Long-term care risk, income streams and late in life savings

Abstract

We conduct and analyze a large experimental survey where participants made hypothetical allocations of their retirement savings to three products, a long-term care insurance (LTCI) providing income in long-term care (LTC) states, a life annuity and a liquid investment account. The results show that the stated demand of the LTC income product is negatively correlated with financial literacy and numeracy skills and positively correlated with the potential to receive extensive care from families, pre-existing precautionary savings for LTC and expectations about the chance of needing residential care. This implies that the product has the potential to attract people relying on informal care from unpaid care givers. Moreover, the ratio of income in LTC states over income in non-LTC states does not depend on current health states of individuals, suggesting a life care annuity which bundles LTCI with a life annuity has the potential to pool different risks and thus facilitates the demand for coverage of LTC and longevity risk. We also find evidence on the causal relationship between LTC risk and late in life savings. In the absence of the LTC income product, a significantly higher proportion of participants decreased their annuitization level compared to those who increased it.

Introduction

This paper studies the determinants of the demand for long-term care insurance (LTCI), the potential to pool individuals with different long-term care (LTC) risks by attaching LTCI as a rider benefit to life annuities, and whether LTC risk induces precautionary savings. While conventional life-cycle models predict steady decumulation of wealth in retirement, empirical studies find that retirees in many countries retain a large amount of savings until late in life (Ooijen et al., 2014; Poterba, 2015; Wu et al., 2015a). Among the explanations for conservative drawdown by the elderly, precautionary motives for high costs of private long-term care (LTC) are an important one (Ameriks et al., 2015b). According to Genworth (2013), it costs over $80,000 per annum for an average private room in a nursing home and one third of Americans reaching age 65 will need residential care. However, the coverage of private LTCI is very low, with only about 14% individuals aged 60 and over taking up LTCI and only 7% of total LTC expenditures funded by private insurance (Centers for Medicare and Medicaid Services, 2008). The low LTCI holdings is a puzzle, since standard economic models predict strong demand for the ability to insure against the risk of needing LTC (Ameriks, et al., 2015b). Understanding the determinants of the low demand for LTCI is important for both the design of private insurance products and the arrangements of public sector financing of aged care, especially in a setting of ageing populations.

The literature has offered a variety of explanations, such as adverse selection (Sloan and Norton, 1997; Finkelstein and McGarry, 2006; Webb, 2009), high price loading (Brown and Finkelstein, 2007), poor product design (Brown and Finkelstein, 2007; Ameriks et al., 2015a), underwriting (Murtaugh et al., 1995), crowding out by publicly financed care (Sloan and Norton, 1997; Brown and Finkelstein, 2008), provision of informal care (Pauly, 1990; Zweifel and Struwe, 1998), self-insurance using home equity (Davidoff, 2010), limited awareness of LTC risk as a result of low financial literacy (Lusardi and Mitchell, 2007a, 2007b) or optimism about health (Weinstein, 1982, 1984), and state-dependent utility (Brown and Finkestein, 2009).

Using stated preference data collected from a large survey, this paper contributes to the literature in three ways. First, we provide a comprehensive examination of the determinants LTCI demand, including but not limited to many of the factors discussed above, whereas most of the above studies on low LTCI holdings only focus on one or two explanations. Second, we extend both Murtaugh et al. (2001) and Brown and Warshawsky (2013) who explore the implications of attaching LTCI as a rider benefit to life annuities by empirically examining the risk pooling feature of such combination, which is critical to the success of the bundled product. Third, we provide a test on the causal relationship between LTC risk and the dissaving behaviour of retirees

using a hypothetical experiment, whereas most of the existing studies (De Nardi et al., 2010; Kopecky and Koreshkova, 2014; Ameriks et al., 2015a) which estimate structural models using survey data focus on the relative importance of different determinants of late in life savings.

The survey

In October 2015, we fielded a large experimental survey in which over 1000 Australians close to retirement were incentivized to learn about three products - a LTC income product, a life annuity and a liquid investment account - and then made hypothetical allocations of their retirement savings to these products. Figure 1 illustrates an example of the hypothetical allocation task. The LTC income product provides income benefits when purchasers are functionally disabled in activities of daily living (ADL) and/or are diagnosed with dementia. Although it does not provide full LTC coverage, this product addresses many flaws in a typical LTCI policy offered in the current market and has been studied previously in Ameriks et al. (2011, 2015a, 2015b) and Brown and Warshawsky (2013). A rich array of information about each respondent was also collected, including health and illnesses, subjective expectations about the need for LTC, preferences for the potential form of care to be received, as well as risk aversion, patience of consumption, preferences of spending in different health conditions, and the usual array of personal characteristics, numeracy and financial literacy and demographics. The use of stated preference data allows us to overcome difficulties in analysing revealed preference data, such as uncontrolled and complex institutional settings and market incompleteness.

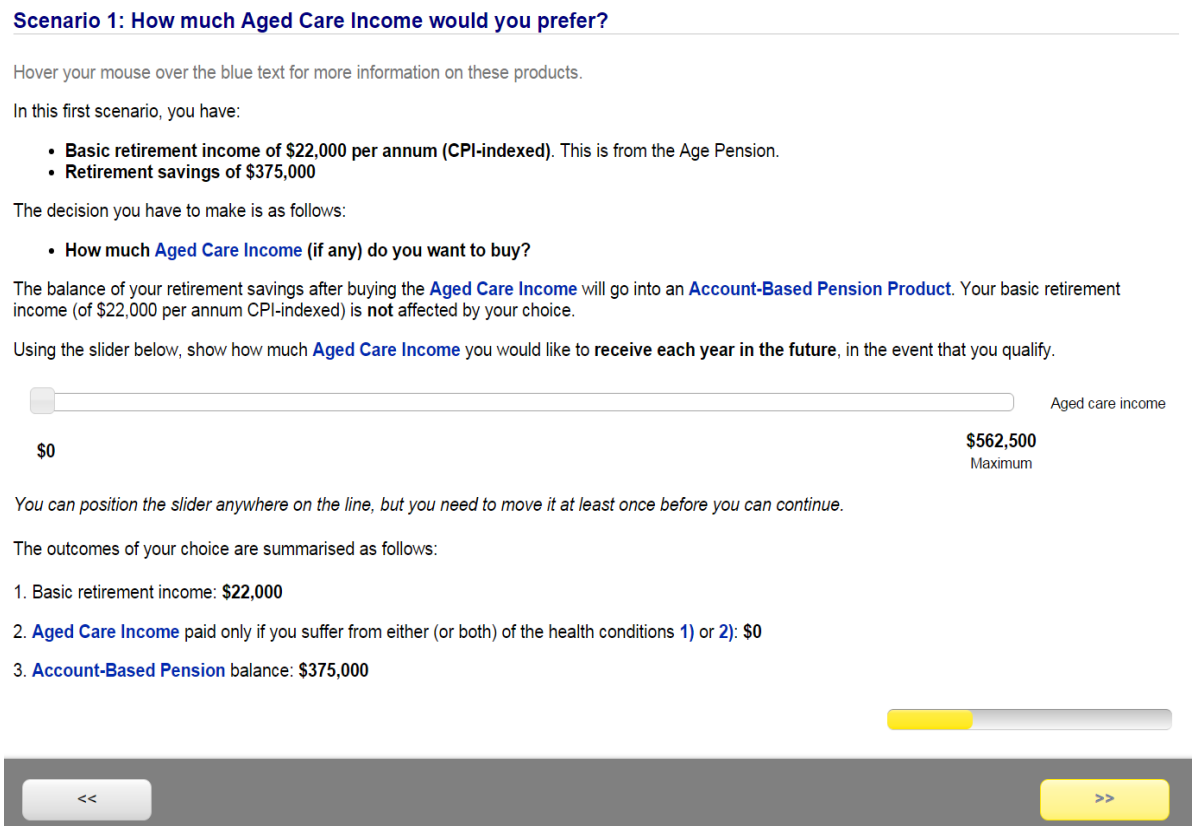

Figure 1: An illustrative allocation question for a male with $375,000 hypothetical retirement savings

Results and discussion

Using data collected from the survey, we first estimate the demand for the LTC income product and study which factors drive the differences in the demand between individuals. We find over three quarters of survey participants would purchase the LTC income product and for the purchasers the median annual income demanded in LTC states is $45,000. This result is in line with Ameriks et al. (2015a) who also find that the stated demand for the LTC income product is substantially higher than for the actual LTCI holdings and conclude that imperfections of existing LTCI policies can partially explain the low LTC coverage. For the

determinants of the demand, results show that in general the demand is negatively correlated with financial literacy and numeracy skills and positively correlated with the potential to receive extensive care from families, pre-existing precautionary savings for LTC and subjective expectations of the chance of needing residential care, while current health states (defined over self-reported health, ADL disability and history of a few major illnesses), bequest motives to children, home ownership, and state-dependent utility have little explanatory power. These results imply that the LTC income product is able to release precautionary savings for the risk of needing residential care. More importantly, the flexibility of the product makes it more attractive to those who may rely on families for extensive care. Given that the vast majority of people receive informal care from unpaid care givers usually a close family member (Kaye et al., 2010), the LTC income product has an advantage of being able to expand the potential market compared with the typical expense reimbursement LTCI policy which does not provide any benefits for unpaid care services. Surprisingly, for females, we find an inverse U-shape relationship between risk aversion and the demand for the LTCI product. This may be due to the very risk averse females (who are also usually the last survivors of the partners) who demand full LTC coverage, rather than the income provided by this LTC product, so they prefer to self-insure instead.

Second, we examine whether bundling a life annuity (attractive to healthy individuals) with LTCI (attractive to individuals at risk of poor health) can successfully pool different risks. Murtaugh et al. (2001) and Brown and Warshawsky (2013) show that the bundled product (which is called a life care annuity) has the potential to moderate the demand for separate products insuring against longevity risk and LTC risk by lowering prices and increasing market base, conditional upon risk pooling. Successful risk pooling requires that the ratio of income in LTC states over income in non-LTC states for a life care annuity does not depend on current health states. If this is not the case, product providers can attract a specific type of risk by altering this ratio, leading to a separation of market equilibrium and different risks. Our results show that the median ratio of the sample is very close to the optimal ratio for a corresponding individual predicted in Wu et al. (2015b) and the cross-sectional differences in the ratio cannot be explained by health states. This implies that there is no evidence against the success of risk pooling. However, we also find that pre-existence of a flat-rate public pension may lead to a failure of risk pooling for females.

Third, we implement an experiment to test whether conservative drawdown by retirees is *caused* by the need for precautionary savings for LTC risk. To carry out this test, survey participants were asked to re-allocate their retirement savings between the liquid investment account and life annuities, in the event that the LTC income product was no longer offered.[1] We find a significantly higher proportion of participants decreased their annuitization level compared to those who increased it, a result that is consistent with De Nardi et al. (2010), Kopecky and Koreshkova (2014) and Ameriks et al. (2015a). This result is also in line with Peijnenburg et al. (2015), Reichling and Smetters (2015), and Wu et al. (2015b) in the annuity puzzle literature. Interestingly, we also find that individuals who generally speaking have lower LTC risk are more likely to sacrifice their income from life annuities in return for more liquid wealth. This illustrates the existence of multi-dimensional selection in insuring LTC risk (Finkelstein and McGarry, 2006; Webb, 2009). As well, we find significant heterogeneity in the response to the unavailability of the LTC income product, with around 20% of individuals choosing to increase their income from the life annuity. This suggests that these people to some extent view the LTC income product as a substitute to a life annuity product and hence use life annuities to insure LTC risk in the absence of LTCI.

Overall, the paper contributes to our understanding of the low demand for LTCI, examines the potential to pool individuals with different LTC risks by bundling LTCI with life annuity products, and provides new evidence on the causal relationship between LTC risk and late in life savings. Our findings can inform policy design for public financing of aged care and private pensions, as well as product design in the private insurance market.

[1] This happened to the LTCI market in the U.K. where the last LTCI provider exited the market in 2010 (Lloyd, 2011).

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