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Funding the long goodnight: more intragenerational risk sharing

Abstract

In New Zealand, middle-income groups face under-appreciated risks in old age, including outliving capital, and stringent income- and asset-tests for expensive long-term care. Focus has been on changes to the dependency ratio, with little discussion whether those over 65 should bear more of their own costs, or spread those costs among themselves. In the past, occupational pensions have been available for some to assist with long-term aged-care. This paper explores the justifications for state intervention in adapting traditional annuities to provide insurance for aged-care costs. The improved intragenerational cost sharing may lessen concerns about intergenerational conflict.

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Introduction

New ways are needed to meet and pay for the associated costs of the large baby-boom cohorts that will swell the ranks of those over 85 by mid-century (Dale & St John, 2011). This is made more urgent by the trend for ever increasing 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 New Zealand, middle-income groups face under-appreciated risks, such as outliving 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-lived parents.

Little discussed in the New Zealand context is whether the over 65 year olds as a group should both bear more of their own costs, and spread those costs among themselves by means of insurance. In this approach, funding puts more emphasis on intragenerational cost sharing and by so doing concerns about intergenerational conflict may lessen (St John & Chen, 2010).

In the past occupational superannuation schemes often paid an on-going income or pension to retirees. Since the 1990s there has been a decline in the use of such schemes in favour of lump-sums accumulation. Middle income retired people who have good pensions have been able to use these to contribute more to the funding of their health costs including long-term care. Most in the babyboom cohorts will not have the protection of a pension to supplement New Zealand Superannuation in old age, but may have illiquid assets especially housing. (St John, 2009)

As private pensions become less common, especially pensions that are inflation-adjusted, many more people face decisions about managing their retirement savings themselves. From 2012, New Zealand retirees will come into retirement with increasingly large, tax-subsidised lump-sums from KiwiSaver that must be managed over an uncertain lifespan, in an uncertain investment climate, including unknown levels of inflation and possibilities of further GST/income tax shifts.

As outlined in Dale and St John (2011), the financing of long-term care costs needs to better reflect the different and often more cost-effective options for care that are emerging in the 21st century. Dale and St John (2011) raise the possibility that new technology may reduce the costs of care providing we are not locked into a model of subsidisation of the For Profit sector long-term care sector. This paper explores the ability of appropriately designed annuity products to both improve well-being of those who live a long time and to spread the burden of the cost of their care more equitably both between generations and among the retired as a group.

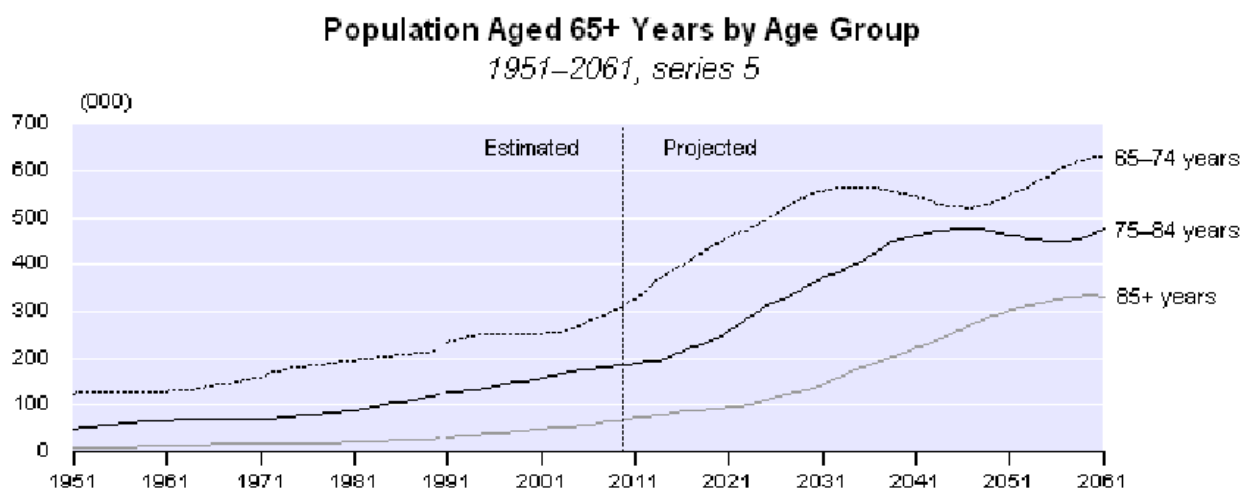
In countries where annuity markets are significant, the state may compel the annuitisation of either part or all of certain tax-subsidised retirement savings. There may also be special tax advantages applied to the annuity itself, or some favourable treatment granted, such as under the means test for a state pension in Australia. The evidence of substantial state intervention in countries that have a viable annuities market reflects the obvious and widespread 'market failure problem' of annuities. Conversely, the almost complete absence of a New Zealand annuities market reflects the reality of market failure when there is no explicit state intervention.²

This paper reflects on the justifications for state intervention in the annuities market, including how annuities may be adapted to provide insurance for old age care costs. It is argued that leadership from the state will be required because the nature of the insurance problem implies that solutions will not arise spontaneously in the private market alone. Furthermore, extra finance from the proposed adapted annuity may allow for not just institutional care but also for creative home-based technological solutions.

The context

Figure 1 Population aged 65+ years by age group

Source (Statistics New Zealand, 2007)



In 2006, the percentage of people aged 65 years and over in residential care in New Zealand was 5.4% Less than 1% of those aged 65-74 years in New Zealand were in residential care, increasing to 5.6% of those aged 75-84 years and 21% for people aged over 85 years (Statistics New Zealand, 2007) Almost 80% of residents aged over 85 years are women. In 2008, just over half of the 30,000 older people residing in long-term care facilities were in rest-homes (i.e. nursing homes), one third were in long-term hospital care and the remainder were in specialised dementia or psychogeriatric units (Ministry of Health, personal communication 2011).

² But it is noted that the provision of New Zealand Superannuation is also a factor.

Of particular relevance to long-term care needs is the projected increased number of those aged 85 years and over. Using series 5³, the projections show that the number of people aged 85 and over (85+) is expected to increase from 67,000 in 2009 to about 330,000 in 2061 (Statistics New Zealand, 2009). Even under the high mortality projection (series 3), the numbers over 85 are projected to grow to 250,000 in 2061. Under the low mortality projection (series 7), there would be 420,000 people aged 85+ in 2061.

Some of the increased demand for long-term care implied by these demographic projections is likely to be taken up by the shift towards services provided in the home and technology improvements (Dale & St John, 2011).

However to encourage 'ageing in place' several strategies, such as raising the dependency threshold at which a person becomes entitled to subsidised residential care, have already been implemented (Ashton & St John, 2011).

Who pays for long term care?⁴

There are considerable measurement issues but Figure 2 provides a comparative visual picture of the total expenditure on long-term care (including home care) for people aged 65 years and over. While total spending in New Zealand at 1.4% of GDP was just below the OECD average of 1.5% more of it (92%) was from public sources than the OECD average (OECD, 2011).

It is striking from Table 1 that in the OECD private insurance plays only a very minor role in the financing of long-term care. New Zealand and Sweden are unusual in having such a high proportion of the financing from general revenue sources and none from social insurance arrangements such as social security. However out-of-pocket expenses also look very low, the OECD suggests that these may be underestimated. One issue is how the non-custodial expenses of care are accounted for.

The proportion paid out-of-pocket for residential care in New Zealand is shown as 4.4% is certainly significantly higher than shown, with all residents paying something out of their income or savings towards the cost of their care. For many, this contribution is limited to their universal taxable flat-rate state pension, paid out of current taxation. Private insurance for long-term care, as elsewhere, is virtually non-existent in New Zealand.

³ Series 5 assumes the total fertility rate will decrease to 1.9 births per woman by 2026 and then remain constant. life expectancy at birth will increase to 85.6 years for males and 88.7 years for females by 2061. A long-run annual net migration gain of 10,000 people from 2013 (Statistics New Zealand 2009)

⁴ This section draws on Ashton and St John (2011)

Figure 2: Public and total spending on LTC in OECD countries, share of GDP, 2008

Source: OECD (2011)

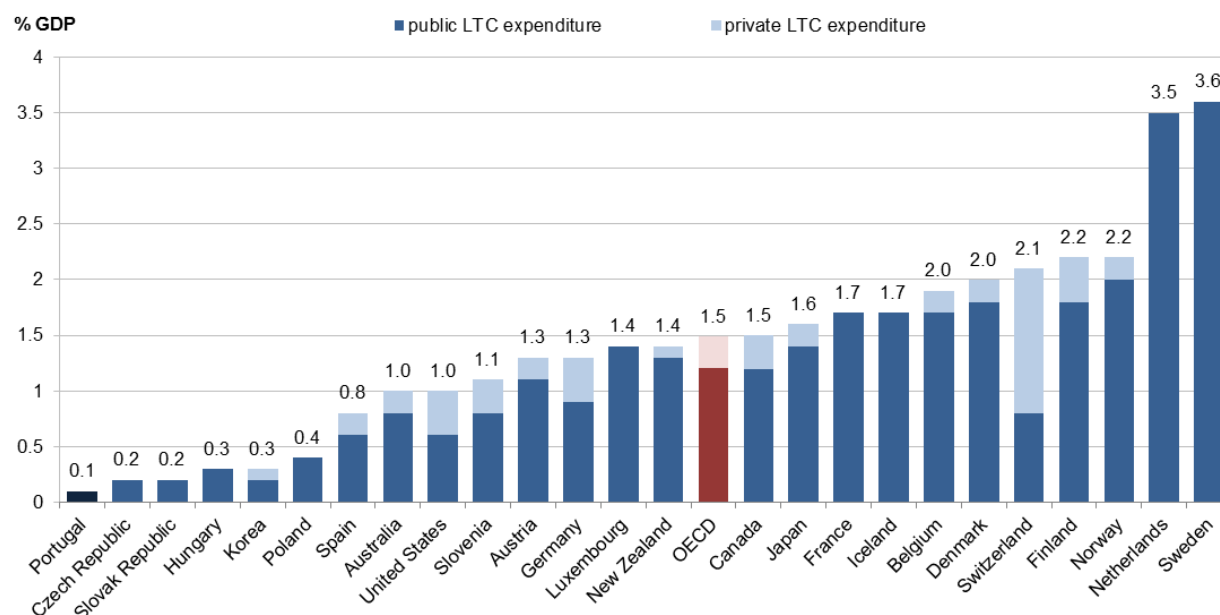


Table 1 Long-term care expenditures by source of funding, 2007

Source OECD 201

Country	HF11: General government (excl. social security)	HF12: Social security funds	HF21-HF22: Private insurance	HF23: Private households out-of-pocket exp.	Other	HF24: Non-profit institutions serving households	HF25: Corporations (other than health insurance)	HFTOT: Total expenditure HF.1-HF.6
Switzerland	11.7	27.1	0.4	58.4	2.4	2.4		100
Portugal	2.0	51.4	1.1	45.4				100
Germany	12.5	54.7	1.7	30.4	0.7	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	5.3		100
Austria	81.1	0.7		17.1	1.0	1.0		100
Canada	81.6	0.4	0.4	16.8	0.8		0.8	100
Finland	77.2	7.6		14.2	1.0	1.0		100
Estonia	48.2	39.3	0.1	12.4	0.0	0.0		100
Norway	89.3			10.7				100
Denmark	89.6			10.4				100
Australia	88.9		0.3	8.5	2.3		2.3	100
Japan	44.2	44.8	4.0	7.1				100
New Zealand	92.0		1.3	4.4	2.3	2.3		100
Hungary	60.1	30.2	0.9	2.4	6.4	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	7.4		100
Belgium	31.4	58.7	9.8	0.2			0.0	100
Iceland	39.4	60.6						100
Czech Republic	30.5	69.5						100
Netherlands	9.5	90.4			0.1		0.1	100

Note: Data on OOP spending for some of the countries may be underestimated. For example, in the Netherlands, cost-sharing on long-term care services is estimated to account for 8% of the total LTC expenditure.

In 2009/10, the district health boards spent \$800 million (exclusive of goods and services tax) on long-term aged residential care while residents contributed around \$650 million (inclusive of goods and services tax), about \$250 million of which came from the residents' state pension (Ministry of Health, personal communication). This suggests that about 42% of total expenditure on long-term residential care was paid for by the individual's own state pension or other savings and income. Of those in rest home care, about 70% were (fully or partially) subsidized by the state while the remaining 30% were paying in full privately.

A range of home care services and equipment is also available including community health services (such as district nursing) and disability support services (e.g. cleaning, shopping, home-delivery of meals, appliances and aids). Funding of services and equipment provided in the home varies with most health services available free of charge while subsidies for most disability support services are income-tested and subject to needs assessment criteria. No asset test is applied to any form of home care.

District health boards are responsible for assessing the health and support needs of older people. Some of the boards also provide long-term care services. However, most commonly, the boards contract for long-term residential care from private providers who are paid on a per day basis under a national contract. The district health boards also contract for long-term care services provided in the home and for other support services such as carer support and respite care.

Financing of residential care in New Zealand

All New Zealand residents who have been assessed as requiring long-term residential care on a permanent basis are eligible for a government subsidy, subject to a means assessment that includes both assets and income. While the asset test determines whether a person is eligible for a subsidy, the income test determines the amount a person must pay towards the cost of their care. The government pays the full cost of care (over and above the contribution from the state pension itself) for people with assets below the threshold and income from assets below an exempt level.

Any income earned above this level goes towards the cost of care up to a maximum amount set equal to the contract price paid by the district health boards for rest home care in each district. 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.

Brief history

In 1994 the threshold for asset testing for married couples with one spouse in long-term care was only NZ\$40,000 with house, car, personal effects and prepaid funerals (up to NZ\$10,000) exempt. The income test applied to all income above a low exemption earned by the spouse or defacto partner living in the community, regardless of whether or not the \$40,000 asset threshold had been reached. A single person without dependent children could retain only \$6500 with no exemption for the family home. A married couple both in care, was effectively treated as two single people with a joint exemption of \$13,000 (Table 1).

Table 2: Exemptions under the asset test for the residential care subsidy

Years	Single person	Married couple with 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 or if chosen \$150,000* of total assets	\$150,000*
As at July 2010	\$200,000	\$105,000 +house and care or \$200,000 of total assets	\$200,000

Sources: (Ministry of Health, 2010)

Notes: * These exemption levels have been raised by \$10,000 each year, commencing July 2006.

Responding to bitterness expressed by older people about the stringency of this means test, in 1996, an incoming Coalition Government agreed to remove income and asset testing of older people in long-stay public hospital care, and asset testing of older people in long-stay private hospital care. The Coalition partners also agreed to exempt \$100,000 of the home for the asset test of singles, and for couples both in residential care (Coalition Agreement, 1996). In the event, the Coalition Government was dissolved and, in place of this agreement, new adjustments to income and asset tests were made in 1998 (Table 2).

In spite of the raising of the thresholds for exempt assets, these means testing arrangements were still perceived as harsh and there was pressure from advocacy groups representing older people for the government to honour the 1996 Coalition Agreement. In 1999, an incoming Labour-led government promised to remove asset testing but new legislation was slow to emerge and did not take effect until 6 years later

in July 2005 (Social Security (Long-term Residential Care) Amendment Act 2004). This time around, the thresholds for the asset test were raised quite considerably, with the rise being most significant for a single person, less so for a married couple in care, and least significant for a married couple with one in care although the exemption for their house was retained (Table 2). 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).

The exemption thresholds are raised by \$10,000 each year for all groups so that by 1 July 2010 the exemption levels were \$200,000 for a single person and for a married couple if both are in care, and \$105,000 (with the house exempt) for a couple with one in care. Initially there was no intention to change the income test but after submissions were heard, the government decided to exclude from the test any income earned by a spouse from personal effort whose partner is in care. The rationale for change was one of a particular view of fairness that did not look more widely at 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 per cent the proportion in care who receive the subsidy. (Dyson, 2003).

Current issues with the means test

While the asset test exemption is being progressively raised, the asset test itself will never be “removed” under the new arrangements as was claimed by the government

The \$10,000 annual increase in the exemption is not indexed and represents an average of only 4.7% increase per annum over the period 2005-2020. This is little more than an inflation adjustment, providing inflation remains low. The next 30 years, out to 2050, would see an average increase of just 2% per annum, and a negligible increase thereafter. Property is a popular asset in New Zealand and is possible that there may be another property boom in which house prices again rise rapidly. In other words, despite being raised each year the exemption is set to fall in real terms under the current policy settings.

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. Single people are significantly better off as their asset threshold has been raised from \$15,000 in 2005 to \$200,000 in 2010.

However, for a married couple, both in care, the exemption is now exactly the same as for a single person. In addition, if they fail the asset test they must both pay up the maximum weekly contribution, even though they may be sharing accommodation. Should they divorce, they would each have an exemption of \$200,000.

In contrast, 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 residential care became eligible for the single, living alone rate of New Zealand Superannuation (i.e. the universal state pension) rather than one half of the married rate (Dyson 2006). In addition the income from assets up to \$2,690 per annum for a couple with one in care is exempt from the income test. For a spouse at home, this barely provides maintenance of the real value of the exempt \$105,000 of joint capital.

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 long-term care facilities increasingly needed to draw down on their capital, the value of which may have been eroded significantly. For them, the raising of the exemption may be viewed as some rough compensation for this loss of wealth. Inevitably, more of the costs will be shifted to taxpayers through the increased use of the residential care subsidy.

Because the family home is exempt from the asset test for a couple with one in care, 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 with an effective 100% confiscation required over the joint exemption.

Some wealthier residents requiring care may be able to pay their fees entirely out of the income from their assets. As the cost of hospital level long-term care can exceed \$1500 a week, and the cap on personal contributions is currently (2011) \$786 - 864 per week depending on the region (Ministry of Health website undated), taxpayers are effectively subsidising the further asset accumulation of some long-term care residents. These assets can then be bequeathed in full, estate duties having been abolished in New Zealand in 1992.

Until recently, contract prices paid by district health boards to providers of age-related residential care were increased on an irregular basis and, inevitably, real prices eroded over time. The cap on fees prevents providers from cost-shifting by increasing the price charged to non-subsidised (i.e. private) patients (Ministry of Health 2007). In addition,

contract prices are now reviewed annually. However, residents can still be charged for services that are described as outside of the service specifications of the contract. These might include for example, superior rooms, special equipment, transport to services or outside social functions, specialist care and so on. If contract prices are inadequate, private providers may not wish to provide services in lower-socioeconomic areas where residents are less able to afford any extra charges, or in rural areas where there is less potential to offset any operating losses through property development. Providers may also be unwilling to accept subsidised residents who may effectively bring in less revenue. All of these pressures may compromise access to long-term residential care for poorer people.

A more important criticism of New Zealand's approach to financing long-term residential care concerns the implications for intergenerational equity. Subsidising long-term care from general taxation effectively redistributes money from the working population to those in care. The burden of this redistribution 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 expensive long-term care the perceptions of intergenerational equity may improve.

In New Zealand, the spectre of asset testing of long-term care may also encourage an early divestment of assets or the use of trusts as a means of asset protection (Frawley, 1995) The use of trusts has expanded markedly in New Zealand 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, available for long term residential care, 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. (Law Commission, 2010)

In 2011 all gift duty was removed, providing yet more financial incentives for people to set up trusts and alienate assets that count for the residential care subsidy. There are also no constraints on the use of reverse mortgages to reduce equity in the home to the threshold for the asset test.

In summary the means test for long-term is harsh even with the improved thresholds and encourages avoidance. Those who do have assets to use in paying for care are

unable to provide for their heirs in the same way that others who are more fortunate can.

The probability of needing long-term care is a function of the probability of living to older ages and the probability of needing care in those older age groups. At the age of 65 this probability of needing care is much lower than the probability of needing care once say the age of 85 is reached. This suggests that there is an insurance problem that a suitable product at age 65 might address. It is interesting to note that no innovations in the private sector have been forthcoming.

Longevity and long-term care risks⁵

The two important risks faced by those over 65 are:

- The risk of excess longevity ie living longer than expected
- The need for long-term care and the run down in assets before the public program steps in.

The state pensions in both countries provide some protection for the longevity risk, but only at a basic income level. Average life expectancy at age 60 or 65 is a poor guide to the years an individual may actually live, with a spread of mortality around the average (Wadsworth, Findlater, & Boardman, 2001). It means that some may live up to twice, or even more as long as the average. Managing a capital sum with a drawdown product to last for a lifetime whose length is uncertain can mean a seriously diminishing annual income for those who live a long time. Drawdown products themselves based on average life expectancy can be a very poor solution for those who live longer than average.

For those who require expensive healthcare, the current practice of user pays can mean that individual estates are quickly depleted, imposing costs on some of the working-age population whose inheritances diminish or disappear. Today there are few, if any, suitable annuity products to meet the risk of outliving additional capital. Private pensions can be helpful but, fewer employers are offering these and few of these pensions provide protection from the erosion of inflation.

In the case of long-term care, private insurance products where they exist tend to be limited and circumscribed. 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 to be a rational solution at that point. Private insurance contracts work best if they are annually renewable so that changes in risks and loss experience can be incorporated into the premium. This in turn can leave people vulnerable to being risk rated out of the market

⁵ This section draws on St John and Chen(2010)

as they age. Suppliers of long-term care insurance are affected by the uncertainties of future costs and demands including the inflation risk which makes it a difficult product 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.

Thus long-term residential care is not well covered by private insurance as would be predicted. Yet there would be gains from pooling risks, as otherwise huge costs can fall on the uninsured and/or the financially naïve. If each person tries to save enough to pay for the maximum time they might need in care, given that the majority will not need such care, many people will die leaving unintended bequests. The obvious welfare gains to be had from pooling risks are not well exploited by private providers because of the special difficulties of the insurance contract.

Some of the difficult questions to be addressed, discussed in Barr (2001) are:

- 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?

In light of these difficulties, and others, it is clear that any all encompassing contract, single premium product at age say 65 will be near impossible to draw up. On the insurer's side, problems arise because uncertainty, rather than risk, makes probabilities indeterminate. Moreover:

- There is no accurate data to predict the probability with which future cohorts of retired will require care.
- Insuring from a young age gives more insurance protection because of the wide pooling, but the costs of uncertainty are higher.

- The condition of independence of probabilities does not hold. Medical advances that prolong life may place everyone in a similar situation
- The relative cost of care is likely to continue to rise over time (Baumol's cost disease), but the extent of this is uncertain.
- Adverse selection problems are high and may require intrusive questioning from the insurer.

Moral hazard may arise from several sources. The obvious one is that the person concerned may be more likely to demand care, but there are also worries that family likewise may push older relatives into care if there is insurance.

The UK Royal Commission report on long-term care cited by Barr (Barr, 2001, p 83) concluded that private insurance without state intervention was not ever likely to become significant in the UK. In practice few countries have grappled successfully with providing protection for the costs of long-term care, but increasingly attention is being focused on this issue. Japan and Germany have most comprehensively addressed the issue with long-term care social insurance see St John and Chen (2010).

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. 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 and what is required is a re-envisioning of social insurance solutions.

The case for finding a solution to these market failures rests on grounds of both individual welfare and public interest. Without insurance against these risks, 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, long-term 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 either 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 long-term care fall unevenly and unfairly on the unsophisticated, while the trust mechanism allows cost shifting to the working-age population.

Older people who die early may pass remaining assets down to the next generation, but the distribution of these bequests is likely further to widen the income and wealth

distribution. Thus, without insurance to overcome these two risks, the impact on the working-age population is arbitrary and inequitable.

From the point of view of society, a requirement to annuitise a portion of wealth 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. It is this thinking behind compulsory annuitisation in the United Kingdom, where extensive tax subsidies to retirement savings have permitted such rules.

Unfortunately, simply compelling annuitisation without attention to design may simply force people to take unsuitable products. It can be argued this has been the case in the United Kingdom, where annuity rates have been falling for many years and annuities have been highly unpopular. Pressure to move away from compulsory annuitisation has forced a policy change in the UK so that the pensions pots do not now have to be annuitized by age 75. Nevertheless, the absence of suitable drawdown products for modestly well-off people means that annuitisation is still the only option. 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.

The intragenerational funding concept

The basic idea of intragenerational funding is that the older age group themselves could meet more of the costs associated with the risk of aging. The intent is to shift some of the burden from the working-age population by arrangements whereby the retired as a group would bear the reduction in consumption through the purchase of suitable social insurance.

Intragenerational funding of the risks of old age, such as increasing longevity and long-term care through suitable insurance mechanisms improves intergenerational equity by removing some of the burden from the working-age population. Without such insurance, taxes must be higher and certain unfortunate families must bear the disproportionate costs of the asset depletion of their parents. If parents 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 intragenerational funding approach for long-term care.

St John and Chen (2010) consider two generic approaches to intragenerational funding . Neither of these is intended to replace existing PAYGO programs, but by supplementing these programs, these models offer the possibility that more of the costs are actually carried by the old as a group:

- Model 1. The old as a group pay for their long-term care insurance by way of a reduced state pension.
- Model 2. The old as a group purchase an additional annuity to supplement the state pension that has a long-term care add-on insurance component.

The first approach would be designed so that low-income retirees who are not able to afford pay for any insurance product are fully subsidised as they are now by the state. Middle-income groups, however, might be attracted by a reduced rate of state pension that would be exchanged for the state meeting part or all of future long-term care costs. While top income groups can self-insure, they too would be encouraged to participate. The inducement to purchase such insurance requires the retention of an effective means test on state provision. It may require compulsion to keep the adjustment to state pension low enough to be attractive.

The second approach is designed specifically for middle income groups as a life annuity plus long-term care insurance purchased with a single premium at 65 or 70. 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 long-term care (the vast majority of those who survive), subsidize the ones who need care. The younger the age of purchase and the greater the numbers who purchase, the more sharing of the risk. Those whose health status makes them poor risks for long-term care insurance are good risks for life annuities, so that linking the two risks is likely to increase long-term care coverage of the population and reduce the need for medical underwriting, and 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 long-term care. Murtaugh, Spillman & Warshawsky (2001) propose 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 provide cover for more people. In Warshawsky, Spillman, & Murtaugh (2002, p. 198) it is argued 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"

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

There are several issues to consider in designing a life annuity that has long-term care 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 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 in helping to paying for this kind of annuity may make it very attractive but it is likely that any advanced annuity product such as envisaged here would not be forthcoming except with a strong involvement from the state. A possible way this might work is considered for New Zealand.

A new approach for New Zealand

Until 2007 New Zealand was in a unique position to offer limited subsidies for a combined life annuity/ long-term care product given that there had been no expensive and regressive tax-driven subsidies to the accumulation phases of retirement saving. In 2007, a new saving scheme, KiwiSaver, began with generous subsidies, since reduced in the 2011 budget. Nevertheless overtime the lump sums generated by this scheme at age 65 will grow and it is very important that some thought is given to how these lump-sums are used (St John, 2009).

The current rates of New Zealand Superannuation in 2011 is \$NZ 13,600 net for a married person, \$16,316 for a single sharing, and \$17675 for a single person living alone. Taking \$15,000 net as the value of the pension for someone in care, that together with another \$30,000 is sufficient to meet the annual capped fee cost of long-term care (up to \$45,000).

Suppose a retiree's private saving, including Kiwisaver, is used to buy an inflation-adjusted annuity of \$10,000 pa, an insurance rider could provide that this annuity would treble on the diagnosis of needing long-term care (St John, 2005) Based on the probabilities of needing care, a purely actuarial calculation at age 65 (averaged for male and female) assuming a real rate of interest of 2%, an annual inflation-adjusted

premium of about \$500 or equivalently an additional capital sum for the annuity purchase of \$11,500 was suggested by St John (2004). This amount is tentative and based on a purely actuarial costing that needs updating, but compares favorably with the costs of setting up and running trusts to hide assets to avoid the asset test for long-term care.

It must be made emphasized the \$500 pa or the \$11,500 single premium would not itself purchase full coverage. The insurance operates on the original annuity, so that the costs of long-term care \$45,000 would be paid for from \$15,000 net state pension plus \$30,000 enhanced annuity. The capital sum required for such an annuity may be made up from KiwiSaver lumpsums, other saving and possibly a home equity share. The state would provide an implicit subsidy for at least the inflation proofing. Options such as treating the annuity AS an add-on to New Zealand Superannuation 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 long-term care in the annuity provision could be used to help pay for the current costs of long-term care (and thus be a PAYGO scheme) or used to build a trust fund to be drawn on later. Table 3 shows how the numbers in the younger "old" population are expected to rise.

Table 3 Population aged 65-74					
Source (Statistics New Zealand, 2007)series 5					
Year	2006	2011	2021	2031	2041
Numbers aged 64-74	275,000	349,000	457,000	559,000	556,000

Under current series 5 assumptions, there will be round 460,000 aged 65-74 by 2021. Assuming that one half of the top six deciles use their cash saving, perhaps with a home equity share to buy a capped inflation-adjusted annuity of \$10,000, a sizeable fund of could be generated in 2021. From this, the state social insurance programme would pay an annual annuity of \$10,000 to the annuitant, and a further \$500 each year to an earmarked long-term care fund. To encourage participation, the asset and income test for long-term care should be strengthened by tightening up on ways to avoid the test such AS through creation of family trusts.

As successive cohorts enter retirement, there will be a growing number of people providing these long-term care contributions, and some of the funds could be applied on a PAYG basis to care for the existing growing frail population.

Conclusion

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

It is possible to think past the old models of social insurance that impose costs directly on the working-age population, and the old models of private annuities and private long-term care insurance, which are not working well if at all. Concern about intergenerational equity is likely to become an increasingly important issue as the population profile of each country begins to change rapidly in the next decade. Intragenerational risk sharing may lessen concerns about possible intergenerational conflicts because the support for the older generation will fall more on older persons themselves.

The model considered here in particular would shift the risks with 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 technological home based solutions.

By encouraging the older age group to fund more long-term care needs themselves through a social insurance mechanism, more resources may be freed to meet the increased demands of an aging population. It is suggested that such intragenerational risk sharing can improve both perceptions and the reality of intergenerational equity.

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