings). They have also maintained a higher allocation towards equities than many international peers which is completely appropriate for managers of long term, patient money which can afford to ride through the equity cycles.

A progressively larger share of funds which might have been saved through banks is being channelled through funds. Some of it finds its way back to banks but earning higher returns for the fund members than bank deposits would have. There is of course an intermediation cost for the transit.

As the funds manage more money, there are strong incentives for other economic agents to produce assets which fit the funds' mandates:

- Banks are likely to transfer longer exposure assets to funds in order to take advantage of the lower capital costs involved
- Governments are likely to sell more of their brownfield assets to funds, leaving them (governments) freer to invest in green-field projects.

The emergence SMSFs muddies the picture somewhat. Because people in them are managing their own savings, we see less of the benefits structured into more professionally developed portfolios. Over time one expects SMSFs to increase diversification and hence converge on similar portfolio structures to the APRA-managed funds.

Bibliography

- Barr, N. and Diamond, P. (2006) "The economics of pensions" Oxford Review of Economic Policy, 22.
- Bishop, James and Natasha Cassidy (2012), 'Trends in national savings and investment', RBA Bulletin, March.
- Black, Susan, Joshua Kirkwood, Alan Rai and Thomas Williams (2012), 'A history of Australian corporate bonds', RBA Working Paper, 2012-09.
- Brailsford, T., J. Handley and K. Mahewaran (2012), 'The historical equity risk premium in Australia: post GFC and 128 years of data', Accounting and Finance, 52,1.
- Brooks, R. (2006) "Demographic change and asset prices" RBA Conference Volume 2006
- Brown, Christine, Kevin Davis, Mervyn Lewis and David Mayes (2011), 'The global financial crisis and financial regulation in the Antipodes' in R. Litan (ed) The World in Crisis: Insights from Six Shadow Financial Regulatory Committees, American Enterprise Institute.
- Chinn, M. and H. Ito (2006) "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," Journal of Development Economics.
- Coase, R. (1937) "The Nature of the Firm", Economica
- Coeurdacier, N. and H. Rey (2011) "Home bias in open economy financial macroeconomics" Sciences Po Discussion Paper.
- Connal, S. and M. Lawrence (2010) "Equity capital raising in Australia during 2008 and 2009" ASX Research Paper: Sydney
- Cummings, J. (2012), "Effect of fund size on the performance of Australian superannuation funds", APRA Working Paper.
- Cummings, J. and K. Ellis (2011) "Risk and return of illiquid investments: A trade-off for superannuation funds offering transferable accounts", APRA Working Paper.
- Davis, K (2011) 'The Australian financial system in the 2000s: dodging the bullet' RBA Conference Volume 2011.
- Debelle, G. (2009) 'Whither securitization' RBA Bulletin, December.
- Deloitte (2013) Dynamics of the Australian superannuation system: the next twenty years 2013-2033 Deloitte Actuaries & Consultants.
- De Nicolò, G., A. Gamba and M. Lucchetta (2012) "Capital Regulation, Liquidity Requirements and Taxation in a Dynamic Model of Banking" IMF Working Paper 12/72.
- Edey, M. and J. Simon (1996) "Australia's retirement income system: implications of savings and capital markets" RBA Discussion Paper 9603, Sydney.
- Gruen, D. and L. Soding (2011) "Compulsory superannuation and national savings" Australian Treasury Economic Roundup, 3.
- Jackson, G. and S. Vitols (2000) Pension regimes and financial systems: between financial commitment, market liquidity and corporate governance" in Varieties of welfare capitalism.

Knox, D. (1995) "Some financial consequences of the size of Australia's superannuation industry in the next three decades" University of Melbourne Research Paper #20.

Maddock, R. (2013) "Principles for Australian infrastructure finance" Monash Business Policy Forum Paper.

Rothman, G. and D. Tellis (2008), "Projecting the distribution of superannuation flows and assets" Treasury Working Paper

Treasury (2012) Intergenerational Report Treasury: Canberra

Towers Watson (2013) Global Pension Assets Study, Towers Watson.

Swensen, D. (2000) Pioneering Portfolio Management: An Unconventional Approach to Institutional Investment Free Press.

