Melbourne Centre for Financial Studies – FINSIA Banking and Finance Conference 1 October, 2010

Executive summary

This is a presentation on Australia's retirement system to a MCFS-FINSIA conference on October 1, 2010. These are talking notes and not in the fully edited state of an article. The purpose of the presentation is to explore future government policy and the services provided by superannuation funds and financial advisers. The discussion relies upon two approaches:

1. We use the Lifecycle Hypothesis (LCH) of saving and investing as the model to evaluate both individual strategies and economy-wide outcomes.
2. We examine the actions of the participant groups assuming each will seek to exploit their unique comparative advantage.

Government has the ability to coerce and mandate across the entire population, superannuation funds have the scale and member relations to provide mass-market solutions for segments of the population and financial advisers develop one-on-one relationships with investors that allow them to provide lifetime financial advice and support.

Some recommendations that arise from this approach include:

- Increasing the SG rate above 9% pa for all workers is likely to disadvantage low income (e.g., below median income) and young (e.g., below age 40) workers.
- An annual contribution cap (at $25,000 pa) is poor policy for workers that face hump-shaped income patterns and whose retirement income will be determined by lifetime income. This could be replaced by a number of alternative policies to prevent the perceived inequitable distribution of tax deductions.
- Superannuation funds should introduce "default savings strategies" for members in the same way as they have default investment strategies. These might encourage members to increase savings rates above 9% pa when age, income and family circumstances result in disposable income being above the lifetime average levels of consumption.
- The asset mix adopted in superannuation strategies should take into account non-super assets such as the member's potential claim on the Age Pension, their own home and their human capital.
- Only financial advisers have the ability to fully incorporate life-cycle factors into lifetime saving, investing and spending financial advice.

Australia has a robust system with a number of far-sighted features. It is critical that changes we make now to incorporate tax, cost and longevity developments do not inadvertently eliminate some of the existing systems best and most robust features.

Retirement system development and implications for financial market participants

Melbourne Centre for Financial Studies MCFS – Finsia Banking and Finance Conference 2010

Justin Wood

The purpose of this session is to explore the retirement system's implications for future government policy and the services provided by superannuation funds and financial advisers, using the lens of the Lifecycle Hypothesis (LCH) of saving and investing. An alternative title for this talk is "A life-cycle review of Australia's Superannuation System".

Australia's current system is a mixture of government provision (Age Pension), government mandated actions (Superannuation Guarantee), government regulation (SIS, APRA and ASIC), private competition (at an institutional or private adviser level) and personal responsibility. Achieving the right balance of accountability between these groups and getting the right actions by each group is the key to lasting success of the system.

Governments have unique powers; the power to coerce and enforce compliance; and hence it makes sense that it acts where coercion is required – example is Age Pension provision which is funded from taxes, or mandating SG contributions. It has less ability and flexibility to respond to segments of the workforce and individual circumstances. This is where the market is best placed to deliver solutions. There is also the danger that Government policy gets captured by

special interest groups who encourage policy that benefits their own objectives at the expense of the wider community.

Outline

- Robust features of the existing system
- The lifecycle model
- Saving
- Investing
- Spending

The over-riding objective for most participants is how to make the system more robust (in terms of risk and affordability) in helping individuals/families to achieve financial freedom throughout their lives.

LCH is an abstraction from reality, a simplification of the real decision setting. It's predictions and policy implications are only as good as the quality of the assumptions in the model and, perhaps even more important, the frictions and real world factors excluded from the model. LCH is a useful working hypothesis, not a description of how the world works.

Robust Features of the System

- High participation rate
- Accounts are individually owned, not pooled
- Accounts are fully funded, not notional
- No mandated investments, some restrictions
- No mandated providers, licensing
- Restrictions on leverage and preservation
- Limited regulatory regime uncertainty

Robust features include:

• High participation rate – almost universal coverage of working Australians except for very low income and some self-employed

• Accounts are individually owned, not pooled – pooling of interests appears to have risk advantages but many Defined Benefit type schemes have over promised (through poor understanding of tail risks and lack of attention to perverse incentives) and late entrants often now face the risk of broken promises. Individually-owned accounts improves accountability of providers and reduces the opportunity for discretionary wealth transfers.

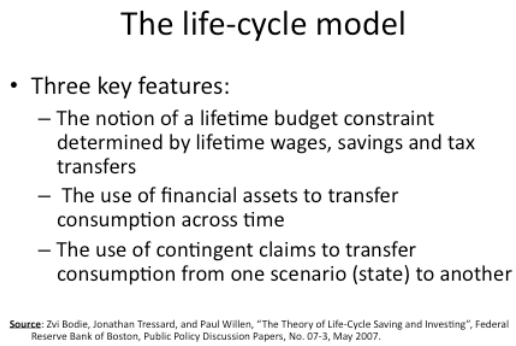
• Accounts are fully funded, not notional – notional long-term retirement savings are very risky even with Government as the guarantor. US social security is essentially unfunded since the "savings" are invested in government bonds (i.e, savings form part of general government borrowings and from 2010 cash outflows have started to exceed annual cash contributions).

• No mandated investments, some restrictions – this is critical and there will be pressure in the future from interests groups to access the superannuation pool for purposes such as government debt, infrastructure etc. Restrictions (such as the "no in-house assets" rule for SMSFs) are a much better policy.

• No mandated providers, licensing –the danger in my view lies with the government becoming a life annuity provider and then mandating a percentage of assets to be used for this purpose in retirement.

• Restrictions on leverage and preservation – both of these have made the system more robust and are essential features of the system

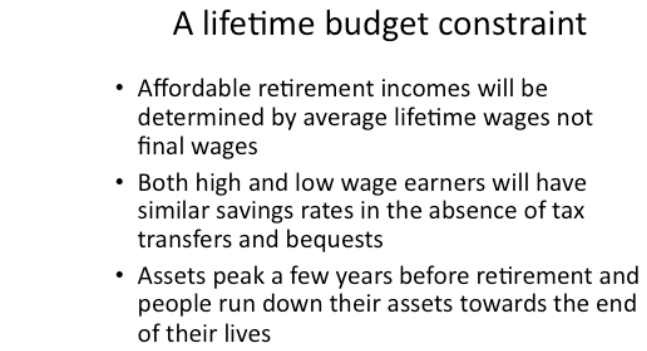
• Limited regulatory regime uncertainty – there will always be some change, but massive change (particularly adverse changes) are likely to have a very detrimental long-term effects on the system.



LCH is a theory of lifetime saving and spending developed by Franco Modigliani and his student Richard Brumberg in the early 1950s. The idea is that the wealth of a nation gets passed around – youth have little, people build savings in later part of working career and run down savings and sell assets as they age.

By building up and running down savings, working people can tailor their consumption at different ages to be (relatively) independent of their incomes at each age. LCH has a series of micro (individual choice) predictions and macro (coordinated or economy wide) predictions about the about saving and wealth such as: Aggregate savings in the economy will grow as the population mix ages and as the retirement phase gets longer; savings rates will be higher in economies with young demographics; and individual savings rates become negative in retirement.

To get a feel for the concept, we can think of the lifecycle as having three periods, each about 22 years in duration. Youth (20-42), prime working phase (42-65) and retirement (65-87)



The LCH causes us to focus on the lifetime budget not current income and has predictions that people may or may not agree with. For example, it would predict that stimulus package handouts will mostly be saved .....

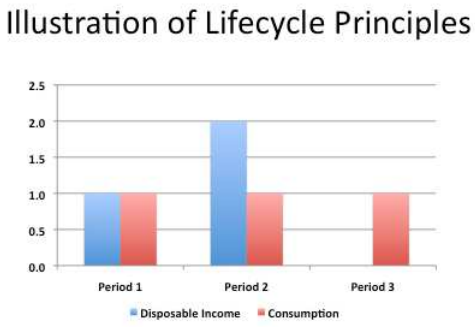
It indicates that we should focus on average or lifetime income when setting retirement expectations, not final wages. Many countries and DB plans have started to move away from final income for this reason. Benefits based on final income are sensitive to prediction errors and are often unsustainable.

LCH tries to be both a normative theory (what people should do) and also a positive theory (explains what people on average do actually do).

On the final dot point, most research indicates that asset holdings do not run down as quickly as LCH predicts, also that consumption is low when income is low and rises as income rises. Researchers have developed many reasons for

these findings including: there is mis-measurement of " retirement assets" by ignoring the value of pensions including government pensions (ie Age Pension), the role of bequests, the impact of longevity risk, the inability to insure against aged-care and other late-age health care costs, the inability to run down illiquid assets such as the own home through a lack of reverse mortgage market, real estate transaction costs, etc.

The other explanation is that the model is not a good description of how people act, or even how they should act.



Suppose someone earns 1 unit in youth, 2 units in prime and zero in retirement. LCH implies they would save nothing in youth, 1 in prime and consume 1 unit in each of the three periods – this assumes zero interest

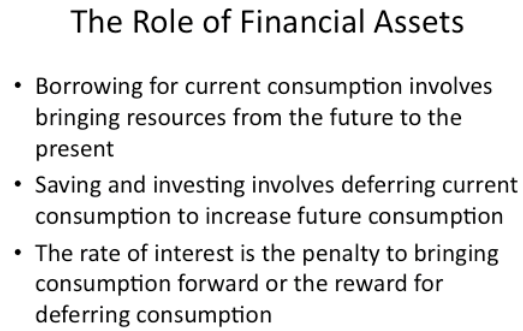
Lower income behaviour – someone who earns 0.5, 1 and zero – will have the same saving pattern (zero in youth, 0.5 or 50% of income in prime) and spend 0.5 in each of the three periods.

Consumption is determined by lifetime income – someone with twice the lifetime income of another will (pari parsu) be able to consumption at twice the rate, with the following provisos:

• Taxes – progressive taxes reduce high income more than lower income, also means-tested tax transfers such as the Age Pension flow more to low income people – hence consumption will exhibit much less cross-sectional inequality than incomes. Also high-income earners need to save at higher rates to be self-funding, compared with lower income people who are eligible to the Age Pension.

• Bequests/savings substitute for future wage income – someone with 60 years to live, no savings and the PV of wage income of $3 million over next 40 years, will consume at the same rate as a person who has $3 in cash from the lotto (or received an inheritance, or a highly paid sports star with a limited active sports life) and does not intend working again and also has 60 years to live.

The LCH assumes that the value of human capital (PV of future earnings) is an asset like any other and is probably the most valuable asset most people have.



LCH assumes people with low income in youth will borrow to support consumption. The problem is that borrowing without collateral is difficult. Future income is uncertain and no-one "knows" they will earn a lot more later. As a result, most borrowing in youth is for education (that sometimes receives government support) or home ownership (where the home can be used as collateral). Borrowing for consumption is rare. Voluntary saving for retirement is also rare and is a low priority when income is low.

Saving involves deferring consumption. People don't like doing this for a number of reasons – they are myopic (don't consider the future) and over confident (they expect that their future income or assets/returns will be higher than is realistic) – hence many people save too little. This is a major aspect of the rationale behind the mandated SG rate. The belief is that, in the absence of SG, people would save too little.

The rate of interest has two components: real rate for time preference and a component for loss in purchasing power of the monetary unit (inflation and devaluation of currency). Paradoxically, the lower the real rate of interest, the more that must be saved to balance lifetime consumption. However, the lower the real rate of interest, the less is the incentive to save. In the simple illustration given before, 1 unit of saving was required. If real rates of return are 2% pa this drops to 0.8 and if real rates are 4% pa the saving rate drops to 0.7 – both now have borrowing in year 1.

The Role of Contingent Claims

- Risky investments have outcomes that pay-off more in some future states than others.
- Combining risky investments and bonds can be used to create contingent claims that shift resources across states at a future point in time.
  - **Example 1**: income replacement and accident insurance moves resources from scenarios of good health to scenarios of poor health
  - **Example 2**: A life annuity moves resources from participants with shorter than expected retirement to those with longer than expected retirement

The ability to use financial assets to transfer consumption across time is quite well understood and appreciated, the creation of contingent claims using risky assets and bonds to move resources across states/scenarios at a future point in time is maybe less well appreciated. We can think of future states as being "good or poor health", a "long or short life in retirement" and a "strong or weak economy".

Illustration of Contingent Claims

- Period 1 (youth) income is 1 unit
- Period 2 (prime) expected income is 2 units, 2.5 if health is good and 1.5 if health is poor
  - Health insurance costs 0.5 and pays +1 if health is poor and zero if health is good. Borrowing to buy insurance has zero cash flow in period 1 and +0.5 (poor health) and -0.5 (good health) in period 2.
- Net income with health insurance is 2 units in both good and poor health

Expected income in prime is 2 units but actual income is contingent on health.

Buy health insurance for 0.5 in period 1 that pays 1 unit if health is poor and zero if health is bad. Expected return is zero. Borrowing to buy health insurance creates a contingent contract that pays +0.5 in period 2 if health is poor and -0.5

in period 2 if health is good. Uncertain future income has been converted to a certain outcome.

Investment in growth assets that pay more if the economy is good and less if the economy is bad can be used to create contingent claims on the state of the economy. Often these have a positive expected pay-off implying that those that go long can a positive risk premium and those that hedge must pay for the cost of the insurance.

If life expectancy in retirement is 22 years (in our example) and that allows the retiree to consume 1 unit (per year), planning is easy. What if the retiree may die after 11 years (and could consume 2 units pa) or only after 33 years (and could consume 0.67 units pa)? Now knowing how much to consume each year in retirement is uncertain. Self insurance will mean that the retiree must assume they may live 33 years and so consume only 0.67 per year. A life annuity – contingent contract linked to life expectancy will allow all retirees to consume at 1 unit per year, irrespective on how long they live. The contract transfers resources from people who die early to people who die later..

Income and Savings Strategies

- Average lifetime real wage patterns are hump-shaped, peaking around 10 years before retirement
- The costs of home ownership and family expenditures also tend to be hump-shaped, peaking earlier than above
- Income available for consumption or retirement saving is lower during first half of working life than the second half.

There is substantial evidence that incomes have three underlying factors that drive income for any individual at age “t”:

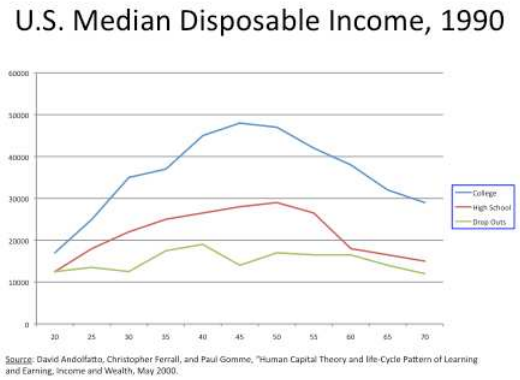
• An age-based pattern of high growth in income early in working life (due to promotions and experience), slower growth in the mature phase and declining income prior to retirement (due to less responsibility and shorter hours)

• Idiosyncratic shocks that have quite long persistence – you can be lucky or unlucky with big consequences to lifetime earnings

• Economy wide growth and shocks (productivity) that impact overall wage levels.

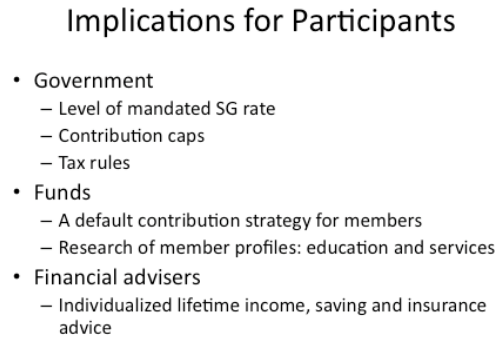
There is also evidence that household formation costs – children, purchase of a home, acquisition of consumer durables – all tend to be high (or peak) in 30-40 age groups

Hence disposable income available for consumption or retirement saving (to be used for future consumption) follows a low, high, low pattern, not a flat pattern 20-67.



A US reference to show the general hump-shaped pattern that is more pronounced as education rises. Australian evidence is documented in an unpublished paper by Tim Higgins (ANU), "Cross-Sectional income distributions in the Australian Population".

The graph above is cross-sectional evidence (i.e., at a point in time) and hence it does not reflect the pattern any one individual may face over their lifetime. Over a lifetime, economy wide wages have tended to increase in real terms due to GDP growth and productivity increases. This implies that the time series peak is later than that shown above and the decline approaching retirement is less steep.



What about implications of government policy for savings strategies:

Setting the Government mandated SG rate:

• Should the same rate apply to age 20-67 – other countries with mandated savings rates have age-dependent rates (Switzerland and Singapore). Is this "too complicated" or does an aged-based contribution rate just not make sense?

• Is an SG rate of 9% pa enough? Enough for whom – all workers, or the median worker? Enough as measured by absolute retirement income, retirement income relative to final income, retirement income relative to lifetime average income? Enough to ensure dependence on Age Pension will not become too

large with changes in demographic patterns (i.e Age Pension will remain affordable)? If not "enough" is it the government's role to increase retirement saving or is there a role for funds, advisers and individuals?

• Employers pay but employees bear the cost (as outlined in the Henry review) and so the SG savings rate is not a "free lunch" to workers – a higher SG disadvantages the young (due to hump-shaped income) and low income earners (whose required savings rate is lower because of the Age Pension)

• A high SG advantages the super industry and government (as they are seen to be doing something),

Annual contribution caps:

• Savings are linked to lifetime earnings and earnings patterns are hump-shaped and early saving can be outside super – if caps are necessary they should be multi-year or lifetime caps. A $1 million lifetime cap is not the same as an annual cap of $25,000 for 40 years.

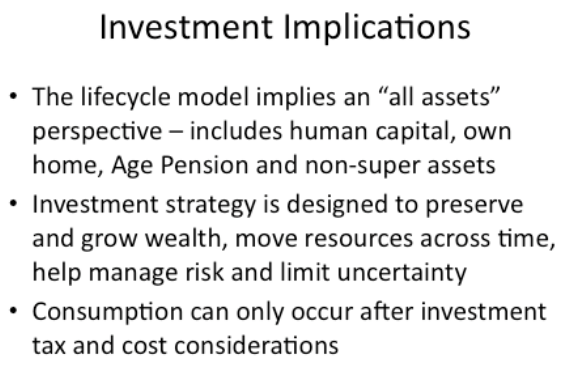
• Why are caps necessary – if the benefits of deductible contributions are inequitably distributed across income groups it might be better to change the deductibility rules (as Henry proposed), rather than restrict annual contributions via a cap (Henry proposed both changing the deductibility rules and having a cap).

Can superannuation funds and should funds impact the savings rates of members more than they do – or just rely on SG and individual decision making? The more the government mandates savings actions, the less the role for funds, and vice-versa. I have argued before that funds should develop default saving

rates for members in the same way as they have default investment strategies for members. What would this look like (rates linked to age, income and family circumstances)? What research and investment of resources would be required to put this in place? What mechanisms can be used to action such a plan? For example, funds may use strategies such as "Save more tomorrow plans" (Thaler and Benartzi trademark). There is also a role for funds to show members why saving rates make sense – or they will undo Govt policy (i.e., increase debt and take retirement as lump sum benefit to repay debts and live off Age Pension).

Financial advisers. Retirement planning is just one aspect of a much larger problem, lifetime financial advice. Financial advisers have the comparative advantage of one-to-one relationships that can extend over a lifetime and they are the only group in a position to integrate all aspects of financial advice and support. With knowledge of life-cycle factors, they can incorporate other aspects of lifetime planning and provide advice on how to use the financial system, incorporate tax, insurance, etc..

Each participant group to exploit its comparative advantage



The LCH lens indicates we must take a wide perspective (all assets) not a narrow one.

Financial markets are not just to be used to attempt to increase wealth – point (2) indicates a variety of functions that we must consider. We are moving from DB to DC types of plans because DB and pay-as-you-go (PAYG) retirement systems experience problems when the population age mix changes and dependency ratios explode. This is not to say that saving and investing over 20,40,60+ years in a market driven global world is not without its problems (to put it mildly!).

Taxes and costs have a big impact on complexity and the incentives of agents and investors in the economy. There is some benefit in trying to reduce and simplify these effects that this, in part, is a driver of the Henry tax reform proposals and the Cooper cost reform proposals.

The basis for the MySuper proposal appears to be that increased standardization of the default strategy will force funds to compete on price rather than product features. Competition of customized products tends to emphasise features whereas competition between commodities tends to emphasise price. If this

occurs, members will get cost savings. Also, a standardized low-cost default fund will provide a risk-adjusted after-tax performance benchmark that will be used to evaluate all other diversified strategies of the fund that employ active management and more expensive asset classes. This benchmarking will provide a discipline to these strategies greater than is possible at present.

One risk with MySuper is the type of risk raised by Nassim Taleb of "Black Swan" fame – a black swan event is a event with very low probability, that people can't see coming, which appears "obvious" after the fact and which has very significant consequences. Collective action – everyone doing the same thing – increases the probability of systemic black swan events. A small number of large funds and all default funds having a similar structure has cost advantages and might reduce the incidence of marginal losses, but makes the system more fragile to unforeseen tail events.

A second risk is that there is great danger if the government is viewed as underwriting the risk of loss in superannuation, even implicitly. Individuals must be exposed to risk of poor outcomes and be aware that they exposed to these outcomes to ensure that private sector risk monitoring of funds, investment strategies and products remains. A culture of implicit government guarantee of institutions and strategies has long run systemic risk implications (similar to deposit insurance in the banking sector – it prevents banks competing for depositors on the basis of bank risk and leaves all the monitoring activity to regulators). There appears a developing view that "ASIC should have seen X coming", "SG mandates contributions into super therefore government has an

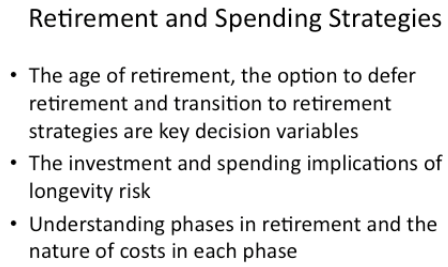
obligation to bailout members that suffer losses". The privatisation of gains and socialisation of losses in a variety of sectors contributed to the GFC.

Rules restricting gearing are important for ensuring that the system remains robust against tail events. Care must be taken to prevent synthetic gearing and regulatory arbitrage. Rules must be maintained on in-house assets (which offer greater opportunities for fraud and risk concentration) and on illiquid and non-traded assets, including life annuities (where emerging risks are observed in a less timely fashion than with traded instruments).

Funds. LCH implies that other assets such as the Age Pension should be taken into account in determining the asset allocation of retirees. The impact of the Age Pension is one example. A retiree with $150,000 in super and claim on the full Age Pension has resources of around $400,000, over 60% of which is in defensive inflation-protected assets. Should this impact the asset mix adopted for the $150,000 in super? I would argue – yes. The question is how far funds should go. Should they also take some aspects of human capital and the member's own home?

Superannuation funds also need to make a host of implementation efficiency, scale and risk-return decisions. Decisions such as whether to develop in-house management versus outsourcing, setting the exposure to non-traded and illiquid assets and the use of active versus passive management, will all have long-term effects on members. Outcomes will rely on market competition and the governance and incentive strategies adopted by funds.

For financial advisers, providing investment advice is much harder and quite different from providing financial advice. In my opinion, few advisers have the skills to consistently add value on active investment decisions and the emphasis should be on total wealth risk management and facilitating access to specialist investment managers.



As retirement approaches, the age and manner in which members transition to retirement is a critical (individualised) decision – the option to defer retirement can also affect investment strategy (i.e., allow members to invest in more risky assets):

• if the risky strategy pays off, they realise gains, restructure portfolio and retire early

• if the risky strategy does not pay off, they continue working.

There are a number of identified factors that allow improved estimates of longevity over a population expected longevity estimate. For example, John Williams of mylongevity.com.au has a website that takes into account factors

such as surroundings, health, attitude, parents and eating habits (SHAPE software).

Rice Warner Actuaries and others break the retirement phase into three distinct periods with quite different expenditure and risk implications:

• The active phase – retirement to age 75,

• The passive phase – 75 – 85,

• The frail phase – 85 – 90

Government should play a direct role where the ability to tax is important and where public resources are provided (e.g., Age Pension and the provision of Age Care facilities – the focus of the Harmer Review – and eligibility or taper rules), or it is necessary to require everyone to act in a particular manner (for example, preservation and distribution rules).

Preservation – will the age at which members can access their own savings increase? Will preservation age be linked to life expectancy change and the

eligibility age for the Age Pension? How important is the need to retain flexibility in the transition to retirement?

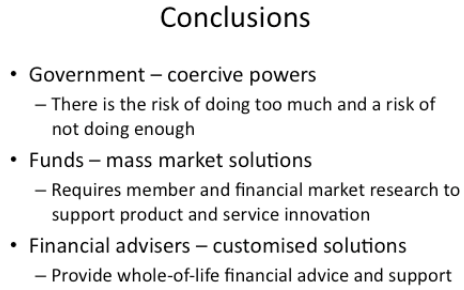
Distribution – currently only minimum distribution requirements are in place (to prevent use of super as a tax free estate planning device) but there are no maximum rules to prevent "double dipping" and increasing access to the Age Pension. Such rules could put in place rules or incentives for abuse could be reduced by adjusting aspects of Age Pension eligibility and taper rules.

What role should the government play in facilitating longevity products? As provider, to mandate use of third party longevity products, to encourage use through tax or social security rules, as guarantor of longevity products, as regulator of prudential security of the providers, ..

Funds are in a position to conduct member research and provide real examples and education to members. In addition, the industry will look to funds to provide product innovation in terms of longevity solutions (which pools risk across a generational cohort) and possibly also inter generational risk sharing across their member base.

Financial Advisers are best placed to provide support to clients as they age, their interest in financial matters declines and their cognitive ability to deal with financial matters deteriorates. In many instances family members will take on increased responsibility but in cases where this is not possible, financial advisers

may be best placed. This could be an area in which increased regulation and even special licensing might be appropriate.



The argument made in this session is that each sector should recognise its comparative advantages and disadvantages versus other sectors and tailor their activities towards that comparative advantage. The overall system objective is create a system that is robust to risk and helps Australians manage their lifetime resources, particularly in retirement.

The comparative advantage of each sector is:

• Government – coercive powers to mandate and tax

• Funds – ability to understand members and the scale to specialise internally or outsource to provide mass-market solutions

• Financial advisers – one-to-one relationships with individuals and families

Balancing the responsibility and accountability between government, funds, financial advisers and individual members is critical to the system's success.

Finally, it is critical to remember the importance of individuals in monitoring risk of products, institutions and the industry's governance behaviour. Avoiding the

monitoring of risk of superannuation funds by individuals takes away an important discipline in the markets. This implicit guarantee could arise due to an implicit guarantee of:

- superannuation funds (e.g., if losses due to a large operating error or fraud is met by government or the industry),
- investment outcomes (e.g., if government supports the performance of default funds in the event of a systemic event),
- products (e.g., government bailout of life annuity investors through collapse of a provider)

or through implicit certification by regulators (ASIC, APRA, industry bodies).