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### **New Zealand Regions, 1986-2001: Labour Market Aspects of Human Capital**

**Pool, I., Baxendine, S., Cochrane, W., Lindop, J.**



**University of Waikato  
Te Whare Wānanga o Waikato  
HAMILTON NEW ZEALAND**

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# NEW ZEALAND REGIONS, 1986-2001: LABOUR MARKET ASPECTS OF HUMAN CAPITAL

Pool, I., Baxendine, S., Cochrane, W., Lindop, J.

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## **Abstract**

This paper provides an analysis of labour force participation, full and part-time work and unemployment, over the 1986 – 2001 period. Using a non-conventional estimation technique devised for this paper, the paper also looks at discouraged worker effects. It points to growth in regional inequality and the worrying impact of negative labour market effects on ages 30-44 years that are central to both the economic and family life of the nation. Using a custom designed method to assess “discouraged worker” effects, this paper shows that such effects are probably higher than the levels shown in official statistics that are constrained by narrowly defined criteria.

**Keywords:** Labour Force, Unemployment, Regions, New Zealand

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The paper is contributing to a monograph entitled *Developing Underdevelopment and Geographical Disparities: A Social Demography of New Zealand Regions* (Hamilton: Population Studies Centre) that will synthesise the results presented in topic-specific discussion papers.

Sandra Baxendine contributed to this discussion paper while being employed at the Population Studies Centre and the material contained herein does not reflect any official position of the part of her current employer, Waikato District Health Board.

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## **1 Introduction**

This working paper is part of a large project, funded by the Foundation for Research, Science and Technology (FoRST), being undertaken by the Population Studies Centre. This project explores the links between different sorts of population transitions, social transformations of various kinds and changes in the political economy of New Zealand's regions between the 1980s and the dawn of the 21st century. It relates to a period of rapid change at the end of which the regional architecture of the country was very different from the way it had been in 1985. The trends also represent a radical departure from what preceded these last two decades.

This particular discussion paper mainly uses data from the five yearly Census of Population and Dwellings collected by Statistics New Zealand. The paper examines labour market aspects including labour force, full- and part-time employment and unemployment of the population across regions of New Zealand<sup>1</sup>.

## **2 Labour Market Aspects of Human Capital**

Human capital is one of the keys to regional economic development (Lall and Yilmaz 2001; Rodríguez-Pose and Fratesi 2003), but the health and welfare, the generation, the recruitment, and the retention of human resources in any region, and the effective exploitation of this capital there is itself a result of regional social and economic development. Its generation through education and its health are covered in other papers in this series (Pool et al. 2005a; Pool et al. 2005b), while some of the wider consequences of the ineffective use of these resources is the subject of a paper on social equity, cohesion and exclusion (Pool et al. forthcoming-b).

While this present paper uses conventional measures of labour force participation, employment and unemployment it also adds in some unconventional ones. This is to cater for the overlapping and fluid employment categories that are to be examined here, a problem highlighted in the Venn Diagram in Figure 1.

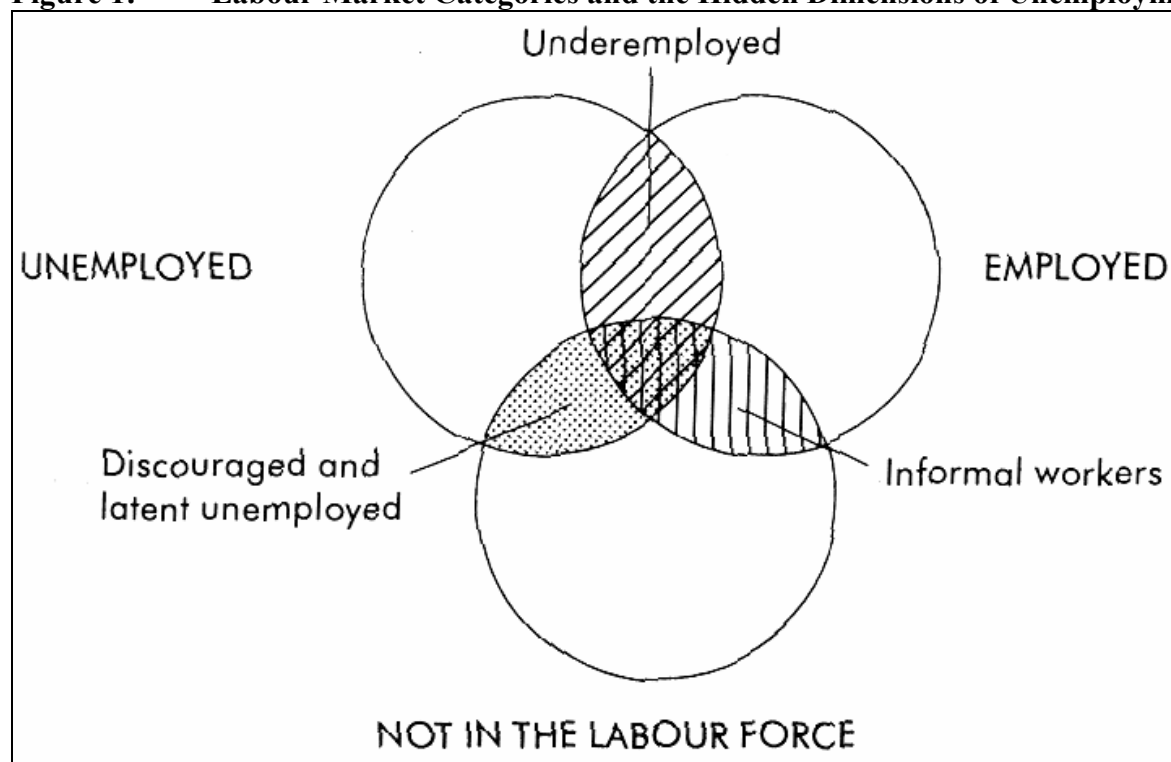
As this paper's interest is beyond the labour market into the wider society it relates unemployment both to the labour force and to the total population. The latter strategy also allows one to gain a better indication of what are phenomena that are often studied using unrobust and fluid parameters as Figure 1 suggests. In statistical data collections, many persons who might consider themselves to be in the labour force are defined out of it by arbitrary questions relating to their level of proactivism in seeking work. This problem particularly affects women at work force ages (Davies and Jackson. 1993).

Secondly, in this paper an attempt is made to estimate the categories termed the "discouraged" and latent unemployed in Figure 1. Again this acknowledges the real fluidity of the labour force as modelled and tries to take account of those persons who, in a buoyant labour market would choose to be in the workforce, but who have been "discouraged". It must be stressed that these are not "dole bludgers", if indeed many such creatures really exist outside the realms of urban myth.

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<sup>1</sup> Other topics covered in this series of discussion papers are listed in the end piece to this paper. The culmination of this project will be the publishing of a monograph synthesizing the various themes explored in this series of working papers (Pool et al. forthcoming-a).

**Figure 1: Labour Market Categories and the Hidden Dimensions of Unemployment**



Source: Le Heron and Pawson (1996:111).

### 3 The Working Age Population

The working age population is defined here as that segment of the population that is aged between 15 and 64 years. There are, of course, a number of problems associated with this arbitrary demarcation. In the past, the working age population included those aged between 15 and 59 years because superannuation and thus retirement typically started at 60 years of age. Recently, however, the age of retirement has been increased to 65 years of age, while at the same time the *Human Rights Act 1993*<sup>2</sup> has decreed that there is no longer a compulsory age of retirement. At the other end of the age scale the school leaving age has been increased to 16 years from 15<sup>3</sup>. Moreover, the growth of tertiary education and training has meant that higher proportions of people at ages 15-19 years, and even 20-24 years, are outside the labour force as defined for statistical purposes. Thus an alternative of 20-59 years as the baseline is investigated because of the changing patterns of participation in order to provide a more comparable series over time. But as labour participation at the marginal age groups 15-19 years and 60-64 have undergone key changes, in one part of the paper a separate analysis is done looking at these age groups.

For New Zealand the proportion of the population aged 15-64 years has remained stable over the time period whereas the 20-59 years age group increased a little by two percentage points. This same trend applies also to both Pakeha and Māori as is shown in Table 1. Against this,

<sup>2</sup> Section 21(1)(i) of the *Human Rights Act 1993* abolishes compulsory retirement from 1 February 1999. From this date it is no longer lawful to retire employees because they have reached a certain age or, with some exceptions (see s149), to attempt to enforce retirement age provisions in employment contracts.

<sup>3</sup> *Education Act 1989* s 20, amended by *Education Amendment Act (No 4) 1991*.



the inter-regional ranges for percentage distributions increased for both the 15-64 and 20-59 years baselines, for both Pakeha and Māori, the latter's range being the wider. The differences in the percentage of the population at working ages 20-59 years for Pakeha and Māori are between seven and eight percentage points for the period with Pakeha being higher than Māori. This reflects the younger age structure of the Māori population compared to Pakeha.

**Table 1: Percentage of Total Population at Working Ages (20-59 and 15-64 years) for New Zealand, and the Inter-Regional Ranges in Percentages, by Ethnicity, 1986-2001**

Ethnicity	20-59 years				15-64 years			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>New Zealand</b>							
Pakeha	52.8	53.8	55.6	54.9	66.3	66.4	66.2	65.9
Māori	44.9	46.7	47.6	47.7	58.7	60.0	59.4	59.3
Total	51.7	52.9	54.3	54.0	65.2	65.5	65.3	65.3
Difference Pakeha-Māori	7.8	7.1	8.0	7.2	7.6	6.5	6.8	6.6
	<b>Inter-regional Ranges</b>							
Pakeha	4.0	5.5	5.8	6.4	4.2	5.4	5.6	5.6
Māori	3.7	4.1	5.2	5.6	3.3	5.0	6.5	6.9
Total	4.3	5.9	6.4	6.6	4.5	5.3	6.0	6.3

*Source:* In this table and except where otherwise noted data used in this paper comes from published census data, or from Supermap3, or from special tabulations from the Censuses of Population and Dwellings from Statistics New Zealand.

As noted, there are regional differences<sup>4</sup> in the percentages of the population as a whole found at labour force ages (see Appendix Table 1). As might be expected, the major metropolitan regions of Auckland and Wellington, and to a lesser extent Canterbury and Otago, had a higher proportion of their populations in the working age groups than was true for the non-metropolitan regions. These are the same four regions which had the largest increase in the working age population for the period 1986 to 2001 and also the only regions above New Zealand's percentage in 2001. Only one region, Northland, saw declines in the percentage aged 20-59 years, while Gisborne registered only a small increase. These two regions are also those with the smallest percentage at the working ages.

#### **4 Labour Force Participation<sup>5</sup>**

The labour force consists of the people employed (full- and part-time) and those unemployed. The labour force participation rate, computed by taking the labour force as a percentage of the total population aged 15-64 years, is shown in Table 2 and the alternative at 20-59 years is

<sup>4</sup> In this paper we use 15 regions instead of the usual 16. Nelson and Tasman are combined into one region as they operate essentially as one region other than administratively. As the division was made on the basis of river catchments not communities of social and economic interest, anomalies occur. For example, Nelson urban area has some of its population in the Tasman region.

<sup>5</sup> Rates are calculated as a percentage of those who specified their employment status. The percentage whose status was not specified at 15-64 years was very low but varied between censuses as follows: 1986 – males 0.4%, females 0.2%, 1991 – males and females 0%, 1996 – males 3.3%, females 2.8%, 2001 – males 3.2%, females 3.1%.

presented in Appendix Table 2. Regardless of which measure is used the direction of change remains the same, but there are differences in the speed of inter-censal change.

In every region rates of labour force participation are higher for males than for females with the gap between the genders being very similar across New Zealand. There were unusually high rates of labour force participation for males in Southland and for females in Wellington<sup>6</sup> for all four periods as can be seen in Table 2. In general, rates for women in 2001 were higher in Wellington and the South Island than for the rest of the North Island.

The inter-regional ranges were low for males, higher for females in 1986. In both cases they rose to 1991 and then declined gradually. Most males work, but from 1986 to 2001 there were significant fall-offs in every region especially in the North Island.

For males the rate for New Zealand declined dramatically between 1986 and 1991, and then recuperated gradually, but in 2001 was still below the rate in 1986. In contrast, over the fifteen-year period was an increase in the labour force participation rates (15-64 years) for females from 64 per cent to 71 per cent for New Zealand as a whole, though there had been a decline between 1986 and 1991 from 64 to 61 per cent (Table 2). The same national pattern is seen at 20-59 years.

Wellington remained the region that had the highest female labour force participation rate at 15-64 years every year 1986-2001 with a minor exception being Marlborough in 1996 and 2001. Auckland<sup>7</sup> had slipped in rank and fell slightly below the New Zealand rate from its high in 1986. From 1986 to 2001, all the South Island regions had a large increase in the female labour force participation with the rate in Marlborough changing from being one of the lowest in 1986 to the highest in 2001. In 1986, female labour force participation was below the national rate for twelve of the fifteen regions. In 2001, only six regions had female labour force participation rates below the national level. Indeed, between 1986 and 2001 female labour force participation increased for all regions as well as nationally.

The picture for males provides a marked contrast. Between 1986 and 2001 male labour force participation rates at 15-64 years declined by almost five percentage points (at 20-59 years, 6.4 percentage points). The more rapid decline for the narrower age-range is significant because to a degree this eliminates the effect of full-time students who were outside the labour force. Thus it more accurately reflects labour market dynamics. It is important to note that the lowest rate was in 1991.

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<sup>6</sup> In 2001, in the four sub-regional urban areas of Wellington the female standardised labour force participation rate at 15-64 years was lowest in Porirua with 70 per cent and highest in Wellington Central with 77 per cent with Lower and Upper Hutt around 72 per cent.

<sup>7</sup> In 2001, in the four urban areas of Auckland the female standardised labour force rate at 15-64 years was lowest in Southern Auckland with 67 per cent and highest in the North Shore with 72 per cent with Central and Southern Auckland with 70 per cent. The deviations for Auckland were lower than for Wellington.

**Table 2: Labour Force Participation as a Percentage of the Total Population<sup>1</sup> for 15-64 Years, by Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	87.2	75.7	79.8	80.2	59.6	55.7	63.9	66.4
Auckland	87.9	80.0	82.6	82.4	65.8	62.1	68.3	69.6
Waikato	88.4	80.8	83.2	83.9	61.5	60.5	68.0	70.9
Bay of Plenty	88.6	79.1	82.5	83.4	61.9	59.4	66.2	69.4
Gisborne	88.4	76.1	80.6	81.5	62.0	56.4	65.8	67.2
Hawke's Bay	89.0	80.9	84.4	84.3	62.5	60.3	68.7	70.9
Taranaki	89.7	82.2	85.0	84.8	62.5	60.6	68.7	70.7
Manawatu-Wanganui	86.9	79.2	81.4	82.6	61.7	60.2	67.0	69.8
Wellington	88.2	81.0	83.5	84.6	67.8	65.1	71.5	74.0
West Coast	87.4	79.2	81.6	83.1	59.6	57.8	67.6	71.2
Canterbury	86.8	80.4	82.7	83.8	61.9	61.2	69.1	72.0
Otago	86.3	78.5	80.8	81.5	61.8	60.1	68.2	71.6
Southland	90.7	84.7	87.9	87.6	61.0	61.1	69.6	72.9
Nelson-Tasman	87.9	82.4	85.5	86.0	64.0	63.2	70.5	72.8
Marlborough	88.3	82.9	86.9	87.5	60.4	61.9	71.7	74.3
<b>New Zealand</b>	<b>87.9</b>	<b>80.1</b>	<b>82.8</b>	<b>83.3</b>	<b>63.6</b>	<b>61.3</b>	<b>68.5</b>	<b>70.8</b>
<i>Range</i>	<i>4.4</i>	<i>9.0</i>	<i>8.2</i>	<i>7.4</i>	<i>8.2</i>	<i>9.4</i>	<i>7.8</i>	<i>7.9</i>

(1) Standardised by age to New Zealand Total (males and females) Population 1996. Those who did not specify labour force status are excluded from total.

All regions showed a decline in male labour force participation with the greatest decreases being in Northland and Gisborne as is seen in Table 2. In contrast all regions showed an increase in female labour force participation with the greatest increases being in Marlborough, Southland and the West Coast. In 1986 the lowest labour force participation rates had been in Canterbury, Otago and Manawatu-Wanganui, but in 2001 the lowest labour force participation rates were in Northland, Gisborne and Otago. The highest rate of labour force participation in 1986 to 2001 was found in Southland; in 2001 with Marlborough and Nelson-Tasman also tending high (Table 2). The range between the highest and lowest region was only four percentage points in 1986 with the range increasing to seven percentage points in 2001.

#### *Ratio Males per 100 Females*

The ratio of males to females in the labour force has changed dramatically over the period 1986 to 2001 as is shown in Table 3. For New Zealand the ratio went from 139 males per 100 females in 1986 to 112 in 2001. The change was large for the 1986-91 and 1991-96 periods.

**Table 3: Males per 100 Females in the Labour Force Aged 15-64 Years, by Region, 1986- 2001**

<b>Region</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>Change</b>
Northland	152	135	119	113	-39
Auckland	131	125	115	111	-19
Waikato	146	133	120	114	-32
Bay Of Plenty	142	129	118	111	-31
Gisborne	145	133	118	114	-31
Hawke's Bay	141	130	118	112	-28
Taranaki	149	137	123	116	-32
Manawatu-Wanganui	142	131	119	113	-30
Wellington	130	123	112	108	-22
West Coast	158	148	128	121	-38
Canterbury	142	131	118	113	-29
Otago	142	130	116	109	-34
Southland	160	147	131	121	-39
Nelson-Tasman	140	131	121	114	-26
Marlborough	155	141	126	117	-38
<b>New Zealand</b>	<b>139</b>	<b>129</b>	<b>117</b>	<b>112</b>	<b>-27</b>
<i>Range</i>	<i>30</i>	<i>26</i>	<i>19</i>	<i>13</i>	

Wellington had the lowest ratio for the whole period going from 130 to 108 males per 100 females. In Auckland the ratio was low for the whole period but was only significantly so in 1986 and 1991. West Coast and Southland had high ratio of males per 100 females for the whole period. Only areas which also tended high were Marlborough for the whole period and Northland for 1986. The smallest change in ratio occurred in Auckland and Wellington as they started from a relatively low position. The largest change occurred in Northland, West Coast, Southland and Marlborough.

#### *Ethnicity*

Pakeha rates of labour force participation for both the two groupings, 15-64 and 20-59 years, were higher than Māori rates for New Zealand as a whole as is shown in Table 4 (see also Appendix Table 3). The differences between Pakeha and Māori have increased considerably from 1986 to 2001 especially for males, with the largest difference being in 1991. The Pakeha rate was four percentage points higher than that for Māori in 1986 for males for 15-64 years, the difference in 1991 has risen to 13 percentage points, then come down in 2001 (nine percentage points) but not to the level it was in 1986. The overall difference for females was larger than that for males in 1986 being nine percentage points, and this rose further to 12 percentage points in 1991 with the difference being 10 percentage points in 2001. This indicates that Māori certainly have significantly lower labour force participation than Pakeha especially so for females. That said the New Zealand males rate has gone down for both Pakeha and Māori between 1986 and 2001, with 1991 being the lowest level, and the females rate has gone up, though the Pakeha changes are more marked.

**Table 4: Labour Force as a Percentage of Total Population<sup>1</sup> 15-64 Years, by Ethnicity, Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>Pakeha</b>							
Northland	89.2	81.5	84.5	84.5	63.1	61.9	69.7	71.7
Auckland	89.3	84.7	87.7	88.0	68.2	67.5	74.3	76.9
Waikato	89.6	84.0	86.6	87.2	63.9	64.5	71.9	74.8
Bay of Plenty	90.1	84.0	86.4	87.1	65.3	65.2	71.1	73.5
Gisborne	90.2	84.0	87.3	87.1	65.4	65.4	73.1	73.7
Hawke's Bay	90.1	84.5	87.2	87.3	64.1	63.6	71.7	73.7
Taranaki	90.3	84.2	86.9	86.6	64.0	63.0	70.7	72.9
Manawatu-Wanganui	88.0	81.4	83.8	84.9	63.2	62.6	69.5	72.4
Wellington	89.4	84.0	86.2	87.1	69.5	68.3	74.4	77.0
West Coast	88.2	80.6	82.1	83.8	60.4	59.1	68.3	71.9
Canterbury	87.5	81.6	84.5	85.8	62.5	62.2	70.8	74.1
Otago	87.1	79.4	82.2	82.9	62.4	60.9	69.6	73.1
Southland	91.2	85.8	88.8	88.4	61.9	62.4	70.9	74.1
Nelson-Tasman	88.2	83.2	86.5	86.6	64.1	64.0	71.6	73.6
Marlborough	89.0	83.8	87.6	88.3	60.9	62.8	72.5	75.4
<b>New Zealand</b>	<b>89.0</b>	<b>83.3</b>	<b>86.0</b>	<b>86.6</b>	<b>65.2</b>	<b>64.7</b>	<b>72.1</b>	<b>74.9</b>
<i>Range</i>	<i>4.1</i>	<i>6.5</i>	<i>6.7</i>	<i>5.5</i>	<i>9.1</i>	<i>9.1</i>	<i>6.1</i>	<i>5.4</i>
	<b>Māori</b>							
Northland	83.1	62.2	69.7	71.6	51.0	41.9	52.8	57.5
Auckland	85.6	72.6	79.0	79.8	59.4	52.0	62.7	66.8
Waikato	84.2	69.3	73.5	76.2	51.5	45.9	57.2	62.8
Bay of Plenty	85.2	66.5	73.8	76.0	53.2	45.4	56.5	61.9
Gisborne	85.7	66.5	72.6	75.0	57.4	46.2	57.9	61.3
Hawke's Bay	86.0	69.1	76.9	77.9	57.9	49.4	60.5	65.4
Taranaki	86.3	67.8	75.8	76.2	52.3	44.4	58.3	60.7
Manawatu-Wanganui	84.6	69.8	74.6	76.9	55.3	49.2	59.1	63.0
Wellington	85.5	73.4	77.2	79.5	63.5	57.3	65.2	70.7
West Coast	85.1	67.9	77.5	76.9	54.9	48.7	62.1	66.8
Canterbury	86.0	74.2	77.6	79.1	58.0	53.8	63.9	68.7
Otago	86.6	75.0	78.9	79.4	57.8	54.4	64.3	69.7
Southland	89.4	76.9	82.9	83.2	55.1	50.4	60.6	66.6
Nelson-Tasman	87.8	77.0	81.3	84.8	65.6	56.9	63.8	69.4
Marlborough	87.4	75.6	82.4	83.6	62.8	57.6	65.8	69.1
<b>New Zealand</b>	<b>85.3</b>	<b>70.1</b>	<b>76.0</b>	<b>77.7</b>	<b>56.5</b>	<b>49.3</b>	<b>60.1</b>	<b>64.8</b>
<i>Range</i>	<i>6.3</i>	<i>14.8</i>	<i>13.1</i>	<i>13.2</i>	<i>14.7</i>	<i>15.7</i>	<i>13.0</i>	<i>13.2</i>

(1) Standardised by age to New Zealand Total (males and females) Population 1996. Those who did not specify labour force status are excluded from total.

For both ethnic groups, males have higher labour force participation rates than do females. But the inter-regional range has gone up over time for males, as seen in Table 4. These ranges are far lower for Pakeha than Māori (six and 13 percentage points respectively in 2001). At all four censuses the highest rates of labour force participation were recorded for

Southland Pakeha males (91, 86, 89 and 88 per cent respectively) while the lowest was for Northland Māori females (51, 42, 53 and 58 per cent respectively). Northland is in fact, notable for its low participation rates for Māori of both sexes.

In some of the other geographically more marginal regions there are large Māori-Pakeha differences in labour force participation. Conversely, for both Pakeha and Māori females, Wellington<sup>8</sup> and Auckland<sup>9</sup> are the regions that offer the best opportunities for labour force participation. Southland, Nelson-Tasman and Marlborough Māori males have high rates which could be partially attributed to the small number in these regions.

#### *Age-Specific Rates*

The working age population has been broken down into five age groups: adolescents workers (15-19 years of age), the young adult working age group (20-29 years), the experienced working age group (30-44 years), the mature working age group (45-59 years) and the transition to retirement age group (60-64 years) to reflect the different stages of a person's working life.

Labour force participation rates have changed differently across various age groups for New Zealand as a whole as is seen in Table 5. The most dramatic change was for the 60-64 years age groups, a result the age of eligibility for National Superannuation going from 60 to 65 years, thus pressuring workers to stay in the labour force longer. This has been particularly noticeable for females with their labour force participation rate more than doubling. For females there was also a large rise in the 45-59 years age group's participation in the labour force. At 15-19 years both males and females saw participation drop over 13 percentage point between 1986 and 1991, and then the rate recovered somewhat, but was still below 1986 levels in 2001. The age groups 20-59 years all saw decreases for males and increases for females between 1986 and 2001.

Labour force participation for males was highest for the 30-44 years age group for the whole time period. For females the highest age group was 30-44 years in 1986 to 1996, but this changed to 45-59 years in 2001. The levels at 15-19 and 60-64 years were significantly lower for both males and females than the other age groups, this is because these age groups have people still in full-time education or who have moved into retirement.

For most age groups the range between the highest and lowest regions had increased between 1986 and 2001 (Table 5). The exception being at 60-64 years where males decreased and females decreased slightly, and at 45-59 years for females where the regional variation over halved. The age groups 15-59 years for males all experienced a dramatic increase in variations

between regions over the period 1986 to 2001. For females only, the age group 15-19 years had a large increase in range between the regions.

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<sup>8</sup> In 2001, in the urban areas of Wellington the female standardised labour force participation 15-64 years the rates for Pakeha and Maori respectively are for Porirua: 75 and 68 per cent; Lower Hutt 76 and 70 per cent; Upper Hutt 74 and 72 per cent; and Wellington Central 80 and 76 per cent.

<sup>9</sup> In 2001, in the urban areas of Auckland the female standardised labour force participation 15-64 years the rates for Pakeha and Maori respectively are for North Shore: 77 and 73 per cent; Western Auckland 76 and 66 per cent; Auckland Central 78 and 70 per cent; and Southern Auckland 77 and 64 per cent.

**Table 5: Labour Force Participation Rates<sup>1</sup> by Age Group, 1986-2001**

Age Group (years)	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>New Zealand</b>								
15-19	64.9	49.4	61.1	59.0	60.6	47.0	60.2	57.6
20-29	92.7	84.0	86.0	84.3	68.7	65.4	72.9	72.5
30-44	96.0	90.4	90.2	90.2	70.2	68.6	72.8	74.9
45-59	92.1	85.8	86.7	87.5	60.1	63.3	71.2	76.3
60-64	42.2	35.8	50.2	65.0	15.9	16.6	28.3	42.1
<b>Inter-regional ranges</b>								
15-19	9.9	14.9	20.8	17.5	10.3	12.8	17.5	16.2
20-29	7.8	11.8	14.0	14.2	13.6	16.7	14.3	14.9
30-44	2.8	8.3	8.1	7.9	5.8	6.8	7.7	7.4
45-59	5.1	9.4	8.1	8.0	15.3	11.9	7.4	6.0
60-64	15.4	11.8	13.2	9.9	11.7	8.4	8.1	11.4

(1) This is a percentage of those at each age who specified their labour force status.

The ages under 30 years are split into two age groups to reflect the very different work patterns in the 15-19 years age group compared to the 20-29 years age group where participation was much higher in the 20-29 years age group. Also in the 15-19 years age group the school leaving age changed from 15 to 16 in 1993 and this age group was affected most by the economic changes that took place. Both these age groups had their lowest labour force participation rates in 1991.

Rates for Northland and Gisborne were low for the whole period for both 15-19 and 20-29 years for females as shown in Appendix Table 4. These results could be due to “discouraged worker effects” (see later in this paper) rather than full-time study. Otago was low at 15-19 years for both males and females and at 20-29 years for males, a result of the number of young people who come primarily to the region for full-time study. Auckland was also lower in 2001 at the 15-19 years age group perhaps a result of the region also having a university.

The regions which tend to have higher levels are generally those without universities and are typically rural regions in the South Island. Southland, Nelson-Tasman, Marlborough and West Coast were high for males and females at 15-19 years and males 20-29 years for the whole period. Wellington was high at 20-29 years age group for females for the whole period. Canterbury and Auckland were also high for females 20-29 years. This is because these regions house major enterprises and they have good employment opportunities for many workers.

Nationally, there was a decline of six percentage points between 1986 and 2001 in the participation rate at 15-19 for males and a decline of three percentage points for females. At 20-29 years there was a decline for males of eight percentage points and an increase for females of four percentage points. Marlborough was the only region with a significant increase, of five percentage points for males in the 15-19 years age group. Auckland had the largest decline of 12 percentage points going from one of the highest to the lowest region. For females the same regions were at the extreme, with Marlborough having a 7 percentage point increase and Auckland having a 10 percentage point decline. This shows that the regional patterns and changes are very diverse. For the 20-29 years age group for males all the regions had a decline between 1986 and 2001, with Otago having the largest of 12

percentage points and Marlborough the smallest of four percentage points. For females all regions except Gisborne had an increase in participation, with the largest increase occurring in Marlborough and Southland.

In 1986 and 2001 the highest level of labour force participation for males was at the 30-44 years age group. In 1986 there was little variation between regions for males with the regions ranging from 95 to 98 per cent (see Appendix Table 4). By 2001 for males in this age group, Southland had the highest rate closely followed by Marlborough (over 92 per cent), with Northland (86 per cent) having the lowest participation rate. For females in 1986 the highest participation level at 30-44 years was in Wellington and the lowest was on the West Coast followed by Marlborough and Canterbury. By 2001 this changed significantly with Otago, Southland and Marlborough being the highest, and Northland and Gisborne the lowest.

Accompanying this was an overall decline in participation nationally for males at this age, the regional manifestation of which sometimes show percentage point decreases (e.g. nine for Northland). This held true, moreover, for every region except Southland and Marlborough with these same regions having the largest increase for females. There were also rank-order shifts in rates: for example, Auckland that had been above the national level for females in 1986 fell below by 2001. In these complex shifts generally the South Island regions fared better than the North Island.

These shifts at age group 30-44 years are of major significance in labour market dynamics. Firstly, this is the age at which peak levels occur for men. Secondly, this was a period when, as will be shown below, in most regions women entered the labour market in significant numbers (or, in a minority of regions their numerical losses were less than for men). Thirdly, as will be seen later in this paper, the part-time work force also grew very significantly. Fourthly, workers at these ages were likely to have heavy familial financial obligations. In sum, the trends at this age group are rather disturbing as essentially they point to a downsizing of the most critical of the regions' human capital resource-bases, and quite probably therefore regional, community and family revenue-bases.

For the 45-59 years age group, the labour force participation was high in Southland for males and high in Wellington for females for the whole period 1986 to 2001. The regions which tended to be low for the period are Northland and West Coast for both males and females. For Auckland females the region went from being high to low. Nationally, the participation rate for the 45-59 years age group decreased by five percentage points for males from 1986 to 2001 and increased by 16 percentage points for females with most regions following the national figures. West Coast and Marlborough had the largest increase for females of 23 percentage points and the smallest increase occurred in Auckland and Wellington of 11 percentage points.

For the 60-64 years age group all the region experienced large increases in participation for both males and females with the New Zealand changes being 23 and 26 percentage points respectively. The largest increase in the regions occurring in Marlborough and the smallest in Wellington. Southland had the high participation for males 60-64 years for the whole period, with Wellington high in 1986 and Gisborne in 1991. Wellington was the highest for females from 1986 to 1996 with Gisborne being high between 1996 and 2001. West Coast had low participation for both males and females for the whole period. Otago, Canterbury, Nelson-Tasman and Marlborough were low between 1986 and 1996 for males, with Northland low in 1996 and 2001.



## 5 The Employed Population

There were also major shifts in the work-force status within the employed population itself. This is shown by looking at the working age group (15-64 years<sup>10</sup>) of the employed population in terms of its employment work patterns, using two categories: full-time employment and part-time (up to 30 hours per week<sup>11</sup>). Thus there were large increases in the percentages of both males and females in part-time work over the fifteen year period.

### 5.1 Part-time Employment

Throughout the developed countries a shift to part-time employment, and accompanying this casualisation, has been a major trend over this period (OECD, 1996). The data on the growth of part-time work and the decline in full-time employment illustrate this point for New Zealand, but also show that the impacts of this trend were not evenly spread. In one sense high levels of growth in this sector can be seen as good as more people may participate in the labour force, but if casualisation replaces regular employment the results may not be entirely desirable. But the worst situation is seen in some regions (e.g. Gisborne) where full-time employment declined at a faster rate than it did nationally, and was not compensated for by a growth in part-time employment.

A virtual absence of data on casualisation *per se* means that we cannot comment on this, but the shift to part-time work, associated with the patterns of unemployment and discouraged worker effects, both to be discussed later, probably imply that casualisation was widespread. The two surveys, in 1991 and 1995 when, and after the worst effect of restructuring were being felt, show that levels were around 11 per cent (Brosnan and Walsh 1996), but we have not data before or since to benchmark these rates to.

#### *Age Standardised Rate*

The proportion of the employed population engaged in part-time work is shown in Table 6. There was an initial small decline between 1986 and 1991 in part-time work for New Zealand males then there was an increase of four percentage points the rate remained stable. Between 1986 and 2001 participation rates in the part-time workforce, especially for males, were very similar across all regions. In 1986 the inter-regional range for males in part-time employment was only 3.0 percentage points rising by 2001 to 4.3. In 1991 the range was 2.4 percentage points which meant that there was very little variation. Southland for males went from the highest rate in 1986 to the lowest rate in 1996 and 2001, with Marlborough also low for these years. Northland had the highest part-time work for males between 1991 and 2001 with Gisborne high in 1996 and 2001.

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<sup>10</sup> The rates at 20-59 years were higher, but showed similar results to 15-64 years.

<sup>11</sup> "In 1986 the definition of full-time was changed from 20+ hours per week to 30+ hours per week" (Davies and Jackson. 1993).

**Table 6: Standardised<sup>1</sup> Percentage of the Employed Population in Part-time Work Aged 15-64 years, by Gender, 1986 to 2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	8.5	8.4	13.2	12.3	29.4	33.2	38.4	38.0
Auckland	7.7	7.5	11.4	11.4	26.4	28.0	31.2	30.8
Waikato	7.5	6.5	11.2	10.4	30.5	32.1	37.5	37.1
Bay of Plenty	7.7	7.4	11.4	11.4	31.3	33.6	38.1	38.4
Gisborne	9.6	7.0	13.0	12.3	30.7	33.5	38.1	38.3
Hawke's Bay	9.9	7.6	11.3	10.0	32.9	33.8	37.1	37.1
Taranaki	7.9	6.5	10.9	10.2	31.3	33.9	38.8	38.4
Manawatu-Wanganui	8.0	7.2	11.7	11.0	32.4	34.0	38.7	38.7
Wellington	7.3	7.0	12.6	11.9	26.2	27.9	32.6	31.7
West Coast	7.2	6.1	11.2	9.9	33.7	34.5	40.6	40.0
Canterbury	8.1	7.4	11.3	11.0	33.9	35.5	39.1	38.7
Otago	8.7	7.3	12.2	12.6	33.4	34.9	39.3	38.7
Southland	10.2	6.3	8.7	8.2	33.9	35.2	39.3	38.7
Nelson-Tasman	7.7	7.8	11.2	10.7	33.5	34.7	37.8	39.1
Marlborough	8.2	6.2	9.5	8.6	36.3	36.2	37.9	37.2
<b>New Zealand</b>	<b>8.0</b>	<b>7.2</b>	<b>11.5</b>	<b>11.2</b>	<b>29.8</b>	<b>31.4</b>	<b>35.5</b>	<b>35.0</b>
<i>Range</i>	<i>3.0</i>	<i>2.4</i>	<i>4.5</i>	<i>4.3</i>	<i>10.1</i>	<i>8.3</i>	<i>9.5</i>	<i>9.2</i>

(1) Standardised by age to New Zealand Total (males and females) employed Population 1996.

The percentage of females in part-time work for New Zealand increased from 30 per cent in 1986 to 35 per cent in 2001. In 1986 and 1991 the region with the lowest proportions of employed females in part-time work was Wellington followed by Auckland. In 1996 and 2001 the lowest proportions of females in part-time work were in Auckland<sup>12</sup> followed by Wellington<sup>13</sup>, with these regions keeping pace with the national increases.

In 1986 and 1991 the region with the highest proportions of employed females in part-time work was Marlborough, at 36 per cent. By 1996 and 2001 the highest proportions of females in part-time work had increased by a further four percentage points and were seen in the West Coast followed by Southland, Canterbury and Otago in 1996 and Nelson-Tasman in 2001.

Across all regions the inter-regional ranges in the percentage of the female workforce employed in part-time work between eight and ten percentage points for the whole period with the lowest range in 1991, which were much larger than males. For the total New Zealand population more females than males were employed in part-time work.

The difference between male and female was 22 percentage points in 1986 and 24 percentage points between 1991 and 2001, thus remaining reasonably constant over the decade from 1986 to 2001. Yet the percentage of both males and females employed in part-time work has increased in the same period. That said, however, the percentage point increases in part-time

<sup>12</sup> In 2001, in the urban areas of Auckland the female standardised part-time employed as a percentage of the employed population for 15-64 years ranged from 29 per cent in Central Auckland to 34 per cent in North Shore with Western and Southern Auckland were around 30 per cent.

<sup>13</sup> In 2001, in the urban areas of Wellington the female standardised part-time employed as a percentage of the employed population for 15-64 years ranged from 28 per cent in Wellington Central to 33 per cent in Upper Hutt with Lower Hutt and Porirua were 32 per cent.

work in the regions from 1986 to 2001 were systematic and for the majority of regions at levels of a similar order for males and females.

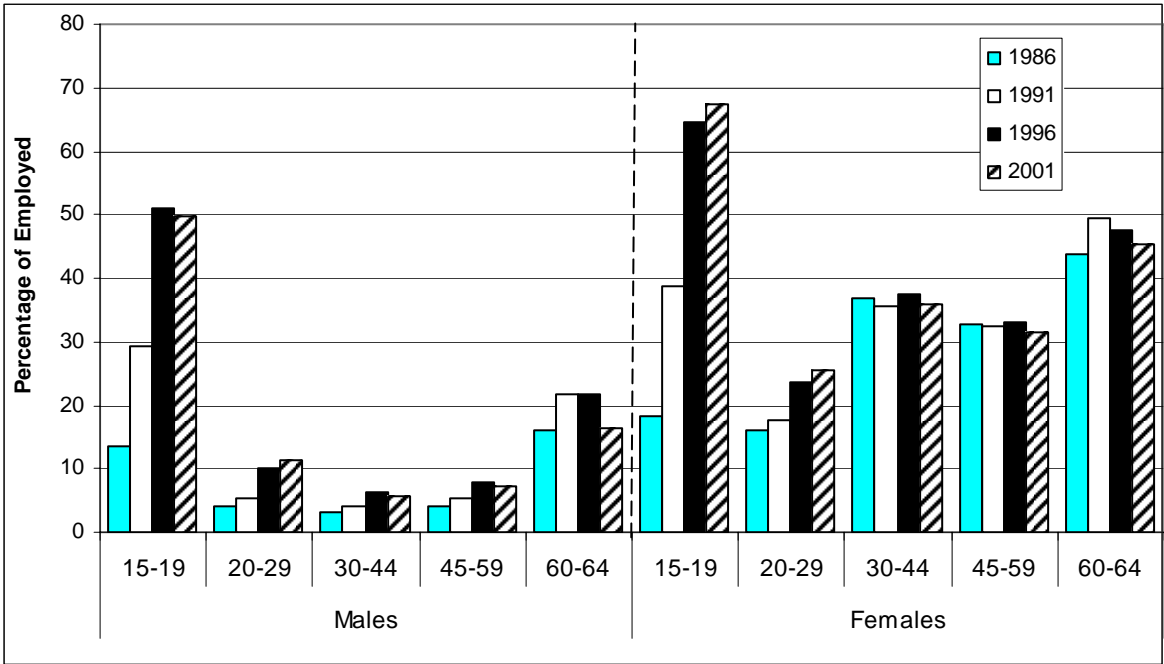
*Age-Specific Rates*

The shifts to part-time work were probably accompanied by growing casualisation, something that can not be gleaned from the census. As can be inferred from the data presented above, a move to part-time work also involves gender-shifts in the labour market. For the whole period 1986 to 2001, in all regions, in all four age groups the proportion of employed in part-time work was greater for females than for males as is shown in Appendix Table 5. The greatest gender difference is at the 30-44 years age group, as females in this age group who are employed are often in part-time work, typically because of childbearing and childrearing commitments. There is also a substantial difference in the 60-64 and 45-59 years age group. The difference between the proportion of males and females in the 30-44 and 45-59 years age groups decreased from 1986 to 2001 because of a strong increase in the proportion of males at these age groups in part-time employment as shown in Figure 2.

Between 1986 and 2001 the greatest increase in part-time employment was at the 15-19 years age group. This increase is due in part to students taking on part-time work, but even regions without specialist tertiary institutions show the same magnitude of increases as those with major tertiary institutions. The increase is greater for females than for males at this age group. At 20-29 years there was a smaller increase for both males and females with some of this age group being students.

For males in the 30-44 and 45-59 years age groups there were smaller increases in the proportions in part-time employment between 1986 and 2001. For females for these age groups there were virtually no changes. In the 60-64 years age group there was an increase where levels for 1991 and 1996 were high then in 2001 the rate returned closer to 1986 levels.

**Figure 2: Percentage in Part-Time Work, of all those Employed by Age, New Zealand, 1986-2001**



The inter-regional ranges for part-time workers as a percentage of employed are shown in Table 7, where there is little regional variation for males in the age groups between 30 and 64 years. The range for the age group 15-19 years showed a large increase climbing from six percentage points in 1986 to a high of 24 percentage points in 1996 then reducing to 18 percentage points. At 20-29 years the range increased from four percentage points to 11 percentage points. For females the variation between the regions are higher for males in all age groups except 15-19 years.

**Table 7: Inter-Regional Ranges for Percentage in Part-Time Work, of all those Employed by Age, 1986-2001**

Age group (years)	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
15-19	5.7	17.2	23.6	18.4	7.9	15.8	15.7	15.8
20-29	3.5	2.9	7.5	10.9	9.0	10.3	10.3	12.3
30-44	3.5	2.7	3.7	4.5	12.3	10.2	12.0	13.5
45-59	3.7	2.9	4.1	4.0	12.7	10.8	10.2	9.0
60-64	5.5	14.4	9.3	7.6	20.2	16.0	15.8	10.2

In the 15-19 years age group the range went from eight percentage points to 16 percentage points between 1991 and 2001. The range for 20-29 years increased from nine percentage point in 1986 to 12 percentage points in 2001. The variance at age group 30-44 years remained reasonably stable, whereas at 45-59 years it reduced. The most interesting result is that the range for the 60-64 years age group reduced by half.

The age-specific patterns for the regions mirrored the overall age standardised results for part-time employment for the age groups 20 to 59 years (see Appendix Table 5 and Table 6 in the text), the exception being the 15-19 and 60-64 years age groups. West Coast and Marlborough had low levels of part-time work in the 15-19 year age group for the whole time period for both males and females. Nelson-Tasman was also low for females in 1996 and 2001. Regions which were high were Wellington for both males and females, and the Bay of Plenty and Otago for females for the whole time period. The result for Wellington females and Marlborough females were the opposite of the overall result. For 60-64 years Nelson-Tasman for males had high levels of part-time work.

#### *Ethnicity*

The results by ethnicity for the percentage of people employed in part-time work presented in Table 8 show that there are some clear differences between the two ethnic group as well as different patterns by gender for New Zealand<sup>14</sup>. Table 8 shows that for males, the rate for Māori is over three percentage points above that for Pakeha between 1986 and 1996, and slightly less for 2001, whereas for females Pakeha have a higher percentage in part-time work compared to Māori, though the gap has reduced from seven percentage points in 1986 to two percentage points in 2001. Both Pakeha and Māori rates have gone up over time with the peak being in 1996 for both genders except female Māori when the peak was in 2001.

The inter-regional ranges for the percentage of those employed in part-time employment have decreased over time for time in all except Pakeha males which had a small range between the regions. Nevertheless, for female Māori in 1986 the range would have been considerably less

<sup>14</sup> The standardised rate for 20-59 years is not shown here, but the change is not as large as that at 15-64 years.

if Marlborough had been excluded, reducing from 20 percentage points to 11 percentage points. For both Pakeha and Māori females, Auckland<sup>15</sup> and Wellington<sup>16</sup> had significantly lower levels than was seen in other regions. In 1996 and 2001 the rates for Northland and Gisborne for Māori males were higher than for the other regions. Between 1991 and 2001 the level for Northland is also high for Māori females, while the West Coast was also high in 1996 and 2001.

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<sup>15</sup> In 2001, in the urban areas of Auckland the female standardised part-time employed as a percentage of the employed population 15-64 years the rates for Pakeha and Māori respectively are for North Shore: 34 and 30 per cent; Western Auckland 32 and 26 per cent; Auckland Central 29 and 26 per cent; and Southern Auckland 32 and 26 per cent.

<sup>16</sup> In 2001, in the urban areas of Wellington the female standardised part-time employed as a percentage of the employed population 15-64 years the rates for Pakeha and Māori respectively are for Porirua: 34 and 30 per cent; Upper Hutt 34 and 29 per cent; Lower Hutt 33 and 28 per cent; and Wellington Central 29 and 25 per cent.

**Table 8. Standardised<sup>1</sup> Percentage of the Employed Population<sup>2</sup> in Part-time Work Aged 15-64 years, by Ethnicity and Gender, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>Pakeha</b>								
Northland	4.2	7.6	11.6	11.0	30.1	33.0	37.7	37.1
Auckland	4.2	7.4	10.5	10.3	28.0	29.6	32.6	31.7
Waikato	3.8	6.1	10.3	9.5	30.8	32.4	37.6	36.7
Bay of Plenty	4.0	7.1	10.1	10.2	31.9	34.0	38.0	37.8
Gisborne	4.6	5.8	10.4	10.1	34.5	36.5	39.6	39.5
Hawke's Bay	4.9	7.0	10.2	9.0	34.1	35.1	38.8	38.3
Taranaki	4.1	6.0	10.4	9.6	31.6	34.0	38.9	38.3
Manawatu-Wanganui	4.1	6.6	11.0	10.4	33.3	34.7	39.4	39.3
Wellington	3.8	6.8	11.9	11.2	27.2	28.8	33.4	32.2
West Coast	3.7	6.0	10.7	9.7	33.7	35.0	40.7	39.9
Canterbury	4.6	7.2	10.9	10.6	34.3	35.9	39.6	39.0
Otago	5.2	7.1	11.9	12.3	33.8	35.2	39.6	39.0
Southland	6.0	5.7	8.4	7.9	34.1	35.3	39.5	38.8
Nelson-Tasman	4.3	7.7	10.9	10.4	34.1	34.9	38.4	39.6
Marlborough	4.7	6.0	9.3	8.4	36.4	36.7	38.4	37.7
<b>New Zealand</b>	<b>4.3</b>	<b>6.9</b>	<b>10.7</b>	<b>10.4</b>	<b>30.8</b>	<b>32.4</b>	<b>36.4</b>	<b>35.7</b>
<i>Range</i>	2.2	2.0	3.5	4.5	9.1	7.9	8.1	8.2
<b>Maori</b>								
Northland	9.3	12.1	18.3	16.5	25.9	33.1	40.7	40.0
Auckland	5.3	6.8	11.6	10.7	18.8	21.2	27.0	27.1
Waikato	6.9	8.5	14.9	13.8	28.7	31.5	38.3	39.1
Bay of Plenty	5.8	8.4	15.5	14.9	28.5	32.1	38.5	39.6
Gisborne	10.6	10.1	18.1	15.7	22.6	27.4	35.4	35.8
Hawke's Bay	16.1	11.1	15.2	13.1	25.9	26.0	31.3	32.5
Taranaki	10.4	11.7	15.2	13.4	27.2	33.3	38.7	40.2
Manawatu-Wanganui	9.4	11.1	14.6	13.8	26.5	29.6	35.9	36.4
Wellington	6.2	7.0	13.8	13.1	19.9	22.4	29.9	29.3
West Coast	3.8	4.7	14.9	12.7	29.1	27.4	41.1	40.3
Canterbury	7.7	9.8	13.1	12.3	26.0	28.8	35.5	34.7
Otago	9.5	9.8	15.7	12.5	27.4	32.5	38.1	35.2
Southland	15.5	12.9	11.6	10.5	30.1	33.6	37.0	37.6
Nelson-Tasman	7.7	10.6	13.8	13.6	24.0	29.3	33.5	34.9
Marlborough	10.4	11.0	10.0	11.8	38.6	27.5	33.9	33.0
<b>New Zealand</b>	<b>7.8</b>	<b>9.0</b>	<b>14.1</b>	<b>13.0</b>	<b>24.1</b>	<b>27.0</b>	<b>33.4</b>	<b>33.7</b>
<i>Range</i>	12.3	8.3	8.3	6.0	19.8	12.4	14.1	13.1

(1) Standardised by age to New Zealand Total (males and females) employed Population 1996.

(2) To reiterate, "employed" relates to the sum of hours in full plus part-time work. Clearly the percent full-time is simply the inverse of the figure presented and this is not reproduced.

## 5.2 Full-time Work

Full-time workers as a percentage of the population at labour force ages gives an indication of what might be seen at least historically, to have been the standard work pattern in most regions and for New Zealand as a whole. The procedure is followed here is not the same as that followed by part-time employment.

### *Age Standardised*

The age standardised rate for 20-59 years is employed in this section as this focuses on the ages that are not affected significantly by the changes in school leaving age and the change of age for eligibility for National Superannuation. For males there is a dramatic reduction of 12 percentage points in full-time employment as a percentage of the population of New Zealand between 1986 and 1991. This also occurred in all the regions as is shown in Table 9. There was, however, only a slight recovery between 1991 and 2001. The female population participation in full-time work initially went down two percentage points between 1986 and 1991, then went up five percentage points. Generally the regions follow this pattern.

**Table 9: Standardised<sup>1</sup> Percentage of the Population in Full-Time Work Aged 20-59<sup>2</sup> Years, by Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	84.6	66.1	67.8	68.6	40.6	36.1	38.8	40.5
Auckland	87.8	75.3	76.1	75.4	48.0	45.0	48.3	49.5
Waikato	88.5	76.7	75.8	76.4	41.4	41.0	43.1	45.1
Bay of Plenty	88.2	72.1	73.4	74.2	40.9	38.2	40.5	42.4
Gisborne	86.2	69.3	69.2	70.7	40.9	36.5	39.9	40.1
Hawke's Bay	87.0	75.4	76.6	77.4	40.4	39.5	43.6	44.7
Taranaki	89.1	77.8	78.5	77.7	42.0	40.1	43.0	44.6
Manawatu-Wanganui	86.4	74.5	73.9	74.6	40.4	39.6	41.8	43.4
Wellington	89.2	78.3	76.6	77.0	50.4	48.5	50.4	52.6
West Coast	86.9	73.2	73.3	74.3	38.8	37.2	40.6	44.0
Canterbury	86.8	76.8	77.0	77.5	39.8	39.8	43.8	46.0
Otago	85.9	75.3	75.1	75.1	40.3	39.8	43.7	46.4
Southland	89.0	82.4	84.5	84.0	39.4	39.8	43.9	46.3
Nelson-Tasman	89.0	78.6	79.8	80.1	42.0	41.5	45.5	45.4
Marlborough	88.1	79.0	81.4	82.8	37.0	39.8	45.9	47.9
<b>New Zealand</b>	<b>87.6</b>	<b>75.7</b>	<b>75.9</b>	<b>76.0</b>	<b>43.8</b>	<b>42.3</b>	<b>45.4</b>	<b>47.2</b>
<i>Range</i>	<i>4.6</i>	<i>16.3</i>	<i>16.7</i>	<i>15.3</i>	<i>13.4</i>	<i>12.4</i>	<i>11.6</i>	<i>12.5</i>

(1) Standardised by age to New Zealand Total (males and females) Population 1996. This is a percentage of those at each age who specified their labour force status.

(2) Because full-time work is pursued typically by those who have completed their education and who are pre-retirement (as against students, 15-19 years, & semi-retired 60-64) the rates in Tables 6 & 9.

In 1986 the range between the highest and lowest regions for males were small being five percentage points, though for 1991 to 2001 this range increased to around 16 percentage points (see Table 9). For females the range between the highest and lowest region has been more stable varying from 12 to 13 percentage points for the period 1986-2001.

For males the lowest rates for full-time work participation in the population was in Northland for the whole period, with Gisborne also being low. Southland had the highest participation between 1991 and 2001 with Marlborough and Nelson-Tasman also tending high. The largest overall reductions in participation in full-time work as a percentage of the population occurred in Northland, Gisborne and the Bay of Plenty<sup>17</sup>. The smallest reductions occurred in Southland and Marlborough, with Canterbury and Nelson-Tasman.

The highest participation rate for full-time work as a percentage of the population for females is Wellington<sup>18</sup> followed by Auckland<sup>19</sup>. They are so much higher in fact that with Auckland and Wellington excluded the range reduces to five percentage points in 1986 and 2001. In 1986 Marlborough had the lowest participation. This changes in 1991 with Northland and Gisborne having the lowest for the remainder of the period with these two regions being the only to have a decline in full-time employed to the population. The region with the largest increase was Marlborough with 11 percentage points.

### *Age-Specific Rates*

The age groups 60-64 and 15-19 years for males and females show different patterns from the rest of the age groups for New Zealand as a whole, as is shown in Figure 3. For both males and females the 60-64 year age group between 1986 and 2001 showed a large increase after an initial decrease for the period 1986-91. This was mainly because the age for eligibility for National Superannuation went from 60 in 1991 to 65 by 2001. Females aged 30-44 and 45-59 years also saw increases with the 45-59 years increasing quite dramatically. For the 15-19 years age group there was a dramatic change in full-time employment as a proportion of the population between 1986 and 1991 with the percentage dropping around 20 percentage points for both males and females. The school leaving age went up from 15 to 16 in 1993 so this change is not explained by this factor, but rather by the economic downturn at that time which affected this age group the most. After 1991 this age group's participation in full-time work kept on falling but at a slower rate. For the age groups between 20 and 59 years for males, all showed a similar drop between 1986 and 1991 with the trend plateauing out after that.

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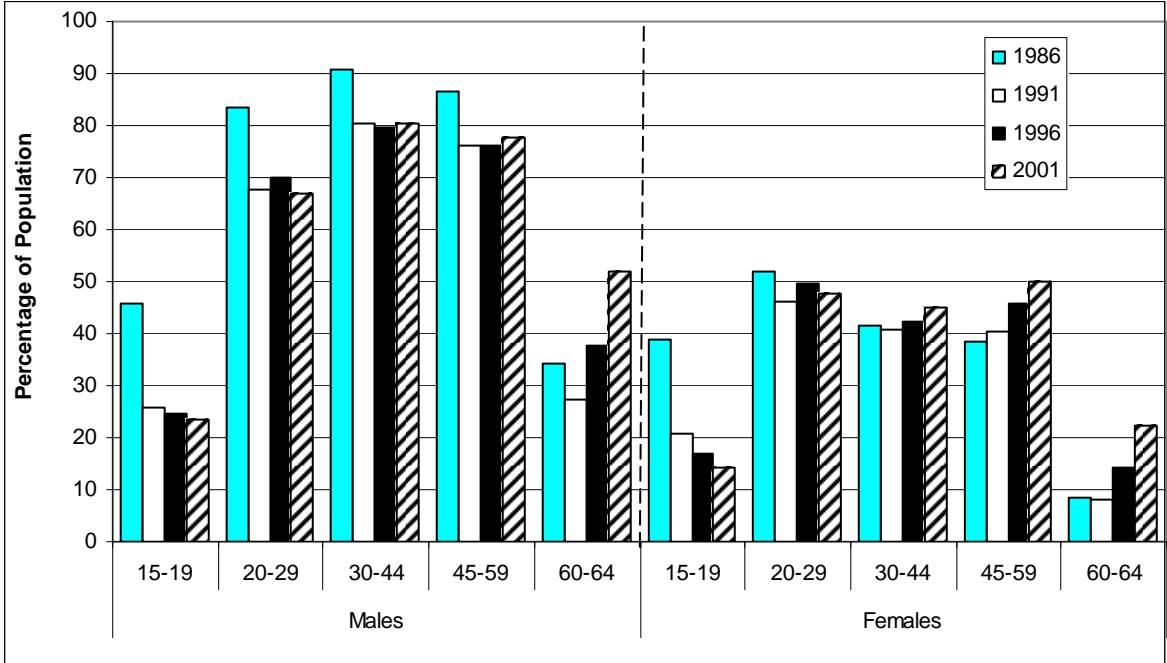
<sup>17</sup> In 2001, in the sub-regions of the Bay of Plenty the male age standardised full-time employed as a percentage of the population for 20-59 years ranged from 66 per cent in Eastern Bay of Plenty to 77 per cent in Western Bay of Plenty with Rotorua District being 76 per cent.

<sup>18</sup> In 2001, in the urban areas of Wellington the female age standardised full-time employed as a percentage of the population for 20-59 years ranged from 47 per cent in Porirua to 58 per cent in Wellington Central with Upper and Lower Hutt being around 50 per cent.

<sup>19</sup> In 2001, in the urban areas of Auckland the female age standardised full-time employed as a percentage of the population for 20-59 years ranged from 46 per cent in Southern Auckland to 52 per cent in Central Auckland with Northern and Western Auckland being 50 per cent.



**Figure 3: Percentage of the Population Employed in Full-Time Work<sup>1</sup> by Age Group and Gender, New Zealand, 1986-2001**



(1) This is a percentage of those at each age who specified their labour force status.

The inter-regional range between the highest and lowest region for full-time workers as a percentage of the population increased at all age groups for males under the age of 60 years as shown in Table 10. This increment in the gap had mainly occurred between 1986 and 1991, but with ages under 30 years continuing to increase thereafter. Females show a very different pattern from that of males for the ranges between the highest and lowest regions. For females aged 45-59 years the inter-regional range reduced substantially, whereas it increased slightly for those aged 20-29 years. At the age groups 30-34 and 60-64 years inter-regional ranges were similar at the start and at the end of this period, although they were both lower in 1991 and 1996.

**Table 10: Inter-Regional Ranges for the Percentage of the Population Employed in Full-Time Work<sup>1</sup> by age group, 1986-2001**

Age Group (years)	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
15-19	10.7	14.5	22.8	19.8	10.4	10.4	11.9	15.3
20-29	10.8	20.8	22.0	24.0	17.4	21.6	18.2	19.8
30-44	4.0	15.3	16.8	16.5	11.6	8.4	9.7	11.5
45-59	6.6	13.6	13.0	12.8	17.7	14.6	11.6	8.5
60-64	14.0	11.9	13.7	13.8	8.4	5.9	7.1	8.3

(1) This is a percentage of those at each age who specified their labour force status.

The high and low regions for percentages full-time over the population for 20-29 and 30-44 years (see Appendix Table 6) are very similar for the overall age standardised rate. For 45-59 years it was similar except that West Coast was the lowest for females for 1991-2001.

At 15-19 years there were more differences in patterns. For females Otago had the lowest participation level in full-time work for the whole period 1986-2001, with males also tending

to be low. Auckland males had very low rates in 2001, and Wellington in 1996 and 2001. The West Coast, Nelson-Tasman and Marlborough had high levels for the whole period. The 60-64 year age group shows slightly different patterns. Southland males and Wellington females remained highest for the whole period. The West Coast females remained low for the whole period, and Marlborough for 1986-1996 for both males and females. Canterbury, Otago and Nelson-Tasman had low levels for males for 1986 and 1991.

### *Ethnicity*

When looking at work patterns by ethnicity the results are rather disturbing with Māori lagging well behind Pakeha, and with the gap getting wider over the time period, as is shown in Table 11. For males the percentage of the population in full-time work for New Zealand as a whole was 90 per cent for Pakeha and 78 per cent for Māori in 1986. These figures had reduced to 81 and 64 per cent respectively by 2001. This also means that the gap increased from 12 percentage points in 1986 to 17 percentage points in 2001, though the gap had been largest in 1991 at 23 percentage points. For females the gap was not as wide initially for New Zealand as a whole with Māori being 38 per cent and Pakeha being 45 per cent in 1986 (a seven percentage points gap) in 1986. The gap had widened to 11 percentage points in 2001 with Pakeha being 51 per cent and Māori being 40 per cent, though the gap had been the widest in 1991 at 13 percentage points.

Turning to regions the range between the lowest and highest regions for males was five percentage points for Pakeha and 10 percentage points for Māori in 1986 with the maximum range occurring in 1996 at 12 and 25 percentage points respectively for Pakeha and Māori, and reducing to 10 and 22 percentage points in 2001. The range between the lowest and highest regions for Pakeha females reduced from 14 percentage points in 1986 to 11 percentage points in 2001. For Māori females the ranges between the regions went up slightly from 17 to 18 percentage points over the period.

**Table 11: Standardised<sup>1</sup> Percentage of the Population Employed in Full-Time Work<sup>2</sup> aged 20-59 years, by Ethnicity, Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>Pakeha</b>								
Northland	89.3	75.0	76.6	76.9	43.7	41.7	44.9	46.4
Auckland	90.4	81.3	83.2	82.8	49.3	48.7	52.9	55.5
Waikato	91.1	81.8	81.4	82.1	43.8	44.5	46.9	49.5
Bay of Plenty	91.3	79.1	80.8	81.3	44.0	43.0	45.5	47.3
Gisborne	91.7	82.1	81.9	81.3	42.3	42.9	46.2	45.9
Hawke's Bay	90.8	81.1	82.3	83.1	41.7	42.0	45.7	47.3
Taranaki	90.8	81.3	81.8	81.1	43.2	42.3	45.0	47.0
Manawatu-Wanganui	88.7	78.3	78.2	78.8	41.4	41.4	43.8	45.6
Wellington	91.4	82.3	80.7	81.0	51.3	50.7	52.7	55.3
West Coast	88.0	74.9	74.7	75.3	39.5	38.2	41.3	44.8
Canterbury	88.0	78.5	79.3	79.8	40.2	40.4	44.9	47.4
Otago	87.2	76.6	77.0	76.6	40.6	40.2	44.7	47.3
Southland	90.6	84.8	86.3	85.5	40.1	40.9	45.0	47.4
Nelson-Tasman	89.8	79.9	81.5	81.5	41.9	42.1	46.1	46.1
Marlborough	89.3	80.7	82.9	84.0	37.5	40.4	46.6	48.4
<b>New Zealand</b>	<b>89.9</b>	<b>80.2</b>	<b>80.9</b>	<b>81.0</b>	<b>44.9</b>	<b>44.7</b>	<b>48.2</b>	<b>50.6</b>
<i>Range</i>	<i>4.5</i>	<i>9.9</i>	<i>11.6</i>	<i>10.3</i>	<i>13.8</i>	<i>12.5</i>	<i>11.6</i>	<i>10.7</i>
<b>Maori</b>								
Northland	71.6	43.9	48.6	52.2	32.8	23.6	26.7	30.1
Auckland	80.2	61.2	68.3	68.7	43.9	36.3	42.8	45.1
Waikato	77.5	56.0	58.0	61.1	31.3	27.0	31.3	34.3
Bay of Plenty	79.6	52.8	55.5	59.0	33.3	26.4	30.1	32.9
Gisborne	76.4	51.2	52.8	58.1	39.8	29.2	33.3	35.0
Hawke's Bay	71.0	54.3	61.2	64.4	37.4	31.9	37.7	39.8
Taranaki	75.1	51.2	60.7	61.0	33.5	25.1	31.9	32.7
Manawatu-Wanganui	76.1	56.1	59.9	61.7	36.1	30.8	34.5	37.2
Wellington	80.6	64.4	64.2	66.6	48.2	41.9	43.9	48.0
West Coast	80.8	55.3	62.3	63.2	35.5	30.0	33.6	37.5
Canterbury	78.4	62.2	67.0	68.4	37.9	35.1	40.1	43.4
Otago	79.0	63.3	66.7	69.2	37.2	34.5	39.1	45.0
Southland	77.3	63.7	73.6	74.2	34.8	30.4	35.8	40.0
Nelson-Tasman	81.1	66.0	70.2	72.7	48.2	37.8	40.9	41.7
Marlborough	78.1	63.1	71.8	74.4	32.5	38.4	42.0	46.2
<b>New Zealand</b>	<b>77.8</b>	<b>57.1</b>	<b>61.8</b>	<b>63.9</b>	<b>38.4</b>	<b>31.8</b>	<b>36.7</b>	<b>39.5</b>
<i>Range</i>	<i>10.0</i>	<i>22.1</i>	<i>25.0</i>	<i>22.2</i>	<i>16.9</i>	<i>18.4</i>	<i>17.2</i>	<i>17.9</i>

(1) Standardised by age to New Zealand Total (males and females) employed Population 1996.

(2) This is a percentage of those at each age who specified their labour force status.

Northland Māori had significantly lower rates than Maori in other regions for participation in full-time work in 1991 to 2001 especially for males, these rates had also been low in 1986.

Bay of Plenty<sup>20</sup> and Gisborne Māori males had low rates between 1991-2001, with Hawke's Bay Maori having low rates in 1986. For Māori males, South Island regions with the exception of the West Coast tended to have higher rates than other regions. The only North Island regions which had high levels were Auckland<sup>21</sup> and Wellington<sup>22</sup>. Amongst female Māori, those in the Waikato, Bay of Plenty<sup>23</sup> and Taranaki had significantly low rates, in 1986 Southland and Marlborough were also low. Wellington<sup>24</sup> had the highest rate for Māori females with Auckland<sup>25</sup> also having high rates for the whole period.

The pattern for Pakeha generally reflected the overall age standardised rate with a couple of exceptions. West Coast had the lowest rate for both males and females from 1991 (low in 1986) and in 1986 Otago was the lowest for males. Northland was the lowest for the age standardised rate for the total population.

### **5.3 Job Change Compared to Demographic Supply**

In many labour force analyses the issue of supply is either not addressed or simply sloughed off by adopting the easy and comfortable assumption that supply equals demand. This is clearly not a satisfactory approach as demographic changes in the labour force are also occurring and these changes affect supply, both under- and over-supply. If this varies by region or ethnic group or in other ways, this means that access to jobs and thus to income and thus financial wellbeing will also vary. This section of the paper attempts to look at supply and demand more critically.

It is worthwhile here making a parenthetical comment. The three quinquennia 1986-91, 1991-96 and 1996-2001 saw three distinct trends. Restructuring between 1986-91 saw massive job losses. From 1991-96 there was some degree of stabilisation, but as will be shown below not a marked improvement in job numbers. By 2001, however, there were further improvements. Many analyses tend to use 1991 as a reference point and thus to show steady improvement. Here the intent is different. These questions are addressed: whether or not restructuring produced the gains advocates argued would occur<sup>26</sup>, whether or not restructuring effects fell

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<sup>20</sup> In 2001 the sub-regions of the Bay of Plenty the Maori males, standardised full-time employed as a percentage of the population 20-59 years varied from 50 per cent rate for in the Eastern Bay of Plenty to 65 per cent in Rotorua District with Western Bay of Plenty at 62 per cent.

<sup>21</sup> In 2001, in the urban areas of Auckland the Maori male standardised full-time employed as a percentage of the population 20-59 years varied from 65 per cent in Auckland Central to 75 per cent in North Shore, with Southern Auckland 68 per cent and Western Auckland 71 per cent.

<sup>22</sup> In 2001, in the urban areas of Wellington the Maori male standardised full-time employed as a percentage of the population 20-59 years varied from 61 per cent in Porirua to 71 per cent in Wellington Central with Upper and Lower Hutt 66 per cent.

<sup>23</sup> In 2001, in the sub-regions of the Bay of Plenty the Maori female standardised full-time employed as a percentage of the population 20-59 years varied from 28 per cent in Eastern Bay of Plenty to 37 per cent in Rotorua District with Western Bay of Plenty 35 per cent.

<sup>24</sup> In 2001, in the urban areas of Wellington the Maori female standardised full-time employed as a percentage of the population 20-59 years varied from 44 per cent in Porirua to 57 per cent in Wellington Central with Upper Hutt 49 per cent and Lower Hutt 48 per cent.

<sup>25</sup> In 2001, in the urban areas of Auckland the Maori female standardised full-time employed as a percentage of the population 20-59 years varied from around 50 per cent in North Shore and Central Auckland to 42 per cent in Southern Auckland with Western Auckland 46 per cent.

<sup>26</sup> It must be recognised here that no consideration of human capital effects were built into restructuring – the focus was a financial aspects and productivity gains measured (e.g. see Scott 1996).

evenly across the country, and whether improvements went to restore equity or failed to. To investigate these result further job change trends will be investigated.

By comparing job gains and losses to changes in demographic supply, that is, with growth in the working age population, it is possible to make a crude analysis of how successfully the labour market absorbed workers (Honey 2001). Job change is based on shifts in employment numbers and the demographic supply factor is the change in population numbers. The difference between the two numbers is the overall effect of employing additional workers coming onto the labour market. A positive value indicates growth in employment; a negative value indicates losses. For supply, the same interpretation applies: that is a plus shows that more people entered the age group than left; a minus that more left than entered. Finally the absolute difference (+/-) is also shown.

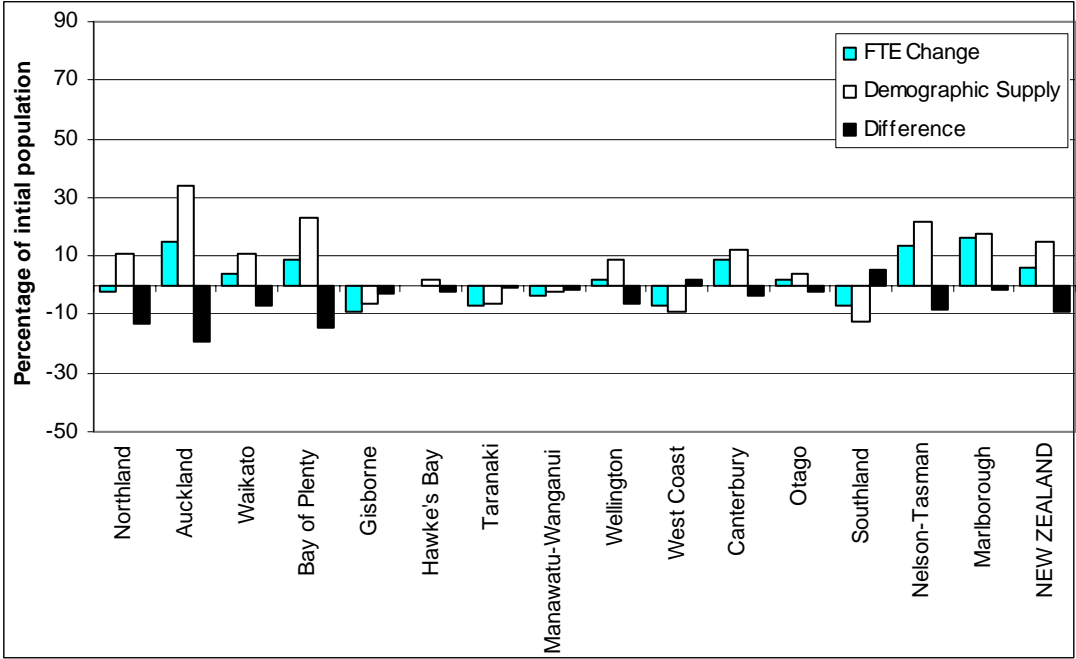
Instead of just looking at employment as was done in Honey (2001), a full-time equivalent (FTE) figure is calculated by taking the full-time employed and adding half the part-time employed. This adjusts the figure for the employed to allow for the fact that people working part-time are not fully employed in the workforce. The changes in both factors are presented in Appendix Table 7 as simple percentages.

A caveat should be noted at this point. The number of “jobs” at the census is not a pure measure of demand, as exogenous factors affect labour force participation (e.g. a decision to study full-time or to retire early). Other factors that are less marked for men may be influenced by decisions on the part of women to take up full-time parenting without leave of absence. So once again it is not a pure measure of the gap. To enable some of the effects of students staying on to study and the change in retirement age in the 15-19 and 60-64 years age groups are treated separately.

For the entire working age population (15-64 years) there was a decrease in employment opportunities – that is the number of new jobs did not match demographic supply for the entire period 1986-2001 (Figure 4). The only exceptions were Southland and the West Coast which showed a positive difference because both employment and population numbers went down but the decline in employment was less marked than were the population decreases. Auckland had the largest overall decline even though this labour market had one of the largest rises in employment, but the increases fell well behind the change in population numbers. Northland and Gisborne also had a large overall decline.

These changes also were not evenly spread across the whole period with all regions having a negative difference between 1986 and 1991 (see Appendix Table 7). In the other two periods the majority of regions had a positive difference, that is job growth exceeded demographic supply, with the exceptions being Northland, Auckland and the Bay of Plenty for both 1991-96 and 1996-2001, and Nelson-Tasman in 1996-2001.

**Figure 4: Percentage Full-time Equivalent (FTE) Change and Demographic Supply at Age group 15-64 Years, by Region, 1986-2001**



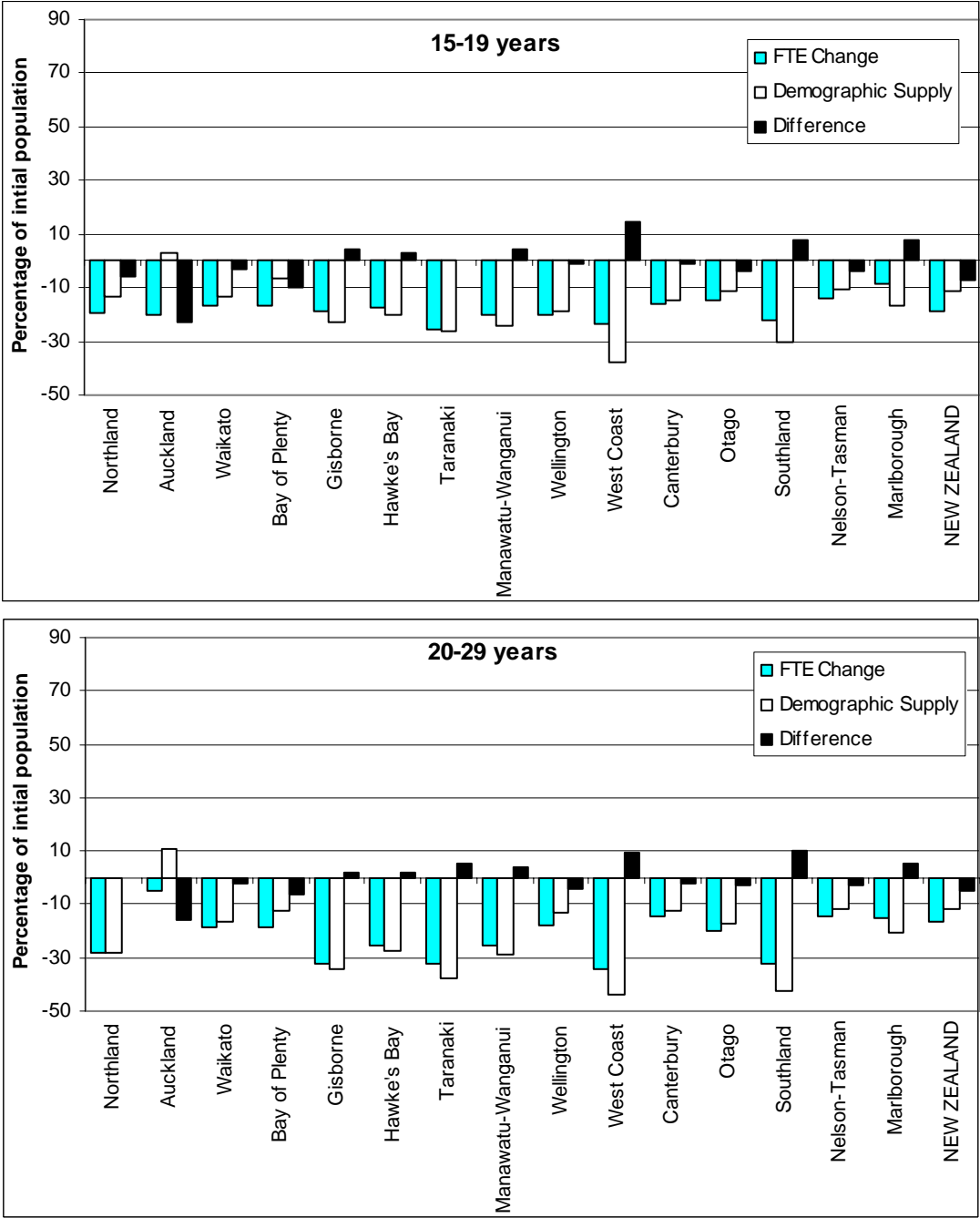
Note: For method and detailed data see Appendix Table 7.

This was the overall picture. The reality was far more complex as employment opportunities varied between age groups.

At the 15-19 years age group all regions had a decline in FTEs between 1986 and 2001 as is seen in Figure 5 and there were also a decline in supply in all areas except Auckland. The overall pattern shows a mixture between positive and negative differences with the largest negative variance between supply and demand occurring in Auckland with the Bay of Plenty also showing a significant difference. On the other end of the scale the West Coast, Southland and Marlborough went through significant increases in the difference. All regions in 1986-91 had a decline in the difference whereas all regions had an increase in 1991-96 with a mixture of results in the period 1996-2001 (see Appendix Table 6).

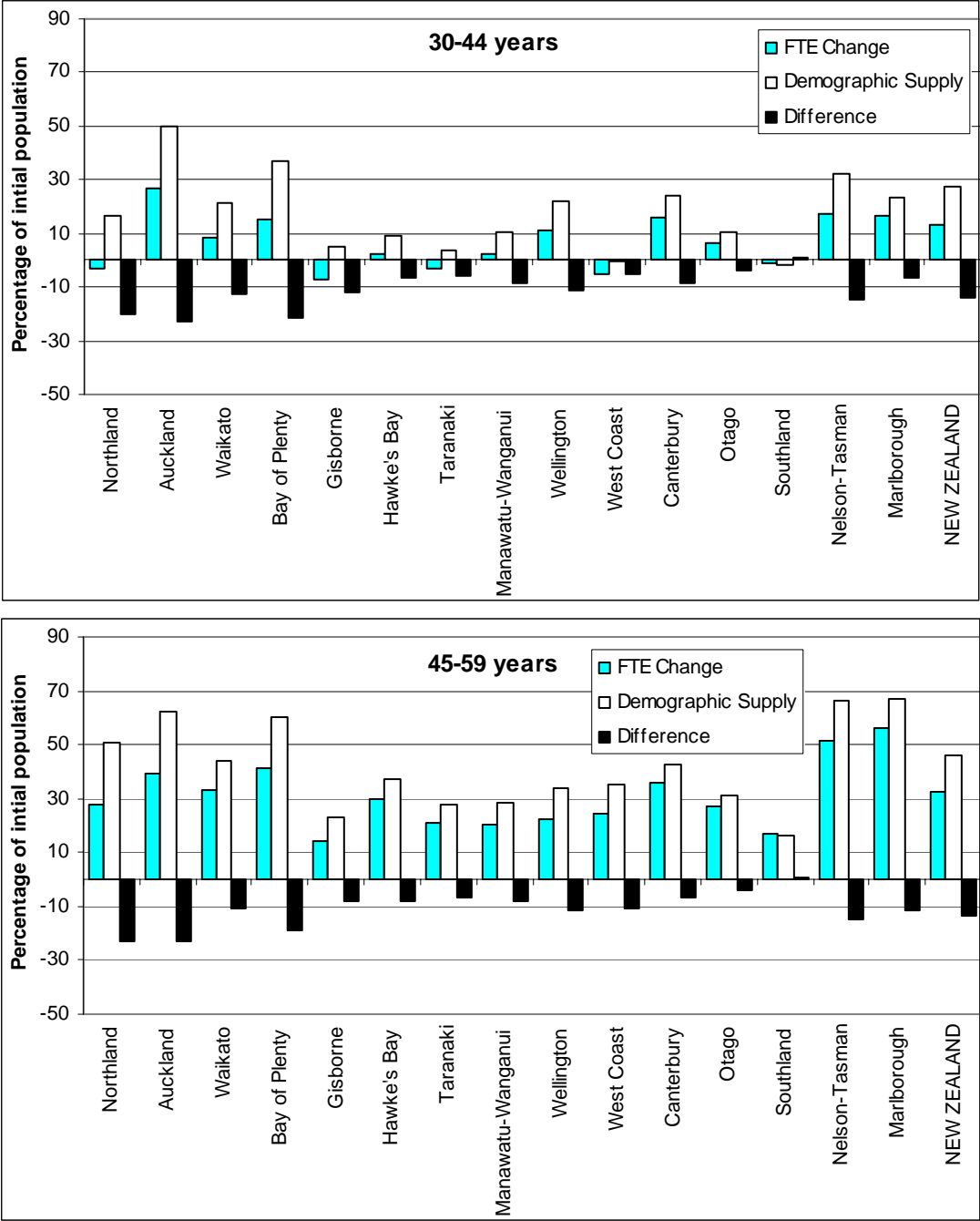
At the 20-29 years age group all regions had a decline in FTEs between 1986 and 2001, with all areas except Auckland also having a decrease in demographic supply at this age. The difference shows an even mix of regions in the positive and negative direction but most with weak differences between supply and demand. There were exceptions as Southland and West Coast were strongly positive and Auckland strongly negative. For the period 1986-91 all the regions had a negative difference and in 1991-96 and 1996-2001 all the regions having increase except Otago in 1991-96 and Auckland in 1996-01.

**Figure 5: Changes in the Percent by Age Group and Region in Full-time Equivalent (FTE) Work and Demographic Supply, 1986-2001**



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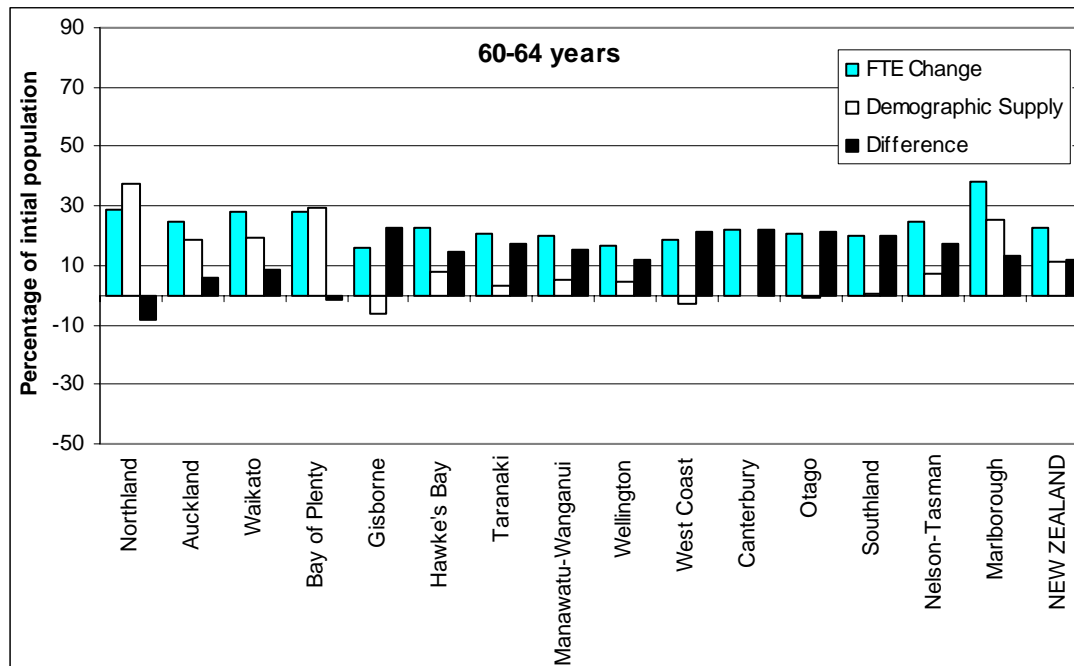
Figure 5. (continued)



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**Figure 5. (continued)**



*Note:* For method and detailed data see Appendix Table 7.

It is when one looks at 30-44 years that the changes recorded become complex. Almost all regions had negative differences: supply exceeded demand. But some regions had strongly negative differences despite job growth occurring in most.

Thus at the 30-44 years age group the number of FTEs increased in many regions between 1986 and 2001, the exceptions being the non-metropolitan areas of Northland, Gisborne, Taranaki, West Coast and Southland. But against this, in all regions except Southland the size of the population of this age group increased far more than the growth in jobs. Southland and West Coast were the only regions to have a decline in the population aged 30-44 years. The net result was that supply exceeded demand with the gap being greatest in Auckland, Northland and the Bay of Plenty. Almost all regions had negative differences in 1986-91 and 1991-96 the only exception being Southland in 1991-96. The majority of regions had a positive difference in 1996-2001 with the exceptions being Auckland, the Bay of Plenty, Nelson-Tasman and Marlborough.

At the 45-59 years age group all regions saw large increases in the number of FTEs, but also in demographic supply between 1986 and 2001. A substantial number of regions had over 30 per cent growth in FTEs (six regions) and Demographic Supply (11 regions) which are very significant results. Only in Southland did demographic supply exceed FTE growth. Northland, Auckland and the Bay of Plenty had the largest negative difference between supply and demand. Finally, it should be noted in passing that all regions had a negative difference in 1986-91, whereas in 1991-96 all were positive and in 1996-2001 there was a mixture of results.

Between 1986 and 2001 the 60-64 years age group has undergone some dramatic changes with the age of eligibility for National Superannuation increasing from 60 to 65, meaning that those without private financial means will have to stay in the labour force longer. This affects the results of this age group with all regions having an increase in FTEs. Three regions had a sizeable increase in demographic supply Northland, the Bay of Plenty and Marlborough –

whereas Gisborne and West Coast had a decrease. The change in FTEs did not keep pace with demographic supply in Northland and the Bay of Plenty. The largest positive difference occurred in Gisborne, the West Coast, Canterbury and Otago. All regions except West Coast and Nelson-Tasman had negative difference for the period 1986-91, and then all the regions had a positive difference in 1991-96. In 1996-2001 all region had a positive difference except Northland and Auckland. This fits with the age of eligibility for National Superannuation increasing from 60 to 65 incrementally over the period 1991 to 1999.

In summary, several points stand out. Of the five age groups, the category 30-44 years at which participation rates are highest and family support needs are often the greatest, has suffered the most in employment terms with the rise in FTEs not keeping pace with the increments in population numbers. For the 15-19 and 20-29 age groups demographic supply dropped significantly with declines in demand for labour at these ages not keeping pace with supply with 45-59 having growth in supply and demand but not keeping pace with supply. In contrast the 60-64 years age group also had rises in FTEs which kept ahead of rises in demographic supply.

The factors affecting supply as measured here are essentially demographic and twofold. There are momentum effects as cohorts of varying sizes reach the different reference age groups used here. This momentum comes from the initial sizes of cohorts at birth, but can be affected prior to reaching this reference age group by migration (both international and domestic) and, to a far lesser degree at all but the oldest ages, by mortality (Pool 2003). The second factor is migration at the given reference age group.

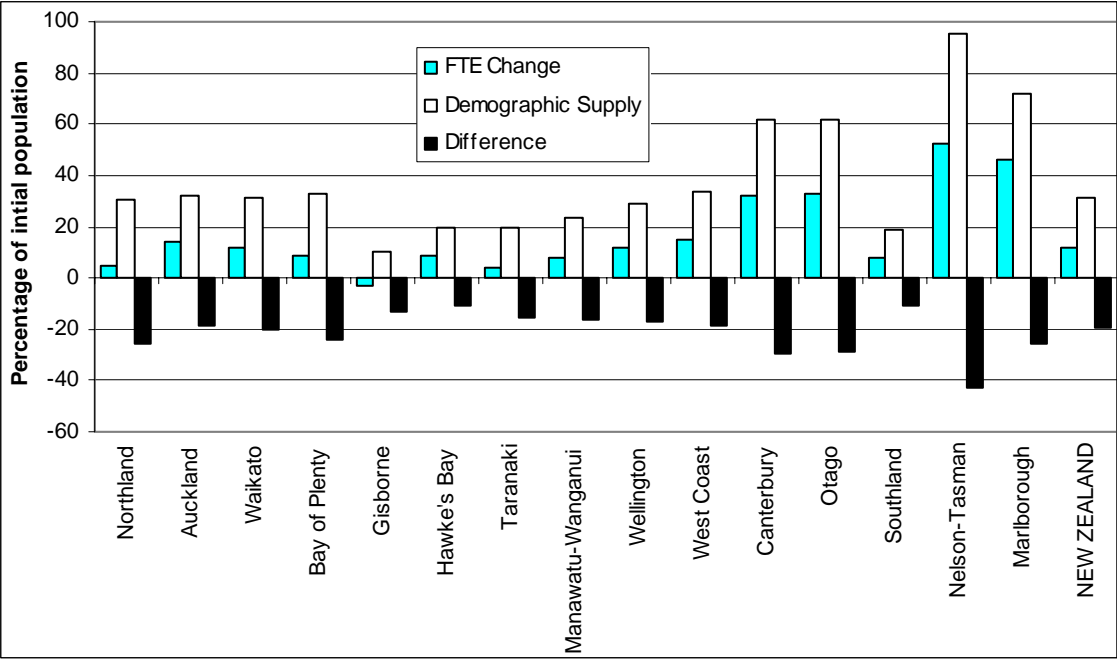
Because the measure used here is crude, other aspects of supply, such as training and experience, are excluded. Nevertheless, out here are the broad parameters for gaps between supply and demand. In this regard, it is worth noting that nationally supply coming from new-entrants (as measured here) peaked in about 1988 (Honey 1998) and will do so again around 2010 (Pool 2003).

### *Maori*

For the Maori population only the whole period 1986 to 2001 is investigated. As shown in Figure 6 all regions except Gisborne had positive growth in Full-time Equivalent (FTE) employment and all regions had positive growth in demographic supply with the largest growth occurring in the South Island regions of Canterbury, Otago, Nelson-Tasman and Marlborough. All regions had a negative difference between FTE change and demographic supply. The largest negative difference occurred in Northland, the Bay of Plenty, Canterbury and Otago. Nelson-Tasman and Marlborough also had large negative difference though the numbers are very small.

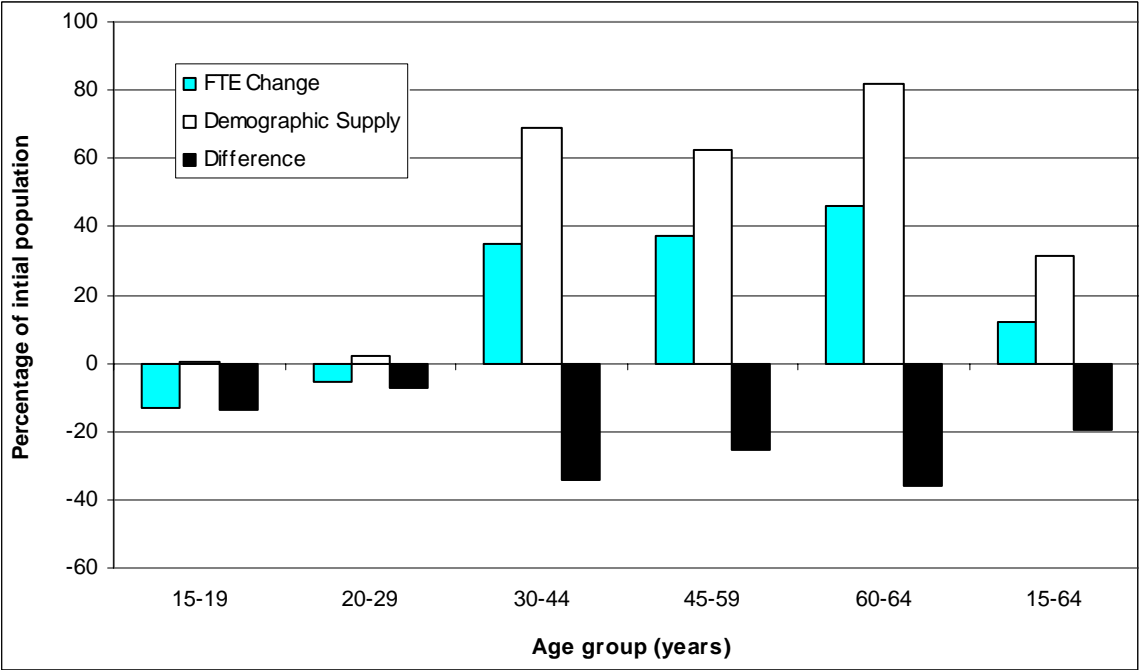
In Figure 7 it can be seen for New Zealand that there is FTE decline at age groups 15-29 years and positive growth for age groups 30-64 years. There was little change in demographic supply at age groups 15-29 years and large growth for 30-64 years. The difference between FTE change and demographic supply are negative at all age groups, with the smallest difference in age group 15-29 years. What is concerning is the difference at older ages.

**Figure 6: Changes in the Percent for 15-64 Years for the Maori Population, by Region Full-time Equivalent (FTE) in Work and Demographic Supply, 1986-2001**



Note: For method and detailed data see Appendix Table 8

**Figure 7: Changes in the Percent by Age for the Maori Population, by Age Group in Full-time Equivalent (FTE) in Work and Demographic Supply, 1986-2001**



Note: For method and detailed data see Appendix Table 8

Appendix Table 8 shows the age specific results for the regions for the Maori Population. There are some large positive changes for FTE and demographic supply for age groups 20-64 years in Canterbury, Otago, Nelson-Tasman and Marlborough.

## 6 The Unemployed Population

Beyond the shift share between full- and part-time, there were also changes in levels of unemployment. In this section unemployment is measured by relating it to the labour force. In much of the work of the Population Studies Centre population-based, rather than labour force, rates are employed to take account of the fluidity of labour force participation – membership is not a static, immutable status, whereas definitions of participation and thus of the boundaries are extremely rigid (Davies with Jackson. 1993). But population based rates are not used here as they are not a conventional measure. In any case both ways of measuring unemployment produce trends in similar directions. Because of the smaller denominators, labour force estimates of unemployment yield higher rates than do population based unemployment rates (Jackson 1994).

### *Age Standardised Rates*

As other research has shown unemployment has been more prevalent in some sub-populations than in others (Newell 1991; Organisation for Economic Co-operation and Development (OECD) 1996; Population Monitoring Group 1989; Prime Ministerial Task Force on Employment 1994). In this same vein the regions that are social and economic peripheries have experienced higher levels of unemployment as is evident in Table 12, in the period of 1986 to 2001 for Northland, the Bay of Plenty<sup>27</sup>, and Gisborne for the age group 20-59 years<sup>28</sup>.

Nationally the level of unemployment increased dramatically for males between 1986 and 1991 with the rate doubling from three to seven per cent then the rate fell slightly for 1996 and 2001, with the 2001 rate being six per cent. For females the unemployment rate was very steady over the entire period around seven per cent.

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<sup>27</sup> In 2001, in the Bay of Plenty, however, there were major differences between the sub-regions. A standardised unemployment as a percentage of the labour force 20-59 years for both males and females respectively was highest in the Eastern Bay of Plenty being 14 and 15 per cent with Rotorua District being eight and nine per cent and Western Bay of Plenty being seven and nine per cent in 2001.

<sup>28</sup> The population aged 20-59 is used to avoid confounding the underlying trends in unemployment with policy changes that affected the under 20 population, changes in the school leaving age, and the 60 and over population, changes in eligibility for national superannuation, in the 1986-2001 period.

**Table 12: Standardised<sup>1</sup> Percentage of the Labour Force who is Unemployed aged 20-59 years, by Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	5.3	11.2	11.2	10.5	8.3	9.4	10.6	11.0
Auckland	3.1	7.0	6.2	6.5	6.4	6.8	7.0	7.3
Waikato	3.3	6.9	6.6	6.7	7.9	7.2	7.9	8.1
Bay of Plenty	3.8	9.4	8.8	8.7	8.7	9.4	10.3	10.2
Gisborne	4.0	9.7	10.9	9.0	9.2	9.1	11.1	11.6
Hawke's Bay	3.3	7.3	7.0	6.2	8.5	7.6	8.0	8.8
Taranaki	3.7	7.2	6.8	7.2	7.2	6.7	7.3	8.0
Manawatu-Wanganui	3.7	7.1	7.0	6.9	7.5	7.2	7.8	8.0
Wellington	2.8	6.0	6.6	6.3	5.4	5.5	6.2	6.0
West Coast	4.3	8.1	7.4	7.9	6.0	6.4	6.5	5.8
Canterbury	3.6	6.4	5.4	5.2	7.6	6.4	6.2	5.6
Otago	4.0	6.9	6.3	5.3	7.3	6.8	6.5	6.0
Southland	2.1	5.0	3.8	4.0	6.2	6.1	5.8	5.9
Nelson-Tasman	2.5	5.3	4.2	4.0	6.0	6.1	5.2	5.4
Marlborough	3.3	6.3	4.9	3.4	8.1	6.1	5.7	4.6
<b>New Zealand</b>	<b>3.4</b>	<b>7.0</b>	<b>6.5</b>	<b>6.4</b>	<b>7.0</b>	<b>6.8</b>	<b>7.2</b>	<b>7.2</b>
<i>Range</i>	3.2	6.3	7.4	7.0	3.7	3.9	5.9	7.0

(1) These unemployment rates have been standardised for age and gender to the labour force in 1996 for New Zealand as a whole

With the exception of the West Coast for males, South Island regions for both males and females had low rates, another region which had low rates was Wellington<sup>29</sup>. Auckland<sup>30</sup> was below the national level in 1986, but thereafter almost exactly paralleled to national trends. Levels for these regions generally remained stable over the whole period, the exceptions being Canterbury and Otago for males and females, which were above New Zealand in 1986, and Marlborough for females in 1986. The highest unemployment rate nationwide was in Northland for males systematically for the whole period 1986 to 2001 with the Bay of Plenty and Gisborne also being high. For females the same three regions were high with Gisborne generally the highest. For Northland males the rate went from five per cent in 1986 to 11 per cent for the period 1991 to 2001.

In 2001 there was thus a far greater range in the unemployment rates than had been the case fifteen years earlier for males: three percentage points (1986) versus seven percentage points (2001). A similar pattern was also true for females with the range in 1986 being four percentage points and 2001 being seven percentage points. The key to this was that the North Island regions which already had high rates in 1986 saw their rates increase even further. For

<sup>29</sup> In 2001 the urban areas of Wellington the age standardised unemployment as a percentage of the labour force 20-59 years for both males and females respectively was high in the Porirua being nine and 10 per cent and low in Wellington Central six and five per cent with the Lower and Upper Hutt between these regions though tending more closer to Wellington Central.

<sup>30</sup> In 2001 the urban area of Auckland the age standardised unemployment as a percentage of the labour force 20-59 years for both males and females respectively was high in Southern Auckland being eight and 10 per cent and low in North Shore both five per cent with West and Central Auckland in the middle.

some of these regions levels had peaked in 1991, but for others, Northland, Gisborne, Hawke's Bay and Taranaki, the 2001 rate for females exceeded the 1991 level.

### *Age-Specific Rates*

The inter-regional ranges and the directions of change by age are both important as they point to the development of underdevelopment, the growing inequity between regions, and the onset of social exclusion. In terms of the age differentials in the levels of unemployment, all regions reflect the same major historical trend. That is, the younger groups of the population have faced higher levels of unemployment. Thus, as Table 13 shows, in the period 1986-2001 the unemployment rates for the two youngest age groups this being 15-19 and 20-29 years were higher than for all the other age groups for New Zealand as a whole, especially so for the 15-19 year age group. In 1991, for all the age groups except those aged 60-64 years, rates were high, with levels then declining but not those of 1986. As the age of eligibility for National Superannuation increased, rates and ranges for males increased at 60-64 years, and exceeded those at 45-59 years by 2001.

The range between the lowest and highest regions increased at all male age groups under 60 years between 1986 and 1991, with all age groups except 45-59 years reaching double the level seen in 1986. The range reduced slightly for age groups under 45 years after 1991 but by 2001 it still had not tracked down to 1986 levels, instead remaining substantially higher. For females the inter-regional ranges increased over time, with all except 60-64 years having a higher range in 2001 than in 1986, and with the age groups under 45 years being nearly double.

**Table 13: Unemployed as a Percentage of Labour Force, by Age and Gender, New Zealand, 1986-2001**

Age Group (years)	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>New Zealand</b>								
15-19	18.4	26.3	18.0	20.5	21.3	28.2	21.1	23.6
20-29	6.2	14.8	9.6	10.3	9.9	14.4	10.8	11.3
30-44	2.4	7.3	5.8	5.4	6.8	7.8	6.8	6.7
45-59	2.3	6.1	4.6	4.1	4.7	5.2	4.3	4.0
60-64	3.3	2.9	3.9	4.8	4.4	2.4	3.6	3.3
<b>Inter-regional Ranges</b>								
15-19	7.0	15.2	13.3	12.8	8.8	10.9	12.5	16.8
20-29	5.9	13.5	11.3	11.0	6.6	10.3	11.8	11.4
30-44	2.2	7.6	7.8	6.9	3.2	3.9	5.3	6.0
45-59	2.0	3.7	3.8	3.8	3.0	2.8	2.9	3.7
60-64	3.8	2.6	2.6	5.5	6.3	3.3	4.8	2.0

Turning to regional age-specific rates (see Appendix Table 9), three regions, Northland, Gisborne and the Bay of Plenty show a different pattern from others. In these three regions in every age group over the period 1986 to 2001 the unemployment rates were the same or higher than the national rate. The age groups between 20 and 59 years follow the trends of the overall rates with the exceptions being for males on the West Coast, where rates were high for the age group 45-59 years in 1996 and 2001, and Otago which was above New Zealand at the 20-29 years age group for females.

At 60-64 years the results were not entirely relevant as before 2001 the age for entitlement for National Superannuation was 60 years in 1986 and 1991, but rose to 62 in 1996 and to 65 in

2001. In 2001 the level at 60-64 years generally followed the overall standardised rate. At the other end of the scale at 15-19 years regional rates generally followed the national trend with the exceptions being that in Auckland rates for males and in the Waikato rates for females were high in 2001.

### *Ethnicity*

As is shown in Table 14, there are large differences between Pakeha and Māori in unemployment rates, with Māori rates in most cases being about three times those for Pakeha. The rates for Pakeha and Māori males for New Zealand as a whole doubled between 1986 and 1991 going from three to six per cent for Pakeha and eight to 15 per cent for Māori. By 2001 the rates had declined a little to four per cent for Pakeha and 13 per cent for Māori. For females the unemployment rate for Pakeha declined by one percentage point, whereas for Māori the rate increased by two percentage points, going from six to five per cent for Pakeha and 14 to 16 per cent for Māori.

The range between the highest and the lowest regions for unemployment rates is greater for Māori than for Pakeha. For males in 1986 the Pakeha range was two percentage points, but for Māori it was seven percentage points with this increasing to four and 15 percentage points respectively in 2001. For female Pakeha the ranges between the regions were very small going from three percentage points in 1986 to two percentage points in 2001. Māori females had their lowest ranges between the regions of eight percentage points in 1991 and the largest in 2001 of 14 percentage points. As Table 14 illustrates, unemployment rates were higher for Māori than for Pakeha for all regions, and the differences were greatest in regions with high levels of overall unemployment.

The only region which showed declines in Māori male unemployment rates was Marlborough. In contrast Northland, the Bay of Plenty<sup>31</sup> and Gisborne had large increases especially for the Māori rates. The South Island with the exception of West Coast had lower levels than other regions for both males and females, with Wellington female Māori also low. The region which were highest for Māori males for the entire period 1986 to 2001 was Northland, with Taranaki, the Bay of Plenty and Gisborne being relatively high for most of the period. For female Māori Northland was high for the whole period, with Waikato and Taranaki relatively high for the period, and Gisborne and Hawke's Bay also high after 1991. The results for Pakeha are not that different than the overall rate and also the inter-regional ranges are not that high though West Coast tended higher for males.

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<sup>31</sup> In 2001, in the sub-regions of the Bay of Plenty the Maori age standardised unemployment rate at 20-59 years for both males and females respectively was highest in the Eastern Bay of Plenty being 23 and 24 percent, with Rotorua District being 14 and 16 per cent and Western Bay of Plenty being 15 and 18 per cent.

**Table 14: Standardised<sup>1</sup> Percentage of the Labour Force Unemployed aged 20-59 years, by Ethnicity, Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>Pakeha</b>								
Northland	3.4	8.1	7.0	6.2	6.0	6.7	6.3	6.0
Auckland	2.3	5.3	3.6	3.8	5.3	5.3	4.1	3.9
Waikato	2.3	5.2	4.3	4.3	6.2	5.5	5.1	5.2
Bay of Plenty	2.5	7.1	5.3	5.1	6.6	7.2	6.5	6.3
Gisborne	2.2	5.5	5.2	4.8	6.4	5.3	5.1	5.3
Hawke's Bay	2.3	5.5	4.6	3.9	6.7	5.6	5.4	5.5
Taranaki	3.0	6.0	5.3	5.7	6.3	5.7	5.6	5.9
Manawatu-Wanganui	3.0	5.9	5.4	5.1	6.7	6.0	5.8	5.9
Wellington	2.2	5.0	5.0	4.7	4.8	4.6	4.6	4.2
West Coast	4.0	7.8	6.9	7.4	5.3	5.9	5.9	5.3
Canterbury	3.3	6.0	4.8	4.5	7.2	6.1	5.5	4.8
Otago	3.8	6.5	5.7	4.8	6.9	6.6	5.8	5.3
Southland	1.8	4.4	3.3	3.4	5.6	5.5	4.9	4.8
Nelson-Tasman	2.3	5.0	3.7	3.6	5.9	5.7	4.6	4.7
Marlborough	3.1	5.6	4.3	3.1	7.6	5.6	5.1	4.2
<b>New Zealand</b>	<b>2.6</b>	<b>5.7</b>	<b>4.6</b>	<b>4.4</b>	<b>6.0</b>	<b>5.6</b>	<b>5.0</b>	<b>4.8</b>
<i>Range</i>	2.2	3.7	3.7	4.3	2.9	2.6	2.4	2.4
<b>Maori</b>								
Northland	11.8	22.0	22.4	19.9	16.8	18.5	21.3	20.8
Auckland	6.7	14.0	10.1	10.8	12.2	13.9	13.0	14.2
Waikato	8.2	15.8	15.2	14.2	17.3	16.6	18.6	17.7
Bay of Plenty	8.1	17.8	18.7	17.0	15.7	17.4	20.1	19.4
Gisborne	7.5	17.7	19.4	14.6	14.1	16.4	18.8	18.7
Hawke's Bay	8.0	16.0	14.2	11.7	16.2	16.1	16.3	17.2
Taranaki	10.3	17.9	15.8	15.1	17.0	17.5	17.6	19.4
Manawatu-Wanganui	7.1	14.3	14.1	13.4	13.1	14.5	16.4	15.2
Wellington	6.1	12.0	12.8	11.1	9.3	11.0	12.3	11.8
West Coast	7.2	15.6	12.9	13.6	11.1	12.8	12.9	12.5
Canterbury	7.2	12.7	9.7	9.1	14.3	13.0	11.3	10.7
Otago	7.3	12.8	10.5	8.3	13.2	11.9	11.7	10.1
Southland	4.5	11.1	7.6	8.4	11.0	13.6	13.7	12.0
Nelson-Tasman	4.8	9.4	7.9	6.6	6.2	10.6	10.3	11.5
Marlborough	7.5	13.2	9.9	4.7	15.0	10.4	9.4	6.7
<b>New Zealand</b>	<b>7.6</b>	<b>15.1</b>	<b>13.7</b>	<b>12.8</b>	<b>13.9</b>	<b>14.8</b>	<b>15.6</b>	<b>15.5</b>
<i>Range</i>	7.3	12.6	14.8	15.2	11.1	8.1	11.9	14.1

(1) These unemployment rates have been standardised for age and gender to the labour force in 1996 for New Zealand as a whole



## 7 “Discouraged Workers” Estimation: Changes in Labour Force Participation

Finally, this paper turns to those people who would be in the labour force under conditions in which jobs appropriate to their qualifications and experience were available, and job searches feasible in terms of costs, time and travelling distance. These people, termed “Discouraged Workers” (see Figure 1) have been traditionally not included in conventional unemployment statistics (Baxendine et al. 2002). In the section above reference was made to the fluidity of the boundaries of labour force participation.

In recent household labour force surveys an attempt had been made to measure this effect. But as it is a sample, numbers per region are small, and the definition is still much narrower than the reality experienced by many former workers, especially those isolated from large labour markets and WINZ offices. Morrison and Berezovsky (2001) have analysed some of these data for regions, however the boundaries used for their regions are larger than those used in this paper. They extended beyond unemployment as conventionally measured to ‘jobless’ people to give flows in and out of employment. This provides what essentially is a narrow interpretation of discouragement. Our concern here is with the truly discouraged, as defined above persons who would work but who have been discouraged and have been truly jobless, not just in a narrowly defined reference period for a long time. There are no data permitting direct computations of ‘discouraged worker’ rates. Thus we have attempted to estimate these.

An estimate of this phenomenon is calculated indirectly here by taking a baseline of persons not in the labour force at the beginning of an inter-censal period (year t) and assuming that they are actively interested in labour force participation. These rates are projected forward to t+n and the difference between these figures and observed numbers not in the labour force taken as a measure of “discouraged” workers, called here labour force change.

The proportion of the population in any census t, n years after 1986, who are estimated for this calculation of the labour force change was thus calculated in three steps:

- 1  $E_{nlf, r, g, x, t} = (NLF_{r, g, x, 1986} / Pop_{r, g, x, 1986}) * Pop_{r, g, x, t}$
- 2  $E_{nlf, r, g, x, t} - O_{nlf, r, g, x, t} = LFC_{r, g, x, t}$
- 3  $LFC_{r, g, x, t} / Pop_{r, g, x, t} = \text{Labour Force Change rate}$

Where  $O_{nlf}$  = Observed population outside the labour force  
 $E_{nlf}$  = Expected population outside the labour force  
NLF = Non-Labour Force  
LFC = Labour Force Change: Loss (-) and Gain (+)  
t = Census, n years after 1986 census  
x = five-year age groups  
g = gender (males, females)  
r = region  
Pop = population

This measure takes the 1986 “non-labour force” participation and applies it to the 1991, 1996 to 2001 census populations to show the differences between expected and actual numbers of people in the “non-labour force”. This assumes that an increase in the non-labour force (therefore a decrease in labour force participation) is an effect of workers becoming “discouraged” between 1986 and the respective census. This measure makes the labour force participation in each region in 1986 as its benchmark and does not take into account the difference in non-labour force participation in the regions. As shown in Tables 15 and 16 the labour force participation rates did not vary as much in 1986 as they did in later periods.

**Table 15: Estimated “Discouraged Worker Effects”: Difference between Expected and Observed Proportions and Workers outside the Labour Force, by Gender and Region, 1991-2001, taking 1986 Non-Labour Force Rates as a Baseline (20-59 years)**

Region	1991		1996		2001	
	Males	Females	Males	Females	Males	Females
	<b>Percentage</b>					
Northland	-10.2	-2.6	-13.1	1.3	-7.3	9.8
Auckland	-6.5	-2.4	-9.3	0.2	-5.4	5.6
Waikato	-6.4	0.3	-8.6	5.0	-5.6	10.7
Bay of Plenty	-7.9	-1.0	-9.4	3.2	-5.5	9.7
Gisborne	-11.6	-4.3	-13.0	1.1	-8.4	6.5
Hawke's Bay	-7.2	-1.2	-8.8	4.0	-5.7	10.0
Taranaki	-6.3	-0.4	-7.6	4.6	-5.5	10.4
Manawatu-Wanganui	-6.8	-0.2	-8.9	3.9	-5.6	9.3
Wellington	-5.9	-1.5	-8.0	1.7	-4.7	6.5
West Coast	-7.6	-0.2	-9.3	6.7	-6.0	14.3
Canterbury	-5.2	0.9	-6.7	6.8	-4.5	11.6
Otago	-6.7	-0.1	-8.2	5.5	-6.4	10.8
Southland	-4.0	1.6	-5.2	8.3	-3.9	13.5
Nelson-Tasman	-4.5	0.8	-5.9	4.9	-3.4	10.4
Marlborough	-4.4	3.8	-5.6	10.6	-3.0	16.0
<b>New Zealand</b>	<b>-6.4</b>	<b>-0.9</b>	<b>-8.6</b>	<b>3.2</b>	<b>-5.4</b>	<b>8.7</b>
<i>Range</i>	<i>7.6</i>	<i>8.1</i>	<i>7.9</i>	<i>10.4</i>	<i>5.4</i>	<i>10.3</i>
	<b>Number</b>					
Northland	-3,195	-825	-4,423	477	-2,455	3,552
Auckland	-16,528	-6,230	-27,247	472	-17,088	18,918
Waikato	-5,425	280	-7,864	4,726	-5,089	10,269
Bay of Plenty	-3,929	-536	-5,214	1,882	-3,183	6,135
Gisborne	-1,250	-473	-1,468	132	-892	733
Hawke's Bay	-2,430	-441	-3,167	1,518	-2,024	3,753
Taranaki	-1,688	-119	-2,062	1,261	-1,410	2,778
Manawatu-Wanganui	-3,888	-140	-5,292	2,355	-3,063	5,437
Wellington	-6,451	-1,700	-9,173	1,982	-5,381	7,966
West Coast	-657	-14	-828	567	-494	1,150
Canterbury	-6,012	1,013	-8,559	8,785	-5,824	15,525
Otago	-3,124	-32	-4,129	2,805	-3,065	5,421
Southland	-1,068	394	-1,365	2,126	-944	3,232
Nelson-Tasman	-828	138	-1,238	1,038	-739	2,350
Marlborough	-403	336	-573	1,056	-305	1,667
<b>New Zealand</b>	<b>-57,114</b>	<b>-7,688</b>	<b>-83,133</b>	<b>32,338</b>	<b>-52,586</b>	<b>90,602</b>

*Note:* Negative values are taken to mean that participation dropped, and that discouraged worker effects increased.

There were some policy changes between 1986 and 1996 that could affect these results. For instance, the school leaving age rose from 15 to 16 years and the age of eligibility for National Superannuation had increased from 60 to just over 62 years by the 1996 census. Thus the analysis of this section focuses on the age group 20-59 years.

Given the crude nature of this measure, the results need to be interpreted with care. Nevertheless, it does seem that had a more socially accurate measure of unemployment been applied, levels would have been higher than conventional methods allow. Indeed, the numbers of people involved is not small but are in the 1,000's as is seen Table 15. Moreover, it is clear that the effects of this factor were not evenly spread across the population. There are marked regional differences with the marginal regions having the highest losses from the labour force in the discouraged worker category. The data in Table 15 suggest that for males all regions suffered discouraged worker effects between 1986 and the subsequent three censuses, whereas for females most regions only suffered from discouraged worker effects occurred between 1986 and 1991. Two areas, Northland and Gisborne, appear to have suffered most from discouraged worker effects, this was so for males in all three periods and for females in 1991. Three regions, Southland, Marlborough and Nelson-Tasman, did not suffer significantly from discouraged worker effects.

Between 1986 and 1991 there were many more people leaving the labour force than coming in. This also was the case in 1996 (using 1986 levels) in most regions with the exception of Canterbury, Southland and Marlborough. By 2001 there has been a recovery to 1986 levels in most regions with more females coming into the labour force than males leaving the only exception being Gisborne. It is important to note, however, that over the time period 1986 to 2001, the gender mix in employment has changed, with females' participation increasing in the labour force while males rates declined.

Table 16 illustrates the tabulation of discouraged worker effects from 1986 by age group and gender. It shows the 20-29 year age group was affected most for males for the whole period, with 1996 being the highest for New Zealand as a whole. Females also suffered discouraged worker effects in 1991 but then experienced gains on 1986 levels. The age group 30-44 years are also experience discouraged worker effects for males in all three periods and for females in 1991 after which females gain on 1986 levels in 1996 and 2001. Males experienced discouraged worker effects and females experienced gains in all three periods for the age group 45-59 years for New Zealand as a whole, with females having the largest gains of all three age group significantly above the others.

The age-specific rates for the regions generally reflect the overall gender specific rates. The main exceptions are Auckland and Wellington at 45-59 years in 1996 and 2001 where the gains for females in 1996 and 2001 which had the smallest increase on 1986 levels. This is probably because the levels in these regions were high for this age group initially. In the South Island regions males and females at age groups 30-44 and 45-59 years generally seem to do better than those in the other regions of New Zealand.

**Table 16: Estimated “Discouraged Worker Effects”: Difference between Expected and Observed Proportions and Workers outside the Labour Force, by Age Group, Gender and Region, 1991-2001 taking 1986 Non-Labour Force Rates as a Baseline**

Region	1991			1996			2001		
	20-29	30-44	45-59	20-29	30-44	45-59	20-29	30-44	45-59
	<b>Males</b>								
Northland	-13.7	-8.7	-9.4	-15.3	-12.8	-12.0	-8.2	-7.8	-6.3
Auckland	-8.3	-5.5	-5.8	-9.8	-9.3	-8.9	-8.2	-4.6	-4.3
Waikato	-8.8	-5.0	-5.9	-9.4	-8.6	-7.8	-7.6	-5.6	-4.1
Bay Of Plenty	-11.7	-6.0	-7.0	-10.8	-9.2	-8.5	-7.7	-5.8	-3.9
Gisborne	-14.5	-10.1	-11.0	-14.9	-12.4	-12.3	-10.1	-8.2	-7.6
Hawke's Bay	-9.5	-6.0	-6.6	-9.2	-9.1	-8.1	-8.4	-5.7	-4.2
Taranaki	-8.1	-4.6	-6.9	-8.2	-7.3	-7.4	-8.3	-5.2	-4.3
Manawatu-Wanganui	-9.0	-5.4	-6.4	-10.3	-8.3	-8.5	-6.4	-5.8	-4.7
Wellington	-7.3	-4.4	-6.5	-8.9	-7.1	-8.4	-5.7	-4.3	-4.4
West Coast	-8.7	-6.3	-8.8	-11.3	-8.8	-8.6	-6.1	-6.2	-5.8
Canterbury	-6.2	-4.1	-5.6	-7.7	-6.7	-5.6	-6.7	-4.4	-3.1
Otago	-9.6	-4.2	-7.1	-11.0	-6.8	-7.5	-10.8	-5.1	-4.5
Southland	-5.4	-3.0	-4.3	-5.7	-4.7	-5.5	-5.8	-3.2	-3.7
Nelson-Tasman	-6.3	-2.9	-5.2	-6.9	-6.0	-4.9	-4.6	-3.7	-2.3
Marlborough	-4.9	-3.9	-4.7	-7.3	-6.2	-3.6	-3.6	-4.5	-1.2
<b>New Zealand</b>	<b>-8.4</b>	<b>-5.1</b>	<b>-6.3</b>	<b>-9.6</b>	<b>-8.3</b>	<b>-8.1</b>	<b>-7.6</b>	<b>-5.0</b>	<b>-4.2</b>
<i>Range</i>	9.6	7.2	6.8	9.6	8.1	8.7	7.3	5.0	6.4
	<b>Females</b>								
Northland	-6.0	-3.7	2.2	-0.3	-3.0	8.3	7.1	3.5	18.6
Auckland	-4.3	-3.3	1.4	0.0	-2.4	4.2	2.9	3.2	11.4
Waikato	-1.7	-1.0	4.7	4.3	1.5	10.9	7.1	5.7	19.7
Bay Of Plenty	-5.3	-1.4	3.8	0.9	-0.1	9.5	4.4	5.1	18.9
Gisborne	-8.3	-4.8	0.9	-2.0	-1.5	8.1	0.6	1.9	16.8
Hawke's Bay	-5.6	-1.3	3.0	1.0	1.4	10.0	3.6	6.2	18.3
Taranaki	-3.2	-1.2	3.5	4.1	1.7	9.0	6.4	6.5	17.8
Manawatu-Wanganui	-1.9	-0.8	2.6	2.4	1.5	8.9	5.8	5.7	16.5
Wellington	-2.7	-1.7	0.3	2.1	0.0	3.7	5.1	4.4	10.6
West Coast	-4.1	0.2	3.3	3.5	5.1	11.4	9.8	9.1	23.0
Canterbury	-1.4	0.8	3.4	4.1	4.8	12.0	5.4	8.0	20.3
Otago	-2.6	0.4	2.1	1.5	4.6	10.9	3.3	8.4	19.7
Southland	-0.2	0.8	4.6	9.2	5.1	12.4	10.1	8.9	21.5
Nelson-Tasman	-2.0	0.6	3.6	1.6	1.6	12.0	5.3	4.7	20.1
Marlborough	1.3	4.3	5.2	8.2	8.7	14.5	11.1	11.8	22.6
<b>New Zealand</b>	<b>-3.0</b>	<b>-1.4</b>	<b>2.5</b>	<b>2.3</b>	<b>0.6</b>	<b>8.0</b>	<b>5.2</b>	<b>5.2</b>	<b>16.0</b>
<i>Range</i>	9.6	9.1	4.9	11.2	11.7	10.9	10.5	10.0	12.5

Note: Number in Appendix Table 10.

### *Maori*

The same set of calculations was carried out for the Maori population. For New Zealand as a whole there were declines in the Labour Force for Maori males from 1986 over all three periods (1986-91, 1991-96 and 1996-2001) and for Maori females in the period 1986-1991, whereas from 1996 there was an increase in labour force participation with the increase getting larger in 2001 as shown in Table 17.

When looking at the results disaggregated by region, there are a number of South Island regions with small numbers so the results there should be treated with caution. Turning to the North Island Northland males suffered the highest effects of discouraged workers followed by Gisborne. Gisborne had suffered the largest effects of discouraged workers for females between 1986 and 1991, by 1996 Gisborne and Northland had crept up to more positive levels. Auckland did not suffer discouraged worker effects to any great degree this was also true for Wellington. Canterbury and Otago Maori males were low in 1991 and Southland in 2001. Canterbury and Otago Maori females had a small loss in the labour force in 1991 compared to 1986 levels. Taranaki, Waikato, Canterbury and Otago had the largest gains in female labour force in 1996, Waikato, Otago and Southland having the largest gains in 2001.

**Table 17: Estimated “Discouraged Worker Effects” for Maori Population: Difference between Expected and Observed Proportions and Workers outside the Labour Force, by Gender, 1991-2001 taking 1986 Non-Labour Force Rates as a Baseline (20-59 years)**

Region	1991		1996		2001	
	Males	Females	Males	Females	Males	Females
	<b>Numbers</b>					
Northland	-1,622	-783	-1,292	83	-1,134	617
Auckland	-2,779	-1,817	-1,995	1,230	-1,950	2,562
Waikato	-2,000	-799	-1,922	991	-1,596	1,920
Bay Of Plenty	-2,178	-1,022	-1,768	428	-1,482	1,315
Gisborne	-815	-501	-641	18	-557	167
Hawke's Bay	-972	-575	-633	144	-648	520
Taranaki	-519	-242	-371	204	-384	294
Manawatu-Wanganui	-1,054	-441	-877	395	-796	762
Wellington	-1,092	-566	-1,094	276	-939	951
West Coast*	-79	-50	-54	22	-56	59
Canterbury	-586	-118	-707	460	-646	731
Otago	-191	-28	-270	207	-263	284
Southland	-275	-94	-211	130	-164	253
Nelson-Tasman*	-73	-55	-87	-20	-73	23
Marlborough*	-47	-20	-55	30	-60	54
<b>New Zealand</b>	<b>-14,325</b>	<b>-7,153</b>	<b>-12,012</b>	<b>4,680</b>	<b>-10,798</b>	<b>10,632</b>
	<b>Percentage of Population</b>					
Northland	-21.1	-9.5	-15.0	0.8	-13.6	6.3
Auckland	-11.8	-6.8	-6.7	3.7	-6.6	7.6
Waikato	-15.1	-5.6	-11.9	5.7	-9.9	10.6
Bay Of Plenty	-18.6	-8.0	-12.9	2.8	-10.7	8.3
Gisborne	-20.6	-11.3	-15.0	0.4	-13.3	3.4
Hawke's Bay	-16.3	-8.4	-9.3	1.8	-9.5	6.5
Taranaki	-18.5	-8.5	-11.1	6.0	-12.0	8.7
Manawatu-Wanganui	-13.6	-5.5	-9.8	4.1	-9.2	8.0
Wellington	-11.2	-5.3	-9.2	2.2	-7.7	7.1
West Coast*	-17.5	-10.8	-8.7	3.3	-10.3	9.9
Canterbury	-10.5	-2.4	-8.8	6.2	-8.2	9.6
Otago	-10.2	-1.7	-9.7	8.1	-10.3	11.3
Southland	-12.6	-4.9	-8.3	5.5	-7.3	11.1
Nelson-Tasman*	-9.9	-6.7	-6.7	-1.4	-5.4	1.6
Marlborough*	-7.6	-3.2	-5.9	3.2	-6.9	5.7
<b>New Zealand</b>	<b>-14.6</b>	<b>-6.8</b>	<b>-10.0</b>	<b>3.6</b>	<b>-9.1</b>	<b>8.0</b>
<i>Range</i>	<i>13.5</i>	<i>9.6</i>	<i>9.1</i>	<i>9.5</i>	<i>8.2</i>	<i>9.7</i>

\* The number of Maori living in these regions are very small, treat results with caution.

Note: Negative values are taken to mean that participation dropped, and that discouraged worker effects increased.

## 8 Conclusion

This paper shows that regionally, in terms of the labour market, New Zealand is trichotomising or even polytomising country. The shift to part-time work, gender specific shifts in participation patterns, the increases in unemployment, discouraged worker effects and similar phenomena are seen everywhere, but the spread is not equal. The changes recorded here, especially the negative ones, started in the 1980s and were most severe before or in the early 1990s, typically peaking in 1991, but often remaining marked until 1996. What this paper reveals is how intensive, entrenched and prolonged were the effects of the restructuring of the 1980s and early 1990s for some of the regions.

Firstly and most obviously the peripheral regions, especially those in the North Island with significant Māori populations, went from a position that was weak to one that is worse and made them economically sub-marginal. The gaps between them and New Zealand as a whole increased significantly over the period 1986-1996, and for some regions even through to 2001, by which time a turn around was being registered nationally. This shows up systematically across most rates presented here. Moreover, and equally systematically, inter-regional ranges generally increased over the period. This is the raw material of regional inequity and exclusion.

Where regional differences are looked at more closely it is seen that the “devil” as it were “is in the detail”. As expected there are ethnic and gender differences, but there are also age differences even within regions. Most disturbing is a series of seemingly interconnected changes at age group 30-44 years, the one that is probably the most critical not only for economy but also for the family life of the nation – families need secure income and thus jobs (this issue will be taken up in another discussion paper in the series, (Cochrane et al. forthcoming; Pool et al. forthcoming-d). Male participation rates at this age decreased; interregional ranges had been low in 1986 but grew to 1991 and then remained at that level. Female participation rates at this age dropped at first and then increased, but more than a third of these women were part-time, while male part-time rates also increased. While FTEs increased for males, this failed significantly to match demographic supply. By 1996 many men in this age group were discouraged workers.

Secondly, heartland New Zealand – the less isolated and peripheral regions such as Waikato and Manawatu-Wanganui – essentially got by but barely so. In the 1980s they had been seen as regions that were undergoing solid but not spectacular development (Population Monitoring Group 1989). It is these areas that produce the export commodities on which a significant part of the economy is dependent. To the extent that factors such as land aggregation played a role in these changes then this may represent gains in efficiency. But the question remains whether the human capital shifts seen here have had other longer-term negative effects.

Thirdly, Auckland has complex dynamics with some changes that are favourable, others less so. Above all, it attracts young workers and this is a potential strength, but also the region faces tension between the labour supply effects this engenders and demand. In part this is also a function of the general restructuring that affected sectors such as manufacturing over the decade, but in part it is driven by the major demographic changes. Auckland is, of course, a major driver of the “New Zealand” figures cited here. Canterbury and Wellington the other two larger regions containing metropolitan areas seem somewhat enigmatic. At times their



slower demographic change works to their advantage in that supply of workers is not out of kilter with employment.

Since 1996 however there have been indications of a recovery from the consequences of the restructuring, and the tight monetary policies of the late 1980s and early 1990s, as evidenced by the improvements seen between the 1996 and 2001 censuses. This recovery appears to be ongoing with measures of labour market health, such as the household labour force survey, showing high levels of labour market participation, as measured conventionally, combined with low levels of unemployment (Statistics New Zealand 2005). More generally the rise in inequality seen in the period of restructuring seems to have halted and to some degree reversed (Waldegrave et al. 2003).

Despite this general improvement regional differentials appear to be relatively intractable, at least for a number of regions as shown by the 2001 census data<sup>32</sup>. Any judgement on the extent to which these differentials have been 'locked in' must await the release of the 2006 census data.

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<sup>32</sup> The 2001 census is the most recent source of data with cell sizes sufficient enough to permit regional analysis. Thus 'favourable' labour market conditions shown by the HLFS, for example, may not apply to every region.

**Appendix Table 1. Percentage of the Total Population at Working Age groups (15-64 and 20-59 years), by Ethnicity and Region, 1986-2001**

Region	20-59 years				15-64 years			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>Pakeha</b>							
Northland	52.4	51.8	52.9	51.6	65.2	64.2	63.5	63.3
Auckland	54.3	56.1	58.2	57.7	67.8	68.2	68.1	68.0
Waikato	52.4	53.0	54.5	53.6	65.9	65.9	65.6	65.0
Bay of Plenty	51.3	51.3	52.6	51.3	64.7	64.1	63.2	62.5
Gisborne	51.4	50.8	52.3	51.6	63.8	63.0	62.4	62.4
Hawke's Bay	51.0	51.1	53.0	52.2	64.1	63.9	63.7	63.3
Taranaki	50.8	51.1	52.5	51.6	63.7	63.5	63.2	62.8
Manawatu-Wanganui	51.2	51.9	53.3	52.3	65.2	65.2	64.8	64.0
Wellington	54.7	56.2	57.9	57.4	67.9	68.4	68.1	67.8
West Coast	51.8	53.1	54.4	54.1	64.7	64.6	64.6	64.6
Canterbury	52.3	53.4	55.4	54.9	66.3	66.5	66.3	65.9
Otago	51.6	52.7	54.8	54.3	65.8	66.8	66.9	66.7
Southland	52.0	52.5	54.1	53.5	64.9	65.0	65.1	64.9
Nelson-Tasman	51.3	52.4	54.4	53.9	65.1	64.9	64.8	64.6
Marlborough	50.7	51.8	53.2	52.5	64.5	64.6	64.1	63.9
<b>New Zealand</b>	<b>52.8</b>	<b>53.8</b>	<b>55.6</b>	<b>54.9</b>	<b>66.3</b>	<b>66.4</b>	<b>66.2</b>	<b>65.9</b>
<i>Range</i>	<i>4.0</i>	<i>5.5</i>	<i>5.8</i>	<i>6.4</i>	<i>4.2</i>	<i>5.4</i>	<i>5.6</i>	<i>5.6</i>
	<b>Māori</b>							
Northland	44.1	44.8	44.5	44.7	57.4	58.0	55.9	56.6
Auckland	45.9	48.5	49.6	49.9	60.0	61.5	61.1	60.9
Waikato	44.3	45.9	46.7	47.0	58.0	59.3	58.8	58.9
Bay of Plenty	44.5	46.1	46.6	46.7	58.4	59.2	58.4	58.2
Gisborne	45.7	47.0	46.8	47.0	59.6	60.6	58.5	58.6
Hawke's Bay	43.9	45.3	46.2	46.2	57.1	59.0	58.2	58.2
Taranaki	43.2	44.3	44.9	45.1	57.2	57.5	57.3	57.4
Manawatu-Wanganui	44.1	45.5	46.2	46.3	57.8	59.0	58.2	58.0
Wellington	46.2	48.4	49.7	50.1	59.7	61.3	61.6	61.1
West Coast	45.0	45.5	45.4	44.5	58.1	57.4	57.4	55.7
Canterbury	44.9	47.4	49.7	48.8	59.1	61.2	61.9	60.4
Otago	44.4	47.1	48.8	48.1	60.1	62.0	62.4	62.6
Southland	44.5	44.7	46.0	45.2	57.0	57.6	57.9	58.5
Nelson-Tasman	44.9	47.1	48.6	47.0	60.1	62.4	59.8	58.1
Marlborough	42.6	44.6	47.5	46.7	56.8	58.6	59.8	59.1
<b>New Zealand</b>	<b>44.9</b>	<b>46.7</b>	<b>47.6</b>	<b>47.7</b>	<b>58.7</b>	<b>60.0</b>	<b>59.4</b>	<b>59.3</b>
<i>Range</i>	<i>3.7</i>	<i>4.1</i>	<i>5.2</i>	<i>5.6</i>	<i>3.3</i>	<i>5.0</i>	<i>6.5</i>	<i>6.9</i>

(continues on next page)

**Appendix Table 1 (continued)**

Region	20-59 years				15-64 years			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>Total</b>							
Northland	50.3	49.8	50.5	49.9	63.2	62.5	61.5	61.6
Auckland	53.0	54.8	56.2	56.2	66.4	66.9	66.8	67.1
Waikato	50.9	51.8	52.8	52.4	64.4	64.7	64.3	64.0
Bay of Plenty	49.6	50.0	51.0	50.4	63.1	62.8	62.1	61.7
Gisborne	49.3	49.4	50.2	49.7	62.3	62.1	61.1	60.8
Hawke's Bay	49.6	50.0	51.7	51.0	62.7	63.0	62.7	62.3
Taranaki	50.0	50.3	51.5	50.8	62.9	62.8	62.6	62.1
Manawatu-Wanganui	50.2	51.0	52.2	51.5	64.0	64.2	63.9	63.3
Wellington	53.6	55.3	56.6	56.3	66.7	67.4	67.1	67.0
West Coast	51.4	52.6	53.5	53.5	64.4	64.2	63.9	64.1
Canterbury	52.0	53.1	55.0	54.7	65.9	66.2	66.2	65.9
Otago	51.4	52.6	54.6	54.1	65.5	66.6	67.0	67.0
Southland	51.2	51.7	53.3	52.7	64.0	64.3	64.4	64.3
Nelson-Tasman	51.0	52.1	54.2	53.6	64.8	64.7	64.7	64.4
Marlborough	50.1	51.2	52.7	52.1	63.9	64.1	63.6	63.6
<b>New Zealand</b>	<b>51.7</b>	<b>52.9</b>	<b>54.3</b>	<b>54.0</b>	<b>65.2</b>	<b>65.5</b>	<b>65.3</b>	<b>65.3</b>
<i>Range</i>	<i>4.3</i>	<i>5.9</i>	<i>6.4</i>	<i>6.6</i>	<i>4.5</i>	<i>5.3</i>	<i>6.0</i>	<i>6.3</i>

**Appendix Table 2. The Labour Force as a Percentage of the Total Population<sup>1</sup> at 20-59 Years, by Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	93.4	82.7	84.5	84.4	63.2	60.4	67.4	69.8
Auckland	93.6	86.9	87.8	87.2	69.2	66.9	71.9	73.5
Waikato	94.5	87.8	87.9	88.0	65.2	65.4	71.7	74.3
Bay of Plenty	94.7	86.3	87.4	87.8	65.4	64.1	69.8	72.8
Gisborne	95.0	83.1	85.7	85.5	65.6	61.1	69.6	70.1
Hawke's Bay	95.2	87.7	89.1	88.4	66.3	64.9	72.1	74.2
Taranaki	95.9	89.4	90.3	89.5	66.2	65.5	72.3	74.9
Manawatu-Wanganui	93.1	86.1	86.3	86.7	65.4	65.1	70.8	73.4
Wellington	94.4	88.4	89.1	89.2	72.0	70.5	75.5	77.7
West Coast	93.5	85.7	86.4	86.8	62.6	62.3	70.8	74.8
Canterbury	93.4	87.9	88.0	88.1	65.4	66.2	73.3	75.7
Otago	93.5	86.7	87.0	86.4	66.1	66.2	73.4	76.2
Southland	96.8	92.1	92.9	91.9	64.4	65.9	73.7	76.5
Nelson-Tasman	94.3	89.4	90.3	90.0	67.6	68.1	73.9	76.0
Marlborough	95.0	90.1	91.6	91.0	63.7	67.1	75.0	77.3
<b>New Zealand</b>	<b>94.1</b>	<b>87.3</b>	<b>88.0</b>	<b>87.8</b>	<b>67.2</b>	<b>66.3</b>	<b>72.3</b>	<b>74.6</b>
<i>Range</i>	<i>3.7</i>	<i>9.4</i>	<i>8.3</i>	<i>7.5</i>	<i>9.4</i>	<i>10.1</i>	<i>8.2</i>	<i>7.9</i>

(1) Standardised by age to New Zealand Total (males and females) Population 1996. Those who did not specify labour force status are excluded from total.

**Appendix Table 3: The Labour Force as a Percentage of the Total Population<sup>1</sup> at 20-59 Years, by Ethnicity, Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>Pakeha</b>							
Northland	95.6	88.7	89.2	88.6	66.9	67.0	73.3	74.8
Auckland	95.2	91.4	92.2	92.0	71.6	72.3	77.6	80.2
Waikato	95.8	91.2	91.2	91.1	67.8	69.6	75.7	78.4
Bay of Plenty	96.2	91.3	91.1	91.2	68.9	70.0	74.5	76.9
Gisborne	96.9	91.5	92.1	91.1	69.1	70.7	76.6	76.2
Hawke's Bay	96.5	91.3	91.8	91.3	68.0	68.2	74.9	76.9
Taranaki	96.5	91.5	92.0	91.2	67.7	68.2	74.4	77.1
Manawatu-Wanganui	94.3	88.4	88.7	88.9	67.1	67.7	73.3	76.0
Wellington	95.8	91.4	91.4	91.4	73.8	73.6	78.3	80.5
West Coast	94.4	87.2	86.8	87.5	63.4	63.7	71.6	75.6
Canterbury	94.3	89.2	89.6	89.8	66.1	67.4	74.9	77.8
Otago	94.4	87.6	88.2	87.7	66.8	67.0	74.8	77.6
Southland	97.3	93.3	93.8	92.5	65.3	67.2	75.0	77.7
Nelson-Tasman	94.8	90.2	91.3	90.7	67.9	68.9	75.1	76.8
Marlborough	95.8	90.9	92.3	91.8	64.2	68.1	75.9	78.5
<b>New Zealand</b>	<b>95.3</b>	<b>90.5</b>	<b>90.9</b>	<b>90.7</b>	<b>69.0</b>	<b>69.9</b>	<b>75.9</b>	<b>78.5</b>
<i>Range</i>	<i>3.0</i>	<i>6.1</i>	<i>7.0</i>	<i>5.0</i>	<i>10.5</i>	<i>10.0</i>	<i>6.7</i>	<i>5.7</i>
	<b>Māori</b>							
Northland	89.4	68.7	74.3	75.9	53.8	45.2	55.2	60.7
Auckland	90.3	79.0	83.4	84.0	61.5	55.4	65.2	69.7
Waikato	90.2	75.7	78.0	80.3	53.9	49.3	60.1	65.4
Bay of Plenty	91.2	73.4	78.3	80.7	55.7	49.1	59.2	64.8
Gisborne	92.2	72.5	77.4	78.8	60.3	50.0	61.3	64.3
Hawke's Bay	91.3	75.2	81.8	81.9	61.0	53.2	63.4	68.3
Taranaki	92.7	74.4	81.4	80.6	54.8	47.7	60.8	64.3
Manawatu-Wanganui	90.1	76.3	79.4	80.8	57.7	52.8	62.0	66.3
Wellington	91.1	80.3	82.1	83.6	66.5	61.4	68.5	73.8
West Coast	90.3	73.1	83.4	80.6	58.2	51.0	63.9	69.7
Canterbury	91.2	80.8	82.4	83.1	60.5	58.0	67.3	71.3
Otago	93.3	81.7	84.8	83.4	60.5	59.6	68.7	73.6
Southland	95.4	83.2	87.4	88.1	57.4	54.0	63.8	69.6
Nelson-Tasman	92.1	82.7	85.7	87.4	68.4	61.5	66.7	71.5
Marlborough	93.4	83.6	87.4	86.6	64.8	63.2	68.2	70.9
<b>New Zealand</b>	<b>90.8</b>	<b>76.6</b>	<b>80.7</b>	<b>81.8</b>	<b>59.1</b>	<b>53.0</b>	<b>63.0</b>	<b>67.8</b>
<i>Range</i>	<i>6.0</i>	<i>14.9</i>	<i>13.1</i>	<i>12.2</i>	<i>14.6</i>	<i>18.0</i>	<i>13.5</i>	<i>13.2</i>

(1) Standardised by age to New Zealand Total (males and females) Population 1996. Those who did not specify labour force status are excluded from total.

**Appendix Table 4: Labour Force Participation Rates at Working Ages, by Age Group and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>15-19 years</b>							
Northland	64.9	44.5	61.2	59.4	55.9	40.8	56.9	54.0
Auckland	66.7	49.6	59.0	54.3	64.7	49.0	60.5	54.8
Waikato	65.8	50.2	63.6	62.0	58.6	46.1	60.3	59.2
Bay of Plenty	67.6	49.2	64.8	60.9	60.7	46.8	61.0	59.3
Gisborne	63.0	42.6	58.4	59.7	57.6	41.7	55.0	55.5
Hawke's Bay	65.9	52.7	66.2	62.9	58.8	49.7	64.2	60.6
Taranaki	68.4	51.7	64.0	59.9	59.9	46.7	62.2	54.8
Manawatu-Wanganui	63.8	50.0	61.3	60.8	58.0	45.2	58.2	56.7
Wellington	62.1	48.0	59.3	60.3	60.5	48.0	62.1	61.3
West Coast	68.0	56.9	66.5	67.4	63.2	47.4	65.6	61.6
Canterbury	63.0	49.5	61.0	61.0	60.3	47.6	60.1	60.4
Otago	58.5	43.1	53.2	55.0	54.3	39.3	52.3	52.6
Southland	67.3	52.2	68.2	65.2	59.2	48.3	61.4	61.3
Nelson-Tasman	67.4	57.5	68.4	67.6	62.2	52.1	66.8	65.3
Marlborough	66.8	55.4	74.0	71.8	61.7	48.3	69.7	68.7
<b>New Zealand</b>	<b>64.9</b>	<b>49.4</b>	<b>61.1</b>	<b>59.0</b>	<b>60.6</b>	<b>47.0</b>	<b>60.2</b>	<b>57.6</b>
<i>Range</i>	<i>9.9</i>	<i>14.9</i>	<i>20.8</i>	<i>17.5</i>	<i>10.3</i>	<i>12.8</i>	<i>17.5</i>	<i>16.2</i>
	<b>20-29 years</b>							
Northland	94.0	80.0	84.4	84.1	60.2	54.0	63.4	64.4
Auckland	92.4	83.9	86.5	83.3	72.4	67.7	74.8	73.7
Waikato	93.2	84.2	86.2	84.9	64.1	62.2	70.2	70.0
Bay of Plenty	94.9	82.7	87.1	86.1	65.3	59.4	67.9	67.6
Gisborne	94.9	79.8	85.2	83.8	64.2	55.3	64.8	63.0
Hawke's Bay	95.1	85.3	89.6	86.0	66.6	60.7	69.8	68.5
Taranaki	96.3	87.9	90.4	87.2	65.9	62.2	71.9	70.7
Manawatu-Wanganui	90.1	80.9	82.3	83.0	63.4	61.1	67.4	68.1
Wellington	92.9	85.5	87.1	86.8	73.7	70.7	77.7	77.9
West Coast	94.9	85.9	87.1	88.1	64.0	59.0	68.9	72.2
Canterbury	90.4	83.9	84.1	83.2	69.6	68.0	75.0	74.1
Otago	89.3	79.3	79.5	77.5	66.4	63.8	69.6	69.4
Southland	97.1	91.1	93.6	90.5	63.7	62.7	73.5	72.4
Nelson-Tasman	95.0	88.3	89.9	89.6	70.6	68.1	74.0	74.0
Marlborough	95.9	90.6	92.7	91.7	66.0	66.9	75.1	75.5
<b>New Zealand</b>	<b>92.7</b>	<b>84.0</b>	<b>86.0</b>	<b>84.3</b>	<b>68.7</b>	<b>65.4</b>	<b>72.9</b>	<b>72.5</b>
<i>Range</i>	<i>7.8</i>	<i>11.8</i>	<i>14.0</i>	<i>14.2</i>	<i>13.6</i>	<i>16.7</i>	<i>14.3</i>	<i>14.9</i>

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**Appendix Table 4.** (continued)

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>30-44 years</b>							
Northland	94.9	85.6	86.3	85.6	69.0	65.2	69.5	71.4
Auckland	95.5	89.5	89.7	90.0	70.8	67.4	70.8	72.9
Waikato	96.4	91.0	89.8	90.1	70.1	68.9	73.2	75.4
Bay of Plenty	96.3	89.7	89.1	89.5	70.0	68.4	71.5	74.5
Gisborne	96.4	86.0	87.6	87.6	69.9	65.0	71.7	71.4
Hawke's Bay	96.7	90.2	90.3	90.3	70.0	68.7	73.7	76.0
Taranaki	97.2	92.2	92.0	91.5	70.1	68.8	73.8	76.7
Manawatu-Wanganui	95.2	89.4	88.9	88.7	69.3	68.4	72.6	75.0
Wellington	96.0	91.4	91.5	91.3	72.6	70.9	74.5	76.7
West Coast	95.0	88.4	88.3	87.9	66.8	67.3	74.0	76.2
Canterbury	95.9	91.3	90.5	90.9	67.8	68.7	73.9	75.8
Otago	96.3	91.6	91.0	90.6	70.1	70.6	76.4	78.8
Southland	97.7	93.9	94.3	93.6	69.3	69.9	75.7	78.4
Nelson-Tasman	95.6	92.0	91.6	91.0	71.3	71.8	74.6	75.7
Marlborough	97.3	92.8	92.9	92.1	67.2	71.2	77.2	78.5
<b>New Zealand</b>	<b>96.0</b>	<b>90.4</b>	<b>90.2</b>	<b>90.2</b>	<b>70.2</b>	<b>68.6</b>	<b>72.8</b>	<b>74.9</b>
<i>Range</i>	2.8	8.3	8.1	7.9	5.8	6.8	7.7	7.4
	<b>45-59 years</b>							
Northland	90.4	80.7	81.9	82.8	55.9	58.2	67.5	73.0
Auckland	91.6	85.9	86.4	86.8	62.8	65.3	71.0	74.1
Waikato	92.4	86.3	86.7	87.9	57.3	62.6	70.7	77.1
Bay of Plenty	91.6	84.3	85.1	87.0	56.8	61.1	68.4	75.7
Gisborne	92.6	81.6	83.4	84.6	58.2	59.4	70.5	75.6
Hawke's Bay	92.8	86.0	87.1	88.1	58.8	62.4	71.9	77.5
Taranaki	93.4	86.3	87.8	88.7	58.4	62.6	70.4	76.7
Manawatu-Wanganui	92.2	85.5	85.8	87.1	59.8	62.6	71.0	76.4
Wellington	93.1	86.6	87.6	88.5	68.2	69.2	74.8	79.0
West Coast	89.8	81.2	83.1	83.5	52.9	57.3	67.4	75.5
Canterbury	91.9	86.2	87.8	88.6	56.0	60.3	70.9	77.4
Otago	92.6	85.4	87.0	87.9	58.0	60.8	72.1	78.6
Southland	94.9	90.2	90.0	90.8	56.3	61.4	70.5	78.3
Nelson-Tasman	91.4	86.3	89.0	88.8	57.5	62.6	73.4	78.6
Marlborough	90.3	85.3	88.4	88.6	53.6	61.5	71.7	76.9
<b>New Zealand</b>	<b>92.1</b>	<b>85.8</b>	<b>86.7</b>	<b>87.5</b>	<b>60.1</b>	<b>63.3</b>	<b>71.2</b>	<b>76.3</b>
<i>Range</i>	5.1	9.4	8.1	8.0	15.3	11.9	7.4	6.0

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**Appendix Table 4.** (continued)

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>60-64 years</b>							
Northland	40.4	34.3	46.1	59.1	14.0	16.3	26.8	41.6
Auckland	45.6	39.0	53.8	66.3	18.4	18.8	30.6	42.9
Waikato	43.1	38.3	53.0	66.9	14.2	16.8	29.3	43.7
Bay of Plenty	40.5	33.2	46.3	62.7	14.1	15.6	25.3	38.5
Gisborne	40.9	40.5	50.5	65.9	18.5	17.1	32.3	47.7
Hawke's Bay	43.5	38.0	51.0	66.5	14.5	14.3	28.2	42.4
Taranaki	40.3	36.8	48.4	64.7	14.5	15.0	27.7	40.0
Manawatu-Wanganui	42.4	35.5	49.3	64.8	16.2	17.4	28.2	42.6
Wellington	47.6	38.1	50.2	64.6	20.8	20.5	31.3	44.5
West Coast	36.8	29.2	41.4	60.2	9.0	12.1	25.1	36.2
Canterbury	36.7	30.6	48.0	65.2	12.9	13.8	25.5	39.8
Otago	35.6	28.7	45.7	61.6	13.8	12.4	24.2	41.7
Southland	47.6	40.2	54.6	69.1	15.0	16.0	26.5	42.8
Nelson-Tasman	33.6	29.4	48.7	63.3	14.2	13.6	27.0	41.1
Marlborough	32.2	31.7	44.0	66.6	11.3	12.5	26.7	41.8
<b>New Zealand</b>	<b>42.2</b>	<b>35.8</b>	<b>50.2</b>	<b>65.0</b>	<b>15.9</b>	<b>16.6</b>	<b>28.3</b>	<b>42.1</b>
<i>Range</i>	<i>15.4</i>	<i>11.8</i>	<i>13.2</i>	<i>9.9</i>	<i>11.7</i>	<i>8.4</i>	<i>8.1</i>	<i>11.4</i>



**Appendix Table 5: The Percentage of the Employed Population in Part-Time Work<sup>(1)</sup>,  
by Age and Gender, by Region 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>15-19 years</b>							
Northland	10.7	25.3	50.2	46.0	17.1	39.0	64.5	67.0
Auckland	15.1	31.7	51.9	51.6	19.6	38.6	62.8	66.1
Waikato	12.2	25.4	46.4	46.5	17.5	37.3	64.4	67.7
Bay of Plenty	13.6	28.7	47.7	52.2	21.0	42.9	65.0	70.4
Gisborne	15.4	26.7	51.5	46.2	19.9	40.8	65.7	65.9
Hawke's Bay	15.8	30.9	49.6	45.2	20.3	40.4	63.8	67.2
Taranaki	11.4	27.9	54.0	49.8	16.2	37.5	64.7	69.9
Manawatu-Wanganui	12.2	28.6	50.9	47.1	18.8	40.9	66.4	68.4
Wellington	15.3	35.3	61.1	55.5	19.0	42.0	69.9	69.2
West Coast	11.2	20.6	39.4	38.9	14.3	27.1	54.2	62.0
Canterbury	12.2	28.5	50.6	48.9	15.6	37.0	65.3	68.3
Otago	13.6	27.7	53.9	52.9	18.6	40.2	67.4	70.6
Southland	13.2	24.0	43.8	45.3	15.9	37.0	63.8	69.1
Nelson-Tasman	12.1	25.8	45.8	46.6	16.2	33.5	57.8	60.3
Marlborough	10.1	18.1	37.5	37.2	13.1	28.0	58.3	54.8
<b>New Zealand</b>	<b>13.6</b>	<b>29.4</b>	<b>51.0</b>	<b>49.7</b>	<b>18.3</b>	<b>38.9</b>	<b>64.7</b>	<b>67.5</b>
<i>Range</i>	<i>5.7</i>	<i>17.2</i>	<i>23.6</i>	<i>18.4</i>	<i>7.9</i>	<i>15.8</i>	<i>15.7</i>	<i>15.8</i>
	<b>20-29 years</b>							
Northland	4.2	6.6	10.3	9.9	19.6	23.7	29.6	31.5
Auckland	3.7	5.6	10.6	12.1	12.7	13.8	19.5	21.4
Waikato	3.4	4.7	9.8	10.2	19.4	20.7	27.8	29.1
Bay of Plenty	3.3	5.0	8.2	8.7	19.8	22.0	26.6	28.7
Gisborne	5.7	6.2	11.3	11.6	19.9	22.2	28.3	30.6
Hawke's Bay	5.9	5.6	8.4	8.1	19.5	20.6	24.0	28.5
Taranaki	3.6	3.7	7.2	7.2	19.4	22.3	26.9	28.2
Manawatu-Wanganui	3.9	5.5	10.9	10.9	19.6	22.5	29.1	33.0
Wellington	3.7	4.7	11.8	12.6	12.8	14.0	21.7	22.1
West Coast	3.1	3.8	7.1	7.0	20.1	22.4	29.8	30.2
Canterbury	3.9	5.7	10.6	11.8	16.0	18.9	25.4	27.9
Otago	5.3	6.5	12.8	16.0	19.0	21.8	29.1	33.7
Southland	6.3	4.8	5.3	5.1	20.3	21.1	25.8	28.4
Nelson-Tasman	2.8	5.2	7.3	7.1	19.8	22.2	24.1	26.8
Marlborough	4.1	4.1	5.3	5.5	21.7	24.1	24.7	24.1
<b>New Zealand</b>	<b>4.0</b>	<b>5.3</b>	<b>10.2</b>	<b>11.2</b>	<b>16.1</b>	<b>17.7</b>	<b>23.7</b>	<b>25.6</b>
<i>Range</i>	<i>3.5</i>	<i>2.9</i>	<i>7.5</i>	<i>10.9</i>	<i>9.0</i>	<i>10.3</i>	<i>10.3</i>	<i>12.3</i>

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**Appendix Table 5. (continued)**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>30-44 years</b>							
Northland	3.6	6.1	8.4	8.4	35.6	36.3	40.6	39.0
Auckland	2.8	4.1	5.9	5.6	32.0	31.3	32.1	30.3
Waikato	2.7	3.4	6.4	5.4	36.6	35.7	39.5	38.5
Bay of Plenty	2.6	4.5	7.2	6.5	36.9	37.3	40.7	40.0
Gisborne	5.3	4.4	8.1	8.0	37.5	37.3	41.4	40.6
Hawke's Bay	5.1	4.7	6.6	5.6	40.2	37.9	39.6	38.2
Taranaki	3.1	3.7	5.6	5.3	38.0	38.5	41.2	40.0
Manawatu-Wanganui	3.3	4.2	6.6	5.8	40.4	38.4	40.3	39.1
Wellington	2.4	3.4	5.8	5.5	33.2	32.0	33.2	31.5
West Coast	2.9	4.2	8.1	6.6	41.0	39.8	44.1	42.9
Canterbury	3.3	4.0	5.8	5.3	43.1	41.2	42.0	40.9
Otago	3.8	4.2	6.0	6.0	41.8	39.7	41.2	38.7
Southland	5.8	4.1	4.7	3.9	42.0	41.5	43.0	40.6
Nelson-Tasman	3.3	5.1	7.0	6.3	41.8	39.3	42.0	43.8
Marlborough	3.2	3.8	5.5	5.6	44.3	41.3	41.2	42.3
<b>New Zealand</b>	<b>3.2</b>	<b>4.1</b>	<b>6.2</b>	<b>5.7</b>	<b>36.7</b>	<b>35.7</b>	<b>37.4</b>	<b>35.8</b>
<i>Range</i>	<i>3.5</i>	<i>2.7</i>	<i>3.7</i>	<i>4.5</i>	<i>12.3</i>	<i>10.2</i>	<i>12.0</i>	<i>13.5</i>
	<b>45-59 years</b>							
Northland	5.7	7.3	10.6	9.7	30.9	33.0	33.9	32.5
Auckland	3.3	5.5	7.2	6.7	29.6	29.9	29.2	28.2
Waikato	3.7	5.4	8.1	6.7	32.9	32.6	33.7	31.8
Bay of Plenty	3.9	6.0	8.5	8.1	33.9	33.4	34.8	33.9
Gisborne	5.4	4.6	9.7	8.7	32.1	33.7	33.1	32.4
Hawke's Bay	5.8	5.6	8.1	7.2	35.4	34.3	35.2	33.0
Taranaki	4.2	5.1	7.8	7.5	33.6	34.3	36.3	35.0
Manawatu-Wanganui	4.2	5.4	7.7	7.6	34.0	33.5	35.3	33.4
Wellington	2.8	4.5	7.6	7.3	28.0	27.6	29.0	28.2
West Coast	2.9	5.6	9.9	8.3	36.9	38.4	39.3	37.2
Canterbury	4.2	5.7	7.4	6.7	38.9	38.3	37.7	35.1
Otago	4.3	5.1	7.8	7.0	36.5	35.4	35.8	32.8
Southland	6.5	4.4	6.5	5.8	37.0	35.7	38.0	35.0
Nelson-Tasman	3.6	6.5	9.1	8.6	36.2	35.9	35.3	35.6
Marlborough	5.4	5.8	8.9	7.2	40.8	37.4	35.9	34.8
<b>New Zealand</b>	<b>3.9</b>	<b>5.4</b>	<b>7.8</b>	<b>7.2</b>	<b>32.7</b>	<b>32.6</b>	<b>33.0</b>	<b>31.5</b>
<i>Range</i>	<i>3.7</i>	<i>2.9</i>	<i>4.1</i>	<i>4.0</i>	<i>12.7</i>	<i>10.8</i>	<i>10.2</i>	<i>9.0</i>

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**Appendix Table 5.** (continued)

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>60-64 years</b>							
Northland	15.8	19.9	26.3	20.3	41.4	48.0	46.6	47.3
Auckland	15.9	22.2	20.0	14.8	43.8	48.1	43.7	40.6
Waikato	16.4	21.4	22.3	16.3	41.3	49.4	49.6	47.0
Bay of Plenty	18.5	23.0	23.2	18.9	44.8	51.1	50.9	48.6
Gisborne	13.7	18.6	20.7	14.7	38.9	49.1	44.3	43.3
Hawke's Bay	18.3	20.9	23.6	16.6	43.9	53.5	50.0	49.4
Taranaki	17.7	20.4	23.5	17.8	45.7	47.8	52.2	47.3
Manawatu-Wanganui	14.6	19.0	20.6	16.8	43.8	50.2	50.0	47.0
Wellington	13.6	20.8	21.9	16.4	39.5	45.2	43.3	41.4
West Coast	14.1	13.6	23.1	14.9	59.1	42.3	57.4	50.0
Canterbury	17.7	24.1	21.4	16.2	50.1	54.7	51.2	49.6
Otago	16.2	21.9	21.5	16.1	41.1	50.0	52.3	50.4
Southland	15.4	17.6	17.0	13.5	43.1	49.5	45.1	46.2
Nelson-Tasman	19.1	28.0	25.1	21.1	45.5	52.1	54.7	47.0
Marlborough	15.0	27.2	26.0	16.5	54.8	58.3	59.2	50.8
<b>New Zealand</b>	<b>16.1</b>	<b>21.7</b>	<b>21.6</b>	<b>16.3</b>	<b>43.8</b>	<b>49.4</b>	<b>47.7</b>	<b>45.4</b>
<i>Range</i>	<i>5.5</i>	<i>14.4</i>	<i>9.3</i>	<i>7.6</i>	<i>20.2</i>	<i>16.0</i>	<i>15.8</i>	<i>10.2</i>

**Appendix Table 6: Percentage of the Labour Force at each Age-Group, Employed in Full-Time Work<sup>1</sup> by Gender and Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>15-19 years</b>							
Northland	46.7	21.5	24.3	24.5	36.3	16.4	15.3	13.0
Auckland	46.8	25.1	23.2	20.3	42.4	22.1	18.0	14.0
Waikato	46.9	27.7	28.2	26.8	36.8	20.1	16.6	14.2
Bay of Plenty	46.1	25.1	26.5	22.1	36.2	18.5	16.1	13.1
Gisborne	43.2	21.7	21.4	25.9	33.6	17.2	13.9	13.4
Hawke's Bay	44.1	26.7	28.0	27.4	35.7	21.2	18.6	15.1
Taranaki	49.4	26.0	24.2	23.7	39.8	20.4	17.2	12.5
Manawatu-Wanganui	45.3	26.3	24.5	25.7	35.5	18.7	14.8	13.3
Wellington	43.3	23.0	18.3	21.0	39.9	20.9	14.7	14.6
West Coast	47.9	32.7	34.4	35.5	43.7	25.5	24.4	20.4
Canterbury	45.1	26.8	25.3	25.9	39.5	21.5	16.7	15.4
Otago	40.2	23.1	20.3	20.6	33.3	16.2	13.2	11.6
Southland	48.9	29.1	33.1	30.5	40.0	21.1	17.9	15.0
Nelson-Tasman	50.9	34.2	32.6	31.7	42.5	26.6	24.2	21.3
Marlborough	48.4	36.1	41.1	40.0	40.7	26.1	25.1	26.9
<b>New Zealand</b>	<b>45.8</b>	<b>25.7</b>	<b>24.6</b>	<b>23.6</b>	<b>39.0</b>	<b>20.6</b>	<b>16.8</b>	<b>14.3</b>
<i>Range</i>	<i>10.7</i>	<i>14.5</i>	<i>22.8</i>	<i>19.8</i>	<i>10.4</i>	<i>10.4</i>	<i>11.9</i>	<i>15.3</i>
	<b>20-29 years</b>							
Northland	81.6	57.0	63.5	63.8	41.9	32.4	37.2	36.1
Auckland	84.0	67.4	70.8	65.8	57.7	50.5	54.5	51.8
Waikato	84.6	68.1	69.8	67.9	45.6	41.6	44.1	43.1
Bay of Plenty	85.0	62.9	69.1	67.7	45.4	36.8	41.6	40.5
Gisborne	83.0	58.9	63.1	64.5	44.1	34.2	37.6	35.4
Hawke's Bay	83.7	67.8	73.2	70.7	46.5	40.1	46.1	41.3
Taranaki	86.3	71.1	74.9	71.4	47.7	41.1	46.4	44.1
Manawatu-Wanganui	80.4	65.1	65.6	65.8	45.1	39.5	41.6	39.6
Wellington	84.9	71.1	69.2	67.8	59.3	54.0	55.5	55.2
West Coast	85.9	70.3	72.9	74.0	46.5	39.9	43.6	46.0
Canterbury	80.9	68.5	68.7	67.0	52.8	47.9	50.7	48.7
Otago	77.8	63.1	62.0	58.6	47.9	42.0	43.7	40.6
Southland	87.9	77.8	84.0	80.1	46.0	42.5	49.2	46.4
Nelson-Tasman	88.6	75.2	78.5	78.3	52.2	46.3	52.0	49.5
Marlborough	87.6	76.3	81.8	82.6	46.8	44.4	51.5	52.9
<b>New Zealand</b>	<b>83.4</b>	<b>67.7</b>	<b>69.8</b>	<b>67.1</b>	<b>51.9</b>	<b>46.0</b>	<b>49.6</b>	<b>47.9</b>
<i>Range</i>	<i>10.8</i>	<i>20.8</i>	<i>22.0</i>	<i>24.0</i>	<i>17.4</i>	<i>21.6</i>	<i>18.2</i>	<i>19.8</i>

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**Appendix Table 6.** (continued)

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>30-44 years</b>							
Northland	87.9	70.3	70.3	70.7	41.3	37.2	37.1	39.4
Auckland	90.7	79.7	79.4	80.3	45.1	42.6	44.6	47.2
Waikato	91.8	81.7	79.2	80.3	41.2	40.8	41.1	42.9
Bay of Plenty	91.3	77.4	76.1	77.2	40.8	38.5	38.6	40.5
Gisborne	88.3	73.8	72.5	73.6	39.8	36.7	37.9	38.1
Hawke's Bay	89.7	79.5	79.2	80.9	38.6	39.2	41.3	43.5
Taranaki	91.7	82.3	81.9	81.5	40.5	39.3	40.4	42.8
Manawatu-Wanganui	89.7	79.1	78.0	78.5	38.5	39.0	40.3	42.4
Wellington	91.9	83.0	81.5	81.9	45.8	45.1	46.8	49.6
West Coast	88.7	76.3	75.8	76.1	37.2	37.6	38.9	41.0
Canterbury	90.4	81.8	81.5	82.5	35.6	37.4	40.4	42.5
Otago	90.1	81.7	81.3	82.0	38.0	39.5	42.5	46.1
Southland	90.4	85.5	87.1	87.3	37.8	38.3	41.1	44.4
Nelson-Tasman	90.7	82.1	81.9	82.2	39.1	40.6	41.0	40.4
Marlborough	91.5	83.3	84.2	84.2	34.2	39.0	43.2	43.4
<b>New Zealand</b>	<b>90.7</b>	<b>80.4</b>	<b>79.7</b>	<b>80.5</b>	<b>41.4</b>	<b>40.7</b>	<b>42.5</b>	<b>44.8</b>
<i>Range</i>	<i>4.0</i>	<i>15.3</i>	<i>16.8</i>	<i>16.5</i>	<i>11.6</i>	<i>8.4</i>	<i>9.7</i>	<i>11.5</i>
	<b>45-59 years</b>							
Northland	82.1	68.5	68.3	70.1	36.6	36.7	42.2	46.5
Auckland	86.5	76.2	76.7	77.3	42.2	43.4	48.1	50.8
Waikato	86.9	77.0	76.3	78.8	36.5	40.0	45.0	50.4
Bay of Plenty	85.9	72.7	73.4	75.9	35.4	37.9	42.0	47.4
Gisborne	85.7	72.0	70.2	73.0	37.5	36.9	44.7	48.1
Hawke's Bay	85.6	76.2	76.3	78.9	35.9	38.7	44.6	50.0
Taranaki	87.5	77.2	77.2	78.5	36.9	39.0	43.1	47.8
Manawatu-Wanganui	86.3	76.0	75.2	77.0	37.5	39.6	43.9	48.7
Wellington	88.8	78.0	76.8	78.7	47.5	47.9	50.9	54.6
West Coast	84.8	71.2	70.1	71.8	32.1	33.3	39.2	46.0
Canterbury	85.9	76.6	78.2	79.9	32.4	35.4	42.3	48.6
Otago	86.3	76.1	76.7	79.1	35.2	37.4	44.5	51.3
Southland	87.3	82.1	81.3	83.0	34.3	37.9	42.3	49.3
Nelson-Tasman	86.4	76.8	78.4	78.9	35.0	38.2	46.0	49.2
Marlborough	83.1	75.1	76.9	80.2	29.8	36.5	44.1	49.1
<b>New Zealand</b>	<b>86.5</b>	<b>76.1</b>	<b>76.3</b>	<b>77.9</b>	<b>38.5</b>	<b>40.5</b>	<b>45.6</b>	<b>50.1</b>
<i>Range</i>	<i>6.6</i>	<i>13.6</i>	<i>13.0</i>	<i>12.8</i>	<i>17.7</i>	<i>14.6</i>	<i>11.6</i>	<i>8.5</i>

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**Appendix Table 6.** (continued)

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>60-64 years</b>							
Northland	32.7	26.6	32.3	44.1	8.0	8.3	13.9	21.1
Auckland	37.2	29.3	41.5	53.6	9.8	9.5	16.5	24.5
Waikato	35.0	29.3	39.7	53.6	8.0	8.3	14.2	22.5
Bay of Plenty	31.4	24.7	33.6	47.6	7.3	7.4	11.7	19.0
Gisborne	34.1	32.1	38.1	51.5	10.9	8.5	17.4	26.0
Hawke's Bay	34.3	28.8	37.4	52.6	7.8	6.6	13.7	20.8
Taranaki	32.1	28.7	35.7	50.6	7.5	7.8	12.7	20.6
Manawatu-Wanganui	35.5	28.3	37.9	51.6	8.7	8.5	13.7	21.8
Wellington	39.8	29.2	37.2	51.4	12.0	11.0	17.1	25.1
West Coast	30.6	24.5	30.2	48.8	3.7	7.0	10.3	17.7
Canterbury	29.3	22.8	36.5	52.5	6.1	6.1	12.1	19.6
Otago	28.5	22.0	34.8	49.8	7.8	6.1	11.1	20.1
Southland	39.0	32.7	43.9	58.0	8.3	8.0	14.3	22.5
Nelson-Tasman	26.0	20.8	35.3	48.3	7.3	6.3	12.1	21.2
Marlborough	25.8	22.3	31.1	53.9	4.9	5.1	10.6	19.9
<b>New Zealand</b>	<b>34.2</b>	<b>27.2</b>	<b>37.9</b>	<b>51.8</b>	<b>8.6</b>	<b>8.2</b>	<b>14.3</b>	<b>22.2</b>
<i>Range</i>	<i>14.0</i>	<i>11.9</i>	<i>13.7</i>	<i>13.8</i>	<i>8.4</i>	<i>5.9</i>	<i>7.1</i>	<i>8.3</i>

(1) This is a percentage of those at each age who specified their labour force status.

**Appendix Table 7: Percentage Change: Full-Time Equivalent Workers and Demographic Supply, by Age Group and Region, 1986-2001**

**a) 15-64 years**

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	-10.9	6.2	2.3	-2.1	2.0	6.4	2.4	11.1	-12.9	-0.2	-0.1	-13.2
Auckland	-2.9	10.0	5.4	14.7	8.9	13.1	8.9	34.1	-11.8	-3.1	-3.4	-19.4
Waikato	-4.7	5.9	2.5	4.1	3.8	5.1	1.7	11.0	-8.5	0.7	0.8	-6.9
Bay of Plenty	-5.7	8.5	4.9	9.0	6.9	8.7	6.1	23.3	-12.6	-0.2	-1.3	-14.3
Gisborne	-13.2	3.7	0.5	-9.2	-3.5	1.7	-4.5	-6.2	-9.8	2.0	5.0	-3.0
Hawke's Bay	-7.3	5.8	1.4	-0.1	-0.3	2.8	-0.5	2.0	-7.1	3.0	2.0	-2.1
Taranaki	-8.5	3.0	-1.7	-7.1	-1.4	-0.9	-4.1	-6.4	-7.1	4.0	2.4	-0.8
Manawatu-Wanganui	-6.3	3.4	-0.8	-3.8	1.5	1.2	-4.7	-2.1	-7.8	2.2	3.9	-1.6
Wellington	-5.2	3.2	3.5	1.9	3.1	3.0	2.2	8.5	-8.3	0.2	1.3	-6.6
West Coast	-10.0	4.7	-1.5	-6.9	-4.7	2.5	-6.6	-8.7	-5.3	2.2	5.1	1.8
Canterbury	-4.1	8.6	3.7	8.7	2.3	6.8	2.4	11.9	-6.4	1.8	1.2	-3.2
Otago	-6.2	6.8	1.2	2.0	1.0	4.9	-1.9	3.9	-7.2	1.9	3.2	-2.0
Southland	-7.6	3.0	-2.5	-7.0	-3.8	-2.7	-6.4	-12.4	-3.8	5.8	3.9	5.4
Nelson-Tasman	-2.6	11.4	3.9	13.8	4.1	11.0	5.4	21.9	-6.8	0.4	-1.5	-8.1
Marlborough	0.0	11.0	4.2	16.5	5.6	8.4	2.9	17.7	-5.5	2.6	1.3	-1.3
<b>New Zealand</b>	<b>-5.1</b>	<b>7.1</b>	<b>3.2</b>	<b>5.9</b>	<b>4.0</b>	<b>6.9</b>	<b>3.2</b>	<b>14.7</b>	<b>-9.0</b>	<b>0.2</b>	<b>0.0</b>	<b>-8.8</b>

(a) FTE Change = Growth years  $t$  to  $t+i$  in full-time equivalent employment as a percentage of the population in age group  $x$  for period  $i$

$$\frac{FTE_x^{t+i} - FTE_x^t}{P_x^t} \times 100, \text{ where FTE} = \text{Full-time employment} + \frac{1}{2} * \text{Part-time employment.}$$

(b) Demographic Supply = Growth in the population in age group  $x$  for the period  $t$  to  $t+i$   $\frac{P_x^{t+i} - P_x^t}{P_x^t} \times 100$

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Appendix Table 7. (continued)

**b) 15-19 years**

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	-22.5	4.2	-1.2	-19.6	-4.9	-10.8	1.8	-13.6	-17.6	15.0	-3.0	-5.9
Auckland	-20.2	2.9	-2.5	-19.8	-3.3	-0.1	6.8	3.2	-16.9	3.1	-9.3	-23.0
Waikato	-17.7	3.0	-2.3	-16.9	-5.3	-8.3	-0.6	-13.6	-12.4	11.2	-1.8	-3.3
Bay of Plenty	-18.3	3.2	-1.9	-16.8	-2.6	-8.5	4.7	-6.7	-15.6	11.7	-6.6	-10.1
Gisborne	-20.2	0.0	2.1	-18.6	-8.8	-15.1	-0.6	-23.1	-11.4	15.1	2.7	4.5
Hawke's Bay	-15.0	0.9	-3.7	-17.0	-4.0	-14.9	-2.2	-20.2	-10.9	15.9	-1.5	3.1
Taranaki	-21.9	0.5	-5.1	-25.4	-8.6	-15.3	-4.2	-25.9	-13.2	15.8	-0.9	0.5
Manawatu-Wanganui	-17.0	0.0	-3.3	-19.8	-5.2	-12.4	-8.7	-24.2	-11.8	12.4	5.4	4.4
Wellington	-19.0	-1.8	0.9	-20.0	-7.2	-12.8	0.0	-19.1	-11.9	11.0	0.9	-0.9
West Coast	-21.2	3.1	-6.3	-23.3	-17.1	-9.9	-17.0	-38.0	-4.1	13.0	10.7	14.7
Canterbury	-17.5	2.0	-0.7	-16.2	-6.0	-7.5	-2.0	-14.8	-11.5	9.5	1.3	-1.4
Otago	-16.0	2.1	-0.9	-14.8	-1.8	-7.3	-2.3	-11.0	-14.2	9.4	1.3	-3.8
Southland	-20.3	1.7	-4.9	-22.4	-8.9	-17.6	-7.4	-30.5	-11.4	19.3	2.5	8.1
Nelson-Tasman	-15.7	1.4	0.4	-14.0	-5.4	-10.0	5.0	-10.5	-10.3	11.4	-4.7	-3.5
Marlborough	-14.4	6.7	-0.5	-8.6	-7.3	-9.6	-0.2	-16.4	-7.1	16.2	-0.2	7.8
<b>New Zealand</b>	<b>-18.7</b>	<b>1.8</b>	<b>-1.9</b>	<b>-18.5</b>	<b>-5.0</b>	<b>-7.7</b>	<b>0.9</b>	<b>-11.6</b>	<b>-13.6</b>	<b>9.6</b>	<b>-2.7</b>	<b>-6.9</b>

See notes on panel a Appendix Table 7.  
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Appendix Table 7. (continued)

c) 20-29 years

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	-22.0	1.3	-8.8	-28.3	-9.8	-5.3	-15.9	-28.1	-12.2	6.6	7.0	-0.2
Auckland	-6.0	6.3	-5.1	-5.0	9.1	4.9	-3.0	11.0	-15.1	1.3	-2.1	-16.0
Waikato	-12.3	2.7	-9.2	-18.6	-3.5	-0.2	-13.3	-16.4	-8.8	2.8	4.0	-2.2
Bay of Plenty	-16.7	5.2	-7.1	-18.5	-2.6	0.1	-10.0	-12.3	-14.1	5.2	2.9	-6.2
Gisborne	-25.5	-0.4	-7.9	-32.1	-15.2	-6.2	-17.1	-34.0	-10.3	5.8	9.2	1.9
Hawke's Bay	-17.7	2.1	-11.6	-25.8	-10.8	-4.2	-15.1	-27.4	-7.0	6.3	3.5	1.6
Taranaki	-19.1	-1.6	-15.4	-32.5	-13.6	-9.6	-20.3	-37.8	-5.5	8.0	5.0	5.3
Manawatu-Wanganui	-14.1	-0.7	-12.0	-25.4	-6.8	-4.6	-20.2	-29.0	-7.3	3.9	8.2	3.6
Wellington	-8.6	-2.8	-6.5	-17.7	1.1	-5.2	-9.6	-13.3	-9.7	2.3	3.1	-4.4
West Coast	-20.3	-3.5	-14.8	-34.6	-14.9	-10.3	-26.6	-43.9	-5.4	6.8	11.8	9.3
Canterbury	-9.9	5.4	-9.8	-14.6	-2.8	4.1	-13.3	-12.3	-7.1	1.3	3.5	-2.3
Otago	-13.3	4.2	-10.8	-20.0	-5.4	4.4	-16.0	-17.0	-7.9	-0.3	5.2	-3.0
Southland	-17.8	-3.5	-16.1	-32.4	-16.1	-13.6	-20.7	-42.5	-1.7	10.1	4.5	10.1
Nelson-Tasman	-11.4	8.7	-11.3	-14.7	-3.5	7.1	-14.4	-11.6	-7.9	1.6	3.1	-3.2
Marlborough	-9.9	7.4	-12.8	-15.4	-4.9	2.9	-19.1	-20.8	-5.0	4.4	6.3	5.4
<b>New Zealand</b>	<b>-11.4</b>	<b>3.1</b>	<b>-8.3</b>	<b>-16.5</b>	<b>-1.2</b>	<b>0.3</b>	<b>-10.7</b>	<b>-11.5</b>	<b>-10.2</b>	<b>2.8</b>	<b>2.4</b>	<b>-5.0</b>

See notes on panel a Appendix Table 7.

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Appendix Table 7. (continued)

d) 30-44 years

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	-6.5	3.6	-0.5	-3.1	7.6	9.4	-0.7	16.9	-14.1	-5.8	0.2	-20.0
Auckland	4.0	10.2	8.2	27.0	15.9	17.5	10.3	50.1	-11.9	-7.3	-2.1	-23.2
Waikato	2.4	3.5	1.9	8.5	11.3	7.1	1.8	21.3	-8.9	-3.6	0.1	-12.8
Bay of Plenty	1.9	7.0	4.0	15.1	14.9	12.8	5.6	36.9	-13.1	-5.8	-1.6	-21.8
Gisborne	-5.6	3.5	-4.5	-7.0	6.5	8.2	-8.9	5.0	-12.1	-4.7	4.4	-12.0
Hawke's Bay	-1.8	3.1	0.7	2.2	5.5	5.1	-1.7	8.9	-7.3	-2.0	2.4	-6.7
Taranaki	-0.2	1.3	-3.7	-2.8	7.9	2.2	-6.2	3.4	-8.0	-0.8	2.6	-6.1
Manawatu-Wanganui	2.1	3.0	-2.8	2.1	11.2	5.5	-5.5	10.8	-9.0	-2.5	2.6	-8.7
Wellington	2.4	3.5	4.2	11.2	10.5	6.8	3.6	22.2	-8.1	-3.3	0.6	-11.0
West Coast	-3.7	3.7	-4.7	-5.0	3.3	4.7	-7.6	-0.1	-7.0	-1.0	2.8	-5.0
Canterbury	3.7	6.8	3.8	15.8	10.6	8.3	3.6	24.1	-6.8	-1.5	0.2	-8.3
Otago	2.2	5.0	-0.9	6.7	8.8	5.8	-3.8	10.7	-6.5	-0.8	3.0	-4.0
Southland	1.7	2.6	-5.2	-1.1	6.2	1.9	-9.3	-1.8	-4.5	0.7	4.1	0.7
Nelson-Tasman	4.8	8.2	2.7	17.5	12.2	12.5	4.8	32.3	-7.4	-4.3	-2.1	-14.8
Marlborough	6.7	9.1	0.1	16.9	11.2	10.7	0.1	23.3	-4.6	-1.5	-0.1	-6.3
<b>New Zealand</b>	<b>2.3</b>	<b>6.2</b>	<b>3.4</b>	<b>13.4</b>	<b>11.7</b>	<b>10.2</b>	<b>3.4</b>	<b>27.3</b>	<b>-9.4</b>	<b>-4.1</b>	<b>0.0</b>	<b>-13.9</b>

See notes on panel a Appendix Table 7.

(continues on next page)

Appendix Table 7. (continued)

e) 45-59 years

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	-2.2	15.0	10.8	28.1	7.1	22.9	14.5	50.8	-9.3	-7.9	-3.8	-22.7
Auckland	1.7	18.7	12.6	39.5	8.7	27.5	17.0	62.2	-7.0	-8.8	-4.4	-22.6
Waikato	1.7	14.1	13.3	33.5	6.6	18.4	14.3	44.3	-4.9	-4.3	-1.1	-10.8
Bay of Plenty	2.1	17.0	15.0	41.4	10.9	23.2	17.5	60.5	-8.8	-6.3	-2.5	-19.2
Gisborne	-8.3	9.4	12.4	14.5	-1.9	11.7	12.1	22.8	-6.4	-2.3	0.3	-8.4
Hawke's Bay	-0.5	15.5	11.1	29.5	4.3	19.2	10.5	37.4	-4.8	-3.7	0.6	-7.9
Taranaki	-1.6	10.9	9.7	21.0	2.8	13.4	9.5	27.6	-4.3	-2.4	0.2	-6.6
Manawatu-Wanganui	-1.9	10.2	10.3	20.6	2.9	13.2	10.3	28.5	-4.8	-3.0	0.0	-7.9
Wellington	-3.2	12.2	10.9	22.4	2.6	17.6	11.1	34.1	-5.8	-5.5	-0.2	-11.7
West Coast	-2.9	14.4	9.9	24.5	4.4	19.1	8.9	35.4	-7.3	-4.7	1.0	-11.0
Canterbury	-0.6	18.3	14.4	36.1	2.9	20.5	15.0	42.7	-3.5	-2.2	-0.6	-6.6
Otago	-3.6	15.1	13.4	27.3	0.6	16.2	12.5	31.5	-4.1	-1.1	0.9	-4.2
Southland	-2.3	10.1	8.7	17.2	-1.5	11.4	6.1	16.5	-0.8	-1.3	2.6	0.8
Nelson-Tasman	3.8	24.0	15.5	51.4	8.8	27.7	19.7	66.3	-5.0	-3.7	-4.2	-14.9
Marlborough	9.0	19.5	17.4	55.9	15.0	22.5	18.6	67.1	-6.0	-3.1	-1.2	-11.2
<b>New Zealand</b>	<b>-0.2</b>	<b>15.8</b>	<b>12.5</b>	<b>32.4</b>	<b>5.4</b>	<b>21.0</b>	<b>14.3</b>	<b>45.7</b>	<b>-5.6</b>	<b>-5.2</b>	<b>-1.7</b>	<b>-13.3</b>

See notes on panel a Appendix Table 7.

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Appendix Table 7. (continued)

f) 60-64 years

Region	FTE Change (a)				Demographic Supply (b)				Difference (a)-(b)			
	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01	1986-91	1991-96	1996-01	1986-01
Northland	0.7	6.8	17.8	28.9	13.3	1.4	19.4	37.2	-12.6	5.4	-1.7	-8.4
Auckland	-3.4	9.1	19.6	24.6	-1.0	-1.7	22.1	18.8	-2.4	10.7	-2.6	5.8
Waikato	0.6	8.8	16.8	27.9	8.3	-2.0	12.2	19.0	-7.8	10.8	4.6	8.8
Bay of Plenty	-0.2	7.8	17.5	27.8	10.7	0.4	16.5	29.4	-10.9	7.4	1.0	-1.6
Gisborne	-1.1	7.0	10.3	16.3	2.7	-3.4	-5.7	-6.5	-3.8	10.4	16.0	22.8
Hawke's Bay	-1.6	7.8	16.3	22.4	4.0	-5.5	9.7	7.7	-5.6	13.3	6.6	14.7
Taranaki	0.1	6.1	14.5	20.5	4.1	-6.8	6.1	2.9	-4.0	12.9	8.4	17.5
Manawatu-Wanganui	-2.0	6.4	16.1	20.0	2.8	-7.0	9.7	4.9	-4.8	13.3	6.4	15.0
Wellington	-5.6	6.7	16.2	16.4	-2.3	-3.3	10.6	4.5	-3.3	10.0	5.6	11.8
West Coast	-3.5	6.8	18.3	18.5	-11.1	-2.2	11.9	-2.8	7.7	9.1	6.4	21.3
Canterbury	-2.6	8.6	17.9	21.9	-1.5	-9.2	11.6	-0.1	-1.1	17.8	6.3	22.1
Otago	-3.7	8.5	17.8	20.9	-1.1	-8.0	9.2	-0.7	-2.6	16.5	8.6	21.5
Southland	-1.7	6.7	16.3	20.3	1.3	-7.7	7.4	0.4	-3.1	14.3	8.9	19.8
Nelson-Tasman	-3.1	11.7	17.7	24.8	-3.7	-2.9	14.6	7.2	0.6	14.6	3.1	17.6
Marlborough	1.5	8.7	26.1	38.3	8.6	-3.5	19.5	25.1	-7.0	12.2	6.6	13.2
<b>New Zealand</b>	<b>-2.4</b>	<b>8.1</b>	<b>17.7</b>	<b>23.0</b>	<b>1.5</b>	<b>-4.0</b>	<b>14.3</b>	<b>11.4</b>	<b>-4.0</b>	<b>12.1</b>	<b>3.4</b>	<b>11.7</b>

See notes on panel a Appendix Table 7.

**Appendix Table 8: Percentage Change: Full-Time Equivalent Workers and Demographic Supply for the Maori Population, by Age Group and Region, 1986-2001**

Region	FTE Change (a)						Demographic Supply (b)					
	15-19	20-29	30-44	45-59	60-64	15-64	15-19	20-29	30-44	45-59	60-64	15-64
Northland	-12.2	-15.5	25.0	20.8	36.1	5.1	6.2	-8.9	73.3	49.2	76.5	30.8
Auckland	-20.3	-1.0	42.5	42.9	60.7	14.0	-6.9	7.4	73.5	65.9	106.0	32.4
Waikato	-9.1	-5.0	30.1	35.8	40.8	11.5	5.0	3.9	64.6	60.5	74.1	31.7
Bay Of Plenty	-12.8	-9.4	29.9	29.5	35.3	8.8	0.4	1.9	74.4	55.6	71.7	32.9
Gisborne	-12.7	-19.5	9.4	14.2	17.7	-2.7	-14.4	-17.6	40.0	35.6	33.1	10.5
Hawke's Bay	-5.9	-8.8	24.7	30.0	32.7	8.8	0.4	-8.7	47.6	45.4	47.3	19.5
Taranaki	-13.0	-14.6	24.8	25.7	34.6	4.0	-2.8	-12.6	55.1	52.9	46.2	19.4
Manawatu-Wanganui	-12.1	-10.7	31.7	30.6	37.4	7.5	-1.9	-8.1	63.2	58.7	67.1	23.8
Wellington	-18.4	-5.7	36.5	45.0	62.3	11.5	-7.0	1.5	65.4	70.5	101.3	28.6
West Coast	-6.3	-9.9	37.9	51.0	55.0	14.6	4.2	-19.0	78.8	100.0	110.0	33.3
Canterbury	-7.2	14.3	57.7	85.7	76.3	32.4	19.2	32.0	98.1	121.7	148.7	62.0
Otago	-0.6	14.9	61.6	76.7	96.6	33.1	35.1	31.7	99.7	102.3	144.8	61.7
Southland	-7.5	-15.9	24.0	41.0	84.8	7.7	9.0	-18.7	37.3	64.7	160.6	18.9
Nelson-Tasman	2.6	28.3	104.1	87.2	73.5	52.8	37.6	57.1	171.3	125.6	129.4	95.5
Marlborough	11.3	13.0	89.2	76.4	96.7	46.3	29.9	19.0	128.3	121.6	140.0	71.7
<b>New Zealand</b>	<b>-13.4</b>	<b>-5.4</b>	<b>34.8</b>	<b>37.4</b>	<b>45.8</b>	<b>11.8</b>	<b>0.2</b>	<b>2.2</b>	<b>68.8</b>	<b>62.6</b>	<b>82.0</b>	<b>31.4</b>

(a) FTE Change = Growth in full-time equivalent employment as a percentage of the population in age group x for period *i* from year *t*

$$\frac{FTE_x^{t+i} - FTE_x^t}{P_x^t} \times 100, \text{ where FTE} = \text{Full-time employment} + \frac{1}{2} * \text{Part-time employment.}$$

(b) Demographic Supply = Growth in the population in age group x for period *i* from year *t*  $\frac{P_x^{t+i} - P_x^t}{P_x^t} \times 100$

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**Appendix Table 8.** (continued)

Region	Difference (a)-(b)					
	15-19	20-29	30-44	45-59	60-64	15-64
Northland	-18.5	-6.6	-48.4	-28.4	-40.3	-25.7
Auckland	-13.4	-8.4	-31.0	-23.0	-45.3	-18.4
Waikato	-14.0	-8.9	-34.5	-24.8	-33.3	-20.2
Bay Of Plenty	-13.2	-11.3	-44.5	-26.1	-36.3	-24.1
Gisborne	1.6	-1.8	-30.6	-21.5	-15.4	-13.2
Hawke's Bay	-6.3	-0.1	-22.9	-15.4	-14.5	-10.7
Taranaki	-10.1	-1.9	-30.3	-27.2	-11.5	-15.4
Manawatu-Wanganui	-10.2	-2.6	-31.5	-28.0	-29.6	-16.3
Wellington	-11.3	-7.2	-28.9	-25.4	-39.0	-17.1
West Coast	-10.6	9.1	-40.9	-49.0	-55.0	-18.8
Canterbury	-26.4	-17.6	-40.4	-36.0	-72.4	-29.5
Otago	-35.7	-16.8	-38.1	-25.6	-48.3	-28.6
Southland	-16.6	2.8	-13.3	-23.7	-75.8	-11.2
Nelson-Tasman	-35.0	-28.8	-67.2	-38.4	-55.9	-42.7
Marlborough	-18.6	-6.0	-39.2	-45.3	-43.3	-25.3
<b>New Zealand</b>	<b>-13.6</b>	<b>-7.5</b>	<b>-34.1</b>	<b>-25.2</b>	<b>-36.2</b>	<b>-19.5</b>

**Appendix Table 9: Percentage of the Labour Force Unemployed, by Age and Gender, by Region 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>15-19 years</b>							
Northland	19.3	35.2	20.2	23.6	21.7	34.1	24.1	26.8
Auckland	17.3	26.1	18.3	22.8	18.5	26.6	19.8	24.3
Waikato	18.8	26.0	17.1	19.3	23.8	30.6	22.5	26.0
Bay of Plenty	21.1	28.4	21.9	24.1	24.6	30.8	24.7	25.5
Gisborne	18.9	30.6	24.4	19.3	27.2	30.4	26.1	29.6
Hawke's Bay	20.5	26.7	16.1	20.4	24.0	28.4	19.9	24.0
Taranaki	18.5	30.1	17.8	21.2	20.8	30.2	21.6	24.3
Manawatu-Wanganui	19.1	26.3	18.7	20.2	24.6	30.0	24.4	25.7
Wellington	17.6	25.9	20.8	21.5	18.6	25.0	21.2	22.8
West Coast	20.6	27.6	14.7	13.9	19.4	26.3	18.6	12.7
Canterbury	18.4	24.1	16.1	17.1	22.5	28.3	19.8	19.6
Otago	20.5	25.8	17.3	20.3	24.8	31.3	22.6	24.8
Southland	16.3	26.8	13.6	14.4	19.6	30.7	19.6	20.6
Nelson-Tasman	14.1	19.9	12.0	12.2	18.4	23.3	14.2	17.8
Marlborough	19.4	20.5	11.1	11.2	23.9	25.0	13.6	13.5
<b>New Zealand</b>	<b>18.4</b>	<b>26.3</b>	<b>18.0</b>	<b>20.5</b>	<b>21.3</b>	<b>28.2</b>	<b>21.1</b>	<b>23.6</b>
<i>Range</i>	<i>7.0</i>	<i>15.2</i>	<i>13.3</i>	<i>12.8</i>	<i>8.8</i>	<i>10.9</i>	<i>12.5</i>	<i>16.8</i>
	<b>20-29 years</b>							
Northland	9.3	23.8	16.1	15.7	13.4	21.4	16.6	18.1
Auckland	5.6	14.9	8.4	10.1	8.7	13.5	9.6	10.7
Waikato	6.1	15.2	10.4	11.0	11.7	15.8	12.9	13.2
Bay of Plenty	7.3	20.0	13.5	13.8	13.4	20.6	16.6	15.9
Gisborne	7.3	21.3	16.6	12.9	14.3	20.5	19.2	19.1
Hawke's Bay	6.5	15.8	10.8	10.5	13.2	16.8	13.0	15.8
Taranaki	7.0	16.0	10.8	11.9	10.2	14.9	11.7	13.1
Manawatu-Wanganui	7.1	14.8	10.6	11.1	11.5	16.5	12.9	13.1
Wellington	5.1	12.7	9.9	10.6	7.7	11.1	8.9	9.0
West Coast	6.7	15.0	10.0	9.7	9.1	13.0	9.8	8.7
Canterbury	6.8	13.5	8.6	8.7	9.7	13.2	9.3	8.8
Otago	8.0	14.9	10.6	10.0	11.0	15.8	11.5	11.8
Southland	3.4	10.3	5.2	6.6	9.4	14.1	9.8	10.5
Nelson-Tasman	4.1	10.3	5.9	5.9	7.7	12.7	7.4	8.7
Marlborough	4.7	12.3	6.7	4.7	9.5	12.5	8.9	7.8
<b>New Zealand</b>	<b>6.2</b>	<b>14.8</b>	<b>9.6</b>	<b>10.3</b>	<b>9.9</b>	<b>14.4</b>	<b>10.8</b>	<b>11.3</b>
<i>Range</i>	<i>5.9</i>	<i>13.5</i>	<i>11.3</i>	<i>11.0</i>	<i>6.6</i>	<i>10.3</i>	<i>11.8</i>	<i>11.4</i>

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**Appendix Table 9. (continued)**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
<b>30-44 years</b>								
Northland	3.9	12.6	11.0	9.8	7.2	10.3	10.0	9.5
Auckland	2.2	7.2	5.9	5.5	6.3	8.0	7.2	7.0
Waikato	2.2	7.1	5.8	5.8	7.4	7.9	7.2	7.5
Bay of Plenty	2.7	9.7	7.9	7.8	7.7	10.1	9.1	9.4
Gisborne	3.2	10.2	10.0	8.7	8.7	10.0	9.9	10.2
Hawke's Bay	2.3	7.6	6.1	5.1	7.7	8.0	7.2	7.5
Taranaki	2.7	7.3	5.6	6.0	6.9	7.2	6.8	7.0
Manawatu-Wanganui	2.5	7.7	6.2	6.0	6.9	7.6	7.0	7.2
Wellington	2.0	6.0	5.4	5.0	5.6	6.5	6.0	5.6
West Coast	3.9	9.9	6.6	7.3	5.7	7.1	6.0	5.8
Canterbury	2.5	6.6	4.5	4.1	7.8	7.3	5.6	5.1
Otago	2.7	6.9	4.9	3.7	7.0	7.2	5.4	4.5
Southland	1.7	5.0	3.2	3.0	6.0	6.4	4.9	4.6
Nelson-Tasman	1.9	6.0	3.8	3.6	5.8	6.9	5.3	5.0
Marlborough	2.8	6.7	4.1	3.1	8.4	6.7	4.7	4.2
<b>New Zealand</b>	<b>2.4</b>	<b>7.3</b>	<b>5.8</b>	<b>5.4</b>	<b>6.8</b>	<b>7.8</b>	<b>6.8</b>	<b>6.7</b>
<i>Range</i>	2.2	7.6	7.8	6.9	3.2	3.9	5.3	6.0
<b>45-59 years</b>								
Northland	3.6	8.5	6.8	6.1	5.3	5.7	5.4	5.7
Auckland	2.3	6.1	4.4	4.5	4.6	5.3	4.3	4.4
Waikato	2.4	5.7	4.3	3.9	5.2	5.2	4.2	4.0
Bay of Plenty	2.4	8.2	5.8	5.0	5.7	6.9	6.0	5.4
Gisborne	2.2	7.5	6.9	5.5	5.2	6.1	5.3	5.8
Hawke's Bay	2.1	6.1	4.7	3.5	5.4	5.6	4.3	3.8
Taranaki	2.2	5.7	4.7	4.3	5.0	5.2	3.8	4.1
Manawatu-Wanganui	2.4	6.0	5.0	4.2	4.9	5.0	4.5	4.2
Wellington	1.8	5.7	5.2	4.1	3.2	4.3	4.1	3.8
West Coast	2.8	7.1	6.3	6.2	3.8	5.6	4.1	2.9
Canterbury	2.4	5.8	3.8	3.4	5.3	5.1	4.1	3.3
Otago	2.6	6.2	4.5	3.3	4.5	4.7	3.7	2.9
Southland	1.6	4.8	3.4	3.0	3.4	4.1	3.4	3.2
Nelson-Tasman	2.0	4.9	3.0	2.9	4.5	4.7	3.0	2.7
Marlborough	2.7	6.5	4.6	2.5	6.3	5.0	4.0	2.1
<b>New Zealand</b>	<b>2.3</b>	<b>6.1</b>	<b>4.6</b>	<b>4.1</b>	<b>4.7</b>	<b>5.2</b>	<b>4.3</b>	<b>4.0</b>
<i>Range</i>	2.0	3.7	3.8	3.8	3.0	2.8	2.9	3.7

(continues on next page)



**Appendix Table 9. (continued)**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
	<b>60-64 years</b>							
Northland	3.9	3.2	5.0	6.4	2.5	2.6	2.8	3.9
Auckland	3.1	3.6	3.5	5.2	4.7	3.3	4.2	4.0
Waikato	3.0	2.6	3.7	4.3	4.4	1.6	3.8	3.0
Bay of Plenty	4.9	3.3	5.5	6.5	6.3	3.3	5.6	4.1
Gisborne	3.3	2.5	4.9	8.4	3.6	1.9	3.3	3.8
Hawke's Bay	3.7	4.0	3.9	5.2	4.1	1.4	2.6	2.7
Taranaki	3.2	1.8	3.6	4.8	4.5	0.9	4.2	2.3
Manawatu-Wanganui	2.1	1.8	3.2	4.3	4.4	1.5	2.9	3.4
Wellington	3.4	3.3	5.1	4.8	4.0	2.5	3.5	3.5
West Coast	3.2	2.9	5.2	4.7	0.0	0.0	4.1	2.4
Canterbury	3.1	2.1	3.4	3.9	5.2	2.3	2.8	2.3
Otago	4.5	1.8	2.9	3.6	3.6	1.8	3.7	3.1
Southland	3.1	1.4	3.1	3.0	1.9	0.9	1.8	2.1
Nelson-Tasman	4.4	2.0	3.2	3.3	4.9	2.7	0.7	2.9
Marlborough	5.9	3.2	4.7	3.0	3.1	2.7	2.7	3.0
<b>New Zealand</b>	<b>3.3</b>	<b>2.9</b>	<b>3.9</b>	<b>4.8</b>	<b>4.4</b>	<b>2.4</b>	<b>3.6</b>	<b>3.3</b>
<i>Range</i>	3.8	2.6	2.6	5.5	6.3	3.3	4.8	2.0

**Appendix Table 10: Estimated “Discouraged Worker Effects”: Numerical Difference between Expected and Observed Proportions and Workers outside the Labour Force, by Age Group, Gender and Region, 1991-2001 taking 1986 Non-Labour Force Rates as a Baseline**

Region	1991			1996			2001		
	20-29	30-44	45-64	20-29	30-44	45-64	20-29	30-44	45-64
	<b>Males</b>								
Northland	-1,116	-1,173	-907	-1,167	-1,845	-1,411	-532	-1,080	-843
Auckland	-6,748	-5,903	-3,877	-8,145	-11,538	-7,565	-6,638	-6,279	-4,171
Waikato	-2,269	-1,785	-1,370	-2,424	-3,281	-2,160	-1,690	-2,136	-1,263
Bay Of Plenty	-1,623	-1,283	-1,023	-1,498	-2,187	-1,529	-950	-1,420	-814
Gisborne	-436	-487	-327	-430	-622	-416	-242	-359	-292
Hawke's Bay	-909	-863	-658	-838	-1,370	-959	-642	-834	-548
Taranaki	-618	-545	-525	-561	-867	-633	-453	-559	-398
Manawatu-Wanganui	-1,646	-1,261	-982	-1,803	-2,032	-1,457	-876	-1,308	-878
Wellington	-2,538	-2,032	-1,881	-2,897	-3,440	-2,836	-1,661	-2,113	-1,608
West Coast	-199	-240	-218	-227	-349	-252	-89	-220	-186
Canterbury	-2,174	-2,022	-1,816	-2,827	-3,538	-2,194	-2,070	-2,360	-1,394
Otago	-1,396	-816	-912	-1,642	-1,376	-1,112	-1,345	-967	-753
Southland	-399	-349	-319	-370	-535	-460	-297	-323	-323
Nelson-Tasman	-315	-235	-278	-366	-534	-338	-209	-346	-185
Marlborough	-117	-150	-136	-182	-264	-127	-72	-184	-49
<b>New Zealand</b>	<b>-22,671</b>	<b>-19,176</b>	<b>-15,268</b>	<b>-25,683</b>	<b>-33,887</b>	<b>-23,563</b>	<b>-18,044</b>	<b>-20,655</b>	<b>-13,887</b>
	<b>Females</b>								
Northland	-511	-522	209	-22	-463	963	487	560	2,506
Auckland	-3,553	-3,624	946	26	-3,231	3,677	2,477	4,674	11,767
Waikato	-444	-373	1,097	1,132	592	3,002	1,616	2,352	6,301
Bay Of Plenty	-789	-318	571	136	-21	1,768	588	1,409	4,137
Gisborne	-276	-224	27	-60	-80	273	14	92	627
Hawke's Bay	-547	-200	306	91	224	1,203	289	988	2,476
Taranaki	-242	-136	259	285	213	763	358	761	1,659
Manawatu-Wanganui	-352	-183	396	419	382	1,554	817	1,403	3,217
Wellington	-993	-784	76	728	13	1,241	1,633	2,338	3,996
West Coast	-93	6	73	72	190	304	151	326	673
Canterbury	-472	394	1,090	1,467	2,586	4,731	1,728	4,553	9,243
Otago	-375	78	266	236	956	1,613	441	1,709	3,271
Southland	-17	91	321	588	584	953	512	946	1,773
Nelson-Tasman	-98	48	188	86	147	805	242	466	1,641
Marlborough	30	165	141	191	372	493	210	525	933
<b>New Zealand</b>	<b>-8,136</b>	<b>-5,511</b>	<b>5,959</b>	<b>6,272</b>	<b>2,601</b>	<b>23,465</b>	<b>12,880</b>	<b>23,352</b>	<b>54,370</b>

Method described in the text, Section 7.

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## REFERENCES

- Baxendine, S., Dharmalingam, A., Pool, I., & Hodder, C. (2002). The Role of Human Capital in Regional Development, New Zealand 1986-96, *End Users Meeting, The Socio-Economic Impacts of ICT*. Wellington.
- Brosnan, P., & Walsh, P. (1996). Plus ca change: The Employment Contracts Act and Non Standard Employment in New Zealand, 1991-5, *Labour, Employment and Work in New Zealand, Proceedings of the Seventh Conference* (pp. 157-166). Victoria University of Wellington.
- Cochrane, W., Pool, I., & Baxendine, S. (forthcoming). New Zealand Regions, 1986-2001: Household Incomes, Joblessness and Parenting, *Population Studies Centre Discussion Paper Series*. Hamilton: University of Waikato.
- Davies, L., & Jackson, N. (1993). *Women's Labour Force Participation in New Zealand: the Past 100 Years*. Wellington: Social Policy Agency.
- Honey, J. (1998). *Baby-Boom Backwash: A Demographic Perspective of the Employment Opportunities of the "Disadvantaged Generation"*, University of Waikato.
- (2001). New Zealand Jobs, 1976-1996: A Demographic Accounting, *Population Studies Centre Discussion Paper No.40*. Hamilton: University of Waikato.
- Jackson, N. (1994). Youth Unemployment and the 'Invisible Hand' - A Case for a Social Measure of Unemployment, *Labour, Employment and Work in New Zealand, Proceedings of the 6th Conference, Number 24 and 25*. Victoria University, Wellington, New Zealand.
- Lall, S., & Yilmaz, S. (2001). Regional economic convergence: Do policy instruments make a difference? *The Annals of Regional Science*, 35, 153-166.
- Le Heron, R., & Pawson, E. (1996). *Changing Places: New Zealand In The Nineties*. Auckland: Longman Paul.
- Morrison, P., Berezovsky, O. (2001) "Labour Market Risk and the Region: Evidence from Gross Labour Flows" in Martin, R., Morrison, P. (eds) *Geographies of Labour Market Inequalities*. TSO Publishing. Routledge: UK.
- Newell, J. (1991). New Zealand Regional Diversity: Part One A 1986 Profile, *MAF Technical Paper 92/14*. Wellington, New Zealand: Monitoring and Evaluation Research Associates Ltd.
- Organisation for Economic Co-operation and Development (OECD) (1996). *OECD Economic Surveys 1995-1996: New Zealand*. France: OECD.
- Pool, I. (2003). Ageing, Population Waves, Disordered Cohorts and Policy. *New Zealand Population Review*, 29(1), 19-40.
- Pool, I., Baxendine, S., Bedford, R., Cochrane, W., Lidgard, J., & Lindop, J. (forthcoming-a). *Developing Underdevelopment and Geographical Disparities: A Social Demography of New Zealand Regions*. Hamilton: Population Studies Centre.
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- 2005a. New Zealand Regions, 1986-2001: Education and Qualifications, *Population Studies Centre Discussion Paper 56*. Hamilton: University of Waikato.
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- Pool, I., Baxendine, S., & Katzenellenbogen, J. (forthcoming-e). New Zealand Regions, 1986-2001: Hospitalisation and some of its Health Contexts, *Population Studies Centre Discussion Paper*. Hamilton: University of Waikato.

- Population Monitoring Group (1989). *Diversity and Change: Regional Populations in New Zealand, PMG Report No. 5, New Zealand Planning Council*. Wellington, New Zealand.
- Prime Ministerial Task Force on Employment (1994). *Employment: the Issues*. Wellington, New Zealand: Prime Ministerial Task Force on Employment.
- Rodríguez-Pose, A., & Fratesi, U. (2003). *Between development and social policies: the impact of European Structural Funds in Objective 1 regions*: European Economy Group (EEG).
- Scott, G. (1996). *Government Reform in New Zealand*. Washington DC: International Monetary Fund.
- Statistics New Zealand (2005). *Household Labour Force Survey (December 2004 quarter) - Hot Off The Press*. Wellington: Statistics New Zealand.
- Waldegrave, C., Stephens, R., & King, P. (2003). Assessing the Progress on Poverty Reduction. *Social Policy Journal of New Zealand*, 20, 197-222.

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