# PUBLIC PENSIONS AND THE LABOUR MARKET IN NEW ZEALAND

*Paul Rodway*[*]

*From 1977, New Zealand has had one of the simplest public pension systems in the world, a basic, universal pension – concentrating on the prevention of poverty in old age, with some success. The present set-up implies that without means tests, recipients can continue working, receiving a practically universal payment from their 65th birthday, and with only limited options for taking the pension before age 65.*

*This paper samples work done at the New Zealand Treasury about the drivers of the decision to cease being active in the labour market. Hurnard (2005) analysed how changes in the eligibility age for New Zealand Superannuation (NZS) twice in the past 30 or so years have influenced older people's decisions to participate actively in the labour market. Enright and Scobie (2009) have recently used survey data to quantify the separate effects of NZS, other income, health status, education, marital status, wealth, and so on, on the decision to participate for older workers, or to reduce the hours of working.*

*While labour participation of older workers has risen since the gradual lift in the eligibility age from 60 to 65 between 1992 and 2001, there still is a 50 per cent fall-off in participation between people aged 60-64 and 65-69 year olds. So New Zealand Superannuation, despite having no explicit financial disincentives, is still for many older than 65 a barrier to continued participation in the labour market. The coming acceleration of population ageing means that demand for older workers is likely to grow and that any barriers, real or imagined, should be removed.*

## 1 Introduction

This paper reviews recent work done in the New Zealand Treasury on potential drivers of older people's decisions to reduce the hours spent working or to withdraw completely from the paid workforce. It shows that the country relies almost on a universal public scheme where the objective is poverty prevention, rather than publicly supported income replacement.

Population ageing is likely to increase the number of people 65 and older over the next 40-plus years and produce little growth in the population between 15 and 64. This structural change will challenge New Zealand's long-term economic growth prospects and our ability to maintain a stable public debt path. A way of meeting part of this challenge might be for older people to work longer (either by extending their paid working lives or working for more hours or both) and public policy may have a role in facilitating such a change.

The paper is structured as follows. Section 2 describes the pension system in operation in New Zealand since 1977, while Section 3 shows how older people have participated in the labour market in New Zealand and compares this with participation in other OECD countries.

Section 4 then updates work done by Hurnard (2005) analysing how employment and retirement patterns among older people have responded to changes in public pension policy, especially to the age of eligibility for the universal pension (now called New Zealand

[*] New Zealand Treasury.

Superannuation, NZS). The modelling indicates that eligibility for NZS is accompanied by a fall in participation of at least 24 percentage points.

While the aggregate modelling says something about the effects of NZS on participation of older people, sorting out the relative effects of many potential drivers requires analysis of detailed survey results. Since Hurnard's paper was published, work on two surveys has given us some insights into this issue.

Then Section 5 picks up some of the results of Enright and Scobie (2009, forthcoming) about the factors associated with people aged 55-70 continuing in the labour force on a full- or part-time basis, rather than retiring. This study uses the first wave of a new longitudinal survey of health, work and retirement conducted by Massey University in 2006. Relative to being married to a non-working spouse, being separated, a widow/er or married with a working spouse tends to raise the probability of remaining in the labour force, while receiving NZS (or a benefit) lowers the working probability (by 16 percentage points). Levels of significance of these factors are briefly compared with results using Statistics New Zealand's Survey of Family, Income and Employment (2002-05) restricting the sample to 55 and older.

Finally, Section 6 draws some conclusions from these studies about the policy implications for labour participation by older New Zealanders.

## 2 Public pensions in New Zealand

A small country, as far from Europe as it is possible to be, New Zealand has conducted many social experiments, including introducing a public pension system in 1898. Since then, in this area, we have tried targeting, universality, different levels of generosity, dual public pensions, and changes in the eligibility age of our public pension system. The regime introduced in 1977 set up the broad outlines of the present NZS.

Pension systems have two main goals: first, to prevent destitution in old age by redistributing income to poor pensioners (social protection) and secondly to help workers maintain their living standards in retirement (earnings replacement). NZS follows the New Zealand (and Anglo countries') tradition of coming down firmly on the side of social protection.

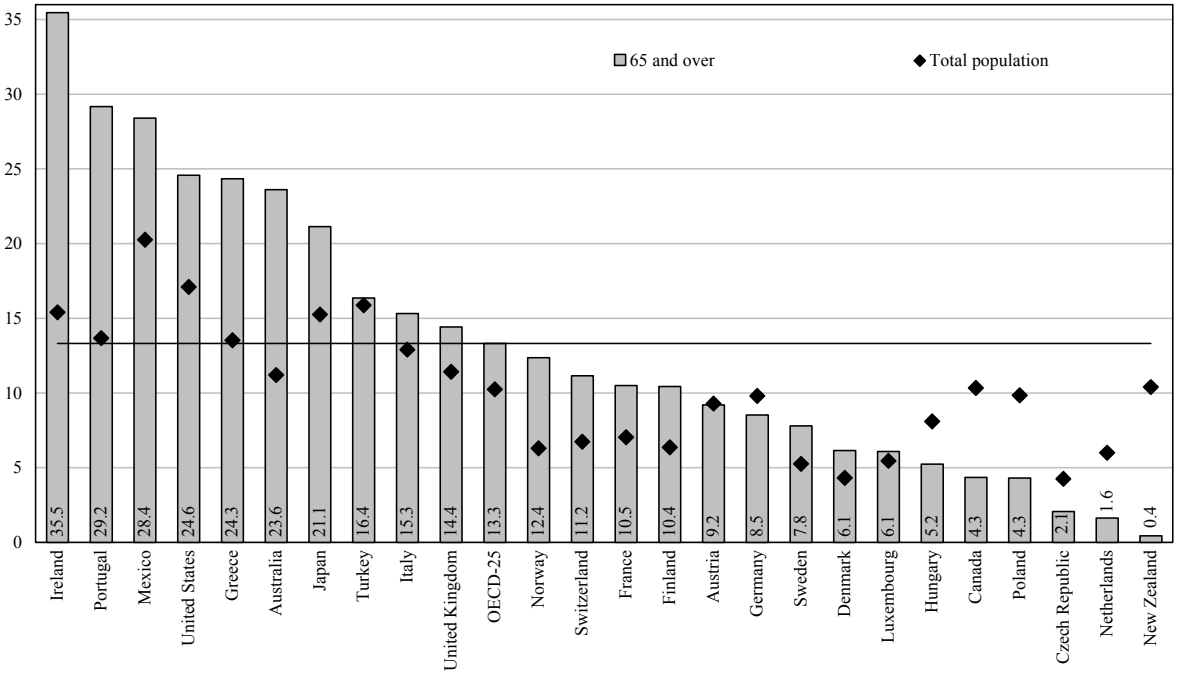
International and national reports rate New Zealand's universal flat-rate public pension scheme highly in achieving the objective of the prevention of poverty in old age. For many, NZS is a major source of retirement income. Figure 1 shows that the poverty rates for New Zealanders aged 65 and over compare very favourably with other OECD countries (also see OECD, 2009).

*Positive Ageing Indicators* (a report released by the Ministry of Social Development, 2007) says older people in New Zealand generally have adequate incomes that provide them with a reasonable standard of living. This assessment varies with population subgroups and is not so positive for older Māori and single people, especially single women. The adequacy of NZS payments is reflected in the low levels of poverty and hardship among the older population. The report says this conclusion also depends on the high levels of mortgage-free home ownership in the current cohort of older people. It is important, the report notes, that future generations of older people enter retirement as home-owners – either mortgage-free or with small mortgages – as mortgage-holders and those who live in rental accommodation are among the most disadvantaged.

That report ties NZS with other forms of savings and wealth. Are we saving enough so that consumption can continue beyond the years of paid work? Research by Scobie and his collaborators (2007, for example) on modelling consumption smoothing for 45- to 64-year-olds based on wealth surveyed in the Survey of Family, Income and Employment (SoFIE) suggests that the highest proportion of inadequate savers fall in the middle income group (couples with incomes

**Figure 1**

**Lower Poverty Rates among Older People than for the Total Population in One-third of OECD Countries**
**Poverty Rates for People Aged 65-plus and for the Total Population, 2000**
*(percent)*




Source: OECD (2005), *Society at a Glance, Social Indicators*.

between $15,000 and $50,000). As expected, for the majority of people in the lower income group (quintile 1) no further saving should be required as NZS offers a higher income than their projected pre-retirement income. Wealthy individuals and couples (quintile 5) would not need to save more than they are doing already. Overall, 70 per cent of single individuals and 50 per cent of couples are estimated to require no more saving for retirement. This work, in other words, suggests that for the majority, NZS is playing a role at providing a base for consumption in retirement for the lower income groups.

Since 1977, New Zealand has changed the parametric settings many times, often after heated debate, and has twice made changes, with little warning, to the age at which the pension can be taken up. Promises to improve settings are often part of political platforms and these settings are the subject of deals between potential coalition partners.

The latest change to the NZ pension system is the addition of an auto-enrolment scheme with private individual accounts (KiwiSaver), a variant of a compulsory scheme that was introduced in 1975 and lasted for only a year and another proposed scheme that was comprehensively rejected in a referendum in 1997. The first KiwiSaver accounts were opened on 1 July 2007 and it has been taken up enthusiastically so far by about 40 per cent of the labour force under 65.

NZS differs from systems in many other countries in several key ways. It is:

- universal,
- paid at a flat rate,
- almost impossible to access before 65,
- paid if working or not.

NZS is now available to everybody (subject to a residency requirement) on turning 65. It is paid out at a rate, for a couple, equal to around 66 per cent of the average ordinary-time earnings, net of tax, and generally grows with growth of the average wage.[1] At present about 520,000 people receive "Super," about 95 per cent of people aged 65 and older.

The fixed age of eligibility means there are very limited options for someone wishing to retire before that age, unlike the situation in many other countries. There is no trade-off between the amount of NZS and when you start to receive it. Before age 65, the only public support is through the income-tested benefit system, where payment is lower than NZS, subject to tight income tests, and other conditions (such as the requirement to look actively for work, or being sick or an invalid). The one exception is for the younger partner of someone 65 and older who can choose to receive NZS, but the combined NZS payment is abated against their joint incomes. This "non-qualified spouse" (usually female) can therefore receive NZS before 65 and explains the tendency for early retirement of some females.[2]

Since the late 1990s, NZS has not been income- or asset-tested. The payment level is unconnected to past income. Most importantly, a person can receive NZS and still remain in work. This means there is no implicit tax on earnings beyond age 65, since you can receive NZS while continuing to work. As a result of these institutional settings, the financial conditions around eligibility for NZS tend to discourage early retirement.

In addition, since 1999 it has been unlawful for an employer to require the retirement of an employee just on the basis of age. This has probably been a driver of the rise in employment rates among those above NZS eligibility age.

Two changes to the eligibility age have occurred since the mid-1970s: an instantaneous drop in 1977 and a progressive increase in the age from 1992 to 2001. As Hurnard notes, these two natural experiments enable us to estimate the strength of the labour force response to NZS eligibility age by older workers.

OECD's *Pensions at a Glance* (2007) examines the role of private pensions across the OECD. In 1990, the coverage in New Zealand was 23 per cent of workers. By 2006 only 14 per cent of the labour force was covered by private schemes. This fall may be a consequence of the success of NZS at poverty prevention over the past three decades. The OECD report concludes that for New Zealanders to reach retirement incomes at average OECD rates, voluntary provision needs to be boosted by something around 5-7 per cent of earnings for an average earner.

Shortly after the present pension system was introduced in 1977, the fiscal cost rose to around 8 per cent of GDP. Subsequently lowering of the relativity with wages, raising of the age of eligibility through the 1990s, lower birth rates in the 1930s, some income-targeting and a buoyant economy have brought the ratio of total payments to GDP down to 4 per cent. But the accelerating ageing of the population suggests that by mid-century the ratio will return to 8 per cent, or more.

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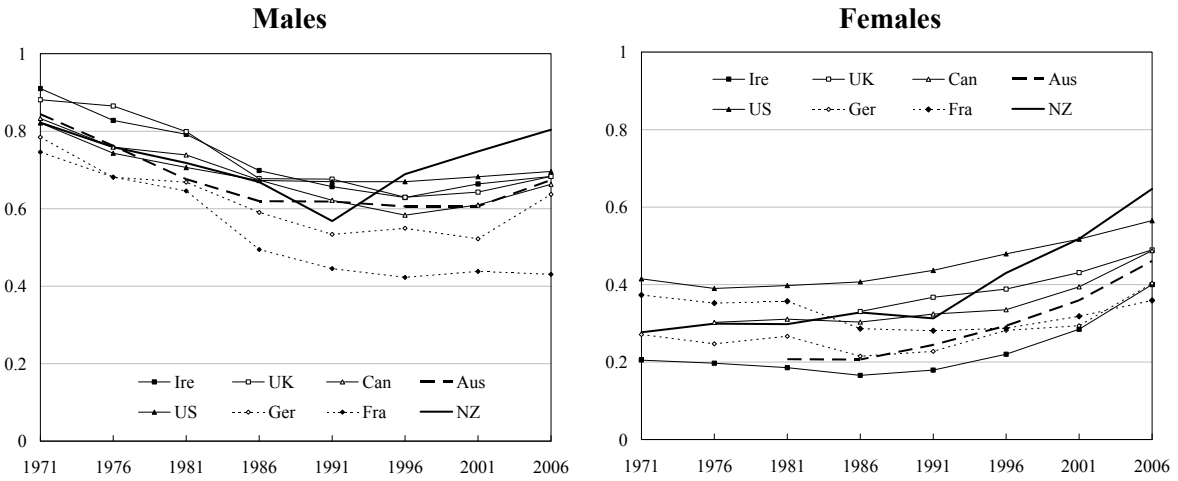
[1] It is indexed to the CPI, but the net amount paid to a couple must lie between 66 and 72.5 per cent of the net average wage. As wages generally grow faster than consumer prices, this usually means that it grows with wages.

[2] This gender difference is supported by OECD estimates of the average effective age of retirement in New Zealand for the period 2002-07: 63.9 years for women and 66.5 for men. These estimates are derived from changes in participation rates over a five-year period for successive cohorts of individuals aged 40 and over (OECD, 2009).

**Figure 2**

**Labour Force Participation Rates, 55-64, by Sex, 1971-2006**




Source: OECD Labour Market Statistics for countries other than New Zealand. NZ data are taken from Census documents (in 1971 and 1976, these have been adjusted for a change of coverage of "actively engaged").[3]

Public pension expenditure, health and aged care are the items in public spending that are most dependent on population changes and other pressures. Hence an awareness about what the effects of changing or not changing our public pension system mean for other spending is important for the on-going debate about fiscal sustainability over the coming decades.

## 3 Trends in older labour force participation

Across many OECD countries, the trend since the 1970s has been for people to retire at a younger age, despite evidence of rising life expectancy. Figure 2 shows the generally falling rates of labour force participation rates in selected OECD countries among males in the age group 55-64 and rising rates for females.

The figure for males shows New Zealand's experience stands in contrast with (some) other countries. All shared the declining trend in older male participation from 1971 to 1991. The reasons for this trend are the increasing coverage and generosity of retirement benefits and actuarially unfair returns from postponing retirement. This changed in New Zealand from 1991 onwards and has continued to 2006 (and beyond). Some countries have introduced policies that are starting to slow or reverse this trend. The picture is similar for older females, but the break since 1991 has been overlaid on a generally rising trend in participation.

It is also instructive to look at 2006 census data on full-time and part-time employment rates (Figure 3). For both men and women, the overall employment rate falls by about 10 percentage points between 64 and 65, the present age of eligibility for NZS.

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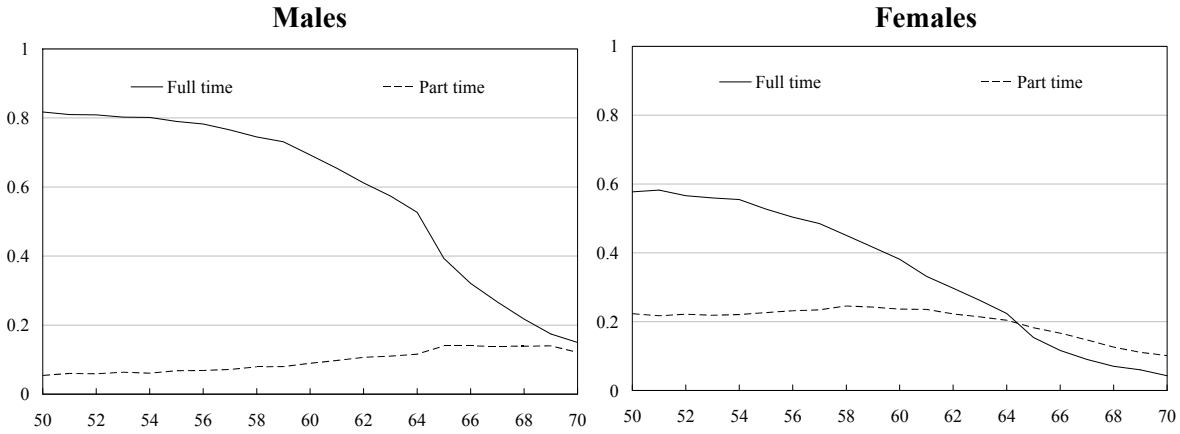
[3] There are two sources of NZ participation data: the 5-yearly censuses for single years of age, 15 to 90+, labour force status, and the Household Labour Force Survey, 5-year age groups, 15-19, . . .60-64, and 65+, quarterly, starting in 1986. Here we use the census numbers to cover the period of the eligibility changes.

**Figure 3**

**Full-time and Part-time Employment Rates, by Sex, 2006**




Source: Statistics New Zealand, Census 2006.

Many factors can influence individual decisions about when to leave paid work. Financial factors could include accumulated assets, current and prospective earnings and the value of any pensions. Examples of non-financial reasons for leaving the labour market include poor health, family care responsibilities, the retirement of a spouse, informal age-based discrimination, layoffs, and a wish to do voluntary work or to enjoy more leisure time.

The next section uses aggregate census data and an analysis of changes in public pension policy settings to estimate the strength of each of these factors. The following sections summarise work using unit record data of a cross-sectional survey (so far) and a longitudinal survey to explain the variability of individual retirement behaviour.

## 4 Effect of NZS on aggregate participation

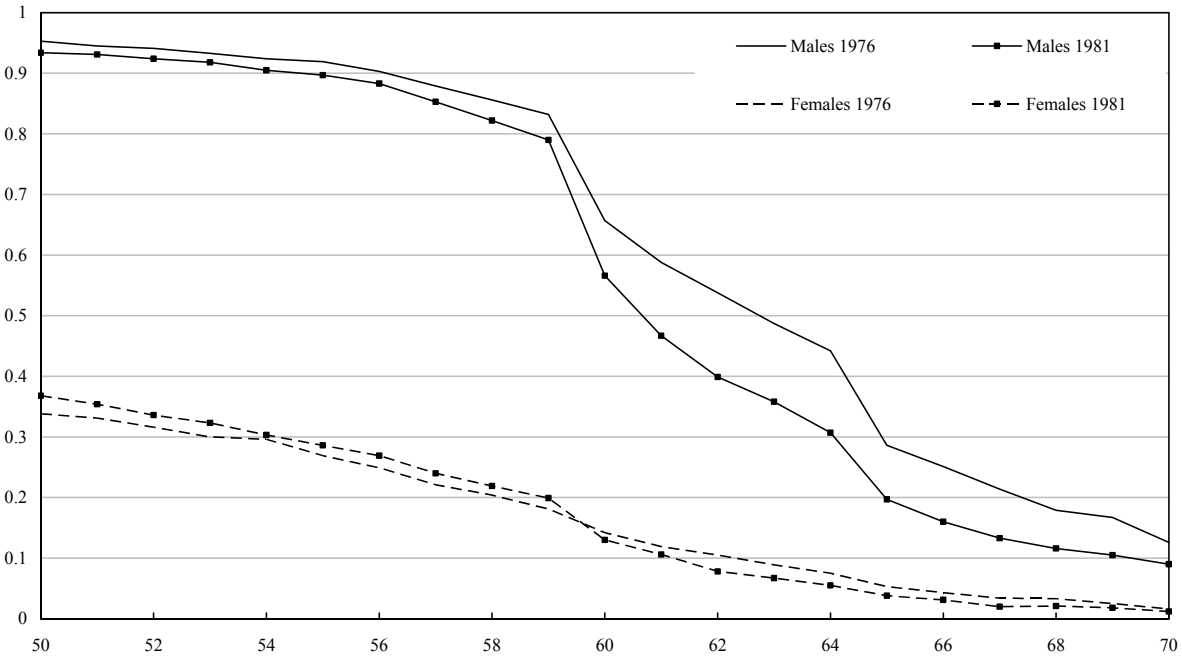
This section updates the work of Hurnard (2005) in using a simple aggregate model to explain the effect of changes in the age of eligibility on participation trends. Two policy changes in opposite directions are used to estimate the effects of these changes. These were very rapid policy decision processes and transitions compared with those in other countries.

The first change occurred in 1977 when the qualifying age for universal superannuation was suddenly dropped from 65 to 60 and at the same time the amount paid was boosted. For 40 years to the mid-1970s, New Zealand had two pensions: the universal pension for those 65 and older and an income-tested Age Pension already available at 60 and claimed by about one third of 60-64 year olds. Figure 4 shows the proportion of men in full-time employment aged 60-64 fell much more than those of a slightly younger age group. Those aged 65 and older show the effect of the larger pension on offer. The trend towards higher participation by women in their 50s becomes reversed from 60 in response to eligibility for superannuation.

The second change happened between 1992 and 2001. In 1989, the government announced that the prospective rise in pension costs would be addressed by gradually lifting the eligibility age from 60 to 65 between 2006 and 2025. Then the economy went into recession. With little debate or warning, the government moved the qualifying age progressively back up to 65, starting almost

**Figure 4**

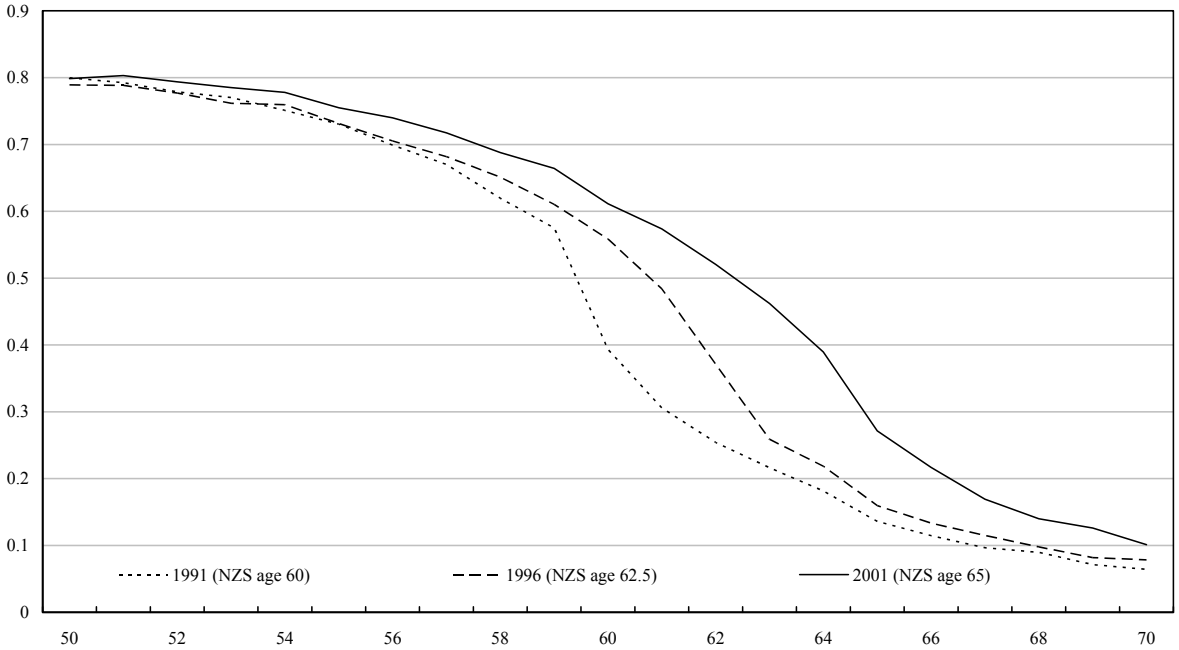
**Changes in the Full-time Employment Ratios, by Sex, 1976 and 1981**




Source: Rochford (1985).

**Figure 5**

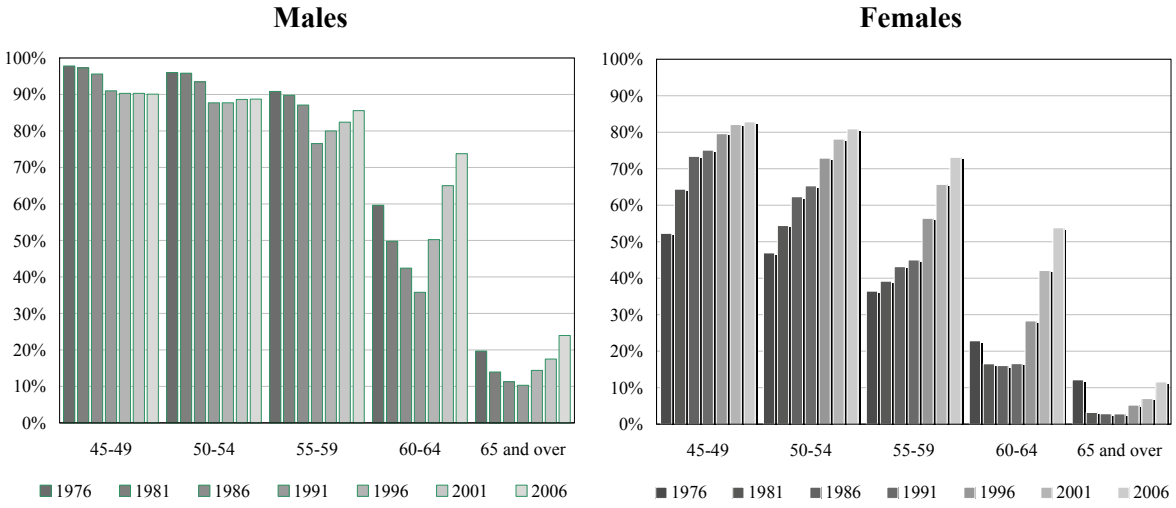
**Changes to Male Full-time Employment during the Transition, 1991-2001**




Source: Statistics New Zealand, census data.

**Figure 6**

**Labour Force Participation Rates, by Age Group, by Sex, 1976-2006**




Source: Statistics New Zealand Census documents and Hurnard's adjustments of data for 1976.

immediately with the transition taking place over the following decade. The short notice disrupted the retirement plans of older workers, but a Transitional Retirement Benefit, income-tested but not work-tested, helped to ease the transition. The 1991 census captured labour market behaviour before the announcement and the transition was complete by the 2001 census. The 1996 census marked the half-way point. Figure 5 shows the rise in participation rates for males aged 60-64 was 20 percentage points or more between 1991 and 2001.

The data for the Hurnard study consist of census participation rates for people aged 45 and older for the seven census years from 1976 to 2006 covering the period of eligibility age changes. Definitions of the labour force participation have changed over the years, reflecting the exclusion of part-time employed and then the change in the number of hours per week constituting part-time employment. The data from 1976 are adjusted to reflect the current definition of a labour force participant: someone who works regularly for one or more hours per week or is unemployed and seeking work in the week prior to the census.

From Figure 6, note that rates for younger females generally rise from census to census, while rates for the males generally are static or falling. Also the 60-64 year age groups show a change in trend compared with the younger groups for both sexes.

Hurnard developed a relatively simple model that controls for the general unemployment rate, age group, whether that age group is currently eligible for NZS, gender and a secular rising trend in female participation. This model can explain a high proportion of the variation in participation rates.

All the coefficients in Table 1 are statistically significant at the 99 per cent level except for one age-group dummy. When the unemployment rate, an indicator of the tightness of the labour market, rises, participation falls. Both male and female participation lowers with age, as you might expect as a result of factors such as the maturing of private savings and rising health problems. Over the period, when eligibility for NZS is triggered, male participation drops by a further 24 percentage points. For females, there is a direct fall of a further 8 percentage points after they

**Table 1**

**Determinants of Labour Force Participation**
**Dependent Variable: Age Group/Gender Participation Rates in Census Year**
*(percent)*

| Explanatory Variables | Coefficient | *t*-stat |
|---|---|---|
| Constant | 98.76 | 66.62 |
| Unemployment rate for year to census date *(percent)* | –1.19 | –6.16 |
| Eligibility of age group for NZS (0, prop,1) | –24.25 | –8.80 |
| Female eligibility for NZS (0, prop, 1) | 16.35 | 2.95 |
| Female near eligibility for NZS (0, prop, 1) | –11.27 | –3.87 |
| Female (0,1) | –42.79 | –19.77 |
| Log time trend for females not eligible for NZS (trend based on 1976=1, 1981=2, …) | 18.41 | 16.16 |
| Dummy, males 50-54 | –2.05 | –1.24 |
| Dummy, males 55-59 | –8.60 | –5.18 |
| Dummy males 60-64 | –26.29 | –11.79 |
| Dummy, males 65 and older | –52.89 | –16.44 |
| Dummy, females 50-54 | –6.97 | –4.20 |
| Dummy, females 55-59 | –15.25 | –6.57 |
| Dummy females 60-64 | –24.92 | –6.47 |
| Dummy, females 65 and older | –36.04 | –7.91 |
| Adjusted *R* square | | 0.99 |
| Observations | | 70 |

Source: Update of Hurnard (2005) to include Census 2006.

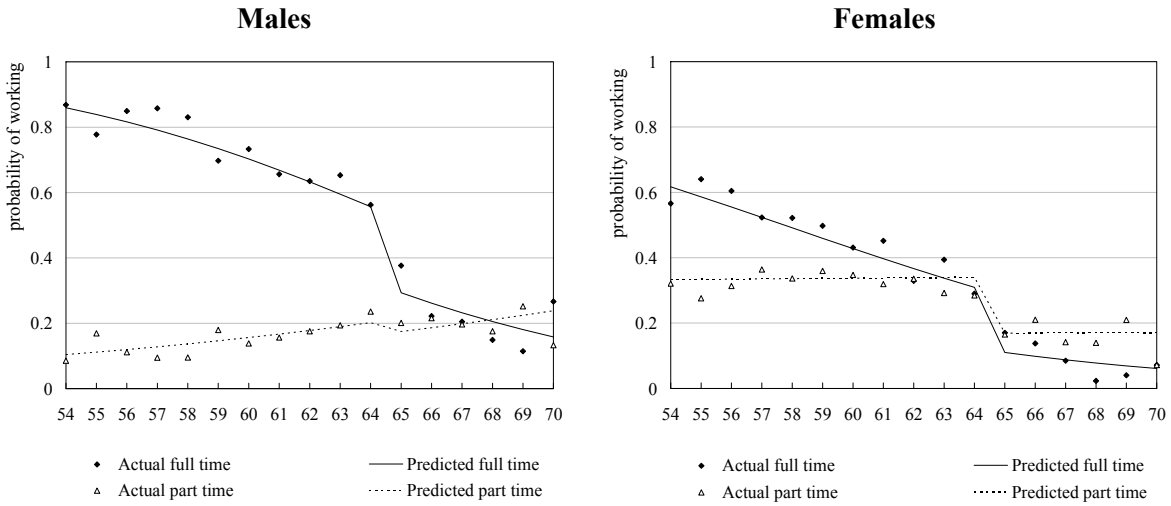
become eligible for NZS (–24.25+16.35). Put another way, if the eligibility age in 1991 had been 65 instead of 60, then participation rates of people aged 60-64 would have been 24 points higher.

The regression results also indicate that average participation rates for women fall if they are within five years of becoming eligible for NZS. This "non-qualified spouse" effect is estimated to lower participation in the near-eligible band by 11 percentage points. This reflects the "joint retirement" decision by couples when the male (typically) starts to receive NZS. An estimated 6 per cent of couples take this option.

It is worth remarking that eligibility for NZS lowers participation rates for men and women, despite the incentive to stay on working (no legal retirement age, NZS is not work tested, absence of early retirement provisions, crowding out of private provision). For many in the lowest quintile of income, NZS is a good replacement for income received in the year before 65. For many, 65 is still a strong signal for retirement.

**Figure 7**

**Unconditional Probabilities of Working Full or Part Time, by Age and Sex**




Source: Enright and Scobie (2009).

## 5 Other drivers of older participation

The next stage of analysis is to examine unit record data in an attempt to sort out what factors are driving people to decide whether to participate, or not, in the labour market, or to change from full-time to part-time work. Since Hurnard, the results of two surveys have become available: Statistics New Zealand's longitudinal Survey of Family, Income and Employment (2002-05) and the Massey University's Health, Work and Retirement survey (2006, first wave).

Enright and Scobie (2009) have drawn on results of the HWR survey. This survey is designed to investigate factors surrounding work and retirement for those aged 55 to 70. It is a national sample of around 6,000 respondents with a heavy over-sampling of Māori.

Among many other things, their paper addresses the question whether the age of eligibility for NZS affects the decision to remain in the labour force. It examines such questions, using logistical regressions to predict behaviour based on binary and continuous data.

"Retirement" is not tied down precisely in the survey. As some respondents say they are continuing to work after retirement, it may mean for them the period after age of eligibility for NZS.

Figure 7 certainly supports the proposition that there is a deterrent effect. For males in the sample, the probability of participation in full-time work falls with age as was also shown in the census data (figure 3). There is a predictable drop at 65, but even so almost 20 per cent of males remain in full-time employment at 70. Contrast this with part-time employment which rises with age, except for only a small fall back at 65. Despite this, at age 66 more than 40 per cent remain active in the labour force.

The female patterns have some differences. The probability of being in part-time employment is much higher than for males until age 68 and drops at 65 by as much as the full-time rate. At the age of eligibility of 65, participation rates for males and females fall by more than 20 per cent. This is twice the size of the fall in the British state pension at age 65. Enright and Scobie attribute this difference to NZS being more generous and universal.

**Table 2**

**Factors Associated with the Decision to Work, by Sex**

| Explanatory variable | Male | Female |
|---|---|---|
| Physical health | *** | *** |
| Mental health | *** | ns |
| Age | --- | --- |
| Secondary education | ns | *** |
| Tertiary education | * | *** |
| Years in New Zealand | *** | * |
| Separated | *** | *** |
| Widow/er | *** | *** |
| Never married | ns | *** |
| Married with working spouse | *** | *** |
| On a benefit | ns | -- |
| Receiving NZ Super | -- | -- |
| Receiving other super | --- | ns |
| No. of dependents | *** | ** |
| Plan to stop work | --- | --- |
| Family health important | * | ns |
| Positive retirement reasons important | - | ns |
| Negative retirement reasons important | * | ** |
| Income of other family members | ns | ns |
| Wealth | ns | ns |

ns = not significant at the 10 per cent level.
*** = significant at the 1 per cent level; ** = significant at the 5 per cent level; * = significant at the 10 per cent level.
Source: Enright and Scobie (2009).

While the data indicate falls in participation at 65, it is difficult to sort out from this how much is due to NZS and how much is due to other factors such as health, marital status, age, ethnicity, region, income, wealth, other forms of super, and so on. These need to be controlled for. To this end, Enright and Scobie run logistical regressions with dependent binary variables such as "working," equal to one if the respondent is in the labour force, and zero otherwise.

As an example, Table 2 shows only those variables that are significant (generally). Health status, as measured by the mental component score, has no significant effect on the labour force participation decisions of women. This contrasts with males, whose decisions to work are strongly related to both their physical and mental scores. Having a tertiary education significantly raises the probability of males and females are working. Compared with being married to a non-working

**Table 3**

**Factors which Change the Probability of Males Remaining in the Labour Force**

| Variable | Unit Change | Probability of Remaining in the Work Force *(percent)* | | |
|---|---|---|---|---|
| | | Initially | After the Change | Marginal Effect |
| Married with working spouse | Binary | 76 | 94 | +18 |
| Widowed | Binary | 76 | 93 | +16 |
| Separated | Binary | 76 | 91 | +14 |
| No. of dependents | 1 | 85 | 90 | +5 |
| Tertiary education | Binary | 88 | 91 | +4 |
| Family health important | Binary | 88 | 92 | +4 |
| Negative aspects of retirement important | Binary | 89 | 92 | +3 |
| Physical health | 5 units | 90 | 92 | +2 |
| Mental health | 5 units | 90 | 91 | +1 |
| Years in New Zealand | 5 years | 90 | 91 | +1 |
| Age | 1 year | 90 | 89 | –1 |
| Positive benefits of retirement important | Binary | 92 | 88 | –4 |
| Receiving NZ Superannuation | Binary | 92 | 76 | –16 |
| Receiving other superannuation | Binary | 91 | 75 | –16 |
| Plans to stop work entirely once retired | Binary | 93 | 63 | –29 |

Note: Variables whose coefficients are not statistically significant are omitted from the table.
Source: Enright and Scobie (2009).

spouse, for both men and women, being separated or widowed significantly lifts the probability of working, as does having a working spouse. Receiving a benefit or NZS significantly lowers the chance of being in the labour force for both males and females.Surprisingly, the level of total wealth and the level of income of other household members have no effect on the probability of males or females working. Enright and Scobie suggest that the wealth results might be because the survey does not record liabilities and so cannot test for the effect of net wealth. In addition, the implied stock of wealth associated with NZS forms a major share of the total retirement wealth of many New Zealanders, but is not included in the wealth questions. This may reduce the incentive to accumulate wealth and hence it may be possible that some of what is actually a wealth effect is being picked up by the highly significant effect of receiving NZS.

In interpreting the effects in a logit regression, it is useful to consider the magnitudes as well as the significance. Tables 3 and 4 therefore show the estimates of the marginal effects – the

**Table 4**

**Factors which Change the Probability of Females Remaining in the Labour Force**

| Variable | Unit Change | Probability of Remaining in the Work Force *(percent)* | | |
|---|---|---|---|---|
| | | Initially | After the Change | Marginal Effect |
| Separated | Binary | 50 | 92 | +42 |
| Married with working spouse | Binary | 50 | 87 | +37 |
| Widowed | Binary | 50 | 84 | +34 |
| Tertiary education | Binary | 73 | 84 | +11 |
| No. of dependents | 1 | 78 | 86 | +8 |
| Negative aspects of retirement important | Binary | 79 | 85 | +7 |
| Physical health | 5 units | 81 | 83 | +2 |
| Years in New Zealand | 5 years | 81 | 82 | +1 |
| Age | 1 year | 83 | 81 | –2 |
| Receiving NZ Superannuation | Binary | 85 | 68 | –16 |
| Receiving a benefit | Binary | 83 | 61 | –22 |
| Plans to stop work entirely once retired | Binary | 87 | 56 | –31 |

Note: Variables whose coefficients were not statistically significant are omitted from the table.
Source: Enright and Scobie (2009).

percentage point change in the probability of working for a one unit change (or in the case of the health variables, five units) in the significant variables.[4]

The probability of remaining in the labour force, in contrast to being retired (no paid work), is calculated by setting all variables in the logit regression, except the one of interest, to their mean values for continuous variables or zero for binary variables. The calculation is then repeated with a change made to the variable of interest. For the physical and mental health scores a difference of five units was chosen, as a change of this magnitude is deemed to be clinically significant.

Male and female results are broadly similar. Changing marital status produces the largest changes in the probability of working. The probability that males who are not separated or divorced are in the workforce is 76 per cent. For those who are, the probability of working rises to

[4] The health variables in the table are indexes constructed from 22 questions in the survey. The study also estimates the separate effects of 19 chronic diseases on the probability of remaining in the work force, again holding constant as many variables as possible. Arthritis, blood pressure and heart conditions are the illnesses having the largest aggregate affects on LFP. In all studies of the effect of health on retirement, there is the question of causality; Is it possible that work status influences health? And can this influence be corrected by appropriate statistical methods? Enright and Scobie attempted to find suitable instrumental variables which might determine health status, but not influence the labour-supply decision. These attempts proved unsuccessful.

**Table 5**

**Factors Influencing the Choice of Full-time Work among Those in the Labour Force**

| Variable | Male | Female |
|---|---|---|
| Physical health | ns | ns |
| Mental health | ns | ns |
| Age | --- | --- |
| Māori | ns | *** |
| Main urban | ns | * |
| Tertiary education | - | ns |
| Separated | ns | *** |
| Widowed | ** | ** |
| Married with working spouse | *** | ns |
| Receiving a benefit | --- | --- |
| Receiving NZ Superannuation | --- | -- |
| Receiving other superannuation | --- | -- |
| Has a super scheme | ns | *** |
| No. of dependents | *** | ** |
| Income of other members of household | --- | ns |

Note: ns = not significant at the 10 per cent level.
*** significant at the 1 per cent level; ** significant at the 5 per cent level; * significant at the 10 per cent level.
Source: Enright and Scobie (2009).

93 per cent or so, meaning that the marginal effect is a rise of around 16 percentage points. For females, the figures rise from 50 to 92 per cent for those separated or divorced, a marginal effect of 42 percentage points. At the other extreme, a clinically significant improvement in physical health raises the probably by only 2 percentage points for both sexes. NZS shows up, after holding other things constant, as having an appreciable and significant negative effect on the decision to remain in the labour force (–16 percentage points).

The survey has some insights on the choice between full- and part-time work, given that a person is employed (full = 30 or more hours per week). In this case, the logit regression model is estimated with a binary dependent variable set at 1=full-time and 0=part-time using only those employed in the sample. The levels of significance for factors were similar to the decision to work or not outlined above. The exception was the health measures, where the probability that a person in the labour force chooses full-time employment is not significantly related to either the physical or mental health scores. So while physical health status has a significant effect on the decision to join the labour force, the survey indicates that if a person is employed, their choice about full- or part-time work does not depend on their health status.[5]

Both sexes have a lower probability of working full-time as they age, receive a benefit or have income from superannuation and where the income of other family members is higher. On the other hand, they are more likely to be in full-time employment if they are Māori (in the case of

[5] The discussant expressed scepticism that a "clinically significant" change in physical or mental health could have only a small marginal effect. The authors concede that perhaps a five-unit change is too small to produce sensible effects on participation.

females), are separated or widowed and have a working spouse (for males), and have more dependents.

The very large longitudinal SoFIE survey also throws some light on the effects of health status on labour market participation. Holt (2009) has used the first three waves in a major study of this relationship covering ages from age 15. SoFIE does not contain direct information about the effect of NZS. Enright and Scobie restrict the SoFIE sample to 55-70 and find similar levels of significance for various factors as for the HWR survey. Being on a benefit significantly reduces the probability of older people working in both surveys.

## 6 Conclusions

This paper is a brief guide to some recent work done at the New Zealand Treasury, principally on the effect of New Zealand Superannuation on the labour market behaviour of older people. The first study, using aggregate time series data, deals with the effects of changes to the age of eligibility for New Zealand Superannuation on the effects of on the decisions by older workers to retire. The second, covering a much wider set of issues than just this topic, draws on a recent survey of about 6,000 individuals and shows the effect of factors such as New Zealand Superannuation, health status, education levels, and marital status, on the decisions by older workers to retire or reduce their hours.

These results add to the international evidence on the question of the disincentive effect of pension policy on the decision to remain in the labour force, even under the fairly benign arrangements in New Zealand.

Many factors, financial and not, can affect the employment decisions of older workers. Enright and Scobie have shown that changes in marital status compared with a base of having a non-working spouse are associated with a large rise in the probability for remaining in work. Smaller rises occur with better health status. Becoming eligible for NZS or receiving a benefit tends to be associated with a large fall in the probability of working.

The acceleration of population ageing means that, under the present structure, payments of NZS will double as a share of GDP over the next 30 plus years (Treasury, 2006). Driving this are the post-war baby boom, more people surviving to 65, and rising life expectancy at 65. Health status may be improving, but the signs are mixed. Functional disability rates appear to be falling, but chronic disease rates may be rising. This makes it difficult to tie down long-term health costs and whether the effect of improving health status on participation can be depended on to lift participation of older workers.

Changing the parameters of NZS would help both the economic growth and the fiscal position – weakening the indexation or indexing the age of eligibility to changes in period life expectancy at 65, but such changes have been ruled out by the current Government.

A decision to maintain present settings for NZS (principally, age of eligibility and indexation to average nominal wages) will mean that fiscal sustainability will require offsets in other areas of expenditure or potentially growth-harming rises in tax rates.

If health status continues to improve along with life expectancy at 65 and levels of education rise, more older people may continue to work past 65. This has several benefits. They maintain strong connections with society, potentially build greater retirement savings, and add to GDP and tax, at a time when the working age population under 64 is experiencing only weak growth because of population ageing.

KiwiSaver, the government-promoted defined contribution scheme, may help maintain the overall participation rates of older workers. Older higher income individuals will contribute more in tax, and are also likely to be more educated and experienced. Preliminary calculations, however, show that the contribution rates are not sufficient to provide sufficient annuity income, along with NZS, to achieve an acceptable income replacement rate for median- and high-income couples and individuals.

Policy changes that soften the fall in participation after age 65 will be beneficial for individuals, the economy, and the fiscal position. One suggestion is to allow NZS payments to be diverted to a worker's KiwiSaver account which unlike now would be permitted to continue for several years after 65. This would allow people a choice to continue working and get a larger payment of NZS due to returns on their savings when they finally stop paid work.

The present severe recession may produce a fall in participation of older workers as firms reduce their staff. On the other hand, the loss of wealth by older workers, reflected in the price of houses and equities, associated with the recession over the past year, may cause people in their 60s during the next decade to decide to remain in work after 65 to recoup these losses.

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