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**What is wrong with the New Zealand model for
pensions?¹**

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¹ Draft paper, comment welcome

Abstract

New Zealand's simple retirement income system based on a universal state pension is very effective in meeting poverty prevention objectives and in providing basic income security in times of increasing uncertainty. This paper argues that the other part of the package, voluntary, unsubsidised private provision, is unlikely to satisfy the income replacement aspirations of middle-income New Zealanders who must invest their supplementary saving in 'scary markets'. The baby boom retirement is set to begin around the year 2010 so that major changes to the accumulation phase of retirement saving, given the time it takes to implement change, are unlikely to make much difference, even if they were politically feasible. This leaves the decumulation phase. In particular this paper argues that attention to the broad risks of ageing is needed, including long-term care and that deliberate intervention in annuity markets will be required. Unfortunately, the possibilities for debate around fundamental issues of pensions reform remain limited with the demise of the 1993 Accord and the narrow terms of reference set for the 2003 Periodic Report Group.

1 Introduction

Compared to other countries, New Zealand's simple retirement income system based on a universal state pension is very effective in meeting poverty prevention objectives (St John & Ashton, 1993; St John & Gran, 2001; St John & Willmore, 2001). Women, in particular, are treated favourably in the New Zealand public pension system compared to their counterparts in countries like the United Kingdom (Ginn, Street & Arber, 2001).

Arrangements for private provision are also remarkable simple, with superannuation schemes, in principle, treated no differently for tax purposes than putting money in the bank. The tax neutral treatment of superannuation saving since 1990, however, has been one of the negative factors impacting on employment-based superannuation in New Zealand. Coverage under employer superannuation schemes has been declining, along with the value of employer subsidies for most earners.² As in other countries, defined contribution schemes are replacing defined benefit schemes so that far fewer people coming into retirement with a private pension or annuity (St John, 2002).³

So what is wrong with the New Zealand model? The New Zealand model has been considered in international debates, but more as an object of international curiosity than as a model to be emulated (see, for example, Johnson, 1999).⁴ Nevertheless, the tax regime for private saving for retirement is of interest to other countries because of its cost advantages, the equity implications, and its relative simplicity. One of the little appreciated consequences of the New Zealand approach, however, is that a tax neutral approach precludes the right to regulate retirement saving for social purposes. This

² Only around 14 % of the labourforce is in employment-based schemes, with women far less likely to have significant coverage than men.

³ An annuity is an annual income stream purchased from a Life Office with an individual's lump sum. Annuities can be paid for life (life annuities) or for a fixed term (term annuities). Pensions are group annuities paid from company, government or group retail schemes.

⁴ More recently, developing countries have shown interest in the New Zealand model as a possible alternative to the World Bank model. This was discussed at a forum at the United Nations conference on Financing for Development at Monterrey, Mexico, 19-22 March 2002.

means there is no potential, for example, to legislate for the purchase of an annuity from the retiree's lump sum.

While not the subject of any degree of debate in New Zealand it seems clear that for those whose pre-retirement income is just above the lowest deciles, the New Zealand model falls short of meeting even modest income replacement objectives. The imminent baby-boom retirement between 2010 and 2030, may see many middle-income retirees fail to achieve adequate protection against the longevity risk, the investment risk, the inflation risk, and the risk of costly long-term care in old age.

New Zealanders have traditionally had a very high proportion of their assets in owner-occupied homes, in part because home ownership is treated more favourably for tax purposes than are other investments. Unfortunately one's own home is not usually a source of readily accessed liquidity that can be drawn on to finance the additional costs of retirement. As with the almost non-existent annuities market, home equity release schemes are rarely used.

In addition to deficiencies in the annuities and reverse mortgage markets, there is no viable private insurance for the costs of long-term care. This paper suggests that market failure arguments provide the justification for the state to play a substantial role in facilitating the income replacement objective in the decumulation phase, and to ensure the availability of insurance for catastrophic expenses in old age.

2 An up-date on the New Zealand model

Recent papers (St John, 2001, 2002) have outlined the evolution of the New Zealand superannuation system. Despite a rather volatile political environment the basic shape of the New Zealand system has proved durable. New Zealand has implicitly rejected the reforms favoured by the OECD and the World Bank for a second pillar compulsory savings scheme and remains the only OECD country to entirely remove all tax concessions for the accumulation of savings for retirement.

Significant issues in 2003 concern the tax treatment of employment-based schemes; the introduction of prefunding for New Zealand Superannuation; and the lack of a political process to ensure stability around necessary policy reforms in the face of rapid demographic change from around the year 2010.

2.1 Tax issues today

The New Zealand tax regime was outlined in detail in previous papers (eg St John, 2001; St John, 2002) In brief, the tax regime adopted by New Zealand in 1990 (TTE) for retirement saving works best for superannuation schemes if the tax rate system is fairly flat. That way, the contributions tax applied to employer contributions, the tax on fund earnings and marginal tax rate of contributors are similar.

When the middle-tax band was lowered in 1996 and 1998 as shown in Table 1 below there were big disparities between taxes paid in superannuation funds and the marginal rates actually faced by middle-income earners. Employer contributions (under a withholding tax) and earnings in the fund are taxed at 33 per cent and thus the regime is tax penal for anyone on only a 21 per cent tax rate.⁵ Later when the top rate for incomes over \$60,000 was introduced in 1999 at 39%, perversely, the regime became concessionary for high-income earners.

Table 1: New Zealand tax schedule for personal income tax

Bracket	Effective marginal tax rate*		
	1988-1996	1/7/98-1/4/00	From 1/4/00
\$0-9,500	15	15	15
\$9501-30,895	28	21	21
\$30,895-38,000	33	21	21
\$38,001-60,000	33	33	33
\$60,000+	33	33	39

Source: Inland Revenue Department

*Includes the low-income earner's rebate

The 2003 Budget signaled the intention to make an attempt to address the overtaxing problem:

The Government acknowledges that there are a number of disincentives to saving through employment-based schemes and for employers to offer these schemes.

Within the next few weeks, the Government will be introducing legislation to remove the current over-taxation of employers' contributions to superannuation funds on behalf of low-income savers. The present tax rate on employer contributions is a flat 33 per cent, regardless of income.

From 1 April next year, employers can apply a lower tax rate of 21 per cent on contributions made to superannuation funds on behalf of employees

⁵ In addition there may be capital gains tax to pay where funds are deemed to be trading. Individuals who invest on their own account may be exempt from such a tax.

earning under \$38,000 a year. This should remove one of the disincentives for low-income earners to save through employment-based schemes.

There are on-going concerns in the industry that compliance under the 2003 budget provisions will be high. Because it is not mandatory to offer the lower tax rate, many employers are likely not to bother, finding the existing compliance costs of the employment-based schemes already onerous. Of course, the tax on employer contributions is only part of the over-taxation of superannuation funds. As the 2003 Budget speech continues:

The direction of the Government's future work in this area is to look at removing the disincentives for employers to offer these schemes, and the inequity of the current tax law in overtaxing a fund's earnings in relation to low income savers.

The savings industry and the government are cooperating on this work which is moving in parallel with that being undertaken by the Periodic Review Group on retirement income policy.

The significant tax advantages for high-income superannuation fund members comprise both a saving of 6 per cent on employer contributions and 6 per cent on fund earnings tax have not been changed. In the 2003 PRG review submissions will doubtless call for the extension of similar tax subsidies to lower income groups as the government itself signaled in the 2002 budget. Treasury reports however have been less than enthusiastic:

Officials do not suggest that an upfront incentive is likely to make savings more realistic for many low to middle-income households. Such an incentive scheme is simpler to promote and explain however, which may increase its utilization amongst households with little to no current savings. While no incentive may be likely to appreciably increase savings, Officials prefer a tTE scheme to a TET or TET incentive because it would result in fewer harmful distortions to investment patterns, it would have a lower fiscal cost and it would create less room for avoidance and tax planning behaviour. (The New Zealand Treasury, 2001, p.1)

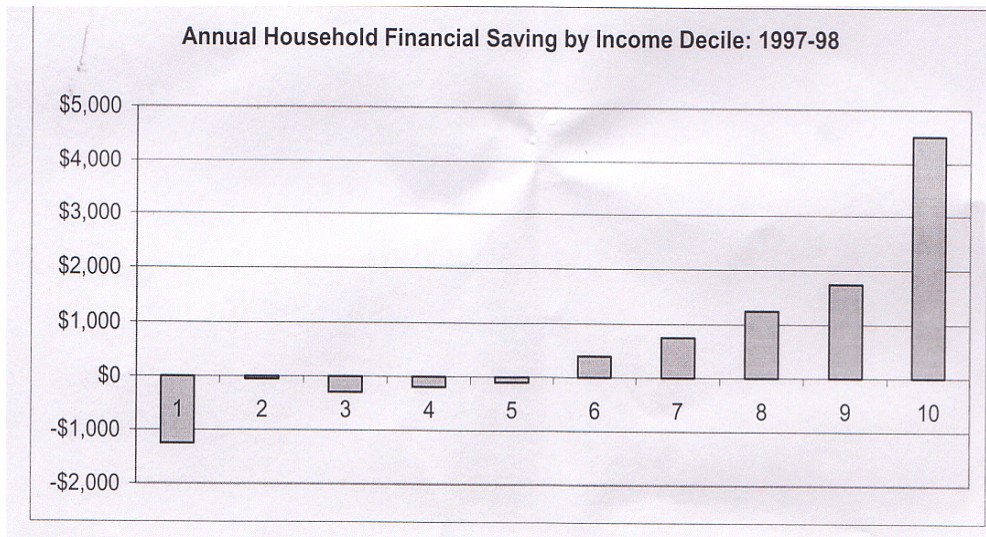
As the Minister of Finance has indicated:

...any incentives would have to meet the requirements that they were fiscally affordable, did not crowd out other government spending and added to overall savings levels, rather than merely shifting the form of savings'. (Cullen, 2001)

The distribution of financial savings (see Figure 1) suggest that the introduction of tax incentives will only benefit those who already save at the top end. There are grave

concerns that to implement actual tax concessions will not in fact achieve any sensible objectives, but will complicate the picture further for employers who will doubtless be forced to comply with a raft of regulations.

Figure 1: Who gains from tax incentives?



Source: *The New Zealand Treasury (2001)*

In the meantime, the tax neutrality goal remains elusive. Housing as an investment is comparatively tax-advantaged, enjoying a TEE treatment in most cases. The imputed rental for home-owners is not taxed, and the capital gains on homes and many rental properties are tax-free. Despite the best endeavours of the McLeod Committee who examined the case for taxing imputed rent and discussed advantages that might flow from a Risk-Free Return Method (RFRM), there has been no political activity to pursue these issues (McLeod, 2001).

2.2 The emergence of the New Zealand Superannuation Fund

Any prospect of the resuscitation of the 1993 Multiparty Accord disappeared in the election of 1999. The Labour party campaigned with a unilateral superannuation policy including plans for introducing an element of pre-funding into the state scheme. This culminated in the New Zealand Superannuation Act 2001 which

established the controversial New Zealand Superannuation Fund.⁶ The National and Act parties voted against Part 2 of the Act that provides for the fund. In return for support pivotal for the passage of the Bill through the House, the New Zealand First leader, Winston Peters required rewording of clause 73, Part 3 of the Act to make it clear that the fund could be transformed into individual accounts at some time in the future.⁷

The Minister of Finance, Dr Michael Cullen, has described the nature of the fund as “smoothed pay-as-you-go”. The fund is expected to ease the transition from pensions costing a net 4 per cent of GDP to a cost of 9 per cent of GDP by the year 2050 as the demographic profile changes and the proportion of the population aged over 65 rises from 12 per cent to 26 per cent (Statistics New Zealand, 1999b). As shown in Figure 2, funds build up for around the next 25 years when they will be run down along with fund earnings to meet part of the costs of New Zealand Superannuation from that time.⁸ In the meantime the fund is to be managed at arms length by a board of appointed trustees called ‘Guardians of the Fund’ who will use professional fund managers to invest the money both domestically and abroad. It is expected that the actual investment of the accumulated funds will not occur until late 2003 by which time investment strategies will have been clearly established.

While officials have has downplayed any significant macro implications from the fund, Dr Cullen has argued that the counterfactual to setting aside some of the projected surpluses would be tax cuts. He claimed these would be bad for the

⁶ This Act comprises three parts: Part 1 sets out the entitlements to New Zealand Superannuation; Part 2 establishes the Fund; and Part 3 sets out miscellaneous provisions including the mechanisms for making changes.

⁷ Specifically the effect of the changes negotiated with Winston Peters are that the ‘Guardians of the Fund’ will have to report back within one year rather than two and that, instead of reporting on options generally, they should report specifically on the best means of allocating the Fund among individual accounts. Most commentators are bemused by what appears to be the confusion of a single tier New Zealand Superannuation which is highly redistributive, with a second tier supplementation based on one’s own contributions. Few commentators understand how the fund could be divided among the population when New Zealand Superannuation is a universal basic flat-rate provision (see for example New Zealand Business Roundtable, 2001, p.13).

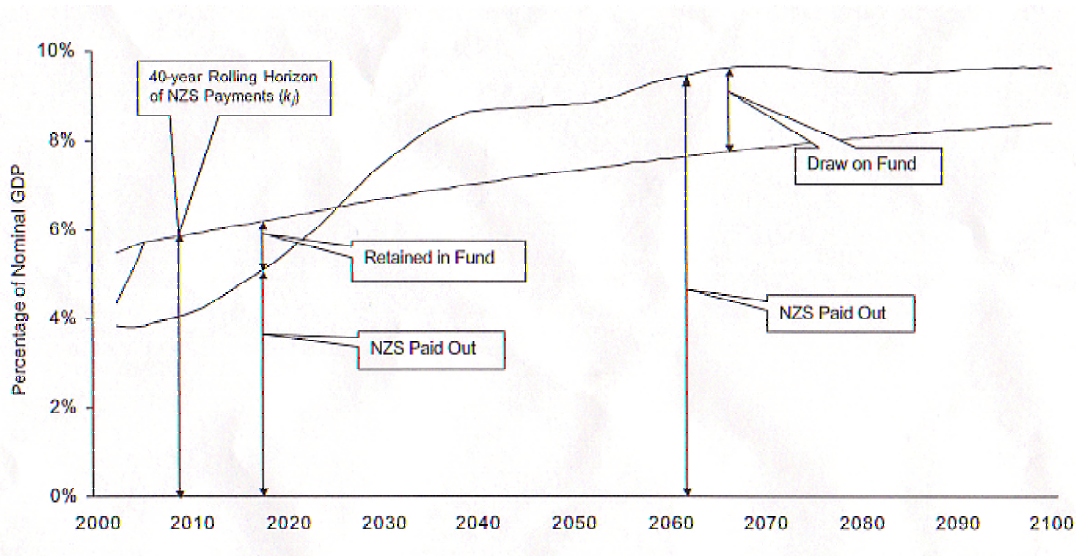
⁸ There are a series of working papers that detail the assumptions and the projections for the fund, see (eg The New Zealand Treasury, 2000). Also see Treasury web site: <http://www.treasury.govt.nz/>

economy. The fund would enable higher national saving compared to the counterfactual of tax cuts, and augmenting national saving should take the pressure off the Current Account Deficit (Cullen, 2000).⁹

It was also argued that by allowing the fund to invest in a diversified way including overseas financial assets, the government would improve the financial position of the Crown as a whole.¹⁰ While it could be argued that the government could diversify its assets without the need to set up the fund, the fund was claimed to have the additional benefit that it would “give people confidence that New Zealand Superannuation could be paid in the future” (Cullen, 2000).

The contributions to the fund required each year are based on a forty-year rolling horizon, and critically depend on the assumed rate of return in the fund. The expected tax smoothing is shown in Figure 2 below where a 9.4 per cent gross return is assumed

Figure 2: The New Zealand Superannuation Fund projected contributions



Source: McCulloch and Frances (2001)

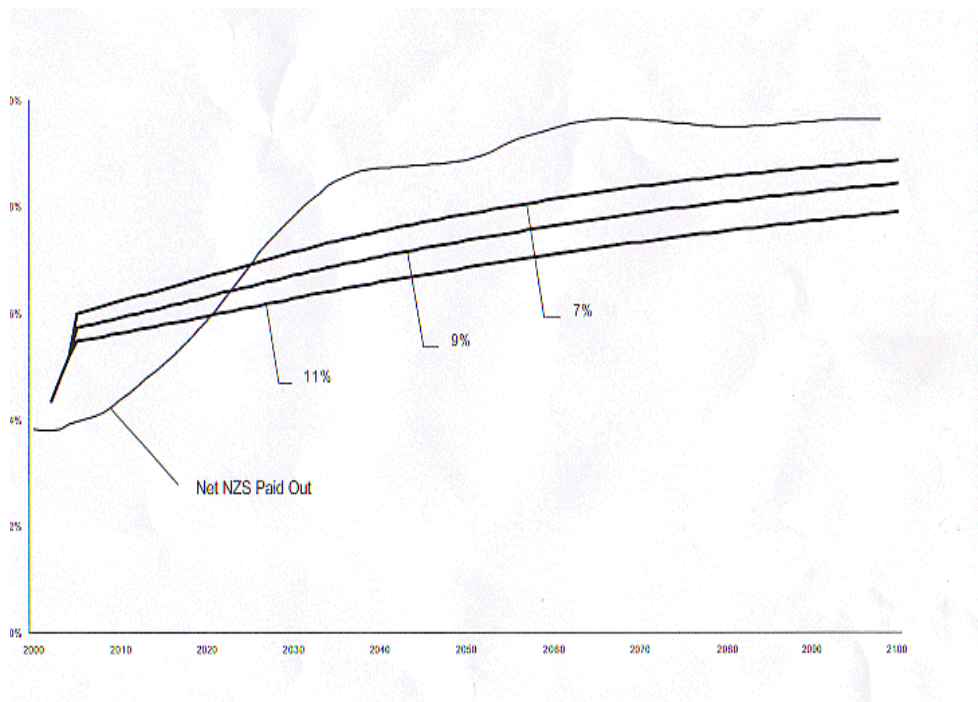
⁹ The concern about the CAD and the need to address it with more saving is not however reflected in all Treasury working papers (eg Kim, Hall & Buckle, 2002).

¹⁰ Already there had been moves to free the Government Superannuation Fund (for state sector employees) from restrictions on international asset holdings.

Davis and Fabling (2002) consider the efficiency cost aspect of tax smoothing and conclude that evening out the tax rates minimises deadweight losses¹¹ and for a base set of assumptions, produces significant welfare benefits compared to running a balanced budget. But, as illustrated in Figure 3, the impact of tax smoothing is sensitive to the assumptions about gross returns. The lower the projected rate of return, the higher taxes must be until 2025, for lower net gain once the fund begins to run down.

Any gain from tax smoothing is conditional on strong fiscal discipline so that ‘expenditure creep’ does not become a problem in the face of an improving balance sheet. It is also dependent on the assumption that government’s investment of the surplus will generate returns significantly above the costs of borrowing.

Figure 3: Effect of different assumptions about expected returns on the path of the required contribution rate



Source: McCulloch and Frances (2001)

¹¹ This is because the deadweight loss of a tax is thought to increase by more than the proportionate rise in the tax rate (Davis & Fabling, 2002, p3).

The New Zealand Superannuation Fund will become an increasingly large asset on the state's balance sheet. Bitter conflicts over resource shares can be expected, especially if the economy fails to recover strongly from the slow growth and population loss of the late 1990s. Thus the size of this fund, how it is invested, and the overall intergenerational implications may yet prove destabilising (St John, 2001).

2.3 Long-term care issues

The history of long-term care, outlined in St John (2003 forthcoming) reveals a number of inequities that suggest reform of the means test was long overdue. Reform rather than abolition of the means test would make it clear that people were expected to provide for themselves if they were able. The next step would be provision of a viable insurance option.

In 2003, after a lengthy delay, the government announced plans to begin the abolition of asset testing for long-term care. This was in order to fulfill an election promise, precluding the wide debate on alternatives that was required. The legislation on the asset test is yet to be introduced into the House but is expected in late 2003. From 2005 the exemption for the asset test is to rise from \$15,000 to \$150,000 for a single person and a married couple both in care, and from \$45,000 to \$55,000 for a married couple with one in care (the home remains exempt in this case). The exemption is to rise by \$10,000 a year with the stated intention of achieving the ultimate removal of the asset test.

The projections show that even this limited attempt to remove the asset test will be expensive, with a cost of \$345m expected by 2020. The costs will fall on the working age population and raise questions of equity because the wealthiest older group also benefit from this policy. While projections do not go out to 2030 when the baby-boom bulge begin to turn 85, it is clear that the costs, from this time, will escalate dramatically.

2.4 The Periodic Report Group 2003

A Periodic Report Group (PRG 2003) was established in early 2003 under the statutory requirement for 6-yearly reviews of New Zealand's retirement income policies. The loss of Accord process has made these 6-yearly periodic reviews somewhat irrelevant however. The 2003 PRG review will not take place in a multi-party setting, but appears more directed to the needs of the government of the day.

With restricted terms of reference it is not the wide-ranging look at total retirement income policies, how they interact and whether they might be adjusted in the light of emerging circumstances that was envisaged in the Retirement Income Act 1993 to which the Accord agreement is appended.

The history of policy making in New Zealand demonstrates the necessity for a multiparty agreement and a proper process for making changes (St John, 1999). Since the last Periodic Report Group in 1997 (Periodic Report Group, 1997a, 1997b) however, there has been little discussion about long-term design issues. The funding for Office of the Retirement Commissioner has been downgraded and the 2003 PRG is a low profile group with limited time and resources.

The 1997 PRG believed that the 2003 review would be a critical one. For example, it was recommended that by at latest, 2015, public and private provision should be integrated in some kind of an ‘affluence’ test which minimised the disincentives to save and work. There are compelling equity arguments to suggest this should happen earlier, but for any acceptable policy to emerge, widespread active public engagement in the issue is required (Periodic Report Group, 1997b).

The Periodic Report Group 2003 have been advised in their terms of reference to concentrate on issues of private provision, as the issues surrounding the state pension, are deemed to have been solved. The next review, not until 2009, on the eve of the baby-boom generation retirement may face a very difficult task to reign in expectations and implement the necessary parametric reforms, such as to age of eligibility, the relative level of the pension and its integration with private provision.

3 For whom is the New Zealand model deficient?

The relative level of New Zealand Superannuation is now at its lowest since the early 1970s.¹² Those at the top of the distribution can always look after themselves. In particular they can cushion themselves against times of high inflation and rapid growth in living standards. At the other end, many low-income people will find that after a lifetime of low wages and/or benefit income New Zealand Superannuation provides a satisfactory replacement income. They will also qualify for subsidies for long-term care if they need them in older age. In contrast, many middle-income

¹² The married rate is currently 65% of the net average wage

people are likely to find under current policy settings that their living standards fall precipitously during retirement. The capital they have saved to supplement New Zealand Superannuation must be eked out to last for the whole of their future lifetime when that period is now often as long as the time spent saving it while in the workforce. The extra income that their capital provides is exposed to the risks of inflation, poor and volatile investment returns, and mismanagement. They may be tempted to invest super-conservatively even though the period of their retirement could be 30 or more years and may be a time of rapid economic growth and rising living standards. They run the risk that they either outlive their capital, or have a needlessly restricted retirement while dying with assets intact. They and their families are also exposed to the risk of running down their assets if long-term care is needed, in spite of the recent proposed changes to the asset test.

In light of these observations it is surprising that the potential role of annuities in the retirement policy mix in New Zealand has barely been raised in discussions on superannuation to date. Will the opportunity be taken in the 2003 Periodic Report Group review? .

The exact location of the middle-income group to be the focus of policy attention here is deliberately vague as there are many combinations possible, such as high assets/low income, low assets/high income. The income distribution becomes much flatter after retirement, due to the equalising effect of New Zealand Superannuation, and the loss of employment income. But the true distribution is understated by failing to account imputed income, and because the use of trusts can disguise individual income. With those caveats in mind, the middle may be thought of as those located in approximately deciles 5-9 of the income and wealth distribution.

3.1 The wealth distribution

Holding of net assets by those over 65 are, on average, only modest. A living standards survey of older New Zealanders conducted in 2001 provided some limited information about assets for ‘core economic units’, or CEUs (Ministry of Social Policy, 2001).¹³ This survey Table 2 shows that three quarters of single CEUs have savings and investments less than \$37,500 and the median is only \$7,500. For

¹³ The unit is based on the status of the individual or couple, not the household they live in.

partnered CEUs, the figures are higher, as would be expected, but more variable: nearly three quarters have assets (apart from their own home) of less than \$100,000 and the median is \$37,500.

The findings indicate a population with relatively low levels of financial resources. (p. iii)

Table 2: Estimated total value of savings and investments of CEUs, (excluding own home)

	Value (\$000)	% Single	% Partnered
<1		30.6	20.9
1-5		13.7	7.8
5-10		11.6	7.6
10-15		7.3	5.5
15-25		8.6	9.2
25-50		9.0	12.3
50-100		7.3	9.7
100-150		3.3	6.0
250-200		2.3	4.1
200-250		2.0	3.6
250-300		0.7	1.9
300-350		0.9	2.7
350-400		0.7	1.6
400+		2.1	7.0
Median value of investments		\$7,500	\$37,500

Source: Ministry of Social Policy (2001, p.52)

Table 3 shows the median value of homes for those who own their own homes is \$125,000 (singles) and \$175,000 (couples).

Table 3 Government valuation of home: for CEUs owning their home

	Value (\$000)	% single CEUs	% partnered CEUs
<25		0.3	0.2
25-50		3.0	1.8
50-100		23.8	14.6
100-150		30.2	21.3
15-200		18.4	21.4
200-250		12.2	15.6
250-300		6.6	11.9
300-350		1.5	4.8
350-400		0.8	3.0
400+		3.2	5.3
Median		\$125,000	\$175,000

Source: Ministry of Social Policy (2001)

These data, and figures from the 2002 dedicated wealth survey discussed next corroborate the story of a low mean and median net worth and an unequal distribution.

The net worth survey (Statistics New Zealand, 2002a, 2002b) provides the most comprehensive view of the holding of wealth yet available. The survey interviewed 2,392 individuals and 2982 couples. Weighted up to the whole population these represent 930,900 individuals and 855,900 couples. While the size of the survey precludes a detailed breakdown by age, and some of the cells in the tables have very high margins of error, the survey represents a benchmark and provides a rough estimate of the liquidity and amount of assets people have in retirement and in the decades immediately preceding retirement.

Table 4 summarises data from the net worth survey and shows the percentage of those over 65 who hold assets in various bands of net worth. Half have net worth under \$112,800. This is compared with the pre-retirement age group 45-64, to which it is not very dissimilar. For both groups the median is well below the mean, suggesting a concentration of wealth at the top end of the distribution.

Table 4 The net worth of those over 65 and those aged 45-64

Individuals	% Under \$20,000	% \$20,001- \$100,000	% \$100,001- \$500,000	% Over \$500,000	Mean \$	Median \$
Over 65	15.9	29.6	47.3	7.2	186,400	112,800
45-64	14.5	25.5	50.8	9.2	220,900	140,000

Source: Statistics New Zealand (2002b)

While those in the ‘middle income’ group have modest capital resources only, it may be possible for them to access capital of in the range of \$60,000-\$150,000 including, where appropriate, some of the equity in their own homes. The problem is that suitable and attractive mechanisms for translating such capital into income have not been available.

4 Annuities in New Zealand

The underdevelopment of the annuities market, described in St John (2002), can be largely explained by widely-accepted market failure arguments in private insurance. These failures include *adverse selection* whereby over time, the cost of a given annuity rises the insurance company attracts the longer-lived and thus becomes even less attractive to the low to average-lived. The New Zealand annuities market does not have the benefit of mandatory purchase, as in the UK, nor is there a strong culture of annuitisation of wealth. Annuities may provide little by way of commission, as there

is no need for an agent's ongoing monitoring and advice, and are hence unlikely to be marketed strongly.¹⁴ They are inflexible, and provide nominal rather than real income. Low and middle-income people in New Zealand also suffer over-taxation on the earnings of the supporting fund.

Compared to the actuarially fair price (net present value) based on a risk-free rate of return, 10-year guarantee, no-profits, no overheads, and using average population longevity, current annuities seem expensive (St John, 2002). Using the Money's Worth Ratio methodology (see for example Doyle, Mitchell & Piggott, 2002; Mitchell, Poterba, Warshawsky & Brown, 1999), estimates of the cost of annuities was approximately 20 per cent, or \$20,000 over the net present value, rising to around \$25,000 for annuitants who are on 21 per cent rather than the 33 per cent tax rate in 2001 (St John, 2003). Women receive annuities that are around 11 per cent less than men's, but collect them for longer on average. Because they live longer, they are affected for longer by the consequences of buying the annuity at the wrong time or from the worst priced company.

The under-development of the annuities market in the case of New Zealand is possibly related to the perception that the state pension provides an adequate annuity and to the lack of any mandatory requirements to take an annuity from superannuation schemes. It is also likely to reflect severe informational asymmetries, a small population, a punitive tax regime, a do-it yourself mentality to investment, unattractive pricing, lack of inflation protection, ignorance as to the role of annuities and a lack of wealth accumulation apart from the family home on retirement. It is argued in this paper it also reflects a lack of public policy interventions that recognise the social value of annuities.

4.1 Reverse home mortgages

New Zealanders have traditionally had a very high proportion of their assets in owner-occupied homes, in part because home ownership is treated more favourably for tax purposes than are other investments. Unfortunately one's own home is not usually a source of readily accessed liquidity that can be drawn on to finance the

¹⁴ Only life insurance companies offer annuities. Under current law, setting up a life office is as simple as lodging a \$500,000 bond with the Public Trust and the industry is best described as 'lightly

additional costs of retirement. As with the almost non-existent annuities market, home equity release schemes are rarely used.

The insurance company Invincible Life Assurance (now S.A.I Life Limited) was New Zealand's first, and to date, only company to offer reverse annuity mortgages. Under a RAM, a mortgage is raised over the home of the older person and used to provide an annuity. The fees and costs are all deferred until the mortgage is discharged.

Given the propensity of New Zealanders to save in the form of owner-occupied housing, methods of translating a portion of this capital into an income stream deserve more exploration.

5 What should the saving industry do?

The industry might first ask what are the unmet insurance needs of retirees. They might then examine whether they can provide annuities that meet the legitimate aspirations of middle-income, modest wealth New Zealanders. Some of the questions to be answered about the design characteristics of annuities include whether they:

- provide good value for money;
- provide a hedge against inflation;
- are capable of adaptation by including insurance for catastrophic care costs;
- can be less of a lottery and more flexible than is currently the case
- make use, in suitable cases, of the equity in owner-occupied housing
- can be gender neutral, given that the majority of both men and women do not experience the extremes of longevity
- provide a degree of insurance against growth in living standards

Private annuities that augment New Zealand Superannuation in a realistic way by meeting some or all of these criteria may have wider social benefits. A more secure middle-income retirement reduces the pressure on workers to provide more directly for their parents. It shares the costs of retirement among the retired as a group, as

regulated'.

those who die early subsidise those who live the longest. While capital itself can be gifted way, annuities provide an transparent income stream which can help meet the costs of old age care thus reducing the pressure on general taxpayers.

If the social and private arguments for annuities make sense yet the industry struggles to meet these criteria, new thinking may be required. A tax neutral approach to the accumulation phase does not preclude the introduction of subsidies and other state interventions in the decumulation phase. Examination of annuity markets and reverse mortgages overseas reveals that the state usually plays a substantial role in the successful development of these markets.

6 What should the government do?

One possibility is that the state's role may include the direct provision of annuities. Another option is private sector provision with the state providing a judicious mix of regulation, monitoring, reinsurance, guarantees, and even direct subsidisation. For example, the state could provide long-term indexed bonds with a taxation regime that guarantees a realistic net real return. Some underwriting of the excess longevity risk and support for gender-neutral annuities are others. The advantage of this approach is that subsidies and their impacts can be made transparent, and can be designed in ways that encourage the kind of annuities that are of most benefit to middle-income people.

To improve intragenerational equity, the subsidy for this market might be derived from the reintroduction of a surcharge or affluence type of income test on the state pension (as discussed in detail St John in 2003 forthcoming).

6.1 Integrating annuities and insurance for old age care

Surprisingly, there has been comparatively 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 (long-term care insurance). 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. This theme is developed in a recent contribution where 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” (Warshawsky, Spillman & Murtaugh, 2002, p.198).

In New Zealand the longevity risk of and the risk of needing old age care could be insured with a single product in the form of a life annuity, the level of which increases once long-term care becomes necessary. The purchase would be at age 65 or 70 and the insurance policy would not require annual premiums as the cost is built into the level of the annuity. In contrast, most health insurance premiums are annual, providing opportunities for providers to reassess the risk with the outcome of diminishing the security of retirees. For example, the major health care insurer in New Zealand has recently adopted an age-related premium, which has made such insurance far less attractive and less affordable to older age persons.

It is logical that a product that insures a large pool of people well before they can be expected to need long-term care, is likely to be cheaper to provide. The problem is that younger people find it hard to relate to a risk they might face so far into the future. There is merit in confining the purchase of insurance to older age groups when there is less reluctance to consider the problem, without leaving the purchase too late (Warshawsky et al., 2002, p.210). It is possible that a life annuity plus long-term care insurance purchased with a single premium at age 65 or 70 might capture a wide pool of annuitants even if it is non-mandatory. 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), subsidise the ones who do need care. The younger the age of purchasers, and the greater the numbers who purchase, the greater the pool for the sharing of risk. Those whose health status make 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 at the same time as reducing adverse selection in the annuities market.

There may be other attractions to a joint product. The coupling of the life annuity with insurance for long-term care may mitigate a perceived disadvantage that there may be a loss of inheritable wealth from the purchase of a life annuity (Warshawsky et al., 2002, p.210). Family members may feel that they have some protection against the erosion of the older person’s assets if viable long-term care insurance is in place.

There is some interest in this kind of product from some providers of annuities emerging world-wide, but Warshawsky et al., (2002) find no actual product has emerged to date. Nevertheless, preliminary estimates for the UK by Life Company Watson Wyatt show 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, 2002). Warshawsky et al., (2002) outlined how the innovation of integrating of the life annuity and long-term care insurance might work in the US. They conclude that the idea is viable but much more research is needed:

The tax treatment of this combination could be improved, and the product design issues must be considered carefully. Furthermore, additional research is required to look at more recent data and different permutations of the product as well as a more refined analysis of population groups who might utilize it. A favourable public policy environment, including tax and insurance regulations is needed to encourage this innovation, and insurance companies must be creative in exploring the possibility of improving the financial security of current and future retirees. (p.217)

There are several issues to consider in designing a life annuity with long-term care insurance.

- The age at which the policy is to be purchased, and 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?

6.2 A new product for New Zealand?

The lack of a market for suitable private life annuities has the potential to undermine the quality of retirement for many people. This issue is particularly important when private employment-based pensions are receding. As in other countries, the ageing of the population also raises urgent issues of who should pay for long-term care. To address these problems a new life annuity product is proposed.

An actuarially fair, fixed life annuity y , purchased from a given capital sum K is dependent on the probability of survival t periods from age x , tp_x , where x is the age of the annuitant at time of up-take, $t=0$. The maximum life span is given by w and the risk-free rate of return is given by r :

$$y = K / \sum_{t=1}^w \frac{tp_x}{(1+r)^t} \quad 1$$

A joint product requires that equation 1 includes the probability of needing long-term care, d_x , at age x , and factors in the necessary increases in the annuity on diagnosis of the need for such care. This can be expressed as:

$$y = K / \sum_{t=1}^w (tp_x + \Omega tp_x d_x) \frac{1}{(1+r)^t} \quad 2$$

where the annuity would increase by a factor of Ω when long-term care is required. Some plausible probabilities d_x , of being in long-term care at various ages can be derived from census data and are given in Table 5 below.

Table 5: Probability (approx) of being in care at each age

Age	Male (1)	Female (2)	Average* Combined (3)
70	0.01	0.01	0.01
75	0.02	0.02	0.02
80	0.04	0.06	0.05
85	0.08	0.11	0.10
90	0.18	0.30	0.25
95	0.30	0.50	0.45
100	0.31	0.60	0.53

Source: 1996 Census

*weighted to reflect the higher proportion of women in the population at older ages

In order to distinguish the joint product under discussion in this section as one uniquely designed to meet the requirements of the New Zealand situation, I name it

the *Enhanced Life Annuity* (ELA). The purpose of the ELA is to offer middle-income New Zealanders the opportunity to annuitise modest amounts of wealth on retirement to supplement the regular income provided by New Zealand Superannuation, and to insure against long-term care costs.

In principle it may seem to be in the interests of private suppliers to develop such a product. In practice there has been little evidence that the market is capable of developing this or any other annuity product for a mass market. It is assumed therefore that it is both necessary and legitimate for the government to be the catalyst for the development of the ELA. The history of New Zealand policies suggests the carrot of subsidisation is an appropriate intervention as it is clear that under the tax-neutral voluntary saving regime, the ELA cannot be made mandatory. It is suggested that the appropriate government intervention will require taking a sophisticated view of social insurance, while not excluding private sector involvement.

6.2.1 The dimensions of the ELA

Currently the maximum that a resident for long-term residential care contributes is \$636 a week or \$33,000 pa, with the government supplying the fees above this. Had the cap been adjusted for inflation since 1994 when it was set, its value in 2002 would be \$750 or \$39,000.¹⁵ For purposes of the analysis, which is conducted in 2002 dollars, \$39,000 is taken to be the required contribution under the cap. The aim of the ELA is to allow this capped contribution to be met comfortably by middle-income retirees.

The ELA would be offered to all people at age 65 from a politically agreed date, such as 2010. Its form would be an immediate or deferred, gender-neutral, inflation-adjusted annuity based on a tax-free, real rate of return, with an added compulsory bonus of long-term care insurance. A guarantee period would normally apply, of 10 years if the annuity is paid from age 65, or 5 years, if commencement is at the age of 70. The market may however be segmented by offering the choice of a zero guarantee period for those who either have no wish to leave a legacy and/or expect to be long-lived.

¹⁵ This adjustment is well overdue and is contributing to the fiscal pressures on this sector.

From Table 4, some crude deductions of the target market for the ELA can be made. The baby-boom generation's fortunes are likely to be similar to the age bracket 45-64. From this it might be surmised that very few from the lowest four deciles, with net worth less than \$100,000, are likely to be interested in the ELA. The middle to upper group, that is, the 5-9th deciles comprising around 50 per cent of the population with net worth between \$100,000- \$500,000 are the obvious candidates for the proposed ELA. The top decile of net worth has a lower bound of \$500,000, and a proportion in this decile could also be interested in the ELA. It is surmised that the really wealthy would prefer to self-insure.

It is proposed that the ELA should aim to provide a real annuity of approximately \$9000-\$10,000. Joint annuities for couples would also be important products to develop, but the analysis here is all done on an individual basis.

It is possible that the target population of middle-income retirees may have higher than average life expectancy. In the absence of New Zealand data to support such life expectancy differentials, the estimates are based on the 1995-1997 Life Tables, in turn are based on the whole population, from which are derived the probability of survival at each age group (for a full discussion see St John, 2003 forthcoming).

Improvements in future longevity are also likely to be significant but in order to include this in the estimates, birth cohort mortality tables are needed that incorporate the expected gains in life expectancy for each age group (Mitchell, Bodie, Hammond & Zeldes, 2002). There are no birth cohort Life Tables for New Zealand, but between 1975-77 and 1998-2000, males have gained an extra 4.4 years and females an extra 3.2 years of life expectancy at age 65. This has obvious implications for pricing annuities and any continuation of this trend will need to be considered for future development of applications like the proposed ELA.

If the ELA is of the order of \$9000-\$10,000, a value of 2 for Ω would mean the total annuity would trebled on diagnosis of the need for long-term care. The ELA together with NZS at current levels would then provide a sum of \$36,000-\$40,000, which should enable the capped fee for residential care to be met.¹⁶

¹⁶ The 2002 rate of New Zealand Superannuation for a married person is \$9550 net.

The enhancement factor Ω may itself be adjusted in light of the development of costs of care. This may be appropriate for example if the costs of care increase faster than the rate of inflation, as is likely to be the case given the labour intensiveness of the industry. An element of choice may also be built into the size of the factor with a corresponding adjustment in initial annuity. For example, in order to secure full protection for long-term care costs when available capital is limited, a lower annuity with a higher enhancement factor may be appropriate.

One of the advantages of linking both risks in the ELA is to overcome the reluctance to buy annuities when the bequest motive is strong. The ELA offers protection for family heirs against the erosion of their parent's assets if the parent needs long-term care. On the other hand, if the need for long-term care falls within the guarantee period of the ELA, the enhanced portion that is paid could be subtracted from any final payout to the estate.

The successful development of the new product requires that it is made clear to new retirees from the introduction of the programme that they are expected to use their assets and income to help pay for long-term care, up to a capped level indexed to the Consumer Price Index. Over and above the cap, the costs of more expensive care should be carried by the state. An education programme would also be necessary to inform the target group of retirees the advantages of certainty and security the subsidised ELA would provide.

Retirees, mainly from the middle-income, middle-wealth deciles could purchase the ELA with their cash saving, supplemented in suitable cases by an equity share of their owner-occupied home. There could be a range of ELAs offered but any one person would be able to buy only up to the maximum permitted, because the ELA requires subsidisation. Variable annuity products might be attractive to those who want a higher expected rate of return than mere inflation protection, joint annuities within the ELA frame work would also be possible.

Table 6 shows the possible impact on the Net Present Value of a \$1 annuity once the probability of needing long-term residential care is incorporated, beginning at $p = 0.02$ from age 75.

A gender-neutral annuity is proposed, so the ELA can be provided on the same basis to both men and women. The estimates of the ELA have been conducted for men and women separately, but the results are also averaged to give a gender-neutral premium.

6.2.2 Use of home equity

To augment the capital people have on retirement for the ELA purchase, it is proposed that the provider could take an equity share, say up to 50 per cent of an owner-occupied dwelling in lieu of cash. Such a ‘home reversion’ is a property transaction rather than a reverse mortgage. As discussed in Caplin (2002), such products are at the innovative end of discussions on home equity release products and there are few international examples of such arrangements. They have a number of features that make them attractive. Among these is the potential to reduce the moral hazard problem that can plague traditional reverse mortgage products because the owner has an incentive to maintain the total value of the house. The return to the provider on this investment is the capital gain on the equity share over the lifetime of the insured for as long as they live in the house or until they sell (Caplin, 2002). While capital appreciation on the house may well exceed the rate of inflation, the share of the annuity financed by the home equity share might be given a zero real rate of interest for the purpose of the annuity calculation. The impact would be to raise the purchase price compared to an all cash purchase reflecting that in the meantime the asset is an illiquid one for the provider.

There are many different considerations and risks. While home reversions have been discussed in some policy circles (UK Royal Commission, 1999) they have not yet been developed in the manner suggested here. One of the impediments is the complex tax treatment of housing in other countries. In having a very simple tax regime for housing and saving in general, it may be more straightforward for New Zealand to consider this innovation of home reversion schemes.

6.2.3 Interest rates, inflation and tax treatment

When an annuity is backed by inflation-adjusted instruments, such as inflation-indexed government bonds that give a full, or substantial, inflation adjustment to the principal, annual inflation protection can, in principle be offered. The alternative of

using the current, long-term, risk-free rate of interest and applying an escalation factor of 2 per cent per annum is a poor proxy for an inflation adjustment.

Current annuities are life insurance products that come under the same tax treatment (TTE) as superannuation schemes. The insurance is purchased out of tax-paid income, while earnings on investments are taxed at 33 per cent as a proxy for the marginal tax of policyholders. In other countries an EET regime applies, so that the analysis is quite different for New Zealand where a tax-free annuity would be paid. For the ELA discussed in this section, all purchases are out of after-tax income so the first (T) stays, consistent with saving for retirement being TTE. As discussed below, the government itself would be the initiator and provider at least in the first instance and under such an arrangement, there would be an assumed real rate of return.

In the event of the private sector supplying equivalent ELAs, the tax treatment could be formally modified, for example, the rate of return could be tax-free, so that the ELA is TEE. If the annuity is to be inflation-adjusted and thus based on a real rate of return, a higher real rate could hence be used than if companies had to use an after-tax rate. This concessionary tax can be viewed as one of the ways that government underpins this market and offers an incentive for participation. On withdrawal the annuity is tax-free capital, but as when the old surcharge used to apply, one half of any annuity or reverse mortgage payment would be considered to be income for purposes of any income test on New Zealand superannuation. The revenue from this income test might be the source of the subsidy for the ELA and could be called an *intragenerational contribution*. Just as with the old surcharge provisions, if there was no other income, annuity income for a couple would have to exceed \$32,000 before they were liable for any intragenerational contribution at all.¹⁷

6.3 Estimates of the ELA

Tables 6 and 7 provide estimates of the model outlined in equation 2 above. It is clear that the value of the ELA is not particularly sensitive to assumptions about the enhancement factor Ω . The results are, however, sensitive to the assumed rate of return, and highly sensitive to gender.

¹⁷ This exemption is at the level that applied to the surcharge at the time of its abolition, adjusted for inflation

With a real rate of return of 2 per cent and $\Omega = 2$, a man would face an actuarially fair premium of \$142,000 for an inflation-adjusted ELA of real value \$10,000 at age 65.¹⁸ On needing long-term care his annuity would treble to \$30,000, which together with NZS would enable him to meet the capped fee. If he could not afford an ELA of this size, he could take a lower annuity with a higher enhancement factor. For instance, for an actuarially fair premium of \$106,500 and an enhancement factor $\Omega = 3$ the annuity would be \$7,500, which, on being diagnosed in need of long-term care, would also rise to \$30,000.

Table 6: Expected value of a real \$10,000 annuity, 10 year guarantee, with long-term care insurance

Male	1% real	2% real	3% real	6% nominal
Standard life annuity	148,000	136,000	124,000	98,000
With long-term care insurance				
$\Omega = 2.0$	156,000	142,000	130,000	102,000
$\Omega = 2.5$	158,000	140,000	131,000	103,000
$\Omega = 3.0$	160,000	146,000	133,000	103,000

Female	1% real	2% real	3% real	6% nominal
Standard life annuity	173,000	156,000	141,000	108,000
With long-term care insurance				
$\Omega = 2.0$	194,000	173,000	155,000	116,000
$\Omega = 2.5$	200,000	177,000	159,000	118,000
$\Omega = 3.0$	205,000	182,000	162,000	120,000

Source: Based on equation 10.2, Life Tables 95-97, Author's calculations

Note: Figures are rounded to nearest '00.

With a real rate of 2 per cent and $\Omega = 2$, a woman would face an actuarially fair premium of \$173,000 for an inflation-adjusted ELA of real value \$10,000. On needing long-term care her annuity would treble to \$30,000, which together with New Zealand Superannuation would enable her to meet the capped fee. If she could not afford an annuity of that size, she could take a lower annuity with a higher Ω factor. For instance for an actuarially fair premium of \$130,000 and an enhancement factor Ω

¹⁸ The estimates are all in 2002 dollars

= 3, the annuity would be \$7,500, which, on being diagnosed in need of long-term care, would also rise to \$30,000.

Table 6 presented the expected NPV of an ELA of value \$10,000 and gives the actuarially fair price. Table 7 presents the same information, but shows the annuity that can be purchased with a given sum of \$100,000 to allow for comparisons with the annuities currently on offer in the New Zealand market.

Table 7: Expected value of annuity, purchase price \$100,000

Male	1% real	2% real	3% real	6% nominal
Standard life annuity.	6,757	7,353	8,065	10,204
With long-term care insurance				
$\Omega = 2.0$	6,410	7,042	7,692	9,804
$\Omega = 2.5$	6,329	6,944	7,634	9,708
$\Omega = 3.0$	6,250	6,849	7,519	9,709
Female	1% real	2% real	3% real	6% nominal
Standard life annuity.	5,780	6,410	7,092	9,259
With long-term care insurance				
$\Omega = 2.0$	5,155	5,780	6,452	8,621
$\Omega = 2.5$	5,000	5,650	6,289	8,475
$\Omega = 3.0$	4,878	5,495	6,173	8,333

Source: Source: Based on equation 10.2, Life Tables 95-97, Author's calculations.

Women live longer in average and are more likely to be in care in old age than their male counterparts. They are also less likely to have a substantial capital sum to purchase an annuity and are more likely to have spent years of their life care-giving for other elderly people including their own spouse. Moreover most women do not have a mortality experience that is significantly different to most men. The approach suggested here is that the ELA should be gender-neutral. Table 8 estimates the gender neutral ELA, by a process of simple averaging.

The averaging in Table 8 is clearly helpful to women in this market. Moreover compared with actual value of annuities on the market, the results for the real ELA in are attractive, even if just the initial annuity is considered. In December 2001 a female

at age 65 could buy a nominal annuity of only about \$6,360 for \$100,000 without any add-on protections for inflation or long-term care¹⁹. With an assumed real interest rate of 2 per cent and an enhancement factor, $\Omega = 2.0$, her actuarially fair ELA is also approximately \$6,400. For men, the average annuity purchasable in December 2001 is \$7,140, which is higher than the ELA for an assumed real interest rate of 2 per cent and an enhancement factor, $\Omega = 2$ in Table 7. However, the compensation for men is that the ELA offers much superior benefits.

Table 8: Expected value of gender neutral annuity, purchase price \$100,000

	1% real	2% real	3% real	6% nominal
Standard life annuity.	6,269	6,882	7,579	9,732
With long-term care insurance				
$\Omega = 2.0$	5,783	6,411	7,072	9,213
$\Omega = 2.5$	5,665	6,297	6,962	9,092
$\Omega = 3.0$	5,564	6,172	6,846	9,021

Source: Based on Table 10.4, Author's calculations

The implicit price of long-term care insurance from Table 8 is the difference between the estimated standard annuity and the enhanced annuity. At an assumed real interest rate of 2 per cent and an enhancement factor, $\Omega = 2.0$, the costs of long-term care insurance is just \$470 per annum or less than \$10 a week. This price might be compared to annual ongoing costs for the annual returns for a family trust.

Of course there are several factors to take into account in making the observation that the ELA appears to offer good value for money. The estimates presented here do not allow for:

- The costs of marketing or overheads.
- The purchasers of the ELA are likely to have a better mortality profile than the average for all aged 65 and over that has been assumed.

¹⁹ By February 2003, based on a benchmark before tax interest rate of around 6 per cent the average annuity for a female had fallen to \$5975 (Aon Annuity Surveys).

- The Life Tables relate to 1995-97 and will be superseded by the 1998-2000 Life Tables in 2003. It is expected that increasing in longevity will need to be factored by using birth cohort mortality tables.
- The assumed real rate of return is an after-tax or net rate. The nominal annuity in Table is based on a rate of 6 percent net, while currently available annuities are priced using an after-tax rate.
- The cost of inflation protection depends on being able to guarantee the real rate of return. The cost of not meeting the rate of return might be met from the a subsidy from the Crown, or there might be protection by use of inflation-adjusted bonds that pay a real after-tax return of the required per cent. The use of indexed bonds is not costless, however, and in this case unexpected inflation is borne by the taxpayers.
- There is no factoring in of likely expected increases in the relative costs of long-term care.

7 Concluding comments

The middle income group of the baby-boom generation face scary markets in which to invest their modest capital for what might be a long and expensive old age, raising prospects of unnecessary insecurity and welfare loss.

The purpose of the 1993 Accord was to remove superannuation policy from the political arena and to provide an opportunity every six years for a serious review of the NZ retirement policy mix. Given that New Zealand's retirement policies are so different to those of the rest of the developed world the opportunity the 2003 Periodic Report Group review provides is critical. The next review is not until 2009, just one year before the first of the baby-boomers retires.

The 2003 review should be addressing the clear deficiencies of the New Zealand model, of which just one, the lack of support for middle-income retirees, has been identified in this paper. In particular the suggestion explored in this paper that middle-income people be offered attractive but limited life annuities coupled with insurance for long-term care costs is worthy of further investigation.

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