

A New Approach to Funding the Costs of New Zealand's Ageing Population

SUSAN ST JOHN *
M. CLAIRE DALE †
TONI ASHTON ‡

Abstract

Population ageing has major implications for the way in which programmes designed to support older people are funded. While social security and means-tested social assistance programmes for long-term care protect the living standards of the poorest, middle income groups face under-appreciated risks, such as outliving their capital or needing expensive long-term care. This paper proposes a social insurance approach to cover these risks which combines a life-time annuity with long-term care insurance. This funding approach encourages intragenerational cost sharing and thus may lessen potential intergenerational conflict. New Zealand may be in a unique position to design new policies and products of this type which better share the costs of an ageing population.

As older populations age in the Organisation for Economic Co-operation and Development (OECD) countries, new ways may be needed to meet and pay for the associated costs. This is made more urgent in New Zealand because of its large baby-boom cohort born between 1946 and 1966, that will swell the ranks of those aged over 85 by mid-century, and because of the trend for gains in longevity at older ages (Jackson, 2011). While social security and means-tested social assistance programmes for long-term care protect the living standards of the poorest in countries like the United States, United Kingdom and New Zealand, middle-income groups face under-appreciated risks, such as outliving

* Associate Professor Susan St John is Co-Director of the Retirement Policy and Research Centre at the University of Auckland. Email: s.stjohn@auckland.ac.nz

† Retirement Policy and Research Centre at the University of Auckland.

‡ School of Population Health, The University of Auckland.

capital or needing expensive long-term care. The working age population may be less willing to bear these costs, either as taxpayers or as the children of long-living parents.

Seldom discussed in the New Zealand context is whether the over 65 year old group should both bear more of their own costs, and spread those costs among themselves by means of insurance. This approach to funding would put more emphasis on intragenerational cost sharing and by so doing may lessen concerns about possible intergenerational conflict (St John & Chen, 2010).

In the past, New Zealand occupational retirement schemes often paid an on-going income or pension to retirees. Middle-income retired people with good private pensions in addition to the universal state pension, New Zealand Superannuation (NZS), were able to fund their own health costs including, for some, long-term care (LTC).

Since the 1990s, when tax advantages were removed from all forms of saving for retirement, there has been a marked decline in the use of defined benefit pension schemes that pay an ongoing income in favour of defined benefit schemes that give lump-sums (St John, 2007). Most in the baby-boom cohorts will not have the protection of a pension or annuity to supplement the NZS in old age, but may have illiquid assets, especially housing (St John, 2009).

In 2007, the government introduced an opt-out workplace-based saving scheme called KiwiSaver (St John & Dale, 2011). Breaking with the former tax-neutral policy for saving for retirement, KiwiSaver is subsidised, albeit modestly, in various ways. Despite this, savings accumulated via Kiwisaver will be paid out in a lump-sum in the same way as unsubsidised superannuation savings are. As a result, from 2012, many New Zealand retirees entering retirement will have access to increasingly large lump-sums that must be managed over an uncertain lifespan in an uncertain investment climate, including unknown levels of inflation and possibilities of tax changes.

In countries where annuity markets are significant, the state may compel the annuitisation of either part or all of certain tax-subsidised retirement savings. Special tax advantages may be applied to the annuity itself, or some favourable treatment granted, such as under the state pension's means-test in Australia. Evidence of substantial state intervention in countries with viable annuities markets confirms the

obvious and widespread 'market failure' problem. Conversely, the almost complete absence of an annuities market in New Zealand demonstrates both the efficacy of NZS in providing a basic income and the reality of market failure when there is no explicit state intervention.

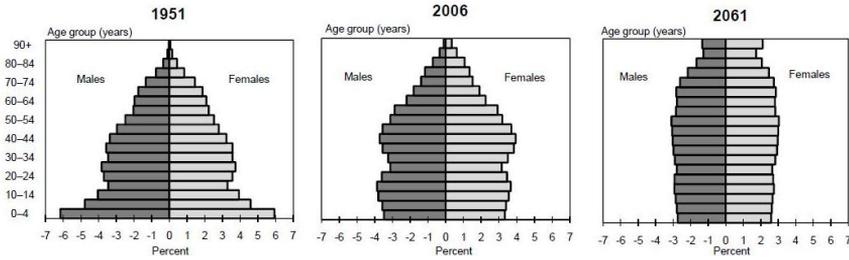
To place the issues into context, this paper begins with some projections of the changes that are expected to occur in the age distribution of the New Zealand population over the next 50 years. We then discuss LTC and in particular residential aged care (RAC). We reflect on the justifications for state intervention in the annuities market, including how annuities may be adapted to provide insurance for LTC costs to spread the burden more equitably both inter- and intra-generationally. We argue that state leadership is required because the nature of the insurance problem means that solutions will not arise spontaneously in the private market.

The Demographic Context

Figure 1 shows the New Zealand pattern of structural ageing (growth in the percentage of the older age groups in the population by sex). This pattern follows trends in population ageing in other developed countries, and as Khawaja & Boddington (2010) note,

... future population projections will require constant vigilance on the part of official statisticians in monitoring international progress in reducing mortality by cause of death at older ages, as well as a rigorous analysis and assessment of the impact of advances in medical knowledge and treatment, to ensure a more realistic figure on future longevity levels and numbers of senior New Zealanders (p.125).

Importantly, Jackson's (2011) research shows that New Zealand had the longest, most pronounced baby-boom of the OECD countries, making numerical ageing very significant regardless of structural shifts. Structural ageing is driven by lower fertility and by a significant loss to net migration at the younger ages, creating a "deep bite in today's age structure at ages 20-39 years" (Jackson, 2011, p.2).

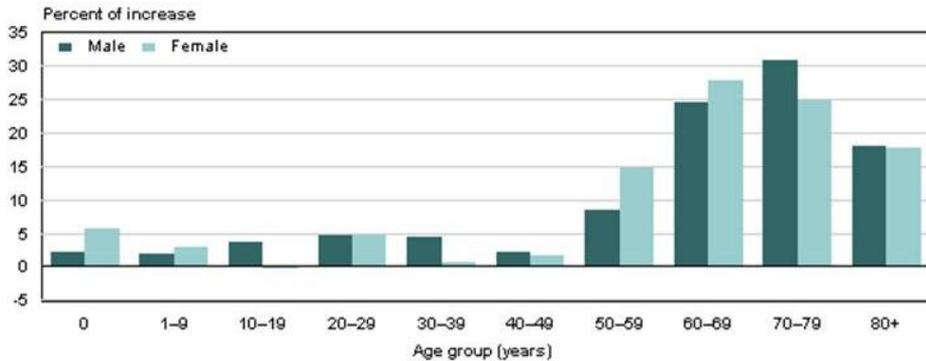
Figure 1: Estimated and projected age-sex distribution

Source: Statistics New Zealand, 2009.

Of particular relevance to care and support needs is the projected increase in number of those aged 85 years and over. The latest national population projections released by Statistics New Zealand (median series) suggest that within the 65+ age group, the number of people aged 85 and over (85+) is expected to increase significantly. From 76,000 in 2012, it is highly likely that there will be 180,000 to 210,000 people aged 85+ in 2036, and 290,000 to 430,000 in 2061. By 2061, about one in four people aged 65+ will be 85+, compared with one in eight in 2012 (Statistics New Zealand, 2012, p.7). Even under series 3, the high mortality projection, the numbers over 85 are projected to grow to 250,200 in 2061. Under series 7, the low mortality projection, there would be 423,000 people aged 85+ in 2061.

Jackson (2011, p.11) argues that the projections for average months life expectancy gained each year have been consistently underestimated even using the low mortality assumptions. One clear trend has been for the increased life expectancy at birth to reflect improvements at the older ages as shown in Figure 2.

Figure 2: Age contribution to increase in life expectancy at birth (percentage); total population by sex, 2000-02 to 2005-07



Source: Statistics New Zealand, 2010.

Long-Term Care

At the last New Zealand census (2006), 5.4 percent of people aged 65+ were in RAC. This comprised one percent of those aged 65-74 years, 5.6 percent of those aged 75-84 years and 21 percent of those aged 85+ (Statistics New Zealand, 2007).

Some of the increased demand for LTC implied by the demographic projections discussed above is likely to be taken up by the shift towards in-home services, and technology improvements (Dale & St John, 2011). To encourage 'ageing in place', several strategies, such as raising the dependency threshold at which a person becomes entitled to subsidised RAC, have already been implemented. When appropriate, in-home care is preferable to RAC for the individual as it maintains independence and community links, among other benefits; and preferable for the state, as the public and private cost of in-home care may be less than for RAC.

The Financing of RAC

New Zealand residents who have been assessed as requiring permanent RAC are eligible for a government subsidy, subject to an asset test that determines eligibility, and an income test that determines their individual contribution to the cost of care. For people with assets below the threshold and income from assets below an exempt level, the government pays up to the full cost of care (over and above the contribution from NZS). Any income above the exempt level goes towards the cost of care up to a

maximum equal to the contract price paid by the local district health board (DHB) for rest home care. If the cost of care exceeds this maximum contribution (as it does for hospital level care) the government pays a top-up subsidy which covers the difference, regardless of a person's wealth.

In 2009/10, New Zealand's DHBs spent \$800 million, exclusive of goods and services tax (GST) on RAC, while residents contributed around \$650 million inclusive of GST, about \$250 million of which came from the residents' NZS. This suggests that about 42 percent of total expenditure on RAC was paid for by the individuals' own state pension or other savings and income (Ministry of Health, personal communication). Of those in RAC, about 70 percent were (fully or partially) state-subsidized while the remaining 30 percent were paying privately up to a maximum limit.

The history of the means test for RAC reflects two tensions: first the desire to ensure that costs are sustainable for the state, and second the desire to reduce the historic harshness of the test which had encouraged older people to divest themselves of assets, sometimes prematurely. In 1999, an incoming Labour-led government promised to remove asset-testing for RAC. However that legislation was slow to emerge and the 2004 Social Security (Long-term Residential Care) Amendment Act did not take effect until July 2005. This legislation raised the thresholds for the asset test, most significantly for a single person, less so for a married couple in care, and least significantly for a married couple with one in care, although the exemption for their house was retained (Table 1). The exemption thresholds were raised by \$10,000 each year for all groups. The effect of the changes was immediate with a spike in the numbers of residents who suddenly became eligible for the residential care subsidy (Grant Thornton, 2010). However, from July 2012, asset thresholds will increase each year by the rate of increase in the Consumer Price Index (Auckland District Health Board, 2012).

Table 1: Exemptions under the asset test for residential care subsidy

Years	Single person	Married couple, one in care	Married couple, both in care
1994 - 1998	\$6,500	\$40,000 + house and car	\$13,000
1998 - 2005	\$15,000	\$45,000 + house and car	\$30,000
From July 2005	\$150,000*	\$55,000* + house and car <i>or \$150,000 total assets</i>	\$150,000*
As at July 2011	\$210,000	\$115,000 + house and car <i>or \$210,000 of total assets</i>	\$210,000
As at 1 July 2012	\$213,297	\$116,806 + house and car <i>or \$213,297 of total assets.</i>	\$213,297

Source: Work and Income, 2011; Auckland District Health Board, 2012.

Note: *Exemption levels were raised by \$10,000 each year, commencing July 2006 until June 2012.

Initially, there was no intention to change the income test but after hearing submissions, the government decided to exclude from the test any personally-earned income by a spouse whose partner is in RAC. The 2005 changes were based upon a narrow view of fairness that did not consider intergenerational equity issues:

It is unfair that people aged 65 and over are required to use up their assets to contribute to the cost of their care, whereas younger people are not. The gradual removal of asset testing will balance these important human rights considerations against the very substantial costs involved. The policy is expected to cost \$103 million in 2005/2006, rising to \$163 million in 2010/11 and \$345 million in 2020/21. Around 5,600 additional people are expected to receive the subsidy from 1 July 2005, taking to 70 percent the proportion in care who receive the subsidy. (Dyson, 2003)

Equity Under the Current RAC Means-Test

While the asset-test exemption threshold is being progressively raised, the asset-test itself will never be 'removed', despite the original claims by the government. The \$10,000 annual increase is not indexed and represents an average of only 4.7 percent increase per annum over the period 2005-2020. This is little more than an inflation adjustment, providing inflation remains low. The next 30 years would see an annual average increase of just 2 percent and a negligible increase thereafter. Property is a popular asset in New Zealand, and it is likely that another property boom will cause rapid rise in house prices - so that the exemption is set to fall in real terms under the current policy settings. In addition, the family home, irrespective of its market value, is exempt from the asset-test for a couple with one in care, and couples with expensive houses are treated the same

as couples with more modest houses. In New Zealand, tax advantages, particularly the absence of a capital gains tax, are associated with saving via investment in one's own home. The asset-test reinforces this bias, especially as financial assets are comparatively harshly treated.

While the means-test prior to 2005 was in need of reform, and a rise in exempt assets was needed to offset the effects of accumulated inflation, the changes have not resolved many of the existing inequities in the system. For a married couple both in RAC, the exemption is now exactly the same as for a single person, and if they fail the asset-test they must both pay the maximum weekly contribution, whether or not they are sharing accommodation. This creates a perverse incentive to divorce, so they can each access the exemption of \$210,000. And although the annual income from assets up to \$2,690 for a couple with one in RAC is now exempt from the income-test, this barely provides maintenance of the real value of the exempt \$115,000 of joint capital.

In comparison, in the United Kingdom, council-funded home help and care home places for the elderly and adults with disabilities are currently only offered to those with under £23,250 of assets. The Commission on Funding of Care and Support (Dilnot et al., 2011) in July 2011 recommended some changes to the harsh asset-test along the lines of New Zealand's policy. The Report suggested capping the cost of a lifetime of personal care at £35,000 per person. The cost of board and lodging in a residential home should be limited at £10,000 a year per person. The Commission also proposed setting a maximum lifetime cost, in order to allow people to plan ahead for how they wish to meet these costs (thus the possibility of new insurance products); and raising the means-tested threshold at which people will have to start paying for care from £23,250 to £100,000. A new tax may be proposed for removing the exemption for national insurance contributions for those over 65 years.

In New Zealand, single people are now significantly better treated as their asset threshold has been raised from \$15,000 in 2005 to \$210,000 in 2011. Also, the exemption of a spouse's earned income from the income-test has reduced some of the inequity between married couples with one in care, and single people who may live with others. In addition, from July 2006, a married person whose spouse or partner is in RAC became eligible for the single, living alone rate of NZS, rather than one half of the married rate (Dyson, 2006).

Some wealthier residents requiring care pay their fees entirely out of the income from their assets. As the cost of hospital-level RAC can exceed \$1,500 a week, and the cap on personal contributions in 2011 is \$786 - \$864 per week depending on the region (Ministry of Health website undated), taxpayers are effectively subsidising the further asset accumulation of some RAC residents. As estate duties were abolished in New Zealand in 1992, taxpayers are also effectively subsidising the bequests of such wealthy residents.

However, as the world financial crisis began to impact in 2008, interest income used to pay for the costs of care fell sharply, and residents of RAC facilities increasingly needed to draw down on their capital, the value of which may have been eroded significantly. For the rest of the population, the intergenerational burden increases as, inevitably, more of the costs are shifted to taxpayers through the increased use of the residential care subsidy.

The spectre of asset-testing of RAC may also encourage an early divestment of assets (Frawley, 1995). The use of trusts as a means of asset protection has expanded markedly in the last 20 years, especially among the baby-boom generation. In a 2010 review of the use of trusts, the Law Commission noted:

...the residential care subsidy... is often credited with creating a significant incentive for people to transfer assets to a trust. The legislation relating to the subsidy allows a settlor to use a trust to reduce his or her assets and income in order to satisfy the eligibility criteria for the subsidy. In the 2009–2010 year the Ministry of Social Development processed approximately 10,000 applications for the residential care subsidy that involved a trust.

Exacerbating these issues, removal in 2011 of gift duty provided more financial incentives for using trusts to alienate assets that count for the residential care subsidy, and there are no constraints on the use of reverse mortgages to reduce equity in the home to the asset-test threshold. The means test for RAC is still likely to encourage avoidance, even after the raising of the asset thresholds.

For those who require expensive RAC, the current practice of 'user pays' can mean that individual estates are quickly depleted, thus diminishing children's inheritances in an arbitrary way. The capped amount payable by a resident in 2012 varies by district but for Auckland

city is \$46,422 (Ministry of Health, 2012, p.1969), requiring a single person to find roughly an additional \$30,000 from their own resources to supplement the pension.

Perhaps the most important criticism of New Zealand's approach to financing RAC concerns the implications for intergenerational equity. Those who have taken advantage of avoidance opportunities to protect their assets are better able to provide for their heirs. Subsidising RAC from general taxation redistributes money from the working population to those in care, a burden that will become more acute as the population ages and the proportion of workers in the population declines. If all of the population who are at risk (i.e. all of those aged 65 years and over) were to share more of the costs of the few who turn out to need RAC, the perceptions of intergenerational equity may improve.

Longevity and Long-Term Care Risks

The two important risks faced by those over 65 are:

- The risk of excess longevity: living longer than expected and outliving capital;
- The need for in-home or residential LTC, and the run down in assets before the public program steps in.

New Zealand's state pension, NZS, provides some protection for the longevity risk, but only at a basic income level (Table 2). Average life expectancy at age 60 or 65 is a poor guide to the number of years an individual may actually live, with a spread of mortality around the average (Wadsworth et al., 2001) - some will live more than twice as long as the average. Drawdown products such as fixed-term annuities, or managed funds release can be unsatisfactory when retirees live longer than the average. Today there are few, if any, suitable annuity products to meet the risk of outliving savings. As noted above, fewer employers are offering private pensions and of these, few provide protection from erosion by inflation.

Table 2: The 2012 annual rate of New Zealand Superannuation (NZS)

Individual's status	Annual Net NZS*
Married person (each)	\$13,957
Single person sharing accommodation	\$16,748
Single person living alone	\$18,143

Source: Work and Income (2012).

* Taxed as primary income.

The probability of needing RAC is a function of the probability of living to older age and the probability of needing care at that age. The total cost is determined by the time spent in care and can be highly variable. This suggests there is an insurance problem that a suitable product at age 65 might address.

Private Long-Term Care Insurance

Private insurance works best when the probability of the event occurring is low so that risk pooling among a large population is possible. For example, the probability of needing care at age 95 is too high for insurance at that point to be a rational solution. Private insurance contracts work best for insurers if they are annually renewable so that changes in risks and loss experience can be incorporated into the premium; however, this can leave people vulnerable to being risk-rated out of the market as they age, as is occurring with private health insurance. Suppliers of RAC insurance are affected by the uncertainties of future costs and demands, including the inflation risk, which makes it difficult to price as a single premium product. Exclusions for higher risk purchasers are likely. As Fenn (1999) notes, the risks of getting it wrong in the face of multiple uncertainties are high, and significant loading charges are likely to make the insurance unduly expensive.

As would be predicted, LTC is not well covered by private insurance. Yet there would be gains from pooling risks, as otherwise large costs can fall on the uninsured and/or the financially naïve, and on the state. If each person tries to save enough to pay for the maximum time they might be in care, given that the majority will not need such care, many people will die leaving unplanned bequests. The obvious welfare gains to be had from pooling risks are not well exploited by private providers because of the special difficulties of private LTC the insurance contract. Some of these are discussed in Barr (2001):

- How will the care be allocated? How much, what type and on what basis?
- How might costs and types of care be affected by new technological developments?
- Can premiums rise if the patient becomes more risky (older, or unwell)?
- Will there be a ceiling on reimbursement of the cost of care?
- Is there a maximum duration over which benefits are paid, if so what happens if the individual lives beyond this period?
- How will wage and price inflation affect the cost of care?
- How are disagreements/bankruptcy of the insurer to be dealt with?
- How much insurance is adequate, ie. should there be any minimum level?
- How integrated is it with existing public funding and/or provision for long-term residential care and what if policy changes?

It is clear that an all-encompassing, single-premium product, say at age 65, will be near impossible to draw up, given these and other difficulties. As discussed in Barr (2010), private insurance can cope with risk, but not certainty or uncertainty, and uncertainty makes probabilities of future cohorts requiring care, and the costs of that care, indeterminate. Moreover the independence of probabilities necessary for insurance does not hold: for example, medical advances that prolong life may place everyone in a similar situation. Adverse selection problems are high and may require intrusive questioning from the insurer. Moral hazard may arise from several sources: for example, the person concerned may be more likely to demand care, but there are also worries that the family may encourage older relatives to move into care if there is insurance, “since the cost to him or her (at the time of use) is zero” (Barr, 2010, p. 365).

Given these considerations, the use of private insurance internationally would be expected to be limited. Table 3 gives a breakdown of the different types of public and private sources of funding. New Zealand, along with Australia, Norway, Denmark and Sweden, is unusual in that a high proportion of financing for LTC comes from general revenue sources and none from social insurance arrangements such as social security. Private insurance plays only a very minor role in LTC financing in all OECD countries including New Zealand. Out-of-pocket expenses also

look very low, although the OECD suggests that these may be underestimated, for example, in how the non-custodial expenses of care are accounted for. In New Zealand, the proportion paid out-of-pocket for RAC is certainly significantly higher than the 4.4 percent reported for all LTC because all residents are required to contribute from income or savings towards their cost of care. For many, this contribution is limited to their NZS, which in turn is financed by the state.

Table 3: Long-term care expenditures by source of funding, 2007

Country	HF11	HF12	HF21-22	HF23	HF24	HF25	Total
Switzerland	11.7	27.1	0.4	58.4	2.4	-	100
Portugal	2.0	51.4	1.1	45.4	-	-	100
Germany	12.5	54.7	1.7	30.4	0.6	0.1	100
Spain	61.7	10.2		28.1	-	-	100
Slovenia	18.3	57.1	0.5	24.0	-	-	100
Korea	46.2	30.7		17.8	5.3	-	100
Austria	81.1	0.7		17.1	1.0	-	100
Canada	81.6	0.4	0.4	16.8	-	0.8	100
Finland	77.2	7.6		14.2	1.0	-	100
Estonia	48.2	39.3	0.1	12.4	0.0	-	100
Norway	89.3			10.7	-	-	100
Denmark	89.6			10.4	-	-	100
Australia	88.9		0.3	8.5	-	2.3	100
Japan	44.2	44.8	4.0	7.1	-	-	100
New Zealand	92.0		1.3	4.4	2.3	-	100
Hungary	60.1	30.2	0.9	2.4	6.4	-	100
Sweden	99.2			0.8	-	-	100
France	44.8	54.4	0.4	0.4	-	-	100
Poland	43.1	49.2		0.3	7.4	-	100
Belgium	31.4	58.7	9.8	0.2	-	0.0	100
Iceland	39.4	60.6	-	-	-	-	100
Czech Rep	30.5	69.5	-	-	-	-	100
Netherlands	9.5	90.4	-	-	-	0.1	100

Source: OECD (2007).

HF 11: General government (excl. social security)

HF 12 : Social security funds

HF 21-22: Private insurance

HF 23: Private h-holds out-of-pocket exp.

HF 24: Non-profit institutions serving households

HF 25: Corporations (other than health insurance)

Note: Data on out-of-pocket spending for some of the countries may be underestimated. For example, in the Netherlands, cost-sharing on LTC services is estimated to account for 8 percent of the total LTC expenditure.

To summarise, New Zealand does not provide middle income citizens with a mechanism to annuitise lump-sums on retirement that might protect them from outliving their savings. While NZS provides longevity

protection at a basic level, in the future there will be more emphasis placed on accruing savings, for example, in KiwiSaver. As in other countries, private insurance for LTC in New Zealand is non-existent, or minor.

A Social Insurance Solution

The UK Royal Commission report on long-term care cited by Barr (2001, p.83) concluded that private insurance without state intervention was not ever likely to become significant. In practice, few countries have grappled successfully with providing protection for RAC or in-home LTC costs, but it is increasingly the focus of attention. Japan and Germany have most comprehensively addressed the issue, and Austria, the Netherlands and Korea also have LTC social insurance. Barr (2010) notes:

Social insurance... differs from private insurance in two important respects. First, because membership is generally compulsory, it is possible ... to break the link between premium and individual risk. Second, the contract is usually less specific than private insurance, with two advantages: protection can be given against risks which the private market cannot insure, or cannot insure well (long-term care is one); and the risks can change over time (p. 368).

There is a clear case of market failure both in the provision of suitable annuity products to meet the longevity risk, and in the provision of private insurance for long-term care. Annuities are seen as a lottery, with the size of the annuity critically dependent on the time of retirement, the gender of the retiree, and the way in which inflation impacts on the real value. New Zealand provides a good case of what happens when there is no state intervention of any kind in these markets. With no compulsion to annuitise, no tax incentives in the accumulation phase, and no encouragement of long-term care insurance, the markets are thin or non-existent (St John, 2009). This suggests that faith in market-based solutions is misplaced.

What is required is a re-envisioning of social insurance solutions on grounds of both individual welfare and public interest. Without such insurance, it is likely that capital will be run down too early by those who live a long time, and the costs of supplementary income top-ups, care, and other age-related health expenditures will fall on the working-age population, either through higher taxes or as the families concerned meet the costs of their parents directly or through receiving lower bequests.

Means testing can lead to inappropriate divestment of assets too early in retirement and/or the setting up of trusts to disguise income and wealth. The costs of RAC or in-home LTC fall unevenly and unfairly on the unsophisticated, while the trust mechanism allows cost shifting to the working-age population, an impact that is arbitrary and inequitable.

... there is a strong case for extending social insurance to provide mandatory cover for long-term care. Social insurance is able to address the major insurance-market problems ..., is well understood politically, and in administrative terms piggybacks on to existing arrangements. Such a system should be large enough to cover all, or almost all, the costs of a good standard of care, covering both clinical needs and 'hotel' costs. Topping up should be an option, either from private saving or through supplementary private insurance, if that is available on terms that people are prepared to pay.... As with other elements of social insurance, and increasingly with private insurance, the system should be based on unisex probabilities. (Barr, 2010, p.372)

From a societal point of view, a requirement to annuitise a portion of accrued savings not only spreads the risk of longevity, but prevents the early spending of lump-sums and ensures an income stream to pay for at least some of the costs of healthcare and long-term care later in retirement. This was the thinking behind compulsory annuitisation in the UK where extensive tax subsidies to retirement savings permitted such rules. Unfortunately, as has been argued in the UK, compelling annuitisation without attention to design may simply force people to take unsuitable products.

Intragenerational Funding to Address Intergenerational Inequity

Using suitable insurance mechanisms for intragenerational funding of increasing longevity, RAC, and other risks of old age, improves intergenerational equity by removing some of the burden from the working-age population. Without such insurance, taxes must be higher and some families must bear the disproportionate costs of the asset depletion of their parents. If parents do not have enough resources and become dependent on their children, the children could in turn find it difficult to prepare for their own old age. The shifting and sharing of the burden can become an important rationale for the use of an intragenerational approach to funding long-term care.

In this approach a life annuity plus LTC insurance purchased with a single premium at age 65 or 70 could be designed specifically for middle income groups. This could be made attractive and might capture a wide pool of annuitants. Those who die early and do not need care, along with those who live into old age but do not need LTC (the vast majority of those who survive), subsidize those who do need care. The younger the age of purchase, and the greater number who purchase, the increased sharing of the risk. Those whose health status makes them poor risks for RAC insurance are good risks for life annuities, so that linking the two risks is likely to increase RAC coverage of the population, reduce the need for medical underwriting, and address the issue of adverse selection in the annuities market.

Surprisingly there has been little literature to date devoted to exploring the potential of pooling risks of longevity (requiring lifetime annuities) with the risk of needing RAC. Murtaugh et al. (2001) proposed a method for linking the two risks in a single product in a voluntary market that has the potential to be cheaper by reducing adverse selection, and providing cover for more people. Warshawsky et al. (2002, p.198) argue that the combination of a life annuity and long-term care insurance “has the potential to make them available to a broader range of the population, with minimal underwriting and at lower cost”. Mayhew (2009) also explored the affordability of products for the UK market, such as a disability-linked annuity, that might offer some insurance for long-term care.

There is also some interest from some providers of annuities emerging worldwide. For example, preliminary modelling for the UK by actuarial consultants Watson Wyatt Worldwide shows that, for modest reductions in the initial annuity, worthwhile income increases could be paid once RAC became necessary. They see the demand for purchases for such annuities arising later in retirement, at above 70 years (Watson Wyatt Worldwide, 2002).

More recently, the OECD report: *Help wanted, providing and paying for long-term care* (Colombo et al., 2011) has described development of private sector innovations and mixed insurance products. The options include combining LTC insurance products with other types of financial products such as life insurance. The market for combined annuities and LTC insurance exists in both the UK and the US but these annuities still

have a low take-up rate as the purchase requires a significant up-front single premium payment.

There are several issues to consider in designing a life annuity with RAC insurance:

- The age at which the policy is to be purchased.
- The role of deferral of purchase
- The nature of the costs to be covered: the policy may either indemnify the actual costs or pay a specified amount for an assessed condition. For the latter, once the highest level of dependency is diagnosed, the annuity increases by a given factor regardless of the nature of the care chosen
- The size of the policy and whether maximums should apply. This may be important if there are significant subsidies or government guarantees to this product
- The kind of inflation adjustment that applies and who pays for it
- The source of the purchase price. Can it include home equity and if so on what basis? The unlocking of home equity to help pay for this kind of annuity may make it very attractive.

It is unlikely that an enhanced annuity product as envisaged here would be forthcoming without strong state involvement. The next section considers a possible way forward for New Zealand.

A New Approach for New Zealand

We consider here an annuity with a LTC rider for New Zealand. If we start with \$16,000 net as the value of NZS for someone in care, another \$30,000 would be sufficient to meet the annual capped fee for RAC of up to around \$46,000.

Suppose a retiree's private saving, including KiwiSaver, is used to buy an inflation-adjusted annuity of up to \$10,000 per annum, an insurance rider could provide that this annuity would treble if the recipient is assessed as needing RAC (St John, 2005). Based on the probabilities of being alive, a purely actuarial calculation at age 65 (averaged for male and female) assuming a real rate of interest of 2 percent, gives the cost of an annual real \$10,000 annuity as approximately \$140,000 or \$150,000 with a

10 year guarantee period (authors' calculations using 2005-2007 mortality data).

If the annuity is designed to treble to \$30,000 of LTC when required, then the capital needed to buy this annuity at age 65 should reflect the probability of needing care at older ages and the average length of this care. Tentative modelling based on the combined probability of living to a particular age and being in care at that age with a trebled annuity of \$30,000 suggests an additional capital sum for the annuity purchase of the order of \$13,000-\$14,000. This tentative RAC premium is conditional on the assumptions of a real rate of 2 percent and on assumptions of future probabilities of needing care and does not include overheads. It does however suggest that the cost of purchase at 65 compares favourably with the costs of setting up and running trusts to shelter assets to avoid the RAC asset test.

It must be emphasised the RAC premium would not itself purchase full coverage. The insurance operates on the original annuity, so that the costs of RAC of \$46,000 would be paid for from \$16,000 net state pension plus \$30,000 enhanced annuity. The capital sum required for such an annuity may be made up from KiwiSaver lump-sums, other saving, and possibly a home equity share. The state itself would offer this annuity and provide an implicit subsidy to guarantee inflation proofing. Options such as treating the annuity as an add-on to NZS are possible.

This voluntary option could be offered to the cohort aged 65-74 with the state operating the scheme as social insurance. The implicit premium for in the annuity provision could be used to help pay for the current RAC costs or used to build a trust fund to be drawn on later. Table 4 shows how numbers in the younger 'old' population are expected to rise. Under current Statistics New Zealand's medium assumptions, there will be around 465,000 people aged 65-74 years by 2021.

Table 4. Projected population aged 65-74, 2011 to 2041

Year	Number
2011	325,400
2021	465,900
2031	568,900
2041	550,100

Source: Statistics New Zealand National Population Projections, medium series.

There is little recent detailed information about the distribution of net wealth by age bracket for those over 65. As a proxy, the Survey of Family, Income and Employment (SoFIE), conducted in 2003/04, found that the median net worth among those aged 65 plus was \$149,500 but the mean net worth was much higher, at \$233,750 (Cheung, 2007, p.9).

Assuming that one half of the four deciles (5th to 9th) use their cash saving, perhaps with a home equity share to buy a capped, inflation-adjusted annuity of up to \$10,000, a sizeable fund could be generated by 2021. From this, the state social insurance programme would pay an annual annuity to the annuitant, and a further amount each year to a dedicated RAC fund. To encourage participation, the asset and income test for RAC would remain and be enforced. As successive cohorts enter retirement, there will be a growing number of people providing RAC contributions, and some or all of the funds could be applied on a Pay As You Go basis to care for the existing and increasing frail population.

Conclusion

Rapid demographic change raises important questions about how the costs of ageing can be shared in ways that are both equitable and sustainable. Concern about intergenerational equity is likely to become an increasingly important issue in New Zealand as the population profile begins to change rapidly in the next decade.

As a group, older people in New Zealand have in past decades improved their income and wealth positions, including increased home equity. Thus as a group they appear more able to pay for some of the support they need during old age. Further, owing to better health for at least some members in this group, the financial capability of older people could also be expected to increase from continued part-time or full-time work.

The model considered here would shift some of the costs of ageing from the working aged population to the older population. It would also shift the risks within the retired generation itself from those who live longer and need income over a longer period, to those who do not live as long; and from those who are less healthy (or more dependent) to those who are healthier (or less dependent). Not explored further here is the

possibility of using the enhanced annuity for home-based care, but encouraging less expensive forms of care is clearly important.

By encouraging the older age group to fund more of their long-term care needs themselves, more resources may be freed to meet the increased demands of an ageing population. Such intra-generational risk sharing can improve both the perceptions and the reality of intergenerational equity.

References

- Auckland District Health Board. (2012). Asset testing. *Seniorline. Accommodation: Rest homes & hospitals: Cost of care; Income & asset testing*. Retrieved from <http://www.adhb.govt.nz/seniorline/Accommodation/CostofCare/IncomeAssetTest.htm>
- Barr, N. (2001). *The welfare state as piggy bank. Information, risk uncertainty and the role of the state*. Oxford: Oxford University Press.
- Barr, N. (2010). Long-term care: a suitable case for social insurance. *Social Policy and Administration*, 44(4), 359 - 374.
- Cheung, J. (2007). *Wealth disparities in New Zealand*. Wellington: Statistics New Zealand.
- Colombo, F., Llana-Nozal, A., Mercier, J., & Tjadens, F. (2011). *Help wanted? providing and paying for long-term care*: OECD Health Policy Studies, OECD.
- Dale, M. C. & St John, S. (2011). *Funding the long goodnight: the rapidly growing market for long-term care of the frail elderly*. Paper presented at the Annual Conference of the New Zealand Association of Economists, 2011.
- Dilnot, A., Warner, N., & Williams, J. (2011). *Fairer Care Funding. The Report of the Commission on Funding of Care and Support*. London: Department of Health.
- Dyson, R. (2003). *Asset testing to be removed*. Retrieved from <http://www.beehive.govt.nz/node/16395>.
- Fenn, P. (1999). Financing long-term care: the potential for insurance. In Royal Commission on Long-term Care (Ed.), *With respect to old age: rights and responsibilities. The Context of long-term care policy* (Vol. I). London.
- Frawley, P. (1995). Abuse of the trust device. Proposals for reform. *New Zealand Journal of Taxation Law and Policy*, 1(4), 200-224.
- Grant Thornton. (2010). *Aged Residential Care Service Review*. Retrieved from <http://www.grantthornton.co.nz/aged-residential-care-service-review.html>
- Jackson, N. (2011). *The demographic forces shaping New Zealand's future. What population ageing [really] means*. Waikato: The University of Waikato: National Institute of Demographic and Economic Analysis.
- Khawaja, M. & Boddington, B. (2010). Informing the debate on population ageing in New Zealand: the role of Statistics New Zealand. *New Zealand Population Review*, 36, 117 - 135.

- Law Commission. (2010). *Some issues with the use of trusts in New Zealand*. Review of the Law of Trusts: Second issues paper. Retrieved from lawcom.govt.nz/sites/default/files/publications/2010/12/trusts
- Mayhew, L. (2009). *The role of private finance in paying for long term care in an ageing society*. London: Cass Business School.
- Murtaugh, C., Spillman, B., & Warshawsky, M. (2001). In sickness and in health: an annuity approach to financing long-term care and retirement income. *Journal of Risk and Insurance*, 68(2), 225-271.
- Ministry of Health. (2012). Maximum contribution applying in each territorial local authority region from 1 July 2012. *New Zealand Gazette*, 69.
- OECD. (2011). *Pensions at a Glance 2011. Retirement-income Systems in OECD and G20 Countries*. OECD Publishing.
- St John, S. (2005). *Policies for drawing down retirement saving in New Zealand: implications for the ageing of the population*. Paper presented at the Ageing population conference 2005. Sixtyfive and not out! 7-9 September 2005, St Anne's College Oxford, UK, Oxford Institute of Ageing.
- _____ (2007). New Zealand's experiment in tax neutrality for retirement saving. *The Geneva Papers*, 32, 532-552.
- _____ (2009). *The Annuities Market in New Zealand*. Wellington: Ministry of Economic Development, For the Capital Markets Taskforce Report.
- _____ & Chen, Y.-P. (2010). Aging of the elderly: An intragenerational funding approach to long-term care. *European Papers on the New Welfare*, 15 (October), 11.
- _____ & Dale, M. C. (2011). *Preparing for the health and long-term care costs of an ageing population in New Zealand*. Paper presented at the The 19th Annual Colloquium of Superannuation Researchers. Financing the retirement needs of an ageing population.
- Statistics New Zealand. (2007). *New Zealand's 65+ Population: A statistical volume*. Wellington: Department of Statistics.
- _____ (2009). *The impact of structural population change*. Wellington: Statistics New Zealand.
- _____ (2010). *New Zealand Life Tables 2005-07*. Wellington: Statistics New Zealand
- _____ (2012). *National Population Projections: 2011 (base)-2061*. Retrieved from http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projection/s/NationalPopulationProjections_HOTP2011.aspx
- Wadsworth, M., Findlater, A., & Boardman, T. (2001). *Reinventing Annuities*. Paper presented at the Staple Inn Actuarial Society, 16 January 2001. https://www.watsonwyatt.com/images/database_uploads/euAnn-01/paper.pdf
- Warshawsky, M., Spillman, B., & Murtaugh, C. (2002). Integrating life annuities and long-term care insurance: theory, evidence, practice and policy. In O. Mitchell, Z. Bodie, P. Hammond & S. Zeldes (Eds.), *Innovations in retirement financing*. Philadelphia: University of Pennsylvania Press.
- Watson Wyatt Worldwide. (2002). *Modernising annuities*. from <http://www.watsonwyatt.com/europe/research/annuities.asp>

Work and Income. (2011). *Residential Care Subsidy and Residential Care Loan*. Retrieved from <http://www.workandincome.govt.nz/individuals/forms-and-brochures/residential-care-subsidy.html#Assetswecountinclude6>