

# Design and Pricing of Private Long-term Care Insurance: An Australian Analysis

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## Abstract

Private long term care insurance (LTCI) is not available in many countries, including Australia, with individuals relying on government aged care and their own retirement savings to meet aged care needs. We consider the design of private LTCI products to meet individual out-of-pocket aged care costs, assess pricing using a recently published model of Australian chronic illness and disability, assess the capital costs for an insurer and implications for pricing, as well the demand for the product using a utility analysis. We consider individuals in good health as well as those that are disabled or with chronic illness and incorporate estimated trends in mortality and disability. Although we focus on Australia, the results have important implications and insights for other developed countries. We consider a range of LTCI products, encompassing stand-alone LTCI and a life care annuity (LCA). We incorporate public aged care co-payments, a comfortable consumption level and the aged pension for Australian retirees, as well as the Solvency II capital requirement (SCR) into our analysis. We also include a systematic literature review for LTCI pricing approaches which informs our analysis. We show how the SCR is significant for stand-alone LTCI premiums, and reduced for the LCA premiums. Our demand analysis illustrates how LTCI products increase individual utility and welfare in most cases, and quantify how this is impacted by product expense loading, risk aversion, wealth, and bequest motive.

## Extended abstract

Aged care, or long-term care (LTC), financing, is a significant issue impacting many countries as populations age around the world. This financing comes from both government support and

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private individual savings. Countries differ in both the amount of total aged care expenditure, as well as the mix between government and private funding. In many countries, future costs of aged care are increasing as the population ages and there is an increased role for individuals to meet part of the costs as increased pressures are placed on government budgets.

Australia, along with Japan, New Zealand, Switzerland, South Korea, Netherlands and Sweden have a high level of LTC access and mid-to-high level of consumer financing. The average public LTC spending in these countries was 2.5% of GDP, although for Australia it was lower at 1.2%. The LTC financing system in Australia is a hybrid system combining a tax-based universal model and a means-tested system. The Australian government provides universal access to LTC based on assessments (and pays for the majority of aged care), but requires co-payments determined by means testing. As a result there is a potential for private LTCI to more efficiently finance individual co-payments.

The development of a private long-term care insurance (LTCI) market in Australia has the potential to support a more sustainable LTC system. Private LTCI can both reduce the financial burden of public aged care and also improve individual welfare through the more efficient management of LTC risk for individuals. Private LTCI must be designed to integrate with the public aged care financing by funding care requirements during waiting periods for a government aged care package, meeting co-payments or paying for the higher quality LTC services. While the demand for the LTCI is shown to exist, there is little on offer.

High cost is an important issue to consider. LTCI is generally considered expensive as the premium has to cover the solvency capital costs arising from product risks and uncertainties in addition to the insurance costs and other expenses. To assess LTCI uncertainties and risks, LTC costs and the pricing of LTCI products require an actuarial model for the Australian population. Costs can also be reduced by innovative design of LTCI products such as a life care annuity or LCA (a combined life annuity with LTCI) which is less sensitive to systematic uncertainties than a stand-alone LTCI.

We provide a detailed analysis of the pricing of a selected range of LTCI products designed for both healthy and chronically ill Australian retirees taking into consideration a comfortable consumption level, aged pensions and public aged care. We use a recently published multi-state Markov model of functional disability and illness. The model, estimated using Australian data, is used to assess the premium and benefit payments for the private LTCI contracts and to quantify the impact of these LTCI products on an individual's utility. Our analysis includes important factors such as expense loading, capital requirements as well as integration with the public pension and aged care system.

**Keywords:** long term care insurance, pricing, utility, demand

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