Flexi-Super:

Not Really Such a Great Idea

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Overview

Flexi-super is a proposal to allow people to begin receiving New Zealand Superannuation (NZS) between the ages of 60 and 70, instead of at age 65 as at present. The intention is that the rate at which NZS was paid commencing at these ages would be adjusted relative to age 65 rates.

A discussion document on this topic was issued by the Government late August 2013. This paper is not a direct response to that publication, having been commenced at an earlier stage in the light of some earlier canvassing of the concept. It does not therefore address all the matters raised in the discussion document, but does set out three distinct grounds for not proceeding any further.

The first section of the paper describes the policy currently underpinning NZS, and outlines why Flexi-super is fundamentally at odds with it. The discussion identifies a crucial misconception that appears to have grown up around NZS, and which needs to be dispelled.

A second section, the most comprehensive of the paper, covers the technical considerations in respect of pricing of the relativity for early uptake (that is, what lower proportion of age 65 NZS could be paid from age 60) and the relativity for deferral (that is, what higher proportion of age 65 NZS could be paid consequential on deferral to age 70). As deferral is highly likely to provide individuals with the opportunity for savings on their income tax, an allowance is made for this cost.

The technical considerations stress the need to establish the longevity characteristics of the "target" clientele. The sensitivity of the results to the assumed rate of discount in excess of wage indexation is also apparent. The early uptake relativity of 73% proposed in the Government discussion paper looks to be of the right order (75% is suggested here) but the discussion paper relativity for deferral of 160% turns out to be far too high; something of the order of 125% is appropriate under a cost-neutral constraint and a realistic view of appropriate discount rates.

Although tentative conclusions are arrived at as to what the relativities might be on a theoretically cost-neutral basis, the process makes it clear that no great precision looking forward 30 or so years is likely to be obtained. There is therefore a not insignificant risk associated even with a "best-estimate" calculation, and it is unclear why one would make risk-sensitive changes to a welfare program already under cost pressures as the population ages.

The third section discusses "choice". Firstly, drawing on basic insurance tenets of adverse selection, the strain on cost neutrality that will occur from exercise of rational choice is described. This is followed by the argument that those for whom early uptake may appear attractive are not in fact likely to enjoy choice in any meaningful sense of the word. Finally, the impact of the way many individuals tend to assess the future (as opposed to a rational agent model) is briefly outlined to argue that deferral in particular will in practice be seen as desirable by only a few, unless cost-neutral pricing is discarded.

The issues of people wanting to defer receipt of NZS due to remaining in paid employment and not needing it at that time, and the need for income support in the years up to NZS commencement, are not negligible. These however could be addressed to a greater or lesser extent by means of some enhancements to KiwiSaver, as set out in a brief fourth section.

The concluding remarks review the paper's findings and arguments, and express concern that the concept was ever taken seriously as a policy option.

Section 1: Conceptual Basis for NZ Superannuation

Behind the idea that one can choose the age at which New Zealand Superannuation commences is a concept that NZS is an individual entitlement, a pot of money if you will. This is unambiguously wrong.

The object of NZS, simply put, is to ensure all NZ residents above a certain age (currently 65) have sufficient income to be able to participate in society, to at least a certain minimum acceptable extent[1]. The level of NZS is therefore intentionally above that which might be considered necessary to alleviate poverty, certainly in the sense of destitution.

NZS is very successful in this goal in fact, and ranks very highly in international comparisons of social security systems (depending however where the comparator is set). Domestically far fewer of our over-65 population are in poverty (as measured by standard of living surveys) compared to families (parents with children under 18).

Behind this policy lies an egalitarian solidarity which requires a minimum equal income to be provided to each and every older New Zealander as of right[2]. It takes the form of an income stream, expressed in statute.

A change in statute can change the income, and indeed this has happened at different times in the past. A change can be challenged politically, but it cannot be challenged legally, because there is no property right; that is, there is no entitlement enforceable in a court of law.

There are of course some countries offering flexibility of eligibility age and an adjustment in pension payments. However, most of these, such as Sweden, feature an individual pension entitlement based on individual contributions. Only Ireland is like New Zealand in having a straightforward level universal pension, and Ireland offers no flexibility. The UK is moving towards a flat rate pension (operating alongside a voluntary but strongly tax-favoured private pension system) and has a deferral arrangement which permits any pension not taken to be accumulated, and paid later either as a taxed lump sum or as additional pension. The Australian means-tested flat-rate pension, which operates alongside tax-favoured compulsory superannuation savings, can also be deferred. Neither of these state pension schemes are strictly comparable to New Zealand, and neither offer early pension at a reduced level.

For completeness one should record there are issues in respect of the affordability of NZS, important to its continuation. These are not however the focus here, and Flexi-super does not purport to address them in any case.

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[1] Refer the Royal Commission of Inquiry 1972:65: "beneficiaries to enjoy a standard of living "much like" that of the rest of the community and which would enable them to participate in and belong to the community". This was further supported in the 1988 Royal Commission on Social Policy. It may be noted that the extent to which this conceptual approach has been applied to benefits other than NZS is arguable.

[2] One of the ways New Zealand exercises the solidarity principle is to require NZS to be offset by any social security pension received by a NZ superannuitant from another country. This is logical in terms of the policy objective of NZS, but again runs counter to the idea of a pension pot, which may be why some confusion exists on this aspect of NZS policy as well.

In summary, there is no legal or moral foundation for the idea of an individual pension pot giving rise to exercise of choice. Further, the core principle and purpose of NZS would disappear were any group to receive a lower amount of benefit than others, or were any group to receive more.

Section 2: Technical Issues

A: Background, methodology and assumptions

As already observed, Flexi-super is based on the mistaken idea that there are individual entitlements to a stream of income. But even were entitlement to current NZS to constitute some form of property right[3], there are technical problems inherent in setting a uniform age-by-age relativity to age 65 rates.

Setting a relative rate according to age of commencement requires comparing the value of different income streams from a consistent date. The standard approach is to make a best estimate of each income stream, and then to determine the current sum that when appropriately invested would be exactly enough to support those payments. The relativity will then follow from equating the current sums at the same point in time.

In this paper I calculate the relativity for anticipating NZS at age 60 in place of age 65 and the relativity for deferring NZS from age 65 to age 70 under different assumptions as to future economic and demographic conditions. The relativity is expressed as the percentage reduction or addition to the age 65 rate of payment.

The relativities are determined by calculating the value at age 60 of (1) a wage-indexed annuity payable from age 60; (2) a wage-indexed annuity deferred five years and commencing at age 65; and (3) a wage-indexed annuity deferred 10 years and commencing at age 70.

The relativity for early uptake is given by (2) divided by (1); the relativity for deferral by (2) divided by (3). A variant of (2), referred to as (2A), assumes the NZS payment is taxed at the maximum rate of 33c in the $ for the first 5 years (65 to 70), in place of the approximate 11c in the $ without other income, since deferral may be attractive for tax reasons. The relativity adjusted for maximum tax savings is then given by (2A) divided by (3). Formulae are set out in Appendix 1.

There are three rates of NZS that may be received by an individual: half married rate, single rate, single plus living alone rate. Half married rates are adjusted each year on a net of tax basis, relativities for single and single living alone are then preserved, and then all three are grossed up, assuming no other income. To be consistent, the early uptake/deferral relativities will need to be applied to the relevant age 65 net rate and grossed up, noting however this will add to computational complexity.

The two principal assumptions relevant to valuation are:

1. The discount rate, net of tax, after allowing for future NZS indexation; indexation is currently the greater of annual price inflation and growth in national average ordinary time earnings.

[3] It may be that some misplaced concept of an enforceable entitlement underpins the current Government refusal to contemplate any increase in the NZS eligibility age, although this has not been made explicit. If it is so, it is in contradiction to the Government's attitude to other forms of social security.

2. Probability of survival to receive a payment, commencing from the valuation date.

Discount rates: appropriate discount rates are likely to change over time, and hence the early uptake/deferral relativities will need to be kept under review. In the UK, a revision downwards has just been made to their deferment provisions as the result of the previous rates having been set in a high interest rate environment. In this instance those in the UK who deferred before the revision have been advantaged.

NZS payments as noted will increase in line with wage growth (underpinned by inflation growth). Looking ahead an average of something along the lines of 3-3.5% increase pa in payments might reasonably be assumed, under stable conditions[4].

The investments one would want to hold to generate a risk-free return over the periods in question (in excess of 30 years), including a hedge against wage growth, do not exist[5]. Taking into account some level of tax on investment income, and the cost of the risk arising from the lack of assets to match liabilities, one might conservatively use a discount of 0%. At the other extreme, and assuming a move to a high interest rate economy, one might optimistically use a discount rate of 3% pa.

As will be shown, relativities are quite sensitive to the chosen discount rate. A high discount makes payments in the near future a lot more valuable than those later, so that deferral appears to confer significant advantage. Conversely bringing payments forward (ie early uptake) appears more valuable the higher the discount. The ability of most individuals to make a sensible judgement on an appropriate discount is of course very limited; it is not a thing they have to do every day, particularly in relation to a wage-indexed series of payments.

In my view a discount of 0% pa (ie assuming risk free returns, less tax, are close to wage growth) is more realistic at the present time, but I provide results from using a 3% pa discount to enable appreciation of the sensitivity to the relationship between wage indexing and net of tax risk-free returns.

Probability of survival: this is derived from mortality rates, which have three dimensions:

- Gender
- Socio-economic status
- The extent of future improvement (ie decrease in current observed rates) to be allowed for.

Difference in **gender** is apparent from NZ population mortality tables. For all population, the 2010-2012 tables[6] show male life expectancy at age 65 of 18.84

[4] The NZ Treasury in its 2013 long term fiscal model assumes 2% pa price inflation and 1.5% pa real labour force productivity growth, and hence about 3.5% pa NZS growth long term; rates in the short term average about 3.1% pa.

[5] It has been argued that the ability to tax increases in wages presents a natural hedge for Government. Future tax receipts are not however usually regarded as an asset class for good and proper reasons, and no government to the author's knowledge has ever issued wage-indexed securities, even though these would be of considerable benefit to private defined benefit pension schemes.

[6] Statistics New Zealand 2010-212 life tables, while based on actual deaths over 2010 to 2012 as the numerator, necessarily use estimates of the population as the denominator in the absence of census

years, compared to female life expectancy of 21.22 years, a difference of 2.38 years.[7]

Difference in mortality due to difference in **socio-economic status** (SES) has been established convincingly in a number of countries[8]. No specific results are available in NZ, but research into NZ mortality rates by Blakely et al and published in the "Decades of Disparity" series, where death records were matched to census data, has brought out a strong relationship between ethnicity and socio-economic status (SES).

Accordingly I use published mortality rates for Māori and non- Māori as proxies for low and high socio-economic status groups. This is likely to be conservative as non-Māori rates include some lower SES non-Māori lives, and Māori rates include some higher SES Māori lives. The difference in period life expectancy for males between higher SES and lower SES on this approach is 3.8 years, and for females 4.6 years.

Finally, **mortality improvement** is the extent to which mortality will decrease in the future, both generally, and within the dimensions of gender and SES. The last 30 years have seen sustained decreases in mortality rates at all ages, both by gender and by socio-economic status – although differentiated within these sectors.

Improvement is relevant here because it extends the period over which the annuity will be paid, while the deferral or anticipation period remains fixed. Failure to allow for mortality improvement would give rise to a lower early uptake relativity, and a higher deferral relativity, than would be correct.

What the future will hold for mortality improvement is a matter of conjecture and dispute. Continued improvement is generally assumed, but the extent of this, and the effect of gender and SES differences, is yet to be fully founded on hard science. As a rule of thumb, a compound decrease in mortality rates of 1% pa at all ages into the future is a not uncommon broad-brush assumption, and may even be considered as too low in some quarters[9].

I explored two approaches:

- improvement in mortality acting in such a way as to maintain existing differences in period (unimproved) life expectancy; for example, assuming the mortality rate of the higher SES groups decreases at a compound rate of 1% pa into the future requires lower SES groups to show a higher compound decrease of 1.20% pa (males) and 1.175% pa (females) for the existing differences by SES and gender to be maintained
- the same absolute improvement in mortality for each SES group; for example, assuming the improvement in mortality for the higher SES group to be 1.5% pa compound, and that the same absolute decrease in mortality occurs for the lower SES group, gives rise to a widening in life expectancy between higher and lower SES groups, from 4.4 to 5.3 years for males, and 4.8 to 5.7 for females

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information delayed by the Christchurch earthquake. They show greater relative improvement in male mortality than in female mortality.

[7] These are period life expectancies, assuming no change in mortality rates in future years.

[8] For example Johnson and Langford & Johnson in the UK, and Monk et al in the US.

[9] For a comprehensive discussion in the NZ context refer O'Connell.

In practice, early uptake/deferral results were very similar on both approaches. I have therefore adopted the first approach, ie assuming future improvement will occur around 1% pa compound, but be a little higher for the lower SES groups so as to preserve current period differences in life expectancy according to gender and SES group.

The comparison of annuity values is based on people aged 60, and hence the deferral calculations for age 65 necessarily have 5 years of mortality improvement included. I have however checked what the relativities for deferral from age 65 would be for people currently aged 65, and results are very similar.

B: Results and findings

The annuity factors are given in Appendix 2. The consequential early uptake/deferral percentages are tabulated below for each combination of discount rate, gender, and SES, including the relativity % adjusted for maximum potential tax saving.

Table 1: relativities by discount, gender and SES

		Early uptake (60 instead of 65)	Deferral (70 instead of 65)	Deferral after tax saving
0% discount	Male high SES	80.2%	130.8%	123.2%
	Male low SES	76.6%	138.1%	128.7%
	Female high SES	82.1%	126.8%	120.2%
	Female low SES	78.3%	134.1%	125.7%
3% discount	Male high SES	72.9%	144.1%	133.2%
	Male low SES	69.1%	153.3%	140.1%
	Female high SES	74.7%	139.4%	129.7%
	Female low SES	70.7%	148.6%	136.6%

It is clear from Table 1 that there are a wide range of possible early uptake/deferral percentages according to assumed discount rate and assumed mortality characteristics, and that tax saving is significant.

Discount rate: averaging all results according to the discount rate assumed gives an early uptake relativity of 79% under the zero discount rate assumption (the first 4 rows), compared to 72% for the 3% discount rate (the last 4 rows). The corresponding average deferral relativities ignoring tax effects are 133% and 146%. As noted in the discussion on choice of discount rate, the effect of using a non-zero discount is to place a relatively higher value on payments closer to the valuation date, so that for early uptake of NZS the later instalments are devalued relative to the immediate age 60 payments. Similarly, the use of a non-zero discount for deferral puts a greater relative value on the immediate age 65 payments, and gives rise to a higher relativity.

The reduction to allow for maximum tax savings brings the deferral to an average of 124% under a zero discount, and to 135% under a 3% discount.

Gender differences: averaging over SES differences and discount rate differences, the male early uptake relativity rate is 75% (the average over rows 1 & 2 and 5 & 6) and the female 76% (the average over rows 3 & 4 and 7 & 8); the male relativity is a little lower because male mortality falls off faster after age 65 than female mortality does and hence less value is available for early payment.

Conversely, the relativity for males deferring to age 70 is 142%, compared to 137% for females. (These drop to 131% and 128% respectively when maximum tax savings are allowed for.) While there is not a significant difference for taking NZS early, there is some difference for deferral; lower female mortality requires a lower relativity percentage for cost neutrality.

If just using the zero discount rate (ie rows 1 to 4 only), the early uptake relativities (ignoring SES effects) are 78% male, 80% female; for deferral they are 135% male, 131% female, or 126% and 123% respectively allowing for maximum tax saving. The use of a higher discount rate widens the relativities based on gender.

SES differences: averaging over gender and discount rate differences, the low SES early uptake relativity is 74% (the average of rows 2, 4, 6 & 8), and the high SES 78% (the average of rows (1, 3, 5 & 7). The relativity is lower for the low SES group because they have more to gain from earlier access.

Conversely, the deferral relativity for low SES is 144%, while it is 135% for the high SES; allowing for tax advantage reduces these to 133% and 127% respectively (although the low SES case is perhaps not one where tax advantage will occur to any degree). The differentials here are quite marked, reflecting the fact that for the high SES group their lower mortality makes deferral relatively more costly.

Gender and SES differences: focusing firstly on the **zero discount** case, and assuming maximum tax advantage enjoyed by deferral in the high SES case but not in the low SES case, the relativities are as tabulated below.

Table 2: relativities by gender and SES: zero discount

Discount: 0%	Male		Female	
	High SES	Low SES	High SES	Low SES
Early uptake (from age 60)	80%	77%	82%	78%
Deferral (to age 70)	123%	138%	120%	134%

The range for early uptake is not insignificant, but given that it will be unattractive to high SES population but attractive to the low SES population, a relativity of around 77% of age 65 NZS may be equitable on average, although not necessarily fiscally neutral for reasons that will be discussed in the next section. Gender differences are apparent but could be considered of minor import.

Conversely, deferral is likely to be attractive to the high SES population and unattractive to the low SES population, so a relativity of around 122% of NZS would appear equitable. This would slightly favour females on average, although females may be marginally less able to get full tax advantages from deferral, given the gender wage gap.

It could be argued that not all (both male and female) would enjoy the full tax advantage, but not to allow for tax saving to the greatest extent would advantage those on high incomes over others. Also, as noted in respect of early uptake, a deferral relativity of 122% would still not necessarily be fiscally neutral for reasons discussed in the next section.

Turning to the results obtained by employing a **3% discount**, the relativities become:

Table 2: relativities by gender and SES: 3% discount

Discount: 3%	Male		Female	
	High SES	Low SES	High SES	Low SES
Early uptake (from age 60)	73%	69%	75%	71%
Deferral (to age 70)	133%	153%	130%	149%

Applying the same reasoning as above, the 3% discount results suggest an early uptake rate of around 70%, and deferral of around 132%.

C: Conclusions from technical analysis

Looking at the rates suggested in the Government discussion paper, the results for early uptake arrived at above from around 70% (3% pa discount over wage indexing) to 77% (0% discount over wage indexing) are not too far out of line with the 73% put forward in the paper. However the 160% proposed in the discussion paper for deferral to age 70 appears much too generous, and it is unclear how this figure could have been arrived at. The analysis here suggests something between 122% (0% discount over wage indexing) to 132% (3% pa discount over wage indexing). Even absence of any attempt to cost the tax advantage of deferral would still give a range of 129% to 142%.

In my view, the highest discount rate appropriate at the current time for costing relativities should not exceed 1% pa in excess of wage indexation; indeed there is an argument for no discount, so that relativities are then set by mortality considerations alone. Be that as it may, a relativity of 75% for early uptake and 125% for deferral could be supported as tentative best estimates assuming no selection effects other than in respect of SES group.

An immediate implication is that responses to the discussion paper in favour of a deferral option based on a relativity of 160% will unfortunately be unreliable and of no utility from a policy development perspective. Were the discussion paper to have put forward the 125% that analysis here suggests, or even a tax favoured 130%, say, it seems likely that enthusiasm would be considerably muted.

A less obvious but important implication is the need for Government to set aside contingency reserves on its balance sheet, should the proposal go ahead. There is clearly uncertainty in any "best estimate" of relativity and a private company would be required to hold regulatory capital sufficient to ensure promises to pay will be met in all reasonably foreseeable circumstances[10].

[10] Government will also need to record on its balance sheet

1. A credit, under early uptake, for anticipated reduced NZS from age 65 in respect of those who elect that choice
2. A debit, under deferral, for anticipated increased NZS from deferral age in respect of those who elect that choice

This will be needed to ensure transparency of NZS cost.

Section 3: Outcomes and Fiscal Neutrality

A: Rational behaviours

When pricing options on which people can make voluntary choices, anyone from an insurance background will be very conscious of adverse selection. A customer for life insurance for example who is in poor health will get better than average value if they can obtain the insurance on normal terms. A person in very good health conversely may not consider life insurance worthwhile.

In the section on technical issues I priced the early uptake option on the basis that it would appeal to low SES groups, and assumed a proxy mortality to get a rate which would be about right on average. However, consider a 60 year old diagnosed with Motor Neuron Disease (MND). Age 60 is a not uncommon onset age, and death before age 65 is almost a given in such circumstances. Someone in this position will opt for early uptake regardless of SES because they will get something rather than nothing.

Fortunately MND is not that widespread. However, it illustrates the point that when people can make a voluntary choice on an option priced on an average, then choice will give rise to a bias against whoever is making the offer. Diagnosis of terminal illness in one's early 60's would almost invariably trigger exercise of an early uptake of NZS were it available, with no offset.

As another example, suppose the deferral relativity was set higher than the cost-neutral 125% arrived at above. Deferral would then become advantageous to those still in employment and earning over $70,000 pa, and the number of people who took advantage would be a direct additional cost on provision of NZS.

In the case of insurance, companies underwrite applicants, in order to weed out the more extreme cases of adverse selection. It is difficult to see however how the Government can underwrite the offer of either early uptake or deferral. Even carrying out pricing on the basis of the subgroups most likely to take up the option, as I have done in the previous section, will not eliminate adverse selection. It follows then that the Government will inevitably lose money if people behave rationally, by which is meant:

- Those who are broadly average for their group may or may not take up the option, depending on their circumstances
- Those who have characteristics which make the offer poor value to them will not take it up
- Those who have characteristics which make the offer of particular value to them will take it up

If there was no choice, then one could average impacts out. But choice means that averages will not apply on the assumption of idiosyncratic risk variation and informed rational behaviour, and hence the Flexi-super proposal must add to the cost of NZS.

If Flexi-super has other benefits, then the Government could carry out a cost-benefit analysis. This would however be a rather hypothetical exercise, and possibly comes into the "how long is a piece of string?" category of enquiry. Whether loading additional costs onto NZS would ever be sensible must be doubtful when NZS cost pressures are increasing. Much better to deal directly with concerns, as outlined later in this paper.

B: Poor or constrained decision making

The above discussion on choice has assumed rational agents, with a good knowledge of their own longevity prospects and high financial literacy. It is particularly necessary to focus on the early uptake choice with a different lens, because the target, the low SES group, are known to have poor financial literacy, at least on average. It is reasonably clear that a not insignificant number will fix on a guaranteed income to the exclusion of any other factors, including comfort in old age. Use of a low enough relativity for early uptake may result in broad fiscal neutrality in respect of NZS cost alone, but other welfare benefits will either have to rise, or greater poverty in old age become generally acceptable.

And people who arrive at age 60 with no prospect of finding work, or indeed unable to work having been in arduous occupations and worn out (or poisoned in their work places as were some Bay of Plenty timber mill workers), will not really have options, but will feel compelled to exercise early uptake, in the absence of any other resource. This is not choice.

A parallel is the case of Prison Service officers who used to have a separate section of the Government Superannuation Scheme. This section was compulsory, and required members to contribute 8.5% of their salary, in return for a pension from age 58 of 1.875% of final average salary. In 1992 the then government made the scheme optional, allowing members to withdraw their own contributions plus meagre interest. At the same time subsidised rental housing was withdrawn. For most rank and file prison officers their GSF contribution became too onerous now that they had to pay market rents, and the lump sum was attractive – so they "chose" to withdraw. The number in the scheme fell from about 1,700 in 1989 to a little over 600 by 1994. For most this was a necessary but financially disadvantageous "decision".

One could not unreasonably argue that those who arrive at 60 with no reasonable prospects of work and no other resource deserve some better support than they obtain currently. But attempting to provide this by rearranging NZS provision is not giving meaningful choice. And it means we are abrogating our current policy of ensuring those over a certain age have enough to live on in order to participate in society at least to some extent.

C: Individual v. financial discounting

The technical section earlier identifies the significant effect of the discount rate in measuring value. The work of David Laibson and others has identified that many people (and not just lower SES groups) apply hyperbolic discounting; that is, a low discount for immediate payments, but a very high discount for later payments. For those who make financial judgements in this fashion, early uptake will appear very attractive even when not financially sensible from a more informed viewpoint. Deferral, on the other hand, unless at a fiscally ruinous relativity, will not be attractive even if, again, it would be financially sensible[11].

D: Other considerations

It could be argued that not many people will exercise a choice away from age 65 entitlement, and certainly this has been the experience of Australian and UK deferral arrangements. It could then be argued that the additional NZS costs described above may be insignificant in the scheme of things.

[11] This may explain the low take-up of deferral in the UK and Australia.

Whether or not experience in New Zealand will follow that in Australia and the UK will depend where relativities are set, especially for deferral. However, there will be significant fixed costs in establishing Flexi-super. Apart from the cost of putting it in place, including the legislative process, rate-setting mechanisms and accounting changes, there will need to be changes to payment systems to cater for different rates. The current Ministry of Social Development benefit payments system is efficient at what it does, but any change to what it is currently designed to do – such as more than three basic NZS rates – will be extremely expensive. A figure of $25 million used to be quoted; the cost is understood to be due to the need for exhaustive testing of changes since interdependencies within the system are imperfectly understood.

It follows then that if there are only a few who exercise a choice under Flexi-super, the overhead cost per head will be considerable, and it may be questioned if this is a sensible use of taxpayer funds.

Section 4: Alternatives

A: Deferral

If receiving NZS while working is seen as an issue for some, facilitating diversion of it into a KiwiSaver account would seem a low-cost option. Payments would be subject to PAYE as usual, and the accumulation uplifted when paid work ceases or reduces.

Work and Income would need to offer the facility, and legislation may be needed to enable those who had attained age 65 without a KiwiSaver account to open one. (Whether or not a kickstart $1,000 would be available to anyone who had not already obtained one is worth consideration; there is an equity argument in favour.)

The accumulation should be available to be taken on a draw-down basis, ie as regular non-taxable (as income) instalments until the money runs out.

It may be that some in favour of Flexi-super have promoted it because it effectively provides additional, wage-indexed and Government-guaranteed annuity payments in return for those foregone payments. If such annuity provision is seen as desirable from a policy perspective, one would think it should be provided openly, rather than through some backdoor method, and subject to full scrutiny and regulation[12]. Be that as it may, some greater attention by government to the management of accumulated KiwiSaver funds does appear necessary, and no doubt will be a feature of the Retirement Commissioner's forthcoming review of Retirement Income Policy.

B: Early uptake

There is good argument for greater resource to be provided for the worn-out and the structurally unemployable than is at present available. There is no obvious solution to that problem other than a targeted benefit at or around NZS levels, requiring higher taxes or diversion of other spending.

However, for those with KiwiSaver balances, there is an argument for relaxing eligibility to some extent. Allowing payment of a regular monthly drawdown payment from age 60 or later when not in work would seem worth exploring.

[12] As adverted to earlier, pricing can never expect to be accurate, and Government would need to set aside reserves on the same basis as private annuity companies.

Conclusion

The basic problem with Flexi-super is that it attempts to apply a financial market mechanism to something for which financial market mechanisms are just not appropriate. As well as being wrong in principle, it inevitably causes difficulties for a Government in application, due to the impossibility of guaranteeing accurate pricing, the impacts of adverse selection, the absence of true choice for those with income constraints, and the likelihood of behaviours rather different from those assumed for economic rational agents.

The opportunity to exercise "choice" is held as a benefit of the proposal, but in this instance "choice" is meaningless, unless one means (in the case of early uptake) choice between poverty now and poverty later, or (in both cases) the choice to exercise a financially advantageous option against the Government. The first of these is really still no choice at all, and the second will inevitably add to NZS cost with no other discernible benefit.

If the main problem is receipt of NZS while still working, the paper puts forward a pragmatic solution that will not disrupt NZS and will increase the utility of KiwiSaver.

If however the underlying problem is the absence of any opportunity to obtain additional, wage-indexed annuities, then note:

- Wage-indexed annuities are just not practicable as financial market instruments
- Annuity products generally are certainly desirable, but are very difficult to provide on a cost-neutral basis because of the tendency for individuals to apply hyperbolic discounting, making annuities appear unattractive on price. Also, for prudential reasons contingency reserves need to be established and held as segregated funds (whether provided publicly or privately)[13], adding to cost

It is not unreasonable to wonder why Flexi-super has been proposed at all. It will do nothing positive for lower SES groups, and will be of utility only to those in robust good health with sufficient private wealth that they can allocate part to increasing their state pension, to be underwritten by all taxpayers. One might suppose a certain myopia in those responsible for policy development, and at the least, a woeful lack of understanding of insurance principles.

[13] The cost of holding contingency reserves necessarily has to be included in the annuity price, and hence products such as annuities deferred to a later age, by reducing uncertainty, are the most promising for investigation, since they require lower reserves.

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Appendix 1: Formulae

The annuity values have been calculated on the assumption of:

- A set of rates q(x,t,s) of the probability of death within one year for a person exact age x at time t (t=0, 1, 2, … years) and SES s
- Increases in payment each year of e compound
- An investment return net of tax for discounting of r compound

The amount of a payment each year, starting at 1, is given by 1, (1+e)^1, (1+e)^2, etc.

The discount factors are given by 1/(1+r)^.5, 1/(1+r)^1.5, 1/(1+r)^2.5, etc, assuming reasonably continuous payment.

The probability of survival to receive a payment in year t= 0, 1,2, etc is written as L(x+t+.5,s) / L(x,0,s) where L(x,0,s) is the opening number of lives, L(x,1,s) the number still alive at the end of year 1, Lx,2,s) the number still alive at the end of year 2, etc, and L(x+t+.5,s) = {L(x,t,s) + L(x,t+1,s)}/2.

Values of L(x,t,s) are generated as follows:

L(x,0,s) = 100,000

L(x,1,s) = L(x,0,s) * (1-q(x,0,s))

L(x,2,s) = L(x,1,s) * (1-q(x+1,1,s))

etc

where q(x+1,1,s)=q(x+1,0,s) * (1-d), q(x+2,2,s)=q(x+2,0,s) * (1-d)^2 and so on.

The value of a basic tax wage indexed annuity of 1 pa from age 60 is given by

{1/L(60,0,s)} * ∑L(60+t+.05) * (1+e)^t * 1/(1+r)^(t+.05), t=0 to 45[14] which can be written as

{(1+e)^-.5/L(60,0,s)} * ∑L(60+t+.05) * v^(t+.05), t=0 to 45 (1)

where v = (1+r)/(1+e), and 1/v – 1 is the net discount rate.

The value at age 60 of a basic tax wage indexed annuity of (1+e)^5 pa from age 65 is given by

{(1+e)^-.5/L(60,0,s)} * ∑L(60+t+.05) * v^(t+.05), t=5 to 45 (2)

Note (2) is identical to (1) except that the first 5 terms are dropped.

To allow for the effect of higher tax (33% in place of 11%) to age 70, the first five terms are multiplied by .67/.89.
(2A)

Finally, the value at age 60 of a basic tax wage indexed annuity of (1+e)^10 pa from age 70 is given by

{(1+e)^-.5/L(60,0,s)} * ∑L(60+t+.05) * v^(t+.05), t=10 to 45 (3)

When calculating relativities, ie (2)/(1) for early uptake, (2)/(3) for deferral, and (2A)/(3) for deferral allowing for maximum tax, the (1+e)^-.5 term drops out. The annuity factors given in Appendix 2 have been calculated without the (1+e)^-.5 term.

[14] The life tables stop at age 105

Appendix 2: Annuity Factors

			(1)	(2)	(2A)	(3)
Keep SES LE same	Discount 3%	Male high SES	16.833	12.265	11.336	8.509
		Male low SES	14.477	10.010	9.150	6.531
		Female high SES	18.198	13.601	12.651	9.757
		Female low SES	15.380	10.877	9.998	7.320
Increase SES LE	Discount 3%	Male high SES	17.189	12.620	11.690	8.859
		Male low SES	14.252	9.786	8.929	6.318
		Female high SES	18.553	13.955	13.004	10.108
		Female low SES	15.156	10.654	9.777	7.108
Keep SES LE same	Discount 0%	Male high SES	24.801	19.889	18.732	15.208
		Male low SES	20.510	15.709	14.638	11.377
		Female high SES	27.592	22.648	21.463	17.856
		Female low SES	22.258	17.418	16.323	12.988
Increase SES LE	Discount 0%	Male high SES	25.663	20.750	19.592	16.063
		Male low SES	20.066	15.267	14.200	10.949
		Female high SES	28.497	23.553	22.367	18.757
		Female low SES	21.821	16.983	15.891	12.567

Results shown here include the mortality improvement case where the absolute decrease was held constant, resulting in a widening of the life expectancy gap by SES. As noted, relativities were very little different from the case where relative mortality improvements were taken to maintain the current (period) life expectancy gap at age 65, requiring a slightly greater improvement for the lower SES group, and it is the latter results that are reported upon in the paper.