



**The Sustainability of
New Zealand Superannuation:
Getting the Starting Point Right**

for Financial Services Council

Prepared by Infometrics Ltd

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Objective

In this paper we look at Treasury's long term fiscal projections and contrast them with what we believe is a more realistic Business as Usual projection. Our emphasis is on the fiscal sustainability of New Zealand Superannuation (NZS), which is a concern of the Financial Services Council and of many New Zealanders. It also dominates papers prepared by Treasury for the Long Term External Review Panel. Thus we do not address the Council's other main concern, namely increasing the total level of income available to people in retirement.

Assumptions

The Treasury's Long Term Fiscal Model (LTFM) is useful for projecting the economy over long time frames of 50 years or so. The model does not produce forecasts. It produces scenarios based on various assumptions about population growth, productivity, government policies and so on. Most users of the projections, however, use them as forecasts as creating their own forecasts of long term trends is too costly or too time-consuming. It is easier to default to whatever "official" projections are available.

Most scenario analysis starts with a "business as usual" (BAU) projection – a projection with no major changes in policy or unexpected exogenous shocks. Subsequent scenarios can then be run to assess the robustness of the BAU or if the BAU is unattractive, to explore how a more acceptable outcome might be secured.

A possible BAU projection (run by Treasury on behalf of the FSC) has the following key assumptions:

- Population aging based on Statistics New Zealand's (SNZ's) 'Very Low Mortality' projection which has life expectancies that are assumed to continue to increase at rates observed recently. It is not a forecast – a higher prevalence of inflammatory diseases and bad diets might shorten life expectancy, but medical break-throughs might extend it yet further.
- Labour productivity growth of 1.1% pa, continuing the average over the last 40 years.
- Income tax rates periodically reduced and income tax bands periodically extended to compensate for fiscal drag.

We look at each of these assumptions below, comparing them with the Treasury *Affording Our Future* (AOF) scenario in Karacaoglu (2012).¹

Population and Longevity

Figure 1 shows population projections for people aged 65 and over for a number of different scenarios. As noted, the BAU scenario is based on the VLM projection. The P50 projection is SNZ's replacement for the previous 'Series 5' medium mortality scenario. It depicts a substantial increase in the population as a result of taking into

¹ Karacaoglu G. (2012): "How does the Treasury's Long Term Fiscal work and what is our initial analysis showing?" Paper delivered to *Affording Our Future* conference, Victoria University Wellington, 10 December .



account recent changes in life expectancy beyond age 65. It is the population scenario that forms the basis of the Treasury projection in Karacaoglu (2012).

Figure 1: Population Aged 65 and Over

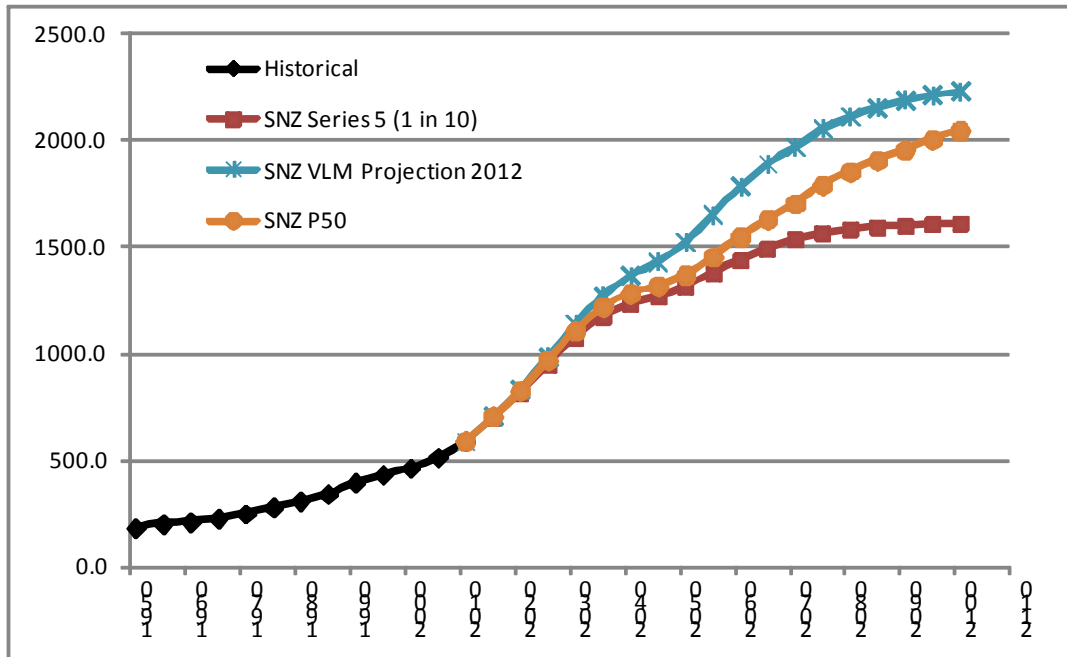
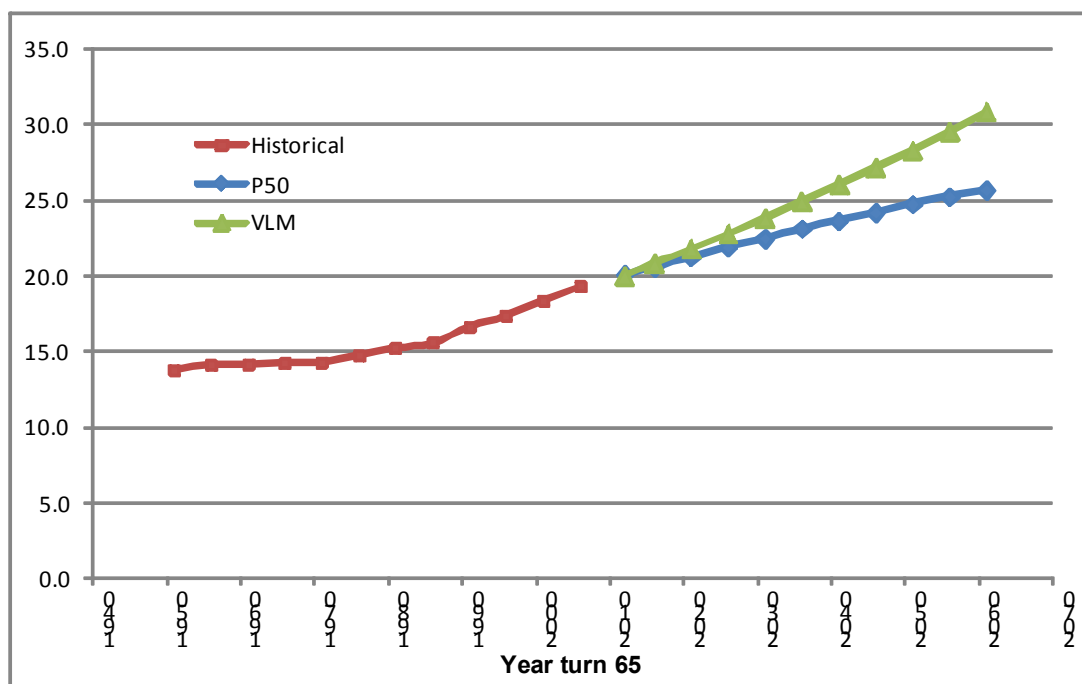


Figure 2 shows (period) life expectancy at age 65, historically and for the P50 and VLM population scenarios; unweighted average for males and females of 65. It is apparent that the P50 scenario presumes a marked slow-down in the recent trend of increasing life expectancy beyond age 65, which is assumed to continue in the VLM scenario.

Figure 2: Period Life Expectancy at Age 65

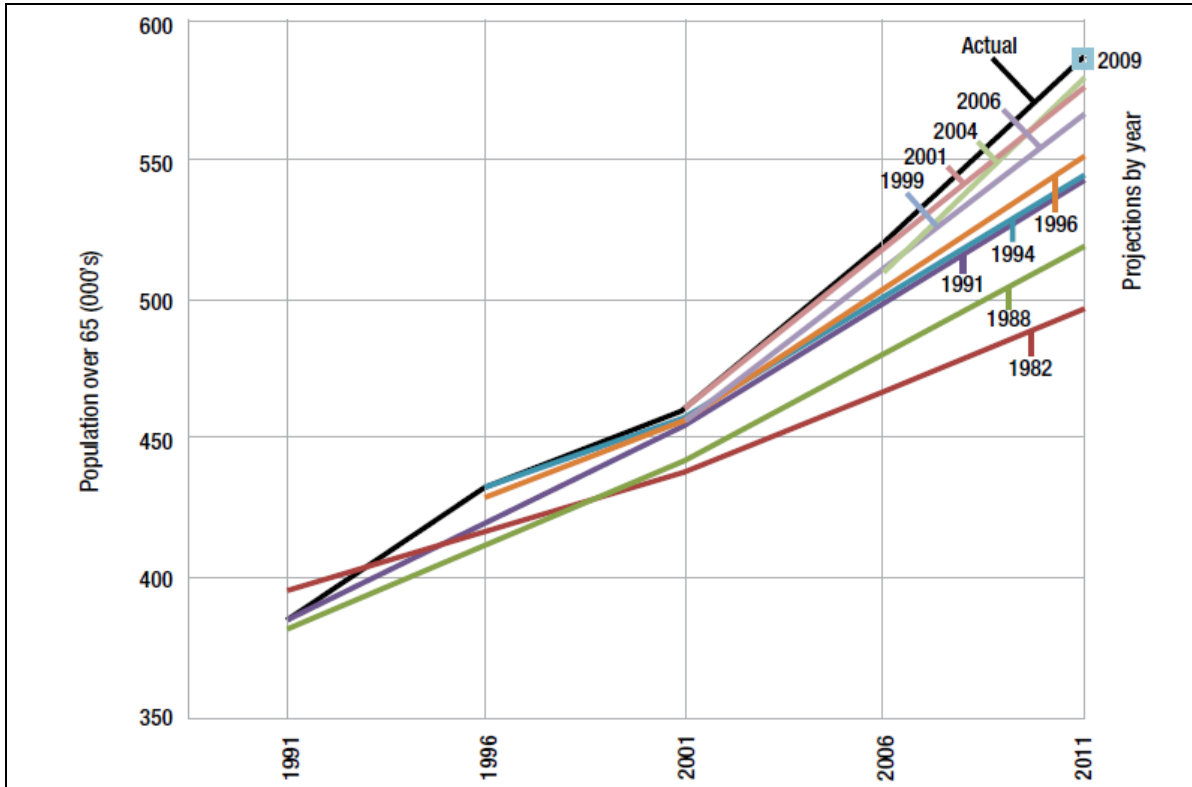




While not necessarily wrong, it is at odds with an analysis presented in *The Lancet*,² which leads to a projection more like the VLM scenario.

Like virtually all official statistics agencies in developed countries SNZ has consistently under-projected the actual improvement in longevity after 65. Figure 3 illustrates the recent path of revisions.³

Figure 3: Actual Over 65 Population Projection Compared to SNZ Mid-Series Projections



Do such differences matter? In 1990/91 when there was a major revision of retirement income policy the projections under-estimated the actual over 65 population by around 100,000 people. At current NZS rates this equates to about \$2 billion of additional cost each year.

Labour Productivity

Figure 4 from Rodway⁴ shows labour productivity over the last 40 years and the projection adopted for the AOF scenario; 1.5% pa. This is higher than the mean of 1.2% pa and higher than the mean of the moving average which is just 1.14%.

There is nothing to indicate that the higher rate depends on some policy change, nor that it is the anticipated result of recent policy. Again it may not be wrong, but there is no case made against adopting the historical average.

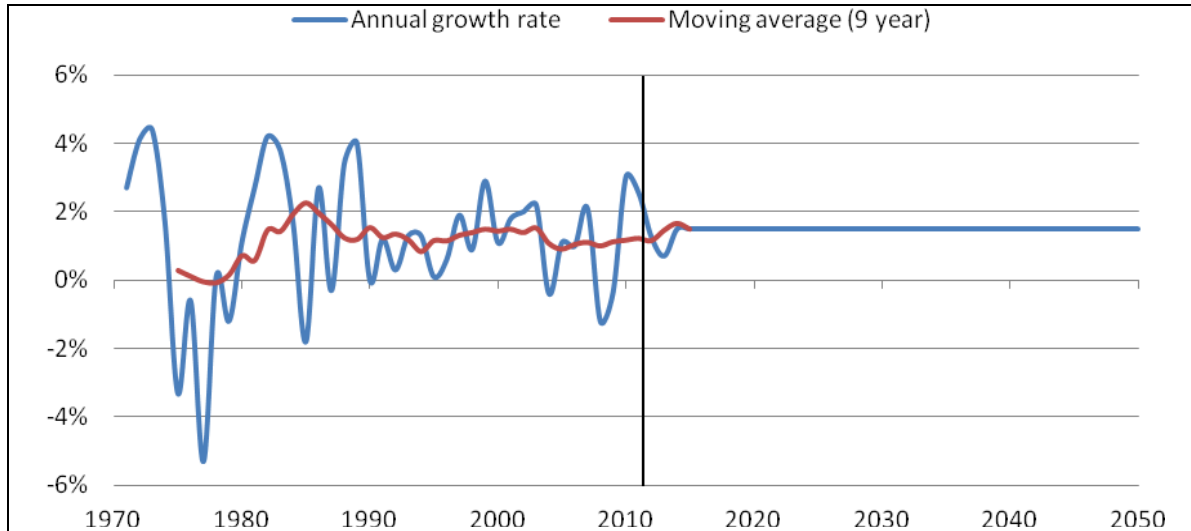
² "Ageing populations: the challenges ahead." *The Lancet*, Vol 374, October 2009.

³ Prepared by PWC for Financial Services Council (2012): *Pensions for the Twenty-First Century: Retirement Income Security for Younger New Zealanders*, p11.

⁴ Rodway (2012): *Long Term Fiscal Projections: Reassessing Assumptions, Testing New Perspectives*. Treasury, draft paper for the long term external review panel.



Figure 4: Labour Productivity Growth



Income Tax Rate Adjustment

Governments do not adjust tax rates every year to compensate for fiscal drag (people moving into higher tax brackets as economic growth and inflation raise income), but periodic adjustments do occur, as shown in Figure 5.⁵ Ministers of finance typically use fiscal drag as an automatic stabiliser when the economy is booming, moving tax brackets or rates to give back fiscal drag when a recession arrives. The AOF scenario has no periodic adjustment to tax rates or brackets over the next 50 years.

As shown in Figure 5, without further reductions in tax rates or adjustment to tax band thresholds, many taxpayers will again see their average tax rates increase.

**Figure 5: Average Tax Rates
(for individuals at 67%/100%/133%/167% of the average wage, AW)**



⁵ Source: Treasury (2009): Medium Term Tax Policy Challenges and Opportunities.



Results

Table 1 shows the results for the BAU, along with the scenario presented by Treasury at the *Affording Our Future* (AOF) conference.

**Table 1: Projections to 2060
(% of GDP)**

	2010	2060	2060	2060
		BAU (FSC)	AOF (Treasury)	AOF+VLM
Superannuation (NZS)	4.4	9.2	8.0	9.2
Total Expenditure	33.9	59.7	47.2	53.8
Total Revenue	30.2	32.6	32.6	32.6
Debt financing costs	1.2	19.6	11.4	14.8
Operating Balance	-3.7	-27.0	-14.7	-21.2

With debt financing costs projected to be almost 20% of GDP by 2060, the implied level of government debt is likely to be unsustainable. This is not a position with which the government is comfortable. As noted by Dr Karacaoglu of the Treasury:

“Crown debt levels won’t be permitted to rise above 100% or 200% of GDP.”⁶

Treasury’s AOF scenario depicts a more palatable picture. Debt servicing costs are reduced to 11.4% of GDP in 2060 by:

- Adopting SNZ’s 50th percentile (P50) population projection, which has lower rates of increase in longevity than have occurred over recent decades.
- Not reducing tax rates to offset fiscal drag for nearly 50 years.
- Assuming labour productivity growth of 1.5% pa.

We are unaware of any policy decisions made by government that will slow the trend improvement in longevity for those over 65, not give tax cuts to offset fiscal drag for some 50 years, or boost our low labour productivity growth rate by 25%.

The United States and the United Kingdom have independent agencies that produce long term fiscal projections that are much closer to the concept of Business as Usual. For example with respect to productivity the Congressional Budget Office:

“... assumes that in the long run, total factor productivity will grow by 1.3 percent annually, approximately the average rate seen over the past half century.”⁷

In the United Kingdom the Office for Budget Responsibility states:

“We assume in our central projection that whole economy productivity growth will average 2.2 per cent a year on an output per worker basis, in line with the average rate over the past 50 years.”

⁶ op cit

⁷ Congressional Budget Office (2012) : *The 2012 Long-Term Budget Outlook*. June.



And with regard to fiscal drag:

“We assume that allowances and thresholds rise in line with earnings rather than prices beyond the medium-term horizon, turning off fiscal drag after five years.”⁸

Fiscal Risk

While all three different assumptions affect debt servicing costs, only the different population aging assumption affects the direct cost of New Zealand Superannuation, as shown by the scenario labelled AOF+VLM. Debt financing costs also rise because of many prior years of larger deficits and higher age-related health costs.

The higher productivity assumption does not directly affect NZS costs (due to the way NZS is indexed), but it pushes people into higher tax brackets at a faster rate, thereby improving the apparent affordability of NZS – and other government expenditure.

Table 2 shows how the time paths of expenditure on NZS and debt servicing costs evolve over the period to 2060, for the BAU and AOF scenarios.

**Table 2: Time Paths for NZS and Debt Financing Costs
(% of GDP)**

	2010	2020	2030	2040	2050	2060
BAU (FSC)						
Superannuation (NZS)	4.4	5.3	6.7	7.7	8.1	9.2
Debt financing costs	1.2	2.0	3.3	6.2	11.3	19.6
AOF (Treasury)						
Superannuation (NZS)	4.4	5.3	6.5	7.2	7.3	8.0
Debt financing costs	1.2	1.9	2.6	4.3	7.1	11.4

Debt financing costs begin to diverge around 2020, but it takes until the 2030s before the difference opens to a full percentage point of GDP. One percent of GDP may appear trivial but it represents additional costs of over \$2 billion per year. It takes another twenty years for the difference in NZS costs to also reach a full percentage point of GDP.

The LTFM projections do not reach beyond 2060, but we have extended the VLM scenario to 2100 by running the FSC macro model used in FSC (2012),⁹ but with labour productivity increasing at 1.1% instead of 1.5% pa. (The FSC model does not cover revenue and so makes no assumption about fiscal drag). This projection shows NZS costs reaching a plateau of about 10.7% of GDP, in line with the stabilisation of the population aged over 65 – refer Figure 1. This 1.7% is about two and a half times the current cost of NZS.

If a policy response to a higher than expected NZS cost is to introduce a SAYGO scheme or expand KiwiSaver when the curves start to diverge, say around 2040, it

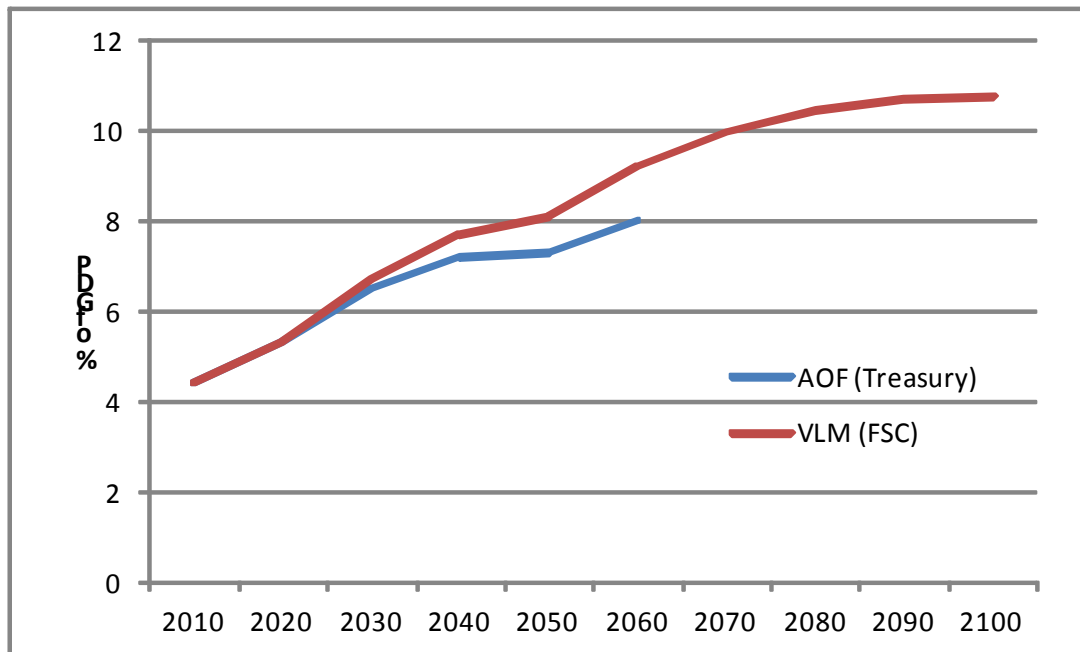
⁸ Office for Budget Responsibility (2012): *Fiscal Sustainability Report*. July.

⁹ op cit



would be too late to prevent a further escalation in NZS costs. This is because it takes decades for the lower amounts of NZS that would be paid to new retirees to outweigh the effect of paying existing retirees for a longer period.

Figure 6: NZS Costs as % of GDP



This effect is shown in Figure 7, taken from FSC (2012)¹⁰ which compares the projected cost of NZS under the current system with funding it from savings. If the latter had started in 2011 it would take until about 2060 for the overall fiscal cost to be lower than under continued PAYGO funding.

(Note that the FSC did not propose this option as it wants retirement incomes to be approximately double current NZS levels so as to provide a comfortable standard of living in retirement. It proposes keeping NZS in place with indexation of the age of eligibility to the longevity of those over 65, supplemented by a second tier pension funded by increases KiwiSaver contributions).

Options for reducing NZS cost are discussed in NZ Treasury (2013)¹¹ and include:

- Raising the age of eligibility for NZS
- Reducing rate of increase in NZS entitlements
- Mandatory private pre-funding (SAYGO) and means testing
- Communal pre-funding (NZSF).

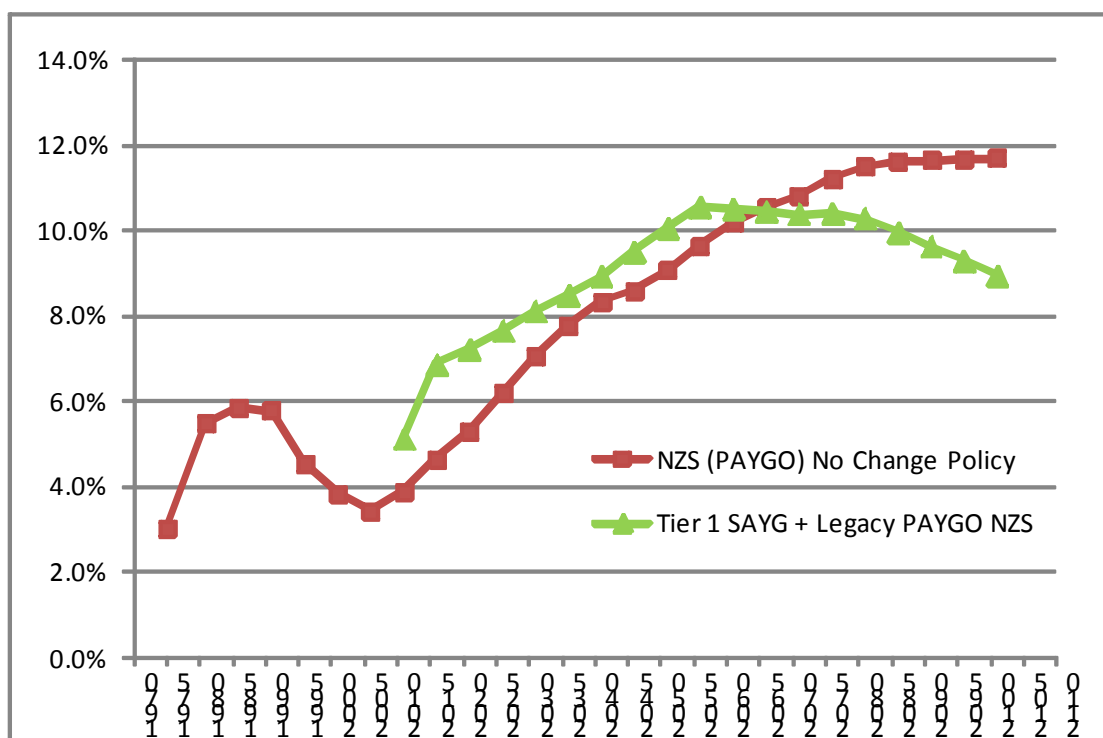
The analysis is insightful and clearly illustrates the relative strengths and weaknesses of the options against various criteria but, as they all seem to use the favourable AOF scenario as baseline, the absolute level of fiscal risk that the reform options are intended to address is understated. Thus the urgency of policy change is diminished.

¹⁰ op cit, p42. Note that these scenarios are based on *The Lancet* mortality projections which have somewhat lower mortality than the VLM projections.

¹¹ Treasury (2013): *The Future Costs of Retirement Income Policy, and Ways of Addressing Them*. Draft paper for the Long-term Fiscal External Panel.



Figure 7: Costs of funding NZS from PAYGO v SAYGO as % of GDP (FSC "Lancet" Longevity)



It is not just NZS that is a threat to fiscal sustainability. Health is a larger component of government expenditure than NZS. In the AOF scenario health costs rise from 6.9% of GDP in 2010 to 11.1% by 2060. In the BAU scenario they rise to 13.0% by 2060. About 80% of the difference is driven by the population/longevity assumption, with the labour productivity assumption accounting for the other 20%.

The AOF projection forms the basis of a discussion in Treasury (2012)¹² on a range of options for reducing health expenditure, including changes in productivity and changes in non-demographic volume growth (that is, real per capita growth in health demand for no change in the age and sex composition of the population, assumed to be 1.5% pa), but again the total fiscal risk is diminished by the relatively favourable input assumptions.

The best starting point for a discussion of the future affordability of NZS is a realistic assessment of what a BAU, or No Change scenario looks like. Assuming away the scale and momentum of the existing NZS policy just provides an excuse to delay actions that could prevent the unsustainable No Change scenario from occurring.

¹² Treasury (2012): *Health Projections and Policy Options for the 2013 Long-term Fiscal Statement*. Draft paper for the Long-term Fiscal External Panel.