



Submission
to
Royal Commission into Aged Care Quality and Safety on
the Financial Sustainability of Aged Care

Response to
Consultation Paper 2, June 2020
Financing Aged Care

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Background

I make this submission in my role as a (now part time, post-retirement) Professor of Actuarial Studies in the School of Risk and Actuarial Studies, UNSW Business School and a Chief Investigator in the Australian Research Council (ARC) Centre of Excellence in Population Ageing Research (CEPAR). Over the last dozen or so years I have mentored and led a research group (UNSW Actuarial Longevity Risk Research Group) comprised of academic researchers, postdoctoral researchers and research students in the UNSW School of Risk and Actuarial Studies at UNSW Sydney and in the ARC Centre of Excellence in Population Ageing Research (CEPAR). The research has focussed on the risk modelling, financing, and insuring of retirement risks, with an emphasis on actuarial aspects of longevity and functional disability risks.

In the ARC Centre of Excellence in Population Ageing Research (CEPAR), I lead the Research Stream “Sustainable Wellbeing in Later Life” and lead projects specifically on “Mortality and Morbidity Risk” and “Financial and Insurance Product Design”.

This research has been funded largely by ARC Discovery Grants, ARC Linkage Grants with Industry Partners and the ARC Centre of Excellence in Population Ageing Research. Research funding is essential for progress in this research. From an actuarial research perspective, modelling, financing and insuring risks and costs of aged care in Australia remains relatively unexplored.

In this submission I provide initially some general background comments on Aged Care Financing and a discussion of Aged Care Risks and Private Market Insurance Product Innovation based on collaborative research on aged care financing and insuring.

Against this background, I then provide selective responses to relevant Questions in the Consultation Paper 2 - Financing Aged Care.

General Comments on Aged Care Financing

1. Aged Care risks, also referred to as Long-Term Care risk, are closely linked with Longevity Risks, and in Australia are currently financed by government, private retirement income, superannuation savings and personal savings including housing equity. Aged care costs should be considered in a broader context of retirement income, since some of the costs of aged care are financed from individual retirement income streams and retirement savings. Retirement incomes vary widely amongst individuals, reflecting heterogeneity in wealth as well as heterogeneity in longevity prospects and aged care needs.



2. Longevity and long-term care (aged care) risks are the major risks that are faced by retired individuals. In Australia, these risks are mostly financed through means-tested government Age Pensions and aged care support. Superannuation savings are increasing with the maturing of the Superannuation Guarantee system in Australia. Over time these will reduce government Age Pension payments, especially in the earlier retirement years, through the means testing of the Age Pension. Without a form of private market longevity insurance, individuals will have drawn down these superannuation savings by later retirement ages, when the risks of functional disability and cognitive decline most impact the need for aged care. Longevity insurance for superannuation savings, through well designed insurance products, can enhance the financing for aged care from government by ensuring more individual financial resources are available in older ages.
3. Because future mortality and aged care needs are uncertain and involve substantial costs, they are fundamentally suitable for insurance. Aged care risks can be pre-financed using insurance and other retirement income products. Insurance reduces uncertainty about future risks and replaces self-insurance, which requires significant precautionary savings resources, with an average cost through risk-pooling. This improves individual welfare as well as societal welfare more generally. Insurance trades off wealth in “good” states, through the reduction in wealth from paying the insurance premium, to cover the costs in “bad” states, where the insurance benefits are paid and premiums cease. For longevity insurance, such as found in a life annuity product, individuals do not know their future lifetime and trade off wealth when they die early for wealth if they live long. Similarly, for long term care insurance, covering aged care risks, individuals trade off wealth if they remain in a healthy state with wealth if they are functionally disabled or suffer cognitive decline.
4. The Australian Government is the largest insurer of longevity risk and the only insurer of aged care risks in Australia. Individuals rely heavily on government financed support, and those with superannuation savings, private savings, and home equity, self-insure the cost and risks of the portion of aged care needs not met through government financing. Government expenditures are reduced through means testing that reduces entitlements for Age Pensions and means testing along with co-contributions and caps, and some rationing, for aged care.
5. Private product markets for insuring and financing longevity and long-term care risks remain thin and lacking in innovation in product solutions in Australia. They will only appeal to a limited a range of individuals determined by individual health status meeting underwriting requirements and having sufficient superannuation and private savings to afford the required premiums.
6. The benefits of risk pooling are reduced by the frictional costs of organizing an insurance vehicle. These costs include underwriting costs, adverse selection, investment costs,



taxation, claims assessment and management costs as well as regulatory costs, particularly solvency capital costs to support guarantees. For longevity insurance, such as guaranteed life annuities, these costs can increase the insurance risk premiums with loadings of around 10-15%, and for long term care insurance these costs can increase the insurance risk premiums with loadings by as much as 30-40%. They reduce the benefits of risk pooling and will reduce the demand for these insurance products. They can be more effectively managed through mutual risk sharing pools, reducing the capital costs for guarantees, and through economies of scale in insurer operations.

7. Innovation in product design for private insurance products is important in meeting individual needs and in reducing these costs. “Combo” products that combine life annuities or variable annuities with long-term care insurance, which are the most popular products in the US, can mitigate adverse selection costs as well as reduce capital costs (Sherris and Wei, (2019)¹). These have the potential as a private insurance product to insure aged care costs and risks to be met by individuals.
8. For a range of individuals, depending on wealth, health status and housing equity, there is a role for private market insurance and financing solutions in combination with the government provided aged pensions and aged care support. If this is to occur, taxation, means testing, and regulatory requirements need to be conducive to a private insurance market. Premiums could be paid from superannuation or private savings as a lump sum at retirement or as a regular premium commencing at retirement age. The assets of the insurer offering the long-term care insurance could have a similar tax treatment as a superannuation/pension fund and benefit payments would not be subject to tax.
9. Solutions need to recognise the impact of individual health, retirement savings, housing as well as bequest considerations which interact in complex ways. There are obvious differences in the potential role of private market product solutions for lower, middle, and higher wealth levels. Individuals with middle to higher wealth levels at retirement are more likely to be able to afford long term care insurance premiums. Individuals in other than the best health status are unlikely to meet the health underwriting requirements for long term care insurance or, if accepted, the premiums may not be affordable.
10. Housing is an important asset for current retiring cohorts since this can meet potential bequest motives and provides a potential substitute for long term care financing. With substantial wealth in housing, many currently retired individuals are asset rich and cash flow poor, highlighting the potential for private market equity release products beyond the government Pension Loans Scheme to finance individual aged care costs.

¹ Sherris, M. and Wei, P. (2019). A multi-state model of functional disability and health status in the presence of systematic trend and uncertainty. *North American Actuarial Journal*. Published online 24 Feb 2020.
<https://doi.org/10.1080/10920277.2019.1708755>



11. There is a role for government, beyond providing financial support for aged pensions and aged care needs of the retired population, in more actively supporting the development of private markets for longevity risk and long-term care products on a viable, efficient and fair priced basis. There are significant potential welfare gains to Australians from a government agency coordinating and promoting retirement income and aged care insurance products as well as taking an insurer/reinsurer role in product innovations. An Australian government insurer or reinsurer for longevity products including long term care insurance could assist in developing a private insurance market.
12. Solutions to aged care financing that include contributions from individual wealth and private market insurance vary with individual circumstances. Less wealthy individuals will not be able to afford private long-term care insurance premiums, will not have housing equity wealth to draw on, relying heavily on government provided aged care financing. Individuals with significant levels of wealth, including housing equity, will be able to self-insure aged care risks and may have limited demand for private long-term care insurance. Individuals with middle levels of wealth, are more likely to benefit from private long-term care insurance. Those individuals in poorer health at the time of purchase of private long-term care insurance will face higher insurance premiums or be excluded from purchasing the insurance.

Aged Care Risks (Longevity, Aged care) and Private Market Insurance Products

1. An assessment of alternatives to financing aged care costs requires the modelling of the risks based on actuarial and demographic data incorporating trends and uncertainties. This is required for an assessment of the sustainability of government financed aged care as well cost sharing arrangements that incorporate private savings and private market insurance products. Fundamental to this is the actuarial modelling of aged care and longevity risk based on individual level data incorporating relevant risk factors including age, gender, and health status.
2. From a risk perspective, it is important to distinguish between aggregate, or systematic, risks and those that are insurable at an individual level. Systematic risks include improvement trends in longevity and the resulting changes in functional disability trends by age and time spent requiring aged care at different levels of care. These are systematic and impact the risks and costs of aged care for all individuals, and as a result are not fundamentally amenable to insurance. Understanding the impact of these systematic risk factors including the uncertainty in risks and costs is critical to the financing and insuring of these long-term aged care risks. Models including improvement trend and uncertainty



for long term care risks using US HRS data are developed in Li, Shao, and Sherris (2017)² and their impact on healthy life expectancy based on activities of daily living is quantified. Sherris and Wei, (2019)³ quantify the impact of improvement trend and uncertainty for long term care risks using US HRS data incorporating both health status and functional disability.

3. To develop private insurance product solutions and to support a sound private insurance market in Australia, it is critical to understand the risks and to be able to quantify those risks. This applies to the uncertainty in future longevity as well as levels of functional disability, including those used for Australian aged care support as well as Instrumental Activities of Daily Living (IADLs) and Activities of Daily Living (ADLs). This is important for costing Government aged care support as well as determining fair premiums and assessing the solvency of private insurers.
4. To do this requires more sophisticated models and access to longitudinal data for Australians at an individual level. This remains relatively unexplored for Australia because of limitations on individual level aged care and functional disability data. UNSW CEPAR actuarial longevity risk research has used mainly US data from the HRS and definitions of functional disability based on Activities of Daily Living. There is no equivalent of the HRS in Australia. A number of CEPAR research collaborators currently have an ARC Discovery Grant application for 2021 on Forecasting and Financing Healthy Ageing and Aged Care in Australia, which, if successful, will consider modelling risks with individual level Australian data and private market product innovations. Without such research there is limited detailed actuarial modelling of these risks suitable to assess many of the questions raised in the Royal Commission Consultation Paper 2. These actuarial and demographic modelling techniques can be used to assess the costs of government provided aged care along with the design and costing of private insurance products including solvency capital requirements.
5. Long term care risk is determined by the incidence and severity of different levels of future functional disability and the impact of trends in longevity. UNSW CEPAR actuarial research has used US HRS longitudinal data to quantify aged care risks, including systematic improvement, based on ADLs, a definition often used in long term care insurance contracts. In Fong, Shao, and Sherris (2015)⁴ we quantify the risks of requiring differing levels of aged care based on activities of daily living. We show how this definition impacts the probabilities of requiring aged care as well as the length of time spent requiring aged

² Li, Z., Shao, W. A., and Sherris, M. (2017), The Impact of Systematic Trend and Uncertainty on Mortality and Disability in a Multistate Latent Factor Model for Transition Rates, *North American Actuarial Journal*, 21, 4, 2017, 1-17.

³ *ibid*

⁴ Fong, J. H., Shao, A. W., and Sherris, M. (2015). Multistate actuarial models of functional disability, *North American Actuarial Journal*, 19(1):41-59.



care. In Li, Shao, and Sherris (2017)⁵ we show that the effect of improvement trends results in an increase in expected future lifetimes as well as an increase in future healthy life expectancy with the proportion of lifetime spent in functional disability on average remaining similar. These actuarial methods of quantifying long-term care risk are fundamental to quantifying the costs of aged care for private long-term care insurance and for government funded aged care.

6. Incorporation of health status as well as functional disability allows the quantification of risk related to both longevity risk as well as aged care risks. In Sherris and Wei, (2019)⁶ we incorporate both health status and functional disability, along with improvement trends and uncertainty, into the actuarial modelling of aged care risks based on US HRS data. We show that incorporating health status is important in modelling aged care risks since not doing so may result in inaccurate estimates of healthy life expectancy and time spent in differing levels of functional disability that require differing levels of aged care. We provide an extensive analysis of the cost of different long-term care insurance policies, including life care annuities, quantifying the impact of inflation, long term trends and uncertainty. We also quantify the benefits of combining long term care insurance with a life annuity in terms of lower insurance premiums and lower uncertainty in the costs of aged care arising from systematic trends.
7. Longevity and health status improvement trends are important since over many years there has been a significant increase in life expectancy and the questions arises as to the extent to which this impacts the risks and costs of aged care. Modelling of trends in health transition rates is required to quantify the relationship between longevity improvement trends and risks of requiring aged care. These trends must also be quantified to assess premiums for long term care insurance since they impact the average time to needing differing levels of aged care support as well as the associated costs.
8. Understanding uncertainty in health transitions and longevity is critical to a sustainable private insurance long term care market since this impacts the amount of capital required to ensure solvency of private market insurers. Higher levels of uncertainty require higher levels of capital to guarantee a specified level of solvency of an insurer. This results in higher loadings in premiums to cover the costs of capital, reducing the demand for such insurance products.
9. The actuarial models developed in UNSW CEPAR actuarial research have direct application to Australian data and would provide a basis to form a better understanding of the requirements for private market products. Issues related to insurer pricing and solvency for long term care products have also been addressed in UNSW CEPAR actuarial research

⁴ ibid

⁶ ibid



(Shao, Sherris, and Fong (2017)⁷). This research compares stand-alone long term care insurance policies, whole life insurance policies with long-term care benefit riders (long term care insurance combined with whole life insurance), life care annuities (long term care insurance combined with annuities) and shared, long term care insurance in terms of actuarial premium costs and solvency capital requirements. It shows that insurance policies with reasonable levels of fixed benefits can be designed to be relatively affordable for healthy lives. Premiums of stand-alone policies are high for disabled, severely disabled, and older individuals. Life care annuities that combine long term care insurance and life annuities are more affordable for disabled and older individuals as well as for healthy lives. Life care annuities have substantially lower solvency capital required per dollar premium compared to stand-alone long-term care insurance. The UNSW CEPAR actuarial research has also quantified how insurance policy design can be used to enhance the insurability of individuals with impaired health.

10. The risks and costs of aged care must be assessed for different financing mechanisms to consider the sustainability of government provided funding as well as private long-term care insurance, including the impact of trends and uncertainty. Costs vary by age, gender, and health status. Shao, Sherris, and Fong (2017)⁸ show how the costs, in terms of an insurance risk premium, vary by age and gender using a representative long-term care insurance contract. The impact of different definitions of functional disability that triggers claim payment, maximum benefit periods as well as of inflation protection is also quantified. These design aspects of long-term care insurance provide the basis for development of insurance products that are more cost effective for individuals and that integrate with government provided aged care.

Home equity and equity release products

1. Long term care insurance has a valuable role to play in providing coverage for wealthier and healthier individuals and particularly in covering more severe functional disability that can be costly in its financial impact in later years of life.
2. To incorporate housing into retirement income decisions, it is necessary to understand the trends and risks in housing values and how to value products linked to housing values, such as equity release products. UNSW CEPAR actuarial research has used Australian and US data to quantify and model these risks including house prices, rental yields, and

⁷ Shao, A. W., Sherris, M., and Fong, J. H. (2017). Product pricing and solvency capital requirements for long-term care insurance. *Scandinavian Actuarial Journal*, 2017(2):175-208.

⁸ *ibid*



interest rates (Alai, Chen, Cho, Hanewald, and Sherris (2014)⁹, Cho, Hanewald and Sherris (2015)¹⁰). The research has developed valuation models for application to equity release products incorporating mortality, long-term care move-out, prepayment, and refinancing, reverse mortgage “crossover risk”, actuarial risk factors and stochastic discount factors for fair pricing. It’s important to recognise that a reverse mortgage is not a conventional housing loan since it is impacted by many risk factors similar to a life insurance product in terms of time of repayment and valuation of the guarantees on house values in these products require sophisticated financial and actuarial modelling.

3. As a major asset for retirees, equity in housing has an important role in insuring and financing retirement risks. The home provides a consumption benefit, equivalent to an imputed rent, reducing the need for higher levels of retirement income that renters face. It is also an important form of precautionary savings providing insurance against costs of aged care and moving into nursing home later in life. It also provides an important bequest asset, if not used for earlier consumption, or to finance aged care costs. It is an illiquid asset providing capital gains and volatility that is not observed as easily as for share market investments.
4. Equity release products, both reverse mortgages and home reversions, have a valuable role in accessing home equity in retirement, with potential to provide higher consumption while individuals are healthy and to finance longevity or aged care risks through financing the purchase of life annuities or long-term care insurance.
5. Equity release products are complex and there are different types of equity release. The UNSW CEPAR actuarial research has considered the profitability and risk of these products particularly from a provider perspective. Lump sum equity release products have risk and profitability benefits compared to income stream products, and home reversions have advantages over reverse mortgages (Alai, Chen, Cho, Hanewald, and Sherris (2014)¹¹, Cho, Hanewald and Sherris (2015)¹²). It is also important to consider the impact of house price risks and longevity risk on reverse mortgage pricing (Shao, A, W., Hanewald, K. and Sherris, M., (2015) ¹³.

⁹ Alai, D., Chen, H., Cho, D., Hanewald, K. and Sherris, M., (2014), Developing Equity Release Markets: Risk Analysis for Reverse Mortgages and Home Reversions, *North American Actuarial Journal*, 18, (1), 217-241.

¹⁰ Cho, D., Hanewald K. and Sherris, M. (2015), Risk Analysis for Reverse Mortgages with Different Payout Designs, *Asia Pacific Journal of Risk and Insurance*. Vol 9, 1, 77-105.

¹¹ *ibid*

¹² *ibid*

¹³ Shao, A, W., Hanewald, K. and Sherris, M., (2015), Reverse Mortgage Pricing and Risk Analysis Allowing for Idiosyncratic House Price Risk and Longevity Risk, *Insurance Mathematics and Economics*, 63: 76–90.



6. There are benefits from “combo” products such as a combination of a lump sum reverse mortgage with long term care insurance (Shao, Chen, and Sherris (2019)¹⁴).
7. The demand for these product innovations depends on many factors. It’s important to consider the level of an individual’s wealth, the government provided means tested Age Pension and aged care support, as well as housing and other retirement income sources and savings (Xu, Alonso-Garcia, Sherris, and Shao (2019)¹⁵). Individuals face complex decisions in retirement incorporating many factors including risks and cost of aged care. Providing simplified, easy to follow financing and insuring arrangements for aged care in Australia would assist this decision-making process.

Comments on Specific questions from the Consultation Paper 2, June 2020, Financing Aged Care

Drawing on the discussion above I now provide selective comments on Specific Questions Consultation Paper 2, June 2020, Financing Aged Care.

Question 2. To what extent should we prepare in advance for future aged care costs versus meeting the costs as they arise?

To assess this would require actuarial, demographic, and economic modelling of the costs and risks of pre-financing compared with pay-as-you-go financing for government provided aged care. Such an analysis would provide a more informed assessment of this issue. To the extent that future aged care costs are met by individuals, savings to finance these costs will need to be funded in advance. That means setting aside funds during a working life to accumulate to an amount available to contribute to aged care costs to be met by the individual in retirement. From an individual perspective, aged care costs can benefit from a risk sharing insurance arrangement. This reduces the need for individuals to hold high levels of funds to finance the most adverse aged care costs an individual may face if they self-insure these costs, with paying an average cost in a risk sharing insurance arrangement. For aged care costs that are met by government, given that it can raise financing through taxation, there is more flexibility. But consideration needs to be given to the health and functional disability status that triggers the payment of different levels of government aged care support, the amount of this support, the waiting time for this support, the means testing used to determine the individual contributions to these costs as well as the co-contribution and caps applied to these individual contributions. Alternative arrangements could be assessed based on actuarial values and variability in costs at retirement age for differing gender, health status and wealth levels including illiquid housing wealth. These values could be

¹⁴ Shao, A. W., Chen, H., and Sherris, M. (2019). To borrow or insure? long term care costs and the impact of housing. *Insurance: Mathematics and Economics*, 85:15-34.

¹⁵ Xu, M., Alonso-Garcia, J., Sherris, M., and Shao, A. W. (2019). Insuring longevity risk and long-term care: Bequest, housing, and liquidity. Unpublished Working Paper.



converted into lifetime contributions if they were to be financed through individual contributions providing an indication of the relative cost.

Question 3. How are the long-term risks associated with aged care best managed?

Aged care risk and costs vary across individuals and depend on risk factors including age, gender, and health status. Not every individual will experience the same aged care risks and costs. As a result, these risks are in principle suitable for risk pooling through insurance, whether that be through government provided financing or individual financing. The risk pooling benefits of insurance are reduced by the costs of managing the insurance pool. These costs include underwriting, administrative, investment, claim payment and solvency capital costs. They can significantly reduce the benefits of risk pooling through insurance. They can be mitigated through spreading across a larger risk pool and through mutual risk sharing, reducing the need for solvency capital to support guarantees. These costs are important in determining the extent to which private long-term care insurance will be of value to individuals. The systematic risks such as inflation and improvement trends are not amenable to risk pooling. These can undermine private insurance arrangements and governments are potentially more suited to manage these risks.

Question 4. Does an approach based on a mix of taxpayer funding and co-contributions provide an appropriate basis for financing Australia's aged care needs into the future?

As for Question 2., this would benefit from actuarial, demographic, and economic modelling of the risks and costs of different mixes of taxpayer financing and co-contributions. If government taxpayer funded financing is not sustainable, then individual provision from retirement and personal saving will be required, especially for those with higher wealth and better health and longevity prospects. A mix of aged care financing can be structured in many ways, with co-contributions being one of these. In insurance, risks and costs are shared using deductibles (or elimination periods in long term care insurance), co-payments and excess of loss, or catastrophe coverage. Deductibles, covering initial costs, could be means tested, along with co-contributions. Catastrophe coverage, where aged care costs impact only a small proportion of individuals, could be met through government financing. Individual risks and costs vary by many factors including health status, gender, and age. There is also a large heterogeneity in wealth, including residential housing equity, amongst individuals. Many individuals do not have sufficient retirement savings to make co-contributions and for others this ability varies as they age and draw down their retirement savings for consumption needs earlier in their retirement.

Question 15. Should private insurance be adopted to finance the Australian aged care sector?

There is a role for private insurance to play in financing Australian aged care. This provides additional resources to support the costs of aged care as well as the potential for more effective



risk sharing. An important consideration is that governments are more able to absorb systematic risks in aged care costs especially where these are uncertain. These systematic risks include the impact of factors such as uncertainty in inflation and changes in technology that impact all individuals to a greater or lesser extent. These are fundamentally not suitable for insurance since they reduce the effectiveness of the pooling of risks by increasing the correlations between the risks and costs of aged care that individuals face. Individuals are more able to meet costs that are relatively predictable. Insurance can make these costs more predictable for an individual, but the impacts of uncertainty in inflation and improvement trends are less amenable to insurance. It is also important to recognise that individual risks and costs of aged care support vary by many factors including gender and health status and that an individual's ability to meet the premiums for private insurance may not correspond with the risks and costs. For example, female long-term care insurance requires higher premiums reflecting their higher longevity and higher risk of functional disability, yet females have on average lower wealth and savings at retirement and will be less able to afford private insurance. Not all individuals would be considered insurable in a private insurance market. Underwriting of long-term care insurance would usually mean that only individuals in good health at the time of purchase would be considered for this insurance. To be affordable and to reduce systematic risks, long term care insurance policies that pay fixed benefits, potentially with fixed inflation rates included, are likely to be more beneficial than indemnity-based policies.

Question 16. How should the risks of private insurance be managed?

The risks of private insurance arise from many factors. Important amongst these is the ability to quantify these risks. To do this requires models for functional disability and longevity reflecting the actuarial risks as well as models that capture the systematic factors that impact these risks. This requires the actuarial analysis of individual level data on risks and costs of aged care for older Australians over a long enough period to estimate the actuarial risks and capture trends and uncertainty in these risks. Systematic risks, such as inflation of costs as well as systematic trends in functional disability and longevity, can undermine private insurance. Although the expected impact of systematic risk factors can be included in premiums, along with risk margins and safety loadings for uncertainty, insurers must hold solvency capital to ensure they can meet the impact of these systematic risks in adverse situations. Mutual risk pooling insurers can reduce the capital costs of shareholder insurers since the systematic risks are shared amongst policyholders rather than guaranteed by shareholders, providing a potentially more cost-effective management of these risks.

Question 17. What additional specific regulatory mechanisms around private insurance arrangements might be required to protect the interests of consumers?

Private long-term care insurance should be provided through a regulated insurer subject to relevant insurer prudential regulatory requirements. Regulatory requirements would include



premium rating and solvency and require the relevant actuarial assessment. From an actuarial perspective, to protect the interests of consumers there would need to be regulatory mechanisms around the determination of adequate and fair premium rates, including risk margins and safety loadings, as well as the holding of capital and determination of solvency. Means testing and taxation requirements for private long-term care insurance should be conducive to a private insurance market.

Question 18. Is there value in considering private “gap” insurance for certain aspects of aged care?

There are different ways of including private contributions to support the costs of aged care. “Gap” insurance is one of those. There should be a careful assessment of alternatives including using deductibles (or elimination periods in long term care insurance), co-payments and excess of loss, as well as catastrophe, coverage.

Question 22. Are there opportunities to adopt new financing arrangements in combination with existing arrangements?

There are opportunities for new financing arrangements in Australia for aged care risk and costs. Individuals have been accumulating retirement savings in the superannuation system, housing equity and other private savings. Developing new products such as life care annuities and reverse mortgages incorporating long term care insurance have the potential to enhance existing arrangements. For some individuals, long-term care insurance may be attractive. Experience in the USA with long-term care insurance suggests that combining long-term care insurance with life annuities, or variable annuities with guaranteed lifetime withdrawal benefits, can be more attractive for individuals. These products also mitigate the effect of adverse selection, broadening the group of individuals that can qualify to purchase the insurance. The capital costs to ensure solvency can also be reduced for these combined contracts. Private market equity release products are currently limited and could be regarded as expensive in terms of the interest rate charged allowing for the costs and risks including the no-negative equity guarantee. They can also be combined with long-term care insurance to provide more effective financing of these risks and costs. These products are complex and require detailed actuarial assessment of the risks involved.

Question 23. What would be the best mix of financing schemes for aged care?

This is a question that requires actuarial and economic modelling and analysis and needs to be considered against the political environment as well as the structures used to finance other retirement risks. For example, in Australia the government finances a large component of retirement income based on means-testing, provides a tax and regulatory environment conducive to employer and individual contributions during a working life to finance additional retirement income. In this environment there is the potential for private contributions from individuals, and



employers, to provide additional lump sums on retirement to purchase some form of long-term care insurance or to be used to finance aged care costs. There is a high level of heterogeneity amongst individuals in terms of health status, longevity, and wealth, including home equity. Solutions to financing and the insurance of aged care risks will differ depending on individual circumstances. A one-size-fits-all approach is not necessarily the best approach.

Question 24. What would be the best way of financing an immediate improvement in quality for aged care services?

A more effective use of current retirement savings including home equity to support aged care costs through means testing and co-contributions would provide more financial resources for aged care services. This could be implemented through innovation in products that include long-term care insurance such as life care annuities and reverse mortgages combined with long-term care insurance. For these products to be successful it is important that factors that reduce the benefits of risk pooling of aged care risks be minimised. This requires the lowest practical loadings in premiums for underwriting, adverse selection, administrative expenses, taxation, claim payment expenses, risk margins and safety loadings. Economies of scale are important in spreading these costs over as large a group of policyholders as possible. The mutual sharing of risks with fixed payment policies and flexibility to include fixed inflation in benefit payments has the potential to provide cost effective products. Efficient management of the impact of systematic factors such as trends in longevity is important. Providing these innovations through a government insurer or reinsuring the systematic risks of long-term care insurance through a government reinsurer should be considered given the current lack of successful product innovation in the Australian market.

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Links to papers

[Sherris, M. and Wei, P. \(2019\). A multi-state model of functional disability and health status in the presence of systematic trend and uncertainty. North American Actuarial Journal. Published online 24 Feb 2020.](#)



[Li, Z., Shao, W. A., and Sherris, M. \(2017\), The Impact of Systematic Trend and Uncertainty on Mortality and Disability in a Multistate Latent Factor Model for Transition Rates, North American Actuarial Journal, 21, 4, 2017, 1-17.](#)

[Fong, J. H., Shao, A. W., and Sherris, M. \(2015\). Multistate actuarial models of functional disability, North American Actuarial Journal, 19\(1\):41-59.](#)

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