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## **New Zealand Regions, 1986-2001: Industries and Occupations**

**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: INDUSTRIES AND OCCUPATIONS

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

December 2005

## Abstract

This paper provides an analysis which examines the differences in the industrial and occupational structure of New Zealand regions. Using data compiled by Statistics New Zealand from Goods and Services Tax (GST) registrations supplied by the Inland Revenue Department, it also looks at business size trends. The analysis in this paper points to a distinct change in the characteristics of the New Zealand labour force, a shift to a “More Highly Skilled Tertiary” sector. This paper shows that these changes did not occur uniformly across New Zealand regions. Instead, skills typical of the “new economy” or the “knowledge society” are concentrated in Auckland and Wellington, and to a lesser degree Canterbury. This trend has seen regional patterns of work diverge more and more.

**Keywords:** Industry, Occupation, Regions, New Zealand

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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, using data from the five yearly Census of Population and Dwellings collected by Statistics New Zealand, examines differences in the industrial and occupational composition of the population between regions in New Zealand<sup>1</sup>. Data on the Statistics New Zealand Business Demography series are also analysed.

## **2. Industries and Occupations**

Over the period 1986 to 2001 the economy of New Zealand experienced rapid and far-reaching changes. Among the most important aspects of restructuring were the following: shifts in the patterns of production and in levels of productivity, in the sectoral composition of the economy and its workforce; the privatisation of state assets; the entry into New Zealand of overseas investment in a way that saw ownership of many companies move overseas; the occurrence of other forms of globalisation and revamping of the way in which industries in New Zealand compete and interact with, and are protected by tariff walls from, enterprises outside New Zealand's borders. Much of this is outside the brief of this set of discussion papers, but it is important to note that it was during this period that the bulk of the recent economic and social restructuring in New Zealand went through an accelerated phase (Bollard 1993; Kelsey 1997; Le Heron and Pawson 1996; Pickford and Bollard. 1999). Changes in the labour force participation and employment levels (Pool et al. forthcoming-c), and the occupational and accompanying industrial shifts in the distribution of the workforce analysed in this paper, constitute key economic contexts for, and provide explanations of, many of the trends that are detailed elsewhere in this set of discussion papers. In essence, the present paper describes an industrial labour force undergoing a major transformation, a transformation that shifted the workforce away from its historical roots. The turbulence that this produced has ramifications not only for the economy but for the social trends in other discussion papers in this series.

These changes did not occur uniformly across New Zealand regions. The net result was that the sectoral composition of the labour force, both by industry and occupation shifted in each region, but did so in a way that was different from what was happening in other regions. As a result the economic geography of New Zealand went through a quantum shift as regional patterns of work diverged more and more.

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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).

### 3. *Industrial distribution of the workforce*

The sectoral categories for industries used in this paper have been adjusted to meet the specific needs of this analysis. We have aggregated sub-sectors in order to produce standardised categories across the four censuses 1986-2001 so as to allow a more consistent picture of the changes that happened over that time (see Appendix Table 1).

The three main industrial sectors in 1986, each comprising over 20 per cent of the total labour force, were the Public Service, Social Services, Utilities; Distribution and Exchange (retail and wholesale); and Manufacturing (see Table 1). By 1991 and for the remainder of the period Manufacturing no longer stood above 20 per cent, and made up only 13 per cent of those employed in 2001. The largest growing sector between 1986 and 2001 was that of Business and Financial Services, rising from 8 per cent to 13 per cent of the total labour force. In contrast, the proportion of the labour force in the Primary industry declined, constituting 11 per cent in 1986 and only 9 per cent in 2001. The Personal, Household, Restaurant and Hotel services sector, and Building and Construction sector have the smallest proportions of the total labour force.

For New Zealand as a whole there are some interesting gender differences in sectoral employment (see Table 1). The most significant is found in the Public Services, Social Services, Utilities with over a third of employed females in this category compared to less than one-sixth of employed males in 2001. In contrast, there are high concentrations of the male workforce in the Manufacturing, Building and Construction, and Primary industrial sectors. The other sectors where females outnumber males are Business and Financial Services and in the Personal, Household, Restaurants and Hotels sector.

It is worth noting that the Not Specified category for males increased from one per cent in 1986 to six per cent in 1996, then reduced again to five per cent in 2001. In this analysis, other than for the overall New Zealand results, “not specified” will be excluded from the totals.<sup>2</sup>

The changes in the size and participation rates of the labour force (Pool et al. forthcoming-c) reflect in part the friction produced by this industrial transformation and relative shifts in the distribution of occupations to be covered later in this paper. The changes in the industrial composition have been more monotonic. The restructuring in the labour force as a whole occurred primarily between 1986 and 1996. But the industrial and occupational shifts have continued, and have at times accelerated, to 2001. Over this same period, the changes in industry are fairly constant.

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<sup>2</sup> The percentages Not Specified are presented in Appendix Table 2 for the standardised rates for Pakeha, Maori and Total and in Appendix Table 3 for the age specific rates.



**Table 1: Percentage Distribution by Industry of the Total Employed for New Zealand, by Gender, 1986-2001**

<b>Industry</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>
	<b>Males</b>				<b>Females</b>			
Business and Financial Services	6.6	10.0	10.8	12.2	10.4	13.5	13.4	13.9
Public Services, Social Services, Utilities	16.0	17.5	15.2	15.5	31.2	34.6	32.2	35.6
Personal, Household, Restaurant and Hotel services	5.0	4.8	5.5	5.5	9.3	8.7	9.9	9.4
Distribution and Exchange (retail, wholesale, transport and storage)	22.9	23.1	22.8	23.4	23.1	21.3	20.6	20.8
Building and Construction	10.5	9.7	9.5	10.0	1.5	1.4	1.6	1.7
Manufacturing	25.0	20.6	18.6	17.5	15.8	11.4	9.6	8.3
Primary	13.0	12.4	11.8	10.7	7.9	7.2	7.0	6.0
Not Specified	1.0	2.0	5.8	5.2	0.8	1.9	5.6	4.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
	<b>Total</b>							
Business and Financial Services	8.2	11.5	12.0	13.0				
Public Services, Social Services, Utilities	22.2	24.9	23.0	24.9				
Personal, Household, Restaurant and Hotel services	6.7	6.5	7.5	7.4				
Distribution and Exchange (retail, wholesale, transport and storage)	23.0	22.3	21.8	22.1				
Building and Construction	6.9	6.1	5.9	6.1				
Manufacturing	21.2	16.6	14.5	13.2				
Primary	10.9	10.1	9.6	8.5				
Not Specified	0.9	1.9	5.7	4.8				
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				

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

### *3.1 Industrial distribution of the workforce in the regions*

The complexities involved when making inter-regional comparisons across the 15 regions and would make any analysis difficult. That said, detailed results for each census 1986 to 2001 are provided in Table 3 (1986 and 2001) and Appendix Table 4 (1991 and 1996). In the text, however, these tabulations have been collapsed into what have been called the Primary, Secondary, “Less Skilled Tertiary” and “More Skilled Tertiary” groups. These broad sector groupings are composed of the industrial groups defined in Table 2.

**Table 2: Industries in broad sector groupings.**

Primary	Primary
Secondary	Manufacturing; Building and Construction
Less Skilled Tertiary	Personal, Household, Restaurants and Hotels; Distribution and Exchange (retail, wholesale, transport and storage)
More Skilled Tertiary	Business and Financial Services; Public Services, Social Services, Utilities

As can be seen, a distinction is made here between what are called the Less Skilled and More Skilled Tertiary sectors. This provides the study with proxies by which to identify subclasses that permit the large tertiary sector, constituting 64 per cent of the labour force, to be split into two components. The “Less Skilled Tertiary” comprises the more traditional sectors involving services directed to hospitality or care of individuals or families, and work relating to the systems of distribution and transport of goods. The “More Skilled Tertiary” constitutes both traditional public and professional services and utilities, and business and financial services. Included in the More Skilled Tertiary sector are the rapidly expanding, highly skilled services of the “new economy” and knowledge industries.

Figure 1 shows that there is a clear difference between Wellington<sup>3</sup> and the other regions<sup>4</sup> for both 1986 and 2001 with high participation in Less Skilled and More Skilled Tertiary industries, and low participation in Secondary and Primary. Auckland<sup>5</sup> had a high proportion in the Less Skilled Tertiary sector and Secondary sector, and low percentages in Primary sector in 1986, but in 2001 the More Skilled Tertiary sector significantly increased.

It is clear that Primary industry makes up only a very small part, less than four per cent, of the economies of Auckland and Wellington for both 1986 and 2001. In contrast in Northland, Waikato, Gisborne, Taranaki, West Coast, Southland, Nelson-Tasman and Marlborough the category Primary industry comprises more than 17 per cent of people in employment for 1986, with only Waikato dropping below this figure in 2001. Regions with more than 20 per cent of workers in the Primary sector in 2001 were Gisborne and Southland.

<sup>3</sup> There is variation between the four urban areas of Wellington in More Skilled Tertiary and Secondary Industry groups in 2001. In Wellington Central 61 per cent of the employed population in More Skilled Tertiary whereas Lower Hutt had 47 per cent with Porirua and Upper Hutt was 50 and 48 respectively in 2001. These four urban areas, however, have percentages that were above that for New Zealand as a whole. For the Secondary industrial sector the lowest urban area was Wellington Central, at 10 per cent, and the highest was Lower Hutt at 20 per cent with Porirua and Upper Hutt being 18 and 19 per cent respectively.

<sup>4</sup> There are 15 regions in this study, instead of the usual 16, as 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 or social and economic interest, anomalies occur. For example, Nelson urban area has some of its population in the Tasman region.

<sup>5</sup> There is variation between the four urban areas of Auckland in the More Skilled Tertiary and Secondary Industry groups. Central Auckland had 48 per cent of the employed population in the category More Skilled Tertiary, whereas in Southern Auckland it was 34 per cent with Western Auckland and North Shore 38 and 45 per cent respectively in 2001. For the Secondary industry sector the lowest urban area was Auckland Central at 17 per cent and the highest at 27 per cent in Southern Auckland, with West Auckland and North Shore at 19 and 25 per cent respectively.

**Table 3: Workers in Each Industrial Sector as a Standardised<sup>1</sup> Percentage of Total Employed by Region, 1986 and 2001**

Region	Industrial Group							
	1	2	3	4	5	6	7	8
<b>1986</b>								
Northland	5.0	21.0	8.3	19.8	10.1	14.9	20.8	100.0
Auckland	10.5	20.7	6.4	26.0	6.7	26.6	3.1	100.0
Waikato	5.9	23.3	6.7	19.0	6.8	16.7	21.7	100.0
Bay of Plenty	6.4	20.9	8.5	22.0	7.2	18.1	16.9	100.0
Gisborne	5.6	24.1	6.5	19.6	6.6	16.1	21.3	100.0
Hawke's Bay	5.8	21.0	6.4	21.2	5.6	23.3	16.5	100.0
Taranaki	5.6	21.1	6.6	20.1	6.9	18.0	21.8	100.0
Manawatu-Wanganui	5.5	28.5	6.6	20.5	6.2	18.1	14.7	100.0
Wellington	13.1	30.2	5.8	25.2	6.0	16.8	2.9	100.0
West Coast	3.6	24.1	10.2	19.9	6.8	15.2	20.2	100.0
Canterbury	6.9	24.9	7.4	23.7	5.3	22.3	9.5	100.0
Otago	6.3	26.7	8.2	22.2	7.5	17.7	11.4	100.0
Southland	5.6	20.3	7.5	21.0	4.6	20.2	20.8	100.0
Nelson-Tasman	5.4	22.9	7.3	20.3	5.9	16.3	22.0	100.0
Marlborough	4.8	25.4	8.0	23.0	6.1	13.9	18.8	100.0
<b>New Zealand</b>	<b>8.2</b>	<b>23.7</b>	<b>6.9</b>	<b>23.1</b>	<b>6.5</b>	<b>20.8</b>	<b>11.0</b>	<b>100.0</b>
<i>Range</i>	<i>9.5</i>	<i>9.9</i>	<i>4.4</i>	<i>7.0</i>	<i>5.5</i>	<i>12.7</i>	<i>19.1</i>	
<b>2001</b>								
Northland	8.4	24.8	8.6	21.7	7.6	11.4	17.6	100.0
Auckland	18.2	23.2	7.5	27.2	6.9	14.8	2.3	100.0
Waikato	9.7	25.2	7.9	21.0	7.0	13.2	16.0	100.0
Bay of Plenty	10.0	24.5	8.9	23.3	7.9	14.3	11.3	100.0
Gisborne	6.9	26.6	6.8	19.1	6.2	10.3	24.0	100.0
Hawke's Bay	8.4	23.1	7.1	21.5	5.8	17.2	16.9	100.0
Taranaki	9.9	22.5	7.2	20.3	5.8	16.3	18.0	100.0
Manawatu-Wanganui	8.1	31.3	7.3	20.7	5.7	13.4	13.5	100.0
Wellington	21.0	31.3	7.4	22.4	6.2	8.8	2.8	100.0
West Coast	5.6	23.4	13.3	21.3	6.4	11.2	18.9	100.0
Canterbury	11.4	24.7	8.8	24.4	6.2	16.4	8.0	100.0
Otago	8.7	29.0	10.7	20.6	6.3	14.0	10.7	100.0
Southland	7.6	20.3	7.9	20.4	5.2	18.7	20.0	100.0
Nelson-Tasman	9.3	21.5	8.8	22.4	6.3	13.6	18.1	100.0
Marlborough	6.9	22.3	9.1	19.8	6.4	16.5	18.9	100.0
<b>New Zealand</b>	<b>13.7</b>	<b>25.3</b>	<b>8.0</b>	<b>23.7</b>	<b>6.5</b>	<b>14.0</b>	<b>8.8</b>	<b>100.0</b>
<i>Range</i>	<i>15.4</i>	<i>11.1</i>	<i>6.4</i>	<i>8.1</i>	<i>2.7</i>	<i>9.9</i>	<i>21.7</i>	

1 Business and Financial Services

5 Building and Construction

2 Public Services, Social Services, Utilities

6 Manufacturing

3 Personal, Household, Restaurants and Hotels

7 Primary

4 Distribution and Exchange (retail and wholesale) 8 Total of all industries (excluding Not Specified)

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole (adjusted for the removal of Not Specified see Appendix Table 2)

There was considerable change in the percentage of people working in the Secondary sector between 1986 and 2001. In 1986 Auckland had the highest proportion at 33 per cent, and Marlborough the lowest at 20 per cent. Other regions that also had low levels of their labour force in the Secondary sector were Gisborne, Wellington, West Coast and Nelson-Tasman. By 2001 Southland was highest at 24 per cent and Wellington the lowest at 15 per cent. Other regions that tended to have high proportions of their labour force in the Secondary sector were Auckland, the Bay of Plenty<sup>6</sup>, Hawke's Bay, Taranaki, Canterbury and Marlborough. Regions with low proportions were Gisborne and West Coast.

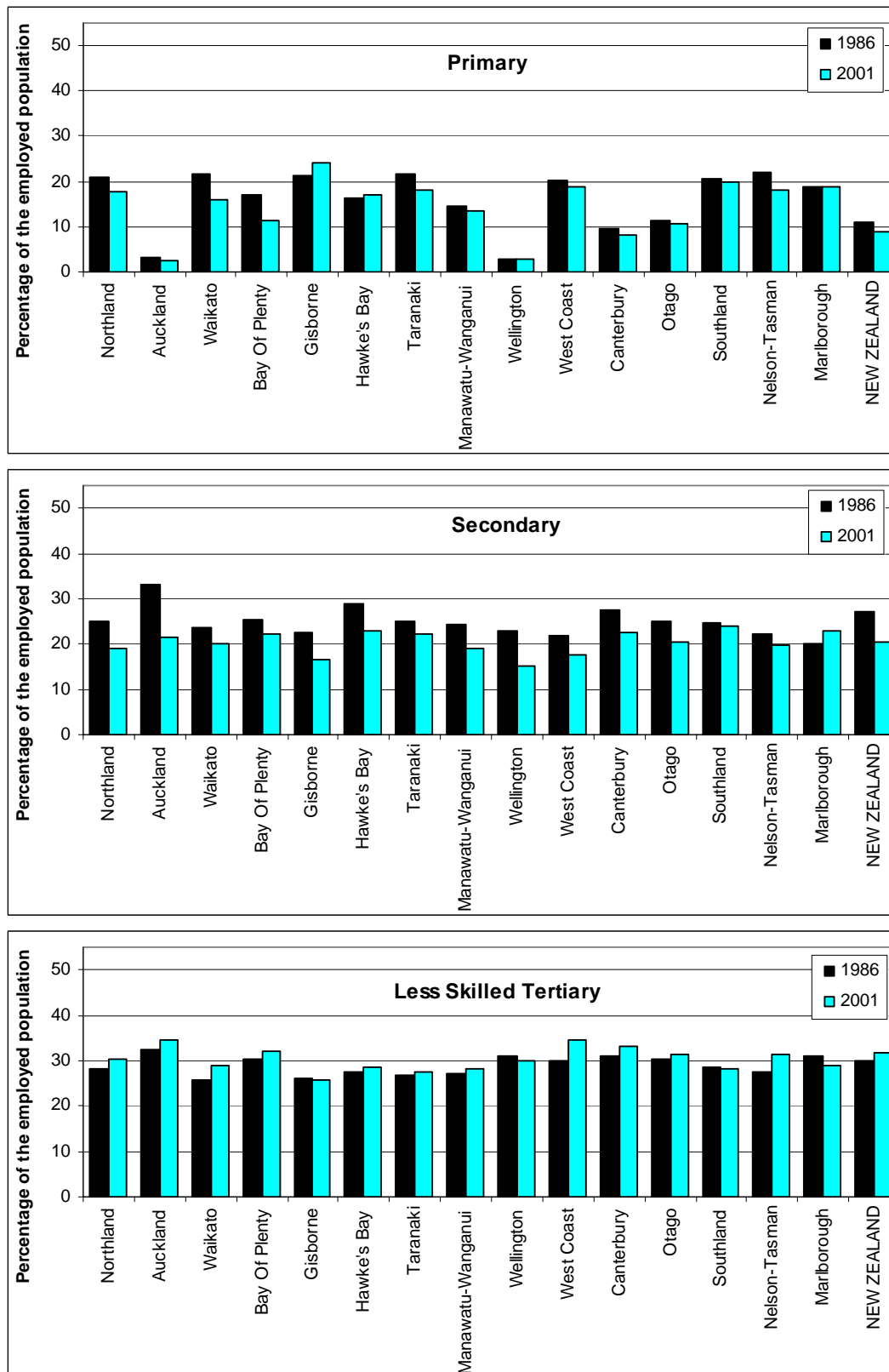
When the changes in Less Skilled and More Skilled Tertiary sectors are considered some interesting points emerge. The percentage in Less Skilled Tertiary sectors increased in the majority of regions, but the most significant increase was in the Bay of Plenty and fits with its role as a retirement region where personal services have become an important industry. In 1986 the results varied from 26 per cent in Waikato to 32 per cent in Auckland. For 2001 the results varied from 26 per cent in Gisborne (which also had relatively low levels in 1986) to 35 per cent in Auckland. Waikato, Taranaki, Manawatu-Wanganui and Southland also had low levels of their labour force in the Less Skilled Tertiary sector.

Generally the More Skilled Tertiary sector increased their share of the labour force, sometimes quite strongly, as in the case of four metropolitan regions (Auckland, Waikato, Wellington and Canterbury). The variation for the More Skilled Tertiary sector was much larger than for Less Skilled Tertiary industries. In 1986 the range ran from 26 per cent in Northland and Southland to 43 per cent in Wellington, which was much higher than any other region. In the same year the Bay of Plenty, Hawke's Bay, Taranaki and West Coast had low levels. By 2001, Wellington with 52 per cent stood out as having a much higher proportion than any other region. Southland (28 per cent) had the lowest proportion of its labour force in the More Skilled Tertiary sector, followed by Hawke's Bay, Taranaki, West Coast, Nelson-Tasman and Marlborough.

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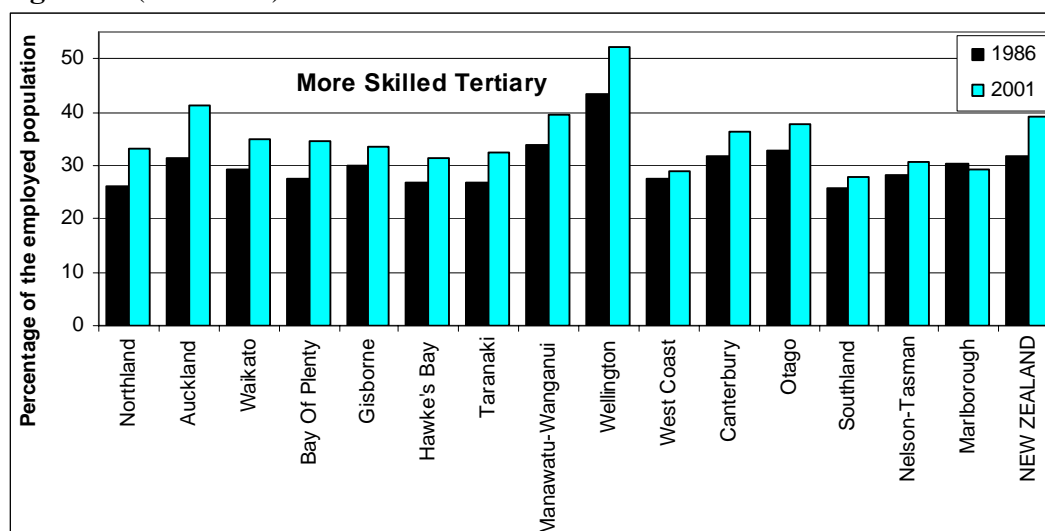
<sup>6</sup> For the sub-regions of Bay of Plenty the Less Skilled Tertiary and Primary industry sectors showed some variation between Eastern and Western Bay of Plenty. Western Bay of Plenty was higher than Eastern Bay of Plenty for the Less Skilled Tertiary sector, 33 and 26 per cent respectively in 2001, whereas the opposite occurs for Primary sector with Western Bay of Plenty 11 per cent and Eastern Bay of Plenty 19 per cent.

**Figure 1: Workers in Each Broad Industrial Sector as a Standardised<sup>1</sup> Percentage of Total Employed by Region, 1986 and 2001**



(continues on next page)

**Figure 1: (continued)**



(1) Standardised by age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified category see Appendix Table 2.

### 3.2 Industrial distribution of the workforce in the regions by age group

Nationwide the industrial distribution of the workforce is different for various age groups as shown in Table 4. In 1986 the level of those employed in Business and Financial Services and in Personal, Household, Restaurants and Hotels industries decreased by age. In contrast participation by the 15-24 year age group was lower than for the other age groups for the Public Services, Social Services, Utilities, and Primary industries. Manufacturing had higher proportion employed in the 15-24 year age group than any other age group. For the Distribution and Exchange industry the proportion employed in the 25-44 year age group was lower than any other age group.

**Table 4: Percentage Distribution by Industry of Total Employed for New Zealand, by Age Group, 1986 and 2001**

Industry	1986			2001		
	15-24	25-44	45-64	15-24	25-44	45-64
Business and Financial Services	10.1	8.1	6.5	10.0	14.3	12.5
Public Services, Social Services, Utilities	17.2	23.4	24.6	14.9	25.3	29.1
Personal, Household, Restaurants and Hotels	8.6	6.5	5.4	15.1	6.2	5.4
Distribution and Exchange (retail and wholesale)	24.6	21.8	23.7	30.1	21.2	19.9
Building and Construction	6.3	7.2	6.7	5.3	6.6	5.8
Manufacturing	23.0	20.8	20.3	11.0	14.2	12.7
Primary	9.2	11.3	11.9	8.1	7.9	9.5
Not Specified	1.0	0.9	0.9	5.6	4.3	5.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

By 2001 this pattern had changed somewhat with the largest shift occurring in the 15-24 year age group. For those aged 15-24 years there was a large increase between 1986 and 2001 in

the proportion working in the Personal, Household, Restaurants and Hotels, and Distribution and Exchange industries so that the proportion employed in those industries was much higher than any other age group. This could be related to the high amount of part-time work in which this age group engages, when working in these service industries. For the 25-44 and 45-64 year age groups the most significant increase came in the proportion employed in Business and Financial services, with about an equal percentage point decline in the same age groups for the Manufacturing industry. There was also a decline for the 15-24 year age group in Manufacturing. For the Public Services, Social Services, Utilities industry there was a decline at the 15-24 year age group, a slight increase at the 25-44 year age group and an increase of over four percentage points for the 45-64 year age group. As previously mentioned, there was also a significant increase in the Not Specified in 1996, this was uniform across all the age groups and will be excluded from any further analysis.<sup>7</sup>

### *3.4 Industrial distribution of the workforce in the regions by ethnicity*

Turning now to the regions, only age specific rates which differ from those for New Zealand as a whole are discussed in the text. To simplify the analysis, only the four industry groups described in Table 4 will be reported.<sup>8</sup>

There are ethnic differentials in the industrial sectoral distributions as is seen in Table 5, but these are not as marked as might be expected, and, a convergence is underway. For some industrial groups Public Services, Social Services and Utilities; Personal, Household, Restaurants and Hotels sector; Building and Construction sector; and Primary sector the ethnic differences between Pakeha and Maori are small. The industries where Pakeha participation levels are higher than Maori include Business and Financial Services, and Distribution and Exchange (retail and wholesale). The only industrial group for which Maori participation is markedly higher than Pakeha is Manufacturing although the ethnic difference has narrowed from 10 to four percentage points from 1986 to 2001. It is important to note, however, that Maori Not Specified was roughly double that of Pakeha in both 1986 and 2001.<sup>9</sup>

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<sup>7</sup> To see the percentage of Not Specifieds for the regions, see Appendix Table 3.

<sup>8</sup> For more detailed results are provided in Appendix Table 5.

<sup>9</sup> For the remainder of the analysis the Not Specified will not be included in the total see Appendix Table 2 for regional percentages.

**Table 5: Distribution of Workers by Industry, Standardised<sup>1</sup> (%) by Ethnicity for New Zealand, 1986 and 2001**

Industry	Pakeha		Maori	
	1986	2001	1986	2001
Business and Financial Services	8.8	13.9	3.1	8.0
Public Services, Social Services, Utilities	23.8	24.4	23.2	26.9
Personal, Household, Restaurants and Hotels	6.8	7.2	6.7	7.4
Distribution and Exchange (retail and wholesale)	23.7	23.1	17.8	19.1
Building and Construction	6.4	6.6	7.9	7.0
Manufacturing	18.6	12.5	28.5	16.0
Primary	11.2	8.9	11.3	9.1
Not Specified	0.8	3.4	1.5	6.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

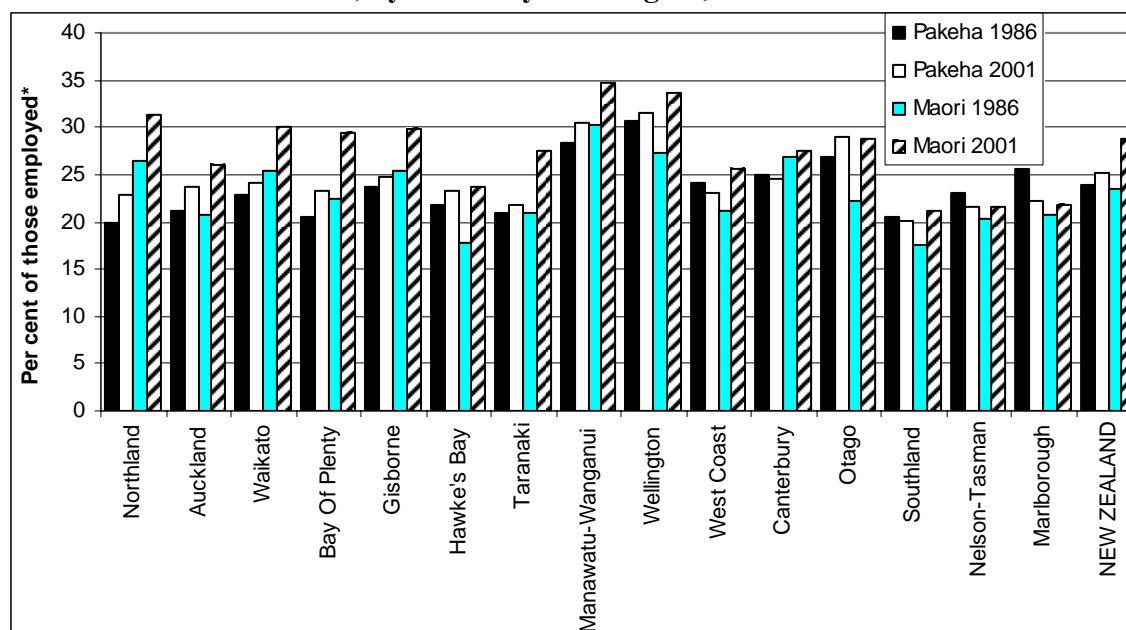
(1) Standardised by age and gender to the employed population in 1996 for Total New Zealand.

The following analysis of regional differences by ethnicity will concentrate on trends that do not follow the national trend and on the regional rates that differ from the overall patterns for the Total Population. Detailed regional ethnic data are given in Appendix Tables 6 and 7.

The Public Services, Social Services, Utilities sector has some regional variation, and thus data on this are presented in Figure 2. In 1986 and 2001, Northland had substantially higher participation by Maori than Pakeha in this industry, whereas, in 1986 Hawke's Bay, Otago and Marlborough Pakeha participation was substantially higher than Maori. By 2001 there was little difference between Pakeha and Maori employment in this sector in Hawke's Bay, Otago, Nelson-Tasman and Marlborough. Between 1986 and 2001 the northern regions generally increase their proportions employed in this sector. Overall the proportion of Maori employed in this sector has increased at a greater pace than Pakeha.



**Figure 2: Percentage of Total Workers Employed in Public Services, Social Services, Utilities Sector, by Ethnicity and Region, 1986 and 2001**



\* Excluding Not Specified

One of the main differences occurring in the analysis of the Distribution and Exchange (retail and wholesale) industry was that Auckland and Wellington had a small difference between Pakeha and Maori participation in 2001. In 1986 and 2001, there was a significant difference between Maori and Pakeha participation in Gisborne, Hawke's Bay and the West Coast compared to other regions, with Maori participation being lower.

The Personal, Household, Restaurants and Hotels sector had levels of participation for Pakeha and Maori that were similar to overall New Zealand levels. But in 1986 for Taranaki, the West Coast and Marlborough, Maori employment in this industry was substantially higher than Pakeha, whereas in Gisborne, Hawke's Bay and Nelson-Tasman, Pakeha participation was substantially higher than Maori. The differences for 2001 were smaller.

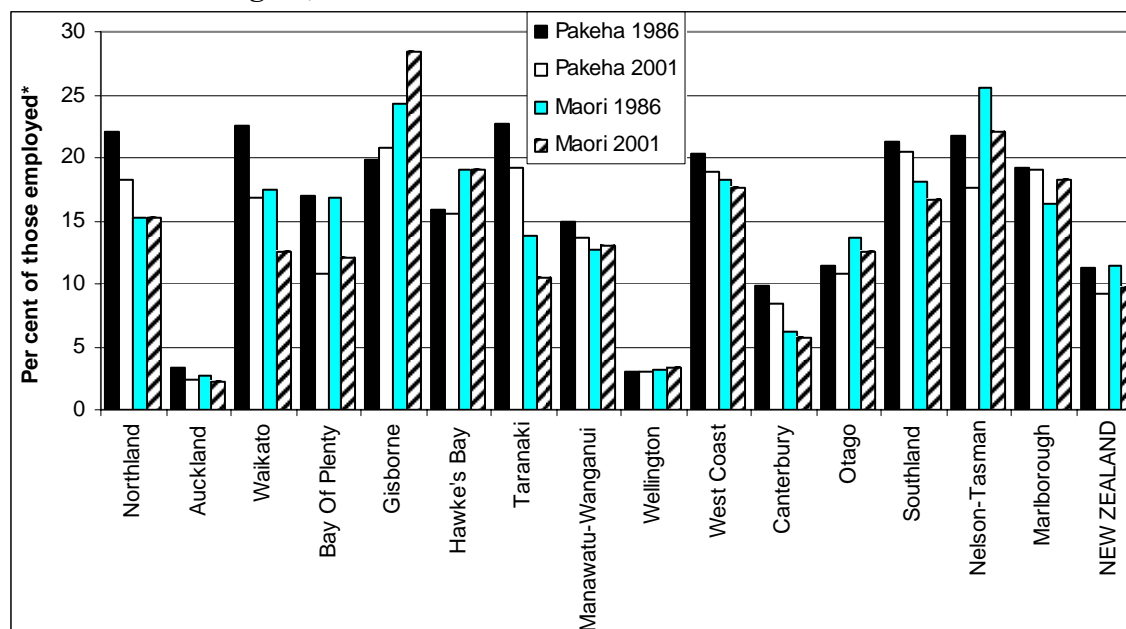
In the Manufacturing industry, three regions did not follow the overall New Zealand pattern. Hawke's Bay, Southland and Nelson-Tasman had much higher Maori participation in 1986, over 13 percentage points, although this level had reduced by 2001. In 1986, both Gisborne and Auckland had significant variances between Maori and Pakeha in this sector, with Maori having significantly higher proportions employed. By 2001, the variance between Maori and Pakeha in these two regions decreased significantly.

Auckland, Wellington, Canterbury, Southland and Marlborough were the only regions in which Maori employment in the Building and Construction sector increased from 1986 to 2001, proportions in this sector declined in all other regions and for New Zealand overall. The completion of the Marsden Point oil refinery saw Pakeha involvement in this industry in Northland decline significantly.

In the Primary sector, Maori and Pakeha employment rates were similar to those for New Zealand as a whole, but for some regions there are some quite marked differences as seen in Figure 3. Maori have much higher employment levels than Pakeha in Gisborne, Hawke's

Bay and Nelson-Tasman, whereas, Pakeha had higher levels than Maori in Waikato and Taranaki in 1986 and 2001, Northland and Canterbury in 1986, and Southland in 2001.

**Figure 3: Percentage of Total Workers Employed in Primary Industry by Ethnicity and Region, 1986 and 2001**



\* Excluding Not Specified

#### 4. Industrial changes between 1986-2001

From 1986 to 2001 there was growth in the proportions of those employed in five out of the seven industrial sectors, though Building and Construction only grew one per cent. There was an overall growth of 13 per cent in the proportion of people employed between 1986 and 2001 as is evident in Table 6. For New Zealand as a whole, the industry that has had the most growth has been Business and Financial Services, experiencing an increase of 81 per cent in the size of its work force in the fifteen year period. The other three industrial sectors in New Zealand that showed growth in this time period were the Personal, Household, Restaurants and Hotels category, the Public Services, Social Services, Utilities, and Distribution grouping and Exchange (retail and wholesale) industries.

Between 1986 and 2001 the Manufacturing industry experienced the largest declines in its share of the workforce. There were also declines in the Primary industry sector. The Manufacturing industry was significantly affected by the restructuring of the late 1980s and early 1990s.

The difference between the male and female work force has been previously noted (Pool et al. forthcoming-c). From 1986 to 2001 there was an overall increase of 30 per cent in the participation of females in all sectors, with only Manufacturing and the Primary sectors declining.

For the female workforce, increases of 20 per cent or more in the proportions employed were found in four industrial sectors: Public Service, Social Services, Utilities; Building and

Construction Business and Financial Services; and Personal, Household, Restaurants and Hotels.

**Table 6: Intercensal Percentage Changes by Industry, New Zealand as a whole, 1986-2001**

<b>Industry</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Business and Financial Services	88.1	73.7	80.6
Public Services, Social Services, Utilities	-1.5	48.8	27.4
Personal, Household, Restaurants and Hotels	12.6	32.4	23.7
Distribution and Exchange (retail and wholesale)	3.9	17.4	9.5
Building and Construction	-3.2	43.5	1.0
Manufacturing	-28.6	-31.4	-29.4
Primary	-16.8	-0.8	-12.1
<b>Total</b>	<b>1.7</b>	<b>30.4</b>	<b>13.4</b>

From 1986 to 2001, the largest increase in the male labour force was in the Business and Financial Services industry an increase of 88 per cent. The other two industries that increased were Personal, Household, Restaurants and Hotels, and Distribution and Exchange. Amongst the male labour force there was a decline in all the other industries with the largest occurring in Manufacturing (29 per cent).

#### *4.1 Change of distribution by industry and region*

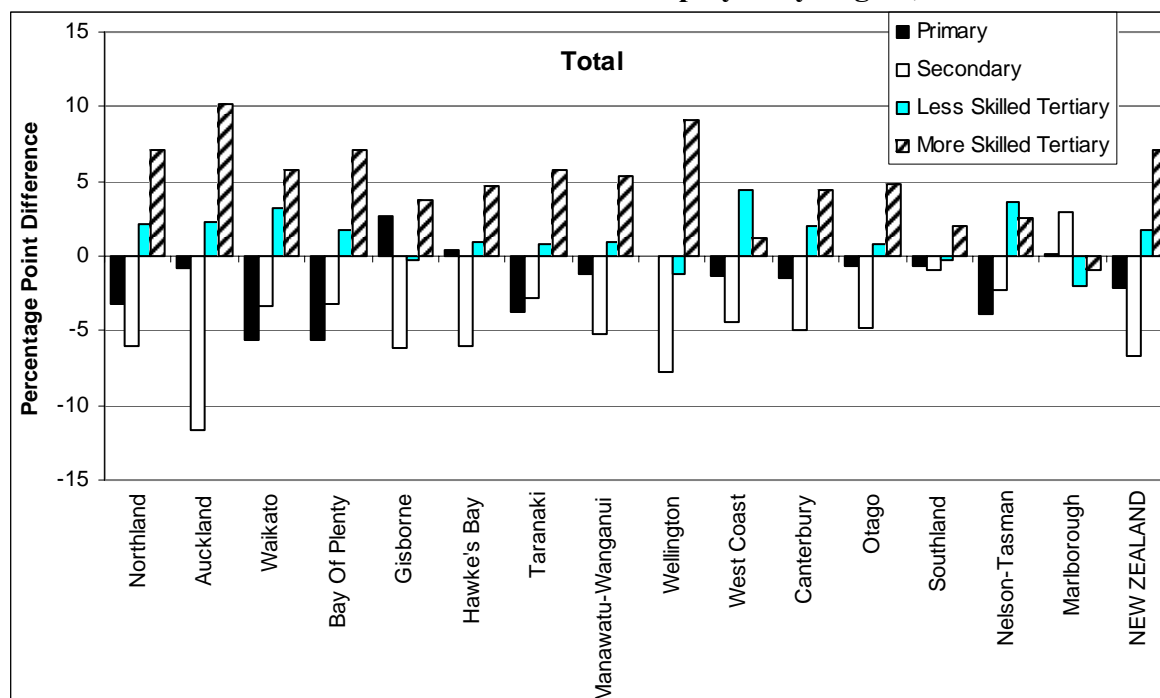
In this section the change in the distribution of industries by sector is analysed. When looking at the change in the distribution of sectors the overall changes in employment patterns need to be considered, a point discussed already in another Discussion Paper (Pool et al. forthcoming-c). The results presented here do not consider increases or decreases in the number of people working in each of the industries, but investigates the change in the composition or distribution of the industries across the sectors. This will give an indication of how the mix of people employed has changed in the regions with the changing nature of industry. The results will be examined for the four major industry groups and some slightly more detailed components.

As Table 6 shows, the Business and Financial Service industry group which is part of the quaternary sector in Figure 4 is the fastest growing industry in New Zealand with all the regions showing increases (see Appendix Table 8). In contrast, the manufacturing industry decreased in all the regions except Marlborough.

Leaving to one side the small region Marlborough, generally speaking there has been an overall shift from the Secondary sector (or Primary and Secondary in the dairying regions) to the More Skilled Tertiary sector (see Figure 4). Loss from the Secondary sector tended to be counterbalanced by gains in the quaternary. That said gains in the More Skilled Tertiary sector were greater than losses in the Secondary sector by over two percentage points in Waikato, the Bay of Plenty and Taranaki. Conversely, losses in the Secondary sector were greater than gains in the More Skilled Tertiary sector by over one percentage point in Auckland, Gisborne, Hawke's Bay and West Coast. The regions with the largest shifts were Auckland and Wellington, which gained rapidly in the quaternary sector. The smallest shifts were in Southland, the West Coast and Marlborough. Marlborough was also the only region

that had a smaller proportion employed in 2001 than in 1986 in the More Skilled Tertiary sector.

**Figure 4: Broad Industrial Sectors: Percentage Point Change in the Standardised<sup>1</sup> Distribution of the Total Workers Employed by Region, 1986-2001**



(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to excluded Not Specified category

There were modest increases across New Zealand as a whole in the proportions of those employed in the Less Skilled Tertiary sector. The regions at the extremes were Waikato, West Coast and Nelson-Tasman which had an increase of more than three percentage points with Gisborne, Wellington, Southland and Marlborough having a declines in those employed in the Less Skilled Tertiary sector.

#### 4.2 Industry Shifts

A somewhat crude analysis is carried out here by looking at the differences between the 2001 observed and expected values for industrial groupings using the same age and gender distribution as in 1986. The measures in this section show the shifts in industrial structures for the period 1986 to 2001. This method of analysis is not as sophisticated as complex shift share analyses which can be carried out by industry (Loveridge and Selting 1998; Patterson 1989), however, it does offer useful analysis.

The Manufacturing industry experienced the largest loss in their industry share, and had also the highest inter-regional range as shown in Table 7. Overall the Business and Financial Services industry had the largest growth in share for New Zealand as a whole, with age groups 25-64 years having the largest proportion. Personal, Household, Restaurants and Hotels had the largest growth in share for 15-24 years olds for New Zealand as a whole, with Distribution and Exchange also having a large growth of this age group. Both these categories had low inter-regional growth in this age group. This could be indicative of the large growth in this age group of those working part-time in these industry groups.

**Table 7: Percentage Difference Between Expected<sup>1</sup> and Observed Shares on Each Industry in 2001, by Industry and Age for New Zealand and Inter-regional Ranges**

Industry	New Zealand				Inter-regional range			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Business and Financial Services	0.8	45.0	50.4	41.3	78.2	21.2	24.3	23.8
Public Services, Social Services, Utilities	-12.0	6.1	13.5	7.4	71.7	29.7	28.9	29.1
Personal, Household, Restaurants and Hotels	44.6	-4.9	-3.2	11.9	19.0	45.5	20.8	23.2
Distribution and Exchange (retail and wholesale)	21.7	0.3	-13.8	0.6	24.4	34.6	34.1	25.8
Building and Construction	-9.1	3.7	3.5	1.9	67.8	53.1	34.2	42.0
Manufacturing	-95.5	-36.2	-46.6	-47.7	172.6	106.2	86.0	105.1
Primary	-5.9	-36.2	-16.8	-23.9	85.3	64.0	53.7	57.6

(1) Pro-rated using 1986 values. For method see Appendix Table 9.

Source: see Appendix Table 9.

The region which shows significant shifts in industry is Marlborough, the only region to have a shift in the share of industry towards the Manufacturing industry (see Appendix Table 9). This region also had the largest declines in Public Service, Social Services, Utilities, and Distribution and Exchange. These trends contrast with those for the majority of the regions. Nelson-Tasman was the only other region to have a shift away from Public Service, Social Services, Utilities. Wellington had large shifts away from Manufacturing, and Distribution and Exchange, instead experiencing large shift towards Personal, Household, Restaurants and Hotels. Gisborne had the smallest increase in Business and Financial Services. In Northland the Public Services, Social Services, Utilities had the largest increases and was the only region to have a shift away from Personal, Household, Restaurants and Hotels. Gisborne also had the largest decrease in Building and Construction, Taranaki and Otago also had decreases in this industry, most probably a result of the completion of “Think Big” projects in these regions. Canterbury had the largest increase in the Building and Construction industry with Southland and the Bay of Plenty also experiencing an increase. Otago had the largest increase in the Personal, Household, Restaurants and Hotels industry. Waikato and Nelson-Tasman had the largest increases in the proportion of those employed in the Distribution and Exchange industry. The Bay of Plenty had the largest decrease in the Primary industry with significant increases in the Public Service, Social Services, Utilities industry.

In summary, some of the most significant changes to occur were: Auckland being the only region to have an increase in the Business and Financial Services, and Public Services, Social Services, Utilities industries for those aged 15-24 years. Northland and the Bay of Plenty had significant increases in the Distribution and Exchange industry for those aged 15-24 years. The most significant shifts amongst those aged 45-64 were in Nelson-Tasman where there was an increase in the Building and Construction industry, and Wellington where there were increases in the Primary sector.

### 4.3 *Distribution of Industries between Regions*

In this section the distribution of industries between the regions are investigated. The percentage of those employed in New Zealand as a whole who work in a given region in a specific industry, again simplified to the broad sector groups of industries.

The distribution of industries across the regions presented in Table 8 highlights a number of points. The first gives the regions that play a dominating and/or disproportionately important role for a given industry: obviously size can dictate absolute dominance whereas a comparison between the total employed as a percentage of the New Zealand total, and the industrial sector's share of the New Zealand total for that sector gives the relative importance. The comparison of the distribution of the Total (all industries combined) with the distribution by sector in a particular region also raises another point. It shows the dominant industries in any region. And the third feature of this table is that it allows this paper to look at changes over time in the distribution of industries across the regions.

When looking at what region dominates given industries Auckland stands out as having the largest percentage in More and Less Skilled Tertiary, and Secondary as shown in Table 8. This is expected as Auckland also has the largest percentage of the employed population. The only industry group they do not dominate is the Primary industry for which the Waikato has the largest share of 19 per cent in 1986 and 17 per cent in 2001. The only other region which has more than 10 per cent of New Zealand's total working population in the Primary sector was Canterbury. In the More and Less Skilled Tertiary, and Manufacturing sector Canterbury and Wellington also have a share over 10 per cent in 1986 and Canterbury remains so in 2001, whereas Wellington falls below 10 per cent in Manufacturing in 2001.

The largest differences in the distribution of New Zealand by industry compared to the total employed occur in the Primary sector. Auckland, Wellington and Canterbury have lower percentages whereas the remainder of the regions have relatively higher percentages employed in the Primary sector. Auckland had disproportionately more people in the Less Skilled Tertiary and Secondary sector than overall employment. By 2001, there were also disproportionately more people in the More Skilled Tertiary sector. Wellington had disproportionately more people employed in the More Skilled Tertiary sector than those employed in all industries, with the Secondary sector being disproportionately lower. Waikato had disproportionately lower percentages in the More and Less Skilled Tertiary sectors, and in the Secondary sector in 1986, but by 2001 the More Skilled Tertiary sector is the only one that significantly lags behind overall employment.

Changes in the distribution of industries between the regions from 1986 to 2001 show that the largest gains occurred, as would be expected, in Auckland with the More and Less Skilled Tertiary sectors benefiting the most. The only other region which had significant gains in an industry was Canterbury in both the Secondary and Primary sectors. Wellington had a sizeable drop in More and Less Skilled Tertiary, and Secondary sectors between 1986 and 2001. Manawatu-Wanganui also experienced decreases in the More Skilled Tertiary sector, while the Waikato and the Bay of Plenty had decreases in the Primary sector.

A detailed breakdown by age and by the seven industrial categories contains, *grosso modo*, see Appendix Table 10. What it adds, however, is the increasing concentration between 1986 and 2001 of skilled tertiary workers not only in Auckland but notably among those in the

younger working ages. This is more notable for the business and financial sub-sector than for the Public Service sub-sector. A similar pattern of concentration occurs but is far less marked in Wellington, and is noticeably absent in Canterbury.

**Table 8: Distribution by Region of Total Employed 15-64 Years by Broad Industrial Sectors, 1986 and 2001: Percentage of New Zealand Total Employed**

	1986					2001					Percentage Point Change 1986-2001				
	More Skilled Tertiary	Less Skilled Tertiary	Secondary	Primary	Total	More Skilled Tertiary	Less Skilled Tertiary	Secondary	Primary	Total	More Skilled Tertiary	Less Skilled Tertiary	Secondary	Primary	Total
Northland	2.8	3.2	3.3	6.7	3.5	2.7	2.9	2.8	6.3	3.1	-0.1	-0.3	-0.5	-0.4	-0.4
Auckland	27.6	30.3	33.5	7.8	27.9	32.7	33.9	32.9	8.2	31.1	5.1	3.6	-0.6	0.4	3.1
Waikato	8.6	8.1	8.5	19.0	9.6	8.3	8.6	9.2	17.0	9.4	-0.3	0.5	0.7	-2.0	-0.2
Bay of Plenty	4.6	5.5	5.2	8.5	5.5	5.2	5.8	6.1	7.5	5.8	0.6	0.3	0.9	-1.0	0.3
Gisborne	1.2	1.1	1.1	2.6	1.3	0.9	0.8	0.8	2.7	1.0	-0.3	-0.3	-0.3	0.1	-0.3
Hawke's Bay	3.4	3.7	4.4	6.2	4.1	3.0	3.3	4.0	6.9	3.7	-0.3	-0.4	-0.3	0.8	-0.4
Taranaki	2.6	2.8	3.1	6.3	3.2	2.2	2.3	2.8	5.4	2.6	-0.4	-0.6	-0.2	-0.9	-0.6
Manawatu-Wanganui	6.9	5.9	5.9	8.7	6.5	5.6	5.0	5.2	8.7	5.6	-1.3	-0.9	-0.6	0.0	-0.9
Wellington	17.9	13.4	10.6	3.4	12.9	16.5	11.5	9.0	3.9	12.2	-1.4	-1.9	-1.6	0.5	-0.7
West Coast	0.8	1.0	0.8	1.9	1.0	0.6	0.9	0.7	1.7	0.8	-0.2	-0.1	-0.1	-0.2	-0.2
Canterbury	12.9	13.5	13.2	11.3	13.0	12.7	14.3	15.0	12.6	13.6	-0.2	0.8	1.8	1.3	0.6
Otago	5.4	5.4	5.0	5.5	5.3	4.9	5.0	4.9	6.1	5.0	-0.5	-0.4	0.0	0.5	-0.3
Southland	2.5	3.0	3.1	6.1	3.2	1.9	2.3	3.1	6.0	2.6	-0.7	-0.7	0.0	-0.1	-0.6
Nelson-Tasman	1.8	1.9	1.7	4.2	2.1	1.9	2.3	2.2	4.6	2.3	0.1	0.4	0.5	0.4	0.2
Marlborough	0.9	1.0	0.7	1.7	1.0	0.8	1.0	1.2	2.4	1.1	-0.1	0.0	0.5	0.8	0.1
<b>New Zealand</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>					

For further details by age and for seven industry categories see Appendix Table 10.



## 5. *Occupational distribution of the workforce*

Industrial categories are concerned with the jobs people are employed to do, whereas occupational categories are used to determine the types of skills of the work force. To the extent that skill is related to other factors such as levels of education and income, occupations are also used as indicators of social status. Therefore, while occupational categories may often sound similar to classes used for industrial groups the inferred meaning is different. That said, in New Zealand there is a major problem: farming is a capital and skill intensive “industry”, many of whose workers are highly qualified, yet by convention it is considered a “manual” occupation. The same is also true for some other primary sector industrial workforces.

There is another important issue. The workforce is becoming increasingly better educated and skilled and job requirements are more demanding. Jobs which an “unskilled” person could perform in the past, now demands some sort of “qualification”. This is not a case of undue inflation in status, instead the processes required for most jobs are becoming more and more complex through the application of mechanisation and information technology to what may have been simple manual tasks in the past. The same holds true in the service sectors where demands of knowledge and information procession grow all the time. The net result is that some of the occupational shifts produce “structural mobility” and are not necessarily due to “social mobility”. The owner-foreman in worker status differentiation in small firms of the past is giving way to corporate ownership, and to senior manager – middle manager – employee of today.

It is important to note that the occupation codes changed between the 1996 and 2001 censuses. The matching used is in Appendix Table 11 where there is an attempt to make the codes comparable over time.

From 1986 to 1996, Production, Transport, Trades and Elementary occupations comprised the highest percentages of the workforce, but by 2001 the Professional, Technical and Related Workers occupation became the largest, as is seen in Table 9. In 1986 Production, Transport, Trades and Elementary occupations (31 per cent) were almost double the next most common occupation, Clerical and Related Workers (18 per cent). In 2001 the gap between the top two occupations was much less, with Professional, Technical and Related Workers occupations reaching 22 per cent and the second occupation of Production, Transport, Trades and Elementary having decreased to 21 per cent, a trend followed by the Clerical and Related Workers occupation which was 13 per cent. From 1986 to 1996 the smallest occupation category was Administrative and Managerial, but by 2001 the smallest was Agriculture, Forestry, Fishery and Hunters. It can be noted that Not Specified increased from one per cent to over five per cent between 1986 and 2001.<sup>10</sup>

The occupational distribution by gender shows major differences. For females the largest occupation was Clerical and Related workers from 1986 to 1996, but this changed in 2001 with Professional, Technical and Related Workers becoming the biggest group. For males the largest occupation was Production, Transport, Trades and Elementary occupations for 1986 to 2001. Between 1986 and 2001 the Production, Transport, Trades and Elementary

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<sup>10</sup> When analysed by region Not Specified is excluded, but the regional results for Not Specified is given in Appendix Table 12 for the Standardised results and in Appendix Table 13 for the age specific results.

occupations category underwent radical declines of 10 percentage points for males, and the Clerical and Related workers occupation for females declined 11 percentage points. Females had significantly higher proportions than men in Professional, Technical and Related Workers; and in the category Clerical and Related Workers; Sales and Service occupations. Males had significantly higher proportions in Administrative and Managerial; Agriculture, Forestry, Fishery and Hunters; and Production, Transport, Trades and Elementary occupations.

**Table 9: Percentage Distributions of the Employed Population Age 15-64 Years for New Zealand as a Whole, by Occupation and Gender, 1986-2001**

<b>Occupation</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>
	<b>Males</b>				<b>Females</b>			
Professional, Technical and Related Workers	13.0	15.6	15.9	18.6	17.9	21.4	21.4	26.2
Administrative and Managerial	6.8	8.1	9.2	10.7	2.1	3.1	4.0	7.3
Clerical and Related Workers	7.6	7.0	6.7	5.1	32.1	31.2	27.0	21.2
Sales	9.1	10.9	10.6	9.6	11.7	12.3	12.4	12.0
Service	6.2	7.2	7.4	7.7	15.5	15.2	16.9	16.9
Agriculture, Forestry, Fishery and Hunters	12.8	12.2	11.7	9.8	7.4	6.5	6.4	5.2
Production, Transport, Trades and Elementary	43.5	37.6	34.7	33.1	12.6	8.6	8.9	6.6
Unidentifiable/Not specified	1.0	1.5	3.7	5.4	0.7	1.8	3.2	4.5
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
	<b>Total</b>							
Professional, Technical and Related Workers	15.0	18.1	18.4	22.2				
Administrative and Managerial	4.9	5.9	6.8	9.1				
Clerical and Related Workers	17.6	17.5	16.0	12.7				
Sales	10.1	11.5	11.4	10.8				
Service	10.0	10.7	11.8	12.0				
Agriculture, Forestry, Fishery and Hunters	10.6	9.7	9.3	7.7				
Production, Transport, Trades and Elementary	30.9	25.0	22.9	20.6				
Unidentifiable/Not specified	0.9	1.6	3.4	5.0				
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				

### 5.1 *The occupational structure of the regional workforce*

As noted earlier an analysis dealing with seven categories for 15 regions requires very large data sets. More detailed results for 1986 to 2001 are given in Appendix Table 14, but in the text the results are grouped into the broad occupational groups of Professional, Service/Clerical and Manual as is shown in Table 10.

**Table 10: Occupations in various broad categories**

Professional	Professional, Technical and Related Workers; Administrative and Managerial workers
Service/Clerical	Clerical and Related workers; Sales workers; Service workers
Manual	Agriculture, Forestry, Fishery and Hunters; Production, Transport, Trade and Elementary workers

When considering the occupational structure of regional workforces two main patterns are evident. First, standing out in Figure 5 are the relatively high proportions in Professional occupations (Administration and Managerial; Professional, Technical and Related Workers) and Clerical and Related occupations in the Auckland<sup>11</sup> and Wellington<sup>12</sup> regions (see also Appendix Table 14). These regions are also notable for having low and decreasing proportions in Manual occupations.

There is a second group of more rural regions with higher levels of workers in Manual occupations and lower proportions of workers in Professional and Service/Clerical occupations (see Figure 5). This group includes Northland, Waikato, the Bay of Plenty<sup>13</sup>, Gisborne, Hawke's Bay, Taranaki, West Coast, Southland and Nelson-Tasman for both 1986 and 2001. Marlborough joins this group in 2001. These regions have high participation levels in Agriculture, Forestry, Fishery and Hunters occupations except for Hawke's Bay and West Coast where there are many workers in Production, Transport, Trade and Elementary occupations.

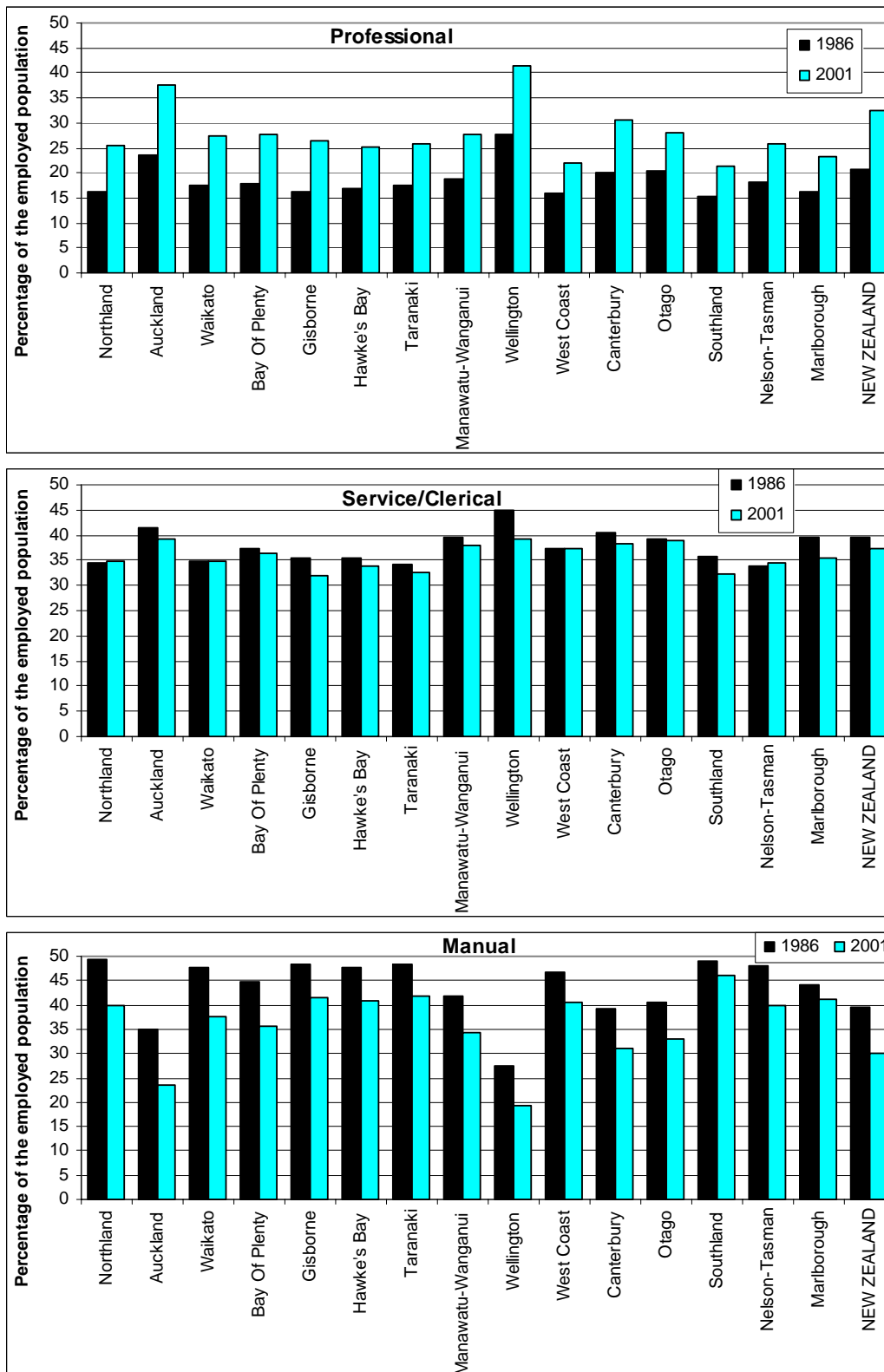
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<sup>11</sup> Across the four urban areas of Auckland there are variations the Professional and Manual sectors. The highest urban area was Central Auckland with 46 per cent of the employed population in Professional jobs, with Southern Auckland being the lowest at 30 per cent, and with North Shore and Western Auckland being 40 and 32 per cent respectively in 2001. For Manual occupations the lowest urban area was Central Auckland at 16 per cent and the highest was 30 per cent in Southern Auckland with North Shore and Western Auckland being 19 and 28 per cent respectively.

<sup>12</sup> In the four urban areas of Wellington there is variation across all three occupations sectors. Wellington Central had 51 per cent of its employed population in Professional jobs, with all the other urban areas between 33 and 36 per cent in 2001. For Manual occupations the lowest urban area was Central Wellington at 12 per cent, with all the other urban areas around 22 per cent. For the group Service/Clerical jobs the highest was 45 per cent in Southern Auckland and the lowest was 37 per cent in Wellington Central, with North Shore and Western Auckland being both 42 per cent.

<sup>13</sup> Comparing Western and Eastern Bay of Plenty for the Professional and Service/Clerical occupations, the Western Bay of Plenty is higher by two and three percentage points respectively in 2001 with Eastern Bay of Plenty being higher in Manual occupations by six percentage points.

**Figure 5: Workers in Broad Occupational Groups as a Standardised<sup>1</sup> Percentage of Total Employed, by Region, 1986 and 2001**



(1) Standardised by age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified category see Appendix Table 2.

## 5.2 *The occupational structure of the regional workforce by age group*

The occupational structure at various age groups is typically different from that for the total population, as workers within different age groups have different skills and experiences available to them. But these skills and experiences also vary according to what region a person is in. In this section the national situation is used to give a base population that allows regional comparisons.

### *National Trends*

The 15-24 years age group has a trend that is distinctly different from the other age groups (see Table 11). This is partly because employed people in this age group are at an early stage in their working life, and because those entering full-time work at these ages are less well qualified and thus tend to enter production and less skilled service jobs, but also, of course, a large percentage of young workers are part-time. Thus at this age group there were much lower percentages in Professional, Technical and Related Workers, and Administrative and Managerial Workers occupations than for the other age groups. In 1986, a low proportion in these occupations had been offset by higher percentages in the Clerical and Related workers, and Production, Transport, Trades and Elementary occupations. But this had changed by 2001, when participation in Sales and Service occupations was higher for the 15-24 years age group than for any other age group. This change reflects the shift noted above to part-time work, many of these jobs occur in Sales and Service occupations, and thus over the period for this age group this category grew by 15 percentage points, the only age group at which this occurred. Conversely other groups such as Clerical and Related Workers and Production, Transport, Trades and Elementary occupations experienced decreases.

At the 25-44 and 45-64 year age groups, changes involved a significant decline in the Production, Transport, Trades and Elementary occupations and increases in the Professional, Technical and Related Workers, and Administrative and Managerial groups. Between 1986 and 2001, there was an increase in the proportion of 25-44 and 45-64 year olds working in Professional, Technical and Related Workers, and Production, Transport, Trades and Elementary occupations.

**Table 11: Percentage Distributions of the Employed Population for New Zealand as a Whole, by Occupation and Age Groups, 1986 and 2001**

Occupation	1986			2001		
	15-24	25-44	45-64	15-24	25-44	45-64
Professional, Technical and Related Workers	9.5	17.7	15.0	12.4	24.8	23.0
Administrative and Managerial	0.8	6.6	6.8	1.8	10.0	11.1
Clerical and Related Workers	22.5	15.9	16.1	14.6	12.4	12.2
Sales	10.5	9.6	10.8	16.6	9.7	9.6
Service	10.4	9.7	10.2	19.0	10.6	10.9
Agriculture, Forestry, Fishery and Hunters	9.2	10.8	11.6	7.8	7.0	8.5
Production, Transport, Trades and Elementary	36.1	29.5	28.6	22.0	21.0	19.5
Unidentifiable/Not specified	1.1	0.8	0.9	5.8	4.6	5.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

### *Regional Trends*

When considering regional trends (see Appendix Table 15) we see that for the Professional occupations as a broad group there was little difference in the regional pattern compared to overall New Zealand trends. For the Service/Clerical occupations as a group there were some differences in the pattern for the regions compared to the overall New Zealand trend. In Gisborne, Hawke's Bay, Southland, Nelson-Tasman and Marlborough for Clerical and Related Workers in 2001 the trend differed from the overall New Zealand trend with the 15-24 year age group having a low proportion compared to the other two age groups, the overall New Zealand trend was for this age group to have the highest proportion. For Sales workers in 1986 the 15-24 year age group was significantly higher than the other age groups in both the West Coast and Marlborough. In 1986 for Service occupations many regions differed from the New Zealand trend. In Manawatu-Wanganui and Marlborough the participation in the Service occupations reduced with age and in Northland, Waikato, Gisborne, Hawke's Bay, Taranaki, West Coast, Southland and Nelson-Tasman participation increased with age. In 2001 the New Zealand trend changed with the 15-24 year age group being substantially higher than the other age groups although this did not occur to the same extent in Gisborne and the West Coast.

In some regions Manual occupations as a group have a different trend from that for New Zealand as a whole. In 1986 the national rate for 15-24 year olds was higher than for the other age groups except in the West Coast, Southland and Marlborough where there was no real difference between the age groups. In 2001 the national rate for the 15-24 year age group was only slightly higher than the other age groups except in Gisborne and Nelson-Tasman where participation for this age group was markedly higher.

When analysing the primary occupations, in 1986, instead of increasing with age like New Zealand as a whole, in Gisborne, Hawke's Bay and Nelson-Tasman the lowest age specific rate was for those aged 45-64 years, in Nelson-Tasman the 15-24 years age group was markedly higher than for the other age groups. Nationally, in 2001 the 15-24 year age group was the second highest age group for this occupation but in Gisborne, Hawke's Bay, West Coast and Nelson-Tasman this age group had the highest proportion. In fact the 15-24 year age group in the West Coast went from having the lowest proportion of the three age groups in 1986 to having the highest in 2001. For both 1986 and 2001 for Production, Transport, Trades and Elementary occupations there were no clear differences in pattern for the regions compared to the overall New Zealand trend.

### *5.3 The occupational structure of the regional workforce by ethnicity*

The ethnic differences in distribution by occupation can help explain ethnic variations in income and other factors. The results in Table 12 show that even though Maori have a very different occupational distribution with a tendency to be in less skilled jobs, the gap between Maori and Pakeha has narrowed overtime.

In both 1986 and 2001, Pakeha were more likely than Maori to be in Professional, Technical and Related Workers; or Administrative and Managerial; or Clerical and Related Workers; or to be in Sales occupations. The largest difference between ethnic groups was in the Professional, Technical and Related Workers although the gap has narrowed, this was also the case for Clerical and Related Workers, and Sales. In 1986, Maori were more likely than Pakeha to be in Production, Transport, Trades and Elementary occupations with a 21 percentage point gap, this gap had, however, reduced to 10 percentage points by 2001. By

2001, Maori were also 3 percentage points more likely than Pakeha to be in Service occupations. The occupations in which Maori participation is higher than Pakeha are generally those which require fewer or lower qualifications. The qualification gap between Maori and Pakeha is discussed in another discussion paper in this series (Pool et al. 2005a).

**Table 12: Standardised<sup>1</sup> Percentage Distributions of the Employed Population Aged 15-64 years for New Zealand as a Whole, by Occupation and Ethnicity, 1986 and 1996**

Occupation	Pakeha		Maori	
	1986	2001	1986	2001
Professional, Technical and Related Workers	16.8	23.2	8.5	16.4
Administrative and Managerial	5.6	9.8	1.4	5.0
Clerical and Related Workers	19.4	12.7	11.9	10.9
Sales	11.1	11.6	4.5	7.4
Service	9.8	11.3	14.9	14.9
Agriculture, Forestry, Fishery and Hunters	10.9	8.1	10.1	7.8
Production, Transport, Trades and Elementary	25.9	19.8	47.0	29.9
Unidentifiable/Not specified	0.6	3.4	1.7	7.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(1) Standardised by age and gender to the employed population in 1996 for New Zealand as a whole.

We next consider the regions to identify ethnic patterns that differ from the national trends (see Appendix Tables 16 and 17) and also to consider differences between Maori and Pakeha regional and national trends as shown in Table 13. For Professional occupations as a group, the gap between Pakeha and Maori is smaller for the West Coast, Northland, Otago and Southland (except in Southland in 1986). The largest gap between Pakeha and Maori, occurs in Auckland and Wellington where there are significantly higher proportions of Pakeha in the Professional occupations and its two sub-categories. In Administrative and Managerial occupations in both 1986 and 2001 Maori had exceptionally low rates in Gisborne, Hawke's Bay and Marlborough. For the West Coast the gap between Maori and Pakeha was very small for this occupation.

**Table 13: Percentage Point Difference in the Percentage Distribution by Occupation between Pakeha and Maori Workers, by Region, 1986 and 2001**

Region	1	2	Professional	3	4	5	Service/ Clerical	6	7	Manual
<b>1986</b>										
Northland	4.1	2.4	<b>6.5</b>	5.3	5.9	-6.0	<b>5.2</b>	6.6	-18.2	<b>-11.6</b>
Auckland	9.7	6.3	<b>16.0</b>	8.5	7.3	-5.3	<b>10.6</b>	1.0	-27.5	<b>-26.5</b>
Waikato	6.6	2.7	<b>9.3</b>	6.7	6.2	-8.0	<b>5.0</b>	7.3	-21.6	<b>-14.3</b>
Bay of Plenty	5.7	3.4	<b>9.1</b>	5.9	8.2	-5.9	<b>8.1</b>	1.0	-18.3	<b>-17.3</b>
Gisborne	6.7	3.1	<b>9.8</b>	9.2	7.5	-4.3	<b>12.4</b>	-3.8	-18.4	<b>-22.2</b>
Hawke's Bay	7.3	3.3	<b>10.6</b>	10.3	8.3	-1.2	<b>17.5</b>	-2.4	-25.7	<b>-28.1</b>
Taranaki	6.4	1.9	<b>8.3</b>	5.3	5.5	-5.7	<b>5.1</b>	9.9	-23.3	<b>-13.3</b>
Manawatu- Wanganui	7.9	2.8	<b>10.7</b>	7.1	6.6	-7.7	<b>6.1</b>	3.0	-19.7	<b>-16.7</b>
Wellington	13.0	5.5	<b>18.5</b>	5.4	5.5	-5.9	<b>4.9</b>	-0.1	-23.4	<b>-23.5</b>
West Coast	2.2	1.0	<b>3.3</b>	3.3	4.9	-7.0	<b>1.2</b>	1.3	-5.7	<b>-4.5</b>
Canterbury	6.6	3.2	<b>9.8</b>	7.0	5.9	-7.7	<b>5.3</b>	3.7	-18.8	<b>-15.1</b>
Otago	5.2	1.3	<b>6.6</b>	4.6	5.4	-3.6	<b>6.3</b>	-0.4	-12.5	<b>-12.9</b>
Southland	7.2	1.9	<b>9.1</b>	7.3	6.5	-5.3	<b>8.5</b>	4.4	-22.0	<b>-17.6</b>
Nelson-Tasman	6.6	1.0	<b>7.6</b>	7.3	5.3	-1.5	<b>11.1</b>	-2.7	-16.0	<b>-18.7</b>
Marlborough	4.9	2.9	<b>7.8</b>	6.3	2.8	-2.2	<b>6.9</b>	4.4	-19.2	<b>-14.8</b>
<b>NEW ZEALAND</b>	<b>8.2</b>	<b>4.2</b>	<b>12.4</b>	<b>7.4</b>	<b>6.6</b>	<b>-5.2</b>	<b>8.7</b>	<b>0.6</b>	<b>-21.7</b>	<b>-21.1</b>
<i>Range</i>	<i>10.8</i>	<i>5.2</i>	<i>15.3</i>	<i>7.0</i>	<i>5.5</i>	<i>6.8</i>	<i>16.3</i>	<i>13.8</i>	<i>21.8</i>	<i>23.6</i>
<b>2001</b>										
Northland	1.7	2.1	<b>3.8</b>	1.9	3.2	-4.8	<b>0.4</b>	3.1	-7.3	<b>-4.1</b>
Auckland	9.7	7.0	<b>16.7</b>	-0.6	3.9	-4.6	<b>-1.3</b>	0.3	-15.8	<b>-15.4</b>
Waikato	3.3	3.9	<b>7.3</b>	2.2	4.1	-6.8	<b>-0.5</b>	4.4	-11.2	<b>-6.8</b>
Bay of Plenty	3.3	4.3	<b>7.5</b>	1.6	5.5	-4.6	<b>2.5</b>	-1.2	-8.9	<b>-10.0</b>
Gisborne	3.5	4.1	<b>7.6</b>	2.3	5.5	-2.5	<b>5.3</b>	-6.7	-6.2	<b>-12.9</b>
Hawke's Bay	6.3	4.2	<b>10.5</b>	4.0	6.5	-2.0	<b>8.6</b>	-3.1	-16.0	<b>-19.1</b>
Taranaki	2.5	2.8	<b>5.3</b>	2.1	3.0	-5.3	<b>-0.3</b>	8.1	-13.1	<b>-5.0</b>
Manawatu- Wanganui	4.3	3.3	<b>7.7</b>	2.9	4.7	-6.1	<b>1.4</b>	1.3	-10.4	<b>-9.1</b>
Wellington	10.1	5.5	<b>15.5</b>	-0.8	2.7	-4.7	<b>-2.8</b>	-0.3	-12.5	<b>-12.7</b>
West Coast	-0.1	-0.2	<b>-0.3</b>	3.3	1.4	-3.4	<b>1.2</b>	0.5	-1.5	<b>-0.9</b>
Canterbury	5.3	3.1	<b>8.4</b>	2.5	3.0	-5.5	<b>0.1</b>	2.3	-10.7	<b>-8.4</b>
Otago	2.6	2.2	<b>4.7</b>	3.4	2.8	-2.2	<b>4.1</b>	-1.9	-6.9	<b>-8.8</b>
Southland	2.1	2.3	<b>4.4</b>	3.0	3.6	-0.9	<b>5.8</b>	2.6	-12.8	<b>-10.2</b>
Nelson-Tasman	4.7	1.2	<b>5.9</b>	3.4	3.1	-0.2	<b>6.2</b>	-3.4	-8.7	<b>-12.1</b>
Marlborough	3.6	1.8	<b>5.5</b>	2.3	4.4	-2.9	<b>3.7</b>	1.2	-10.3	<b>-9.2</b>
<b>NEW ZEALAND</b>	<b>6.3</b>	<b>4.7</b>	<b>11.0</b>	<b>1.4</b>	<b>4.0</b>	<b>-4.4</b>	<b>1.0</b>	<b>-0.1</b>	<b>-11.9</b>	<b>-12.0</b>
<i>Range</i>	<i>10.1</i>	<i>7.3</i>	<i>17.1</i>	<i>4.9</i>	<i>5.1</i>	<i>6.6</i>	<i>11.4</i>	<i>14.8</i>	<i>14.5</i>	<i>18.2</i>

Note: 1 = Professional workers

5 = Service workers

2 = Administrative and Managerial workers

6 = Agriculture, Forestry, Fishery and Hunter workers

3 = Clerical and Related workers

7 = Production, Transport, Trade & Elementary workers

4 = Sales workers

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified as reported in Appendix Table 12.

Compared to national trends, Pakeha had significantly larger proportions, compared to Maori, of those in the Service/Clerical occupations in Gisborne and Hawke's Bay. In contrast, in 2001 Maori had significantly larger proportions, compared to Pakeha, of those in the



Service/Clerical occupation in Auckland, Wellington and the Waikato. The large ethnic difference in Gisborne and Hawke's Bay is caused by the difference in participation rates in the Clerical and Related Workers, and Sales occupations. In 1986 in Hawke's Bay there was almost no difference between Pakeha and Maori for Service workers, while nationally Maori participation was higher than Pakeha for this occupation. The gap between Pakeha and Maori was large, with Maori having higher proportions, in Waikato, Manawatu-Wanganui and Canterbury.

For Manual occupations there was little difference in 2001 between Maori and Pakeha for Northland, Waikato, Taranaki and West Coast. The ethnic gap appears slightly larger than the national trend in Auckland and Hawke's Bay, with Maori having higher proportions. The gap between Pakeha and Maori for Auckland and Hawke's Bay was large in Production, Transport, Trades and Elementary occupations, whereas the gap was small for West Coast. In Agriculture, Forestry, Fishery and Hunters occupations Pakeha proportions were markedly higher than for Maori in Northland, Waikato and Taranaki by more than six percentage points in 1986 and three in 2001. The proportion of Maori was higher than that of Pakeha in Gisborne, Hawke's Bay and Nelson-Tasman for the same occupations.

#### **6. Occupational change of the national workforce, 1986-2001**

Changes in the number of people working in different occupations shows how some occupations have gained and others have lost. The largest gains occurred in the Administrative and Managerial occupations followed by Professional, Technical and Related Workers (see Table 14). These are the two occupation groups which require the highest qualifications and increased education. Sales and Service occupations have also increased by over 20 per cent. The occupations which have lost people are the more manual occupations which require fewer skills and less education. The largest decline was in Production, Transport, Trades and Elementary occupations followed by Agriculture, Forestry, Fishery and Hunters, and Clerical and Related Workers. Thus it is clear that for employment it is becoming increasingly necessary to be well educated and have high skill levels. This is true also for the so called manual occupations where mechanisation and information technologies are replacing manual dexterity.

**Table 14: Percentage Changes in the Occupations of the Workforce Aged 15-64 Years, by Gender, New Zealand, 1986 to 2001**

<b>Occupation</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>
Professional, Technical and Related Workers	45.3	90.8	67.5
Administrative and Managerial	58.8	349.1	110.1
Clerical and Related Workers	-31.0	-13.9	-18.2
Sales	7.9	34.4	20.4
Service	27.2	42.3	36.7
Agriculture, Forestry, Fishery and Hunters	-22.2	-7.4	-18.0
Production, Transport, Trades and Elementary	-22.7	-31.8	-24.3
<b>Total change in those employed</b>	<b>1.7</b>	<b>30.4</b>	<b>13.4</b>

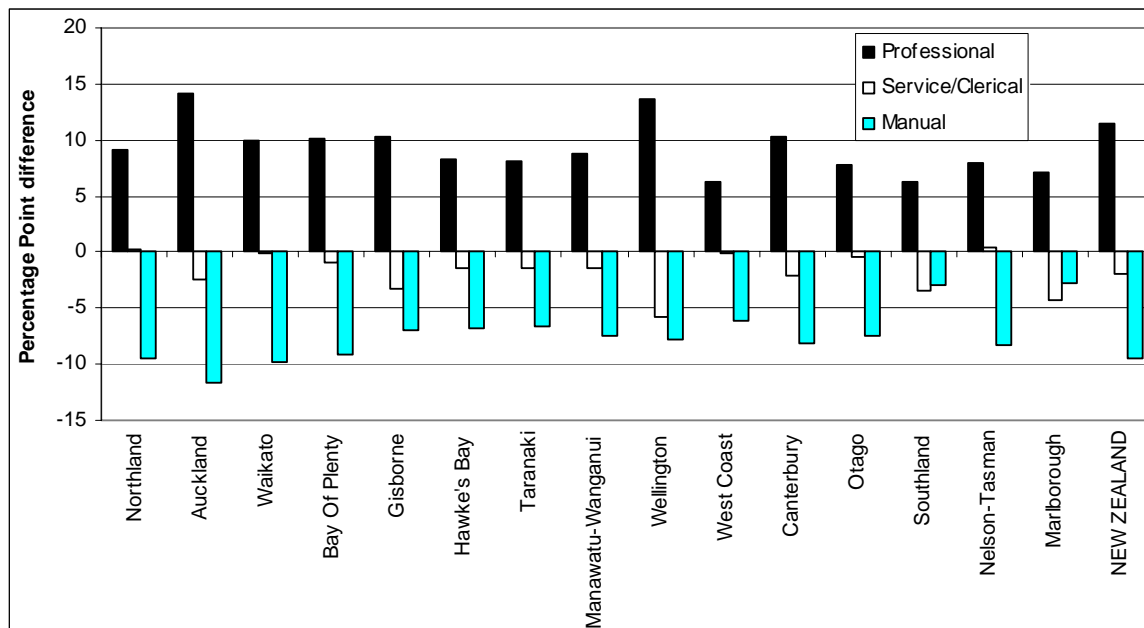
In another discussion paper it is shown that overall rates of female employment were growing over this period, whereas male employment was declining (Pool et al. forthcoming-c). The same occupations for both males and females are declining but there is a difference in magnitude. The largest increase for both males and females came in the Administrative and

Managerial occupations followed by the Professional, Technical and Related Workers, although the change for males is much less than for females. In the Administrative and Managerial occupations participation for females tripled whereas for males there was an increase of only one half, though it is important to note that this came from a low base for females. The only occupation in which female decline was larger than male was in Production, Transport, Trades and Elementary a function of the decreases in Manufacturing noted earlier. Males are moving out of Clerical and Related Workers and Agriculture, Forestry, Fishery and Hunters occupations.

### 6.1 Change in distribution in Occupations by regions

When looking at inter-regional differences in the changes in the distribution of occupations, the overall trends in employment need to be considered, as was discussed in an earlier discussion paper (Pool et al. forthcoming-c). The results given here do not consider the shifts in the number of people working in each of the occupations but rather deal with the change in the mix or distribution of these occupations. This analysis will give an indication of how the mix of employed people has changed in the regions with the changing nature of occupations in which people work. The results will be examined for the three major occupational groups (see Figure 6 and Appendix Table 18 for more detailed components of major occupational groups).

**Figure 6: Percentage Point Change in the Occupational Groupings as a Standardised<sup>1</sup> Percentage of the Total Employed by Region, 1986-2001**



(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified category see Appendix Table 8.

In the Professional occupational grouping the greatest percentage point increase was seen in Auckland, Wellington and Canterbury. The smallest increase in this occupational group was on the West Coast, Southland and Nelson-Tasman. All regions show an increase in the percentage of workers in Professional occupations.

For Service/Clerical occupations the only percentage point increases occurred in Northland and Nelson-Tasman. The largest declines in this category were seen in Marlborough and Wellington.

All regions showed a decline in the percentage of people in Manual occupations. The largest decreases for Manual occupations came in the four northern regions of Northland, Auckland, Waikato and the Bay of Plenty with the smallest being in Marlborough and Southland. The large declines in Manual occupations experienced by these regions, especially Auckland, are a result of the radical decreases in Manufacturing during the economic restructuring.

## 6.2 *Occupation Shifts*

A somewhat crude analysis is carried out here by looking at the differences between the 2001 observed and expected values for occupational groupings using the age and gender distribution of 1986. The expected values have been estimated as if the age and gender specific rates observed in 1986 applied to 2001. The measures in this section show the shifts-shares in occupation structures for the period 1986 to 2001. This is not as sophisticated as complex shift share analyses which can be done with industry (Loveridge and Selting 1998; Patterson 1989).

The largest shift in occupational share was in the Administrative and Managerial Workers for New Zealand as a whole as shown in Table 15. This is also the case for all three age groups 15-24, 25-44 and 45-64 years. There was also a large increase in the proportion of those in the Professional, Technical and Related Workers occupation. In the 15-24 year age group there was a large increase in the proportion of those in the Sales and Service Workers occupation. The largest decline in an occupation occurred in Clerical and Related Workers with declines occurring in Agriculture, Forestry, Fishery and Hunters, and Production, Transport, Trades and Elementary Workers. In Agriculture, Forestry, Fishery and Hunters Workers this decline was largest at the 25-44 year age group and for Production, Transport, Trades and Elementary Workers it was largest at the 15-24 year age group.

The largest inter-regional ranges occur in Agriculture, Forestry, Fishery and Hunters Workers for all age groups as well as the overall population. The range was largest for those aged 15-24 years for Clerical and Related Workers and for those aged 25-44 years for Production, Transport, Trades and Elementary Workers. The lowest inter-regional ranges occurred in Professional, Technical and Related Workers with it also being low in Sales and Services Workers occupation.

**Table 15: Percentage Difference Between Expected<sup>1</sup> and Observed Shares on Each Occupation in 2001, by Occupation and Age for New Zealand and Inter-regional Ranges**

Occupation	New Zealand				Inter-regional range			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Professional, Technical and Related Workers	26.6	30.0	35.9	31.8	39.1	20.2	13.6	13.4
Administrative and Managerial Workers	57.0	43.7	47.2	45.6	45.8	24.7	12.4	18.8
Clerical and Related Workers	-53.1	-35.6	-39.5	-40.1	90.2	30.3	44.3	30.2
Sales Workers	39.1	2.0	-11.5	7.0	37.7	25.6	27.0	15.1
Service Workers	46.9	6.4	0.1	14.8	34.4	25.3	21.2	16.0
Agriculture, Forestry, Fishery and Hunters	-8.7	-45.2	-26.3	-31.8	90.1	47.3	51.2	50.9
Production, Transport, Trades and Elementary	-51.2	-24.5	-27.5	-30.1	60.8	47.4	37.1	46.2

(1) Pro-rated using 1986 values. See method in Appendix Table 19

Source: Appendix Table 19.

The largest increase in Professional, Technical and Related Workers occurred in Auckland with smaller increases in this occupation occurring in all the South Island regions except Christchurch (see Appendix Table 19). Administrative and Managerial Workers had the largest increases in Gisborne, Northland, Waikato and West Coast with the smallest increases occurring in Auckland and Wellington. In Service occupations the largest increases occurred in Otago, Nelson-Tasman, Northland and Hawke's Bay with the smallest increases occurring in Marlborough and Gisborne. For Sales workers there is a mixture of increases and decreases, with the largest increase occurring in Wellington. Those regions that had decreases in this occupation were Southland, Hawke's Bay, Marlborough and Taranaki.

Across all regions, Clerical and Related Workers, Agricultural, Forestry, Fishery and Hunters, and Production, Transport, Trades and Elementary occupations, saw decreases. For Clerical and Related Workers the smallest decreases occurred in the Waikato and Auckland, with the largest decreases, by some distance, occurred in Wellington and Marlborough. In the Agricultural, Forestry, Fishery and Hunters occupation the largest decrease occurred in the Bay of Plenty with only a small decrease occurring in West Coast, Wellington, Marlborough and Hawke's Bay. The Production, Transport, Trades and Elementary occupations grouping had large decreases in Auckland and Wellington and only very small decreases in Southland and Marlborough.

The Clerical and Related Workers for Gisborne had one of the largest decreases amongst those aged 15-24 years and the smallest decrease amongst those aged 45-64 years. Southland had the largest decrease amongst those age 15-24 years for this occupation category. For Sales Workers Auckland and Wellington had the largest decrease amongst those aged 15-24 years. Gisborne had a large decrease in Sales for those aged 25-44 years. Those in Auckland aged 45-64 years olds had a large decrease in service workers. For those aged 15-24 years in Southland there has been a large increase in Agriculture, Forestry, Fishery and Hunter occupation. In Auckland and Waikato there has been a large decrease in this occupation for the same age group.

### 6.3 *Distribution of Occupations between regions*

In this section the distribution of occupations between regions are investigated. That is what percentage of those employed in New Zealand as a whole for a specific industry are employed in any given region. To simplify this analysis the broad occupational groups are used.

The distributions of occupations across the regions presented in Table 16 highlights a number of points. The first gives the regions that play a dominating and/or disproportionately important role for a given occupation: obviously size can dictate absolute dominance whereas a comparison between the total employed as a percentage of the New Zealand total, and the individual occupation group's share of the New Zealand total for that group gives the relative importance. The comparison of the distribution of Total (all occupations combined) with the distribution by occupation group in a particular region also raises another point. It shows the dominant occupations in any region. And the third feature of this table is that it allows us to look at changes over time in the distribution of occupations across the regions.

One region stands out as a dominant region for all three groups of occupations this is Auckland as is shown in Table 16. This is especially the case with the Professional occupations. This is expected as they have the largest percentage of the employed population. Canterbury had over 10 per cent in all three groups of occupations, Wellington had large proportions in Professional and Service/Clerical occupations, and Waikato had large proportions in Manual occupations. Waikato's dominance in Manual occupations is a result of its dependence on Primary industry.

The largest difference in the distribution of New Zealand by occupation to the total employed occurs in the Manual occupations. Auckland and Wellington have lower percentages whereas the remainder of the regions have higher percentages employed in the Manual occupations. The Auckland and Wellington regions had higher percentages employed in both the Professional and Service/Clerical occupations which counter balances the lower percentages of people working in the Manual occupations. In 2001 for another group of regions including Canterbury, Otago and Manawatu-Wanganui there were lower percentages employed in Professional occupations than for their overall employed population and more employed in Service/Clerical and Manual occupations. The remaining regions have lower percentages employed in both the Professional and Service/Clerical occupations and more employed in the Manual occupations.

**Table 16: Distribution by Region of the Total Employed 15-64 years in Broad Occupational Categories, 1986 and 2001: Percentage of New Zealand Total Employed**

Region	1986				2001				Percentage Point Difference			
	Profes- sional	Service/ Clerical	Manual	Total <sup>1</sup>	Profes- sional	Service/ Clerical	Manual	Total <sup>1</sup>	Profes- sional	Service/ Clerical	Manual	Total <sup>1</sup>
Northland	2.7	2.9	4.4	3.5	2.5	2.8	4.1	3.1	-0.2	-0.1	-0.3	-0.4
Auckland	31.3	29.9	24.3	27.9	35.9	32.2	24.0	31.1	4.6	2.3	-0.4	3.1
Waikato	7.9	8.2	11.6	9.6	7.9	8.7	11.8	9.4	0.0	0.5	0.2	-0.2
Bay Of Plenty	4.6	5.1	6.2	5.5	5.1	5.6	6.8	5.8	0.4	0.5	0.5	0.3
Gisborne	1.0	1.1	1.6	1.3	0.8	0.9	1.4	1.0	-0.2	-0.3	-0.2	-0.3
Hawke's Bay	3.3	3.6	4.9	4.1	2.9	3.3	4.9	3.7	-0.4	-0.2	0.0	-0.4
Taranaki	2.7	2.7	4.0	3.2	2.1	2.3	3.6	2.6	-0.6	-0.4	-0.3	-0.6
Manawatu- Wanganui	5.7	6.5	6.9	6.5	4.8	5.7	6.4	5.6	-0.9	-0.8	-0.5	-0.9
Wellington	17.4	15.1	8.8	12.9	15.6	12.8	7.7	12.2	-1.8	-2.2	-1.0	-0.7
West Coast	0.7	0.9	1.2	1.0	0.6	0.8	1.1	0.8	-0.2	-0.1	-0.1	-0.2
Canterbury	12.6	13.2	12.9	13.0	12.9	14.0	14.1	13.6	0.3	0.7	1.2	0.6
Otago	5.1	5.2	5.5	5.3	4.4	5.3	5.5	5.0	-0.7	0.1	0.0	-0.3
Southland	2.3	2.8	4.1	3.2	1.7	2.2	4.1	2.6	-0.6	-0.6	0.0	-0.6
Nelson-Tasman	1.8	1.8	2.5	2.1	1.9	2.1	3.0	2.3	0.1	0.4	0.5	0.2
Marlborough	0.7	1.0	1.1	1.0	0.8	1.1	1.5	1.1	0.1	0.1	0.5	0.1
<b>New Zealand</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				

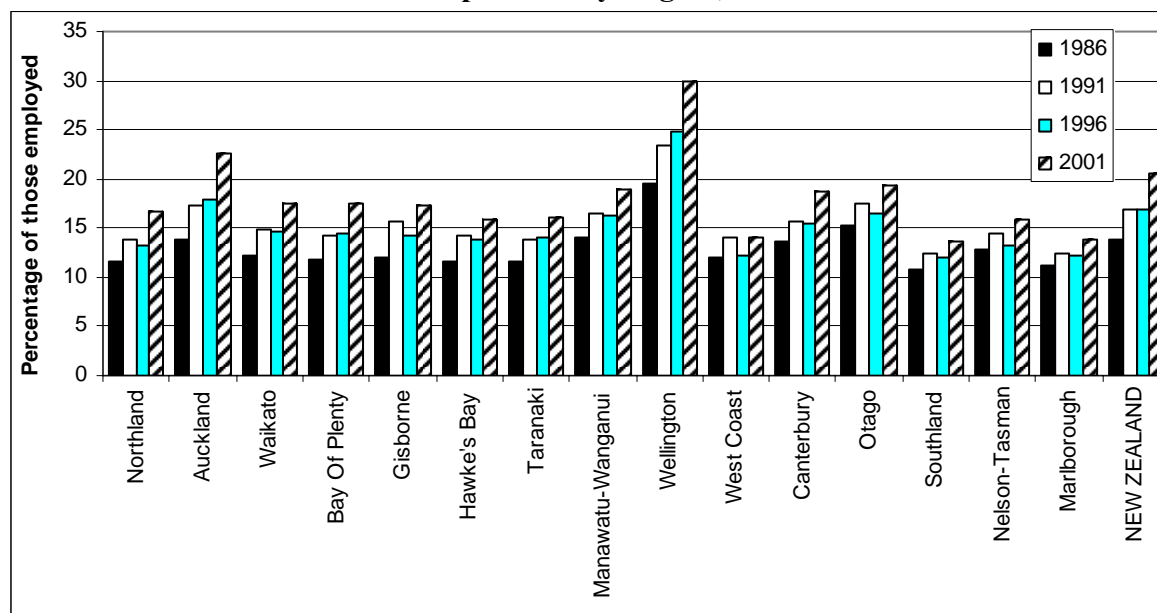
(1) Includes not specified.

When looking at changes in the distribution of occupations between the regions from 1986 to 2001. We can see that the largest increase was in Auckland in the Professional occupations, with Service/Clerical occupations also increasing substantially. Canterbury also had a significant increase in people working in Manual occupations. In Wellington all three occupation groups decreased by more than one percentage point.

## 7. Quaternary Sector Employment

A further issue to be considered here are the regional differences in the levels of development in the sectors that were burgeoning at this time, often called the Quaternary Sector (Baxendine *et al.* 2002). An indicator of employment in this sector is the proportion of workers employed in highly skilled service industries and occupations<sup>14</sup> (see Figure 7). This sector is chosen because their job categories grew most rapidly at this time. For most of this workforce, university or other tertiary educational qualifications are a pre-requisite.

**Figure 7: Standardised<sup>1</sup> Percentage of the Employed Labour Force in Highly Skilled Industries and Occupations<sup>2</sup> by Region, 1986-2001**



- (1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole.
- (2) People employed in the Industries: Business and Financial Services; Public Services, Social Services, Utilities; and in the Occupations: Professional, Technical and Related Workers; Administrative and Managerial Workers.

Between 1986 and 2001 Wellington had the highest proportion of workers in these highly skilled industries and occupations, and also had the largest increase in the proportion in this category over the same period (see Figure 7 and Table 17). These figures reflect the concentration of government departments in this region. In 1986 Otago was the region with the second highest proportion of highly skilled workers, but by 1996 this proportion had fallen to just below the New Zealand level. The proportion of highly skilled workers in Auckland in 1986 was similar to the New Zealand level and rose to the second highest

<sup>14</sup> People employed in the Industries: Business and Financial Services; Public Services, Social Services, Utilities; and in the Occupations: Professional, Technical and Related Workers; Administrative and Managerial Workers.

proportion in 1996 and 2001, after Wellington. Southland, Marlborough and West Coast had low proportions of workers in highly skilled industries and occupations. The regions without universities are generally more rural and have fewer highly skilled workers as defined here. The South Island regions and Northland have had lower growth in highly skilled industries and occupations indicating these regions do not attract these skills and industries.

**Table 17: Standardised<sup>1</sup> Percentage of the Employed Labour Force in Highly Skilled Industries and Occupations<sup>2</sup> by Region, 1986-2001**

Region	Males				Females			
	1986	1991	1996	2001	1986	1991	1996	2001
Northland	7.4	9.5	9.0	10.6	16.5	19.2	18.4	23.9
Auckland	11.2	14.6	15.2	18.7	16.8	20.6	21.3	27.2
Waikato	8.9	11.1	11.0	12.3	16.3	19.2	19.2	23.8
Bay Of Plenty	8.1	10.4	10.4	12.0	16.1	18.8	19.1	23.8
Gisborne	8.5	10.6	9.6	11.1	16.2	21.6	20.0	24.8
Hawke's Bay	8.2	10.1	9.6	10.6	15.8	19.4	18.8	22.2
Taranaki	7.8	9.7	10.1	11.2	16.1	18.9	18.9	21.6
Manawatu-Wanganui	10.5	12.4	12.5	13.9	18.4	21.5	21.0	24.7
Wellington	18.0	21.8	23.2	27.1	21.2	25.4	26.9	33.4
West Coast	7.5	8.9	7.9	9.3	17.3	20.3	17.6	19.6
Canterbury	10.6	12.6	12.2	14.1	17.3	19.6	19.3	24.0
Otago	11.5	13.7	13.2	15.3	19.6	22.1	20.3	24.4
Southland	6.8	7.7	7.7	8.2	15.6	18.0	17.2	20.0
Nelson-Tasman	9.5	11.1	10.1	11.3	16.9	18.7	17.0	21.1
Marlborough	7.5	9.5	10.0	10.8	15.6	16.1	14.8	17.5
<b>New Zealand</b>	<b>10.9</b>	<b>13.5</b>	<b>13.7</b>	<b>16.3</b>	<b>17.5</b>	<b>20.7</b>	<b>20.8</b>	<b>25.8</b>
<i>Range</i>	<i>11.1</i>	<i>14.0</i>	<i>15.5</i>	<i>18.9</i>	<i>5.5</i>	<i>9.3</i>	<i>12.2</i>	<i>15.9</i>

- (1) Standardised for age to the total (both genders) employed population in 1996 for New Zealand as a whole.  
(2) People employed in the Industries: Business and Financial Services; Public Services, Social Services, Utilities; and in the Occupations: Professional, Technical and Related Workers; Administrative and Managerial Workers.



## 8. *Business Size*

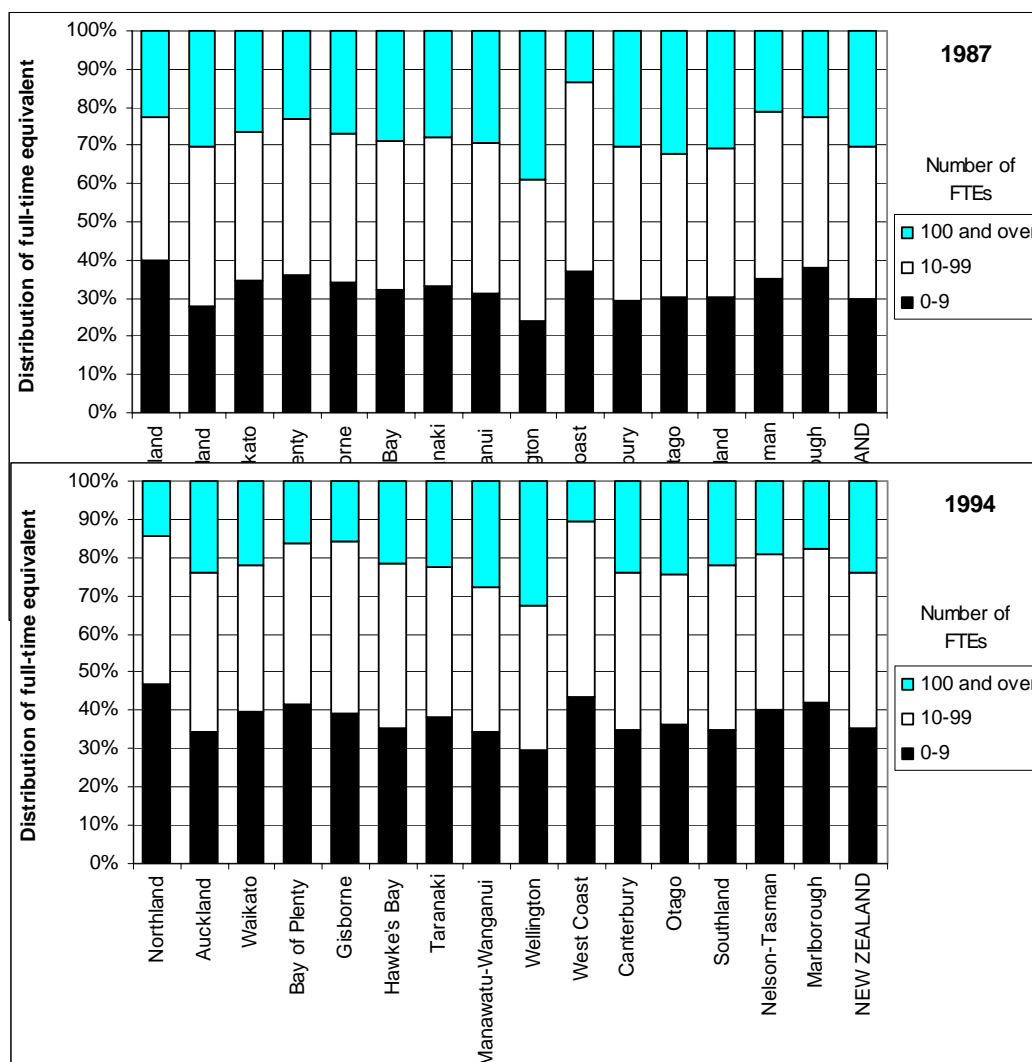
Not only were there shifts in the labour force but there were also significant shifts in enterprise structures. During the period 1986-96 there were changes in the average number of workers employed by businesses of different sizes (Baxendine *et al.* 2002). The data on the number of FTE (Full-time Equivalent) workers by business size were used to examine this aspect. These data have been compiled by Statistics New Zealand from Goods and Services Tax (GST) registrations supplied by the Inland Revenue Department.

### 8.1 *Business Size by Region*

From 1987 to 1994 there was a decrease in the number of FTE working for large business (100 FTEs and over), with a corresponding increase in the number working in smaller business (0-9 FTEs). Businesses with 100 FTEs and over declined from 30 per cent of the FTEs in 1987 to 24 per cent in 1994 and businesses with 0-9 FTEs rose from 30 per cent to 36 per cent in 1994 (see Figure 8). For large businesses, in both 1987 and 1994 Wellington and the West Coast had extreme proportions: Wellington had 39 per cent and 33 per cent of FTEs in 1987 and 1994 respectively while the West Coast had only 14 per cent and 11 per cent of FTEs in 1987 and 1994 respectively. Other regions with a low proportion of FTEs in large businesses in 1994 were Northland, the Bay of Plenty, Gisborne, and Marlborough. Those regions that had a low proportion of FTEs in large business generally had a higher proportion of FTEs in smaller businesses. These regions are the more rural regions without big metropolitan areas. Wellington had low proportions of FTEs in both small businesses and medium sized businesses (10-99 FTEs), a result of this region being the centre for government departments which employ large numbers of people.

These results, which in a sense analyse some labour demand factors, are interesting in two ways. Firstly, the differences between regions follow the results presented earlier on industry and occupations. Secondly, it is evident there has been an increase in the small business sector, a function of the restructuring that favoured the contracting out of many services, and thus an increase in numbers of self-employed workers. The failure rate of these small businesses was also high (Portal 1999; Sceats 1999)

**Figure 8: The distribution of full-time equivalents working in different sized businesses by Region, 1987 and 1994**



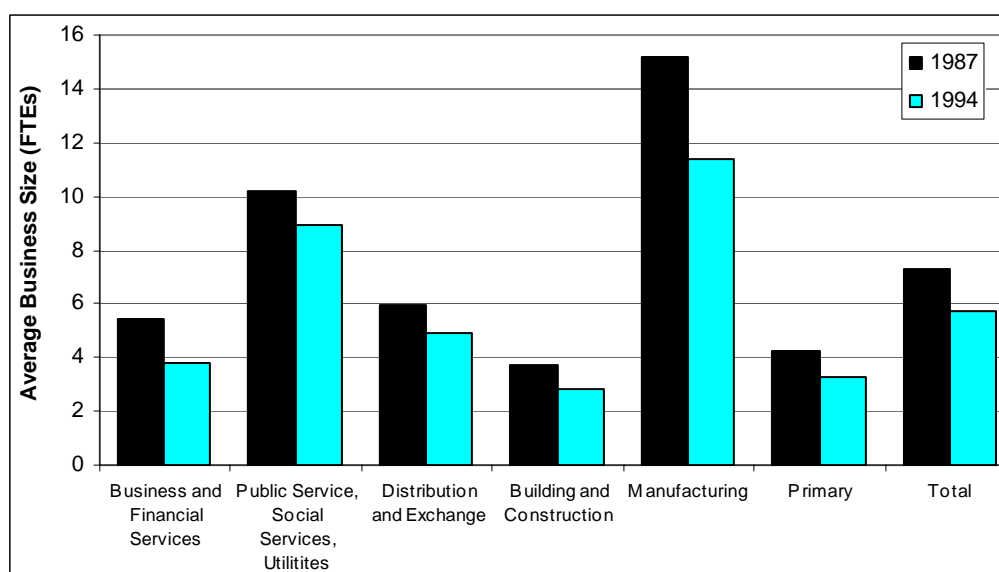
Source: Statistics New Zealand, New Zealand Business Demography

### 8.2 Business size by industry and region

This section considers the average business size by industry grouping, statistics available in the New Zealand Business Demography data set. The industry groupings are slightly different from those given in Appendix Table 1 as Personal, Household, Restaurants and Hotels can not be split into a separate category and therefore has had to be included in Public Services, Social Services, Utilities, and Distribution and Exchange.

The businesses size in all industries has declined over time with the largest decline occurring in Manufacturing (see Figure 9) although this industry had the largest business size of all industry types for both 1987 and 1994. Public Service, Social Services, Utilities is also reasonably large although this grouping contains some very large enterprises and also conversely some very small businesses such as cleaners who work by themselves. Building and Construction, and Primary Industry are the smallest businesses in both 1987 and 1994. These results show that there are many New Zealanders who work in small businesses.

**Figure 9: Average Business size by Industry for New Zealand, 1987 and 1994**



The regional variation has decreased from 1987 to 1994 and coincides with a decrease in the average business size (see Appendix Table 20). In 1987 Wellington had the largest average business size in Business and Financial Services; Public Service, Social Services, Utilities; and Distribution and Exchange were also high. West Coast had the lowest in the same three industries in 1987 and overall one of the lowest regional averages. Southland had a very high average business size for Manufacturing in 1987 and 1994 being 24 and 18 FTEs respectively. This is affected by a major extreme, the Bluff Aluminium smelter, which is a very large manufacturing firm. The lowest average business sizes for Manufacturing were in Nelson-Tasman for 1986 and Northland in 1987 and 1994, which were about half that of Southland. The Highest average business size for Primary industry is Taranaki for both 1987 and 1994. There was a small range between regions for Building and Construction industries, with businesses being small in both 1987 and 1994. In 1994 the range between the regions was relatively small for Business and Financial Services, and Distribution and Exchange. This also applies to the overall average business size. For Public Service, Social Services, Utilities in 1994 the highest average business size was in Wellington and Manawatu-Wanganui at 12 FTEs and the lowest is in Northland and West Coast with 7 FTEs.

## **9. Conclusion**

In a paper in the early 1980s, just before the period covered in the present study, the late Brenda Thompson made some perceptive comments about a natural and inexorable process of industrial labour force transformation (Thompson 1985). It would change the characteristics of the New Zealand labour force, notably producing a shift to the More Highly Skilled Tertiary sector, or quaternary as we have called it here. This forecast has definitely come about, as we have shown. But it has not occurred uniformly across New Zealand. Instead, it has concentrated skills typical of the “new economy” or the “knowledge society” more and more in Auckland and Wellington, and to a lesser degree Canterbury.

Another “natural” and probably inexorable process has been globalisation, that theoretically opened up every region to competition with and to access to the rest of the world. In New Zealand’s case macro-economic restructuring has accelerated that process. One of the difficulties is that it has also meant a change to overseas ownership of New Zealand

businesses, particularly in the very sectors that were growing and that are seen as demanding a quaternary sector labour force – finance and banking, for example. Whatever the argument in favour or against, this result has caused a shift in out sourcing and service contracting (eg. auditing, information technology, accounting and legal services) offshore to non-New Zealand companies, leaving the less-skilled service tasks (eg. cleaning) to New Zealand businesses.

Radical macro- and micro-economic structuring had other effects. Overall they had an impact on levels of labour force participation causing increases in unemployment, and job loss especially for males and for industries such as manufacturing. While a turnaround was occurring in the late 1990s this was limited and had not allowed the equilibrium of the 1980s to be fully regained (see Pool et al. forthcoming-c).

These reforms accelerated the transformation noted above, producing shifts between industrial sectors and occupational groupings. Beyond this, the co-terminus sell-off of state owned enterprises included a number of very large corporations that moved their operation from being carried out by a waged staff to “outsourcing” on a contractual basis. Many of the contractors, most notably in forestry were former waged employees who faced both the skill demands of their occupation and the demands of running a small business that often needed expensive equipment and thus had to be capitalised. Not surprisingly most of these new businesses were small, thus downsizing average business-size, and these businesses were also vulnerable and subject to high failure rates.

The net results of all these contextual labour market changes show up in the analysis and its accompanying discussion in this paper. In effect the impact of restructuring were two fold but interacting. Regional divergence and inequalities increased; within regions the Maori workforce suffered more than the Pakeha. These twin findings fit with those in the other papers in this series. Quite possibly, in fact, the labour force changes documented here may explain, and certainly convey with, many of the patterns and trends noted elsewhere.

**Appendix Table 1: Industrial Categories and the Concordance over Time**

	<b>Industry</b>	<b>NZSIC 87 - 2 digits (1991-1996)</b>	<b>ANZSIC96 v4 (2001) Codes</b>
<b>1</b>	Business and Financial Services	81 Financing	K, L except (L774100, L774200, L781000, L783300, L786500, L786600)
		82 Insurance	
		83 Real Estate and Business Services	
<b>2</b>	Public Services, Social Services, Utilities	41 Electricity, Gas and Steam	D, L781000, L786500, L786600, M, N, O, P, Q961000, Q962100, Q962200, Q962900, Q963
		42 Water Works and Supply	
		91 Public Administration and Defence	
		92 Sanitary and Cleaning Services	
		93 Social and Related Community Services	
		94 Recreational and Cultural Services	
<b>3</b>	Personal, Household, Restaurants and Hotels	96 International and Extra-Territorial Bodies	G512500, G526, G532200, G532300, H, Q952100, Q952200, Q952300, Q952400, Q952600, Q952900, Q970000
		63 Restaurants and Hotels	
<b>4</b>	Distribution and Exchange (retail and wholesale)	95 Personal and Household Services	F, G except (G512500, G526, G532200, G532300), I, J, L774100, L774200, Q951100, Q951900
		61 Wholesale Trade	
		62 Retail Trade	
		71 Transport and Storage	
<b>5</b>	Building and Construction	72 Communication	E
		51 Construction of Buildings	
		52 Construction other than Buildings	
<b>6</b>	Manufacturing	53 Ancillary Construction Services	C, L783300
		31 Food, Beverage, Tobacco	
		32 Textile, Apparel and Leathergoods	
		33 Wood Processing and Wood Product Manufacture	
		34 Manufacturing of Paper and Paper Products; Printing and Publishing	
		35 Manufacture of Chemicals and of Chemical, Petroleum, Coal, Rubber and Plastic Materials	
		36 Concrete, Clay, Glass, Plaster, Masonry, Asbestos and Related Mineral Product Manufacture	
		37 Basic Metal Industries	
		38 Manufacture of Fabricated Metal Products, Machinery and Equipment	
		39 Other Manufacturing Industries	
		<b>7</b>	
12 Forestry and Logging			
13 Fishing			
21 Coal Mining			
22 Crude Petroleum and Natural Gas Production			
23 Metal Ore Mining			
<b>8</b>	Not Specified	29 Other Mining and Quarrying	R
		99 Unidentifiable/Not Specified	

**Appendix Table 2: Workers Reporting “Industry Not Specified” as an Standardised<sup>1</sup> Percentage of Total Employed by Ethnicity and Region, 1986 to 2001**

Region	Pakeha				Maori				Total			
	1986	1991	1996	2001	1986	1991	1996	2001	1986	1991	1996	2001
Northland	0.7	2.1	5.0	4.1	1.6	4.4	11.2	7.7	1.0	2.5	7.5	5.9
Auckland	0.9	1.8	4.1	3.2	1.5	3.5	8.0	6.1	1.1	2.2	6.4	5.2
Waikato	0.7	2.0	4.7	3.8	1.8	4.4	10.0	7.3	0.9	2.3	6.2	5.0
Bay of Plenty	0.7	2.7	4.6	3.5	1.6	7.2	10.3	7.0	1.0	3.6	6.5	5.0
Gisborne	0.6	1.6	4.0	3.3	1.3	3.4	11.2	7.8	1.0	2.2	7.2	5.8
Hawke's Bay	0.6	1.2	4.0	3.4	1.6	2.4	9.4	7.5	0.8	1.4	5.9	5.2
Taranaki	0.6	1.2	4.6	3.8	1.7	2.9	8.9	7.1	0.8	1.4	5.6	4.6
Manawatu-Wanganui	0.6	1.2	3.7	3.4	1.3	2.4	7.9	6.9	0.7	1.4	4.9	4.4
Wellington	0.8	1.6	3.6	2.7	1.5	3.2	7.6	5.4	1.0	1.8	5.0	3.7
West Coast	0.5	1.6	5.4	4.6	2.9	5.7	9.1	6.0	0.7	1.8	6.1	5.1
Canterbury	0.7	1.4	4.0	3.3	1.2	2.4	6.3	5.3	0.8	1.5	4.9	4.2
Otago	0.6	1.3	4.2	3.5	1.1	2.6	7.4	5.2	0.6	1.4	4.9	4.2
Southland	0.6	1.1	3.3	3.6	1.2	2.1	5.9	6.4	0.6	1.1	3.9	4.2
Nelson-Tasman	0.8	1.2	4.8	4.3	1.2	1.4	7.0	5.8	0.7	1.2	5.7	5.1
Marlborough	0.7	1.6	4.4	3.4	1.0	2.8	7.7	5.2	0.6	1.6	5.3	4.0
<b>New Zealand</b>	<b>0.8</b>	<b>1.6</b>	<b>4.1</b>	<b>3.4</b>	<b>1.5</b>	<b>3.7</b>	<b>8.7</b>	<b>6.6</b>	<b>0.9</b>	<b>1.9</b>	<b>5.7</b>	<b>4.7</b>
<i>Range</i>	<i>0.4</i>	<i>1.7</i>	<i>2.1</i>	<i>1.9</i>	<i>2.0</i>	<i>5.8</i>	<i>5.4</i>	<i>2.6</i>	<i>0.5</i>	<i>2.5</i>	<i>3.7</i>	<i>2.1</i>

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole

**Appendix Table 3: Workers Reporting “Industry Not Specified” as a Percentage of Total Employed by Age Group and Region, 1986 to 2001**

Region	15-24 years				25-44 years				45-64 years			
	1986	1991	1996	2001	1986	1991	1996	2001	1986	1991	1996	2001
Northland	1.6	2.9	9.2	7.1	0.8	2.3	6.8	5.2	1.1	2.7	7.9	6.4
Auckland	1.1	2.1	7.3	6.3	1.1	2.2	5.8	4.8	1.1	2.2	6.7	5.3
Waikato	1.1	2.7	7.3	5.8	0.8	2.1	5.4	4.4	0.8	2.4	6.9	5.6
Bay of Plenty	1.3	4.7	8.4	5.5	0.9	3.2	5.5	4.6	1.1	3.5	7.3	5.6
Gisborne	1.6	2.6	10.7	7.5	0.9	2.1	5.8	5.1	1.0	2.0	7.8	6.1
Hawke's Bay	1.1	1.4	7.9	6.6	0.7	1.3	5.2	4.7	0.7	1.5	6.0	5.3
Taranaki	0.8	1.5	6.3	4.9	0.7	1.3	4.5	4.0	0.9	1.4	7.3	5.8
Manawatu-Wanganui	0.9	1.4	5.9	5.1	0.7	1.3	4.1	3.9	0.7	1.4	5.7	5.0
Wellington	1.0	1.9	6.1	4.4	0.9	1.8	4.2	3.3	1.0	1.8	5.4	4.0
West Coast	0.5	1.9	6.3	5.6	0.6	1.7	5.4	4.6	0.9	1.8	7.5	5.9
Canterbury	0.8	1.4	5.8	5.1	0.8	1.4	4.1	3.7	0.8	1.6	5.4	4.7
Otago	0.6	1.5	5.9	5.0	0.6	1.2	4.1	3.7	0.7	1.5	5.8	4.7
Southland	0.8	1.2	5.0	4.4	0.6	0.9	3.1	3.6	0.7	1.3	4.4	5.2
Nelson-Tasman	0.6	1.4	6.6	5.8	0.8	1.1	4.9	4.8	0.8	1.4	6.3	5.2
Marlborough	0.8	1.5	6.3	4.0	0.7	1.5	4.4	3.7	0.8	2.0	6.4	4.9
<b>New Zealand</b>	<b>1.0</b>	<b>2.0</b>	<b>6.8</b>	<b>5.6</b>	<b>0.9</b>	<b>1.9</b>	<b>5.0</b>	<b>4.3</b>	<b>0.9</b>	<b>2.0</b>	<b>6.3</b>	<b>5.1</b>
<i>Range</i>	<i>1.1</i>	<i>3.5</i>	<i>5.7</i>	<i>3.5</i>	<i>0.5</i>	<i>2.2</i>	<i>3.7</i>	<i>1.9</i>	<i>0.5</i>	<i>2.2</i>	<i>3.5</i>	<i>2.4</i>

**Appendix Table 4: Workers in Each Industrial Sector as a Standardised<sup>1</sup> Percentage of Total Employed by Region, 1991 and 1996**

Region	Industrial Group							
	1	2	3	4	5	6	7	8
<b>1991</b>								
Northland	7.6	24.1	7.3	20.7	6.5	12.7	21.0	100.0
Auckland	15.0	23.4	6.4	26.5	6.6	19.3	2.9	100.0
Waikato	8.5	25.0	6.5	18.9	6.1	15.2	19.8	100.0
Bay of Plenty	9.3	23.6	7.9	22.3	6.9	15.8	14.2	100.0
Gisborne	7.3	28.1	6.1	18.2	5.6	14.5	20.2	100.0
Hawke's Bay	8.3	23.8	5.9	20.2	5.0	19.9	16.9	100.0
Taranaki	7.4	23.6	6.1	18.3	5.5	17.4	21.7	100.0
Manawatu-Wanganui	7.3	31.3	6.3	19.6	5.6	15.9	13.8	100.0
Wellington	18.5	31.6	6.0	23.3	6.3	11.6	2.8	100.0
West Coast	5.6	27.2	9.7	19.9	5.8	12.7	19.1	100.0
Canterbury	10.1	26.2	7.2	23.7	5.3	17.9	9.5	100.0
Otago	8.9	29.1	8.5	20.9	5.9	14.8	11.9	100.0
Southland	6.9	21.8	7.1	19.1	4.1	20.7	20.3	100.0
Nelson-Tasman	8.1	23.3	7.0	19.6	5.6	15.9	20.5	100.0
Marlborough	6.3	26.0	7.5	19.5	5.8	17.3	17.6	100.0
<b>New Zealand</b>	<b>11.7</b>	<b>25.9</b>	<b>6.7</b>	<b>22.7</b>	<b>6.0</b>	<b>16.7</b>	<b>10.3</b>	<b>100.0</b>
<i>Range</i>	<i>12.9</i>	<i>9.8</i>	<i>3.8</i>	<i>8.3</i>	<i>2.8</i>	<i>9.2</i>	<i>18.9</i>	
<b>1996</b>								
Northland	7.8	22.6	8.3	21.2	6.6	12.5	20.9	100.0
Auckland	16.7	22.1	7.4	26.9	6.6	17.3	2.9	100.0
Waikato	9.4	23.7	7.9	20.0	6.3	14.1	18.6	100.0
Bay of Plenty	9.1	23.3	9.3	22.7	7.5	14.6	13.5	100.0
Gisborne	7.6	25.0	6.8	19.9	6.1	12.4	22.0	100.0
Hawke's Bay	8.6	22.8	6.6	21.0	5.4	17.0	18.6	100.0
Taranaki	8.9	22.1	7.0	19.4	6.3	17.0	19.3	100.0
Manawatu-Wanganui	7.9	29.9	7.6	20.2	5.5	14.4	14.4	100.0
Wellington	19.8	30.9	7.4	22.6	5.6	10.5	3.1	100.0
West Coast	6.1	22.9	12.1	19.6	6.3	12.3	20.7	100.0
Canterbury	10.6	24.2	8.6	23.9	5.8	17.7	9.1	100.0
Otago	9.2	27.1	10.7	20.7	6.7	13.7	11.8	100.0
Southland	7.7	19.9	7.6	19.2	5.9	17.7	22.1	100.0
Nelson-Tasman	8.7	20.5	7.8	20.8	6.2	14.7	21.2	100.0
Marlborough	6.7	23.6	8.4	20.4	5.8	15.2	19.9	100.0
<b>New Zealand</b>	<b>12.7</b>	<b>24.4</b>	<b>8.0</b>	<b>23.2</b>	<b>6.2</b>	<b>15.3</b>	<b>10.2</b>	<b>100.0</b>
<i>Range</i>	<i>13.7</i>	<i>11.1</i>	<i>5.5</i>	<i>7.8</i>	<i>2.1</i>	<i>7.1</i>	<i>19.2</i>	

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified)

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole (adjusted for the removal of Not Specified see Appendix Table 2)

**Appendix Table 5: Percentage of Total Employed by Industry, by Age Group and Region, 1986 and 2001**

**a) 15-24 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	7.1	15.7	8.9	22.1	11.6	18.1	16.4	100.0	6.1	12.3	14.9	31.7	6.7	10.8	17.5	100.0
Auckland	12.1	14.9	9.0	27.4	6.1	27.9	2.5	100.0	14.9	16.2	15.2	35.0	5.9	10.8	2.0	100.0
Waikato	7.7	16.9	7.7	21.7	6.9	20.9	18.1	100.0	7.1	14.6	15.4	29.3	6.6	12.5	14.5	100.0
Bay of Plenty	7.8	14.8	10.2	23.2	7.1	20.8	16.2	100.0	6.6	13.9	17.7	32.2	6.7	12.8	10.1	100.0
Gisborne	7.7	18.6	6.1	20.4	7.4	18.8	21.0	100.0	5.5	11.2	13.1	25.0	4.8	11.4	29.0	100.0
Hawke's Bay	7.4	14.3	7.1	22.6	5.8	26.8	16.1	100.0	4.9	11.0	13.3	30.1	4.7	16.2	19.8	100.0
Taranaki	7.3	16.1	7.1	22.4	7.8	22.9	16.4	100.0	6.9	11.9	12.6	29.6	5.3	16.8	16.9	100.0
Manawatu-Wanganui	6.9	23.8	7.4	22.9	6.2	21.3	11.5	100.0	6.1	20.6	13.9	28.1	4.9	12.4	14.1	100.0
Wellington	17.2	21.8	8.7	26.3	6.2	17.3	2.5	100.0	16.7	19.7	16.8	32.1	5.6	6.2	2.9	100.0
West Coast	6.1	16.6	10.5	22.9	6.0	21.2	16.8	100.0	4.3	9.8	19.7	29.0	4.6	12.3	20.2	100.0
Canterbury	8.6	18.7	9.1	24.8	5.2	25.7	7.8	100.0	8.2	15.2	17.2	32.7	5.2	13.7	7.6	100.0
Otago	8.8	18.1	10.5	24.6	7.6	20.4	9.9	100.0	6.1	17.5	21.2	27.7	4.5	12.5	10.5	100.0
Southland	8.5	15.1	9.4	24.5	5.5	21.1	16.0	100.0	6.1	9.7	14.2	26.3	4.5	17.2	21.9	100.0
Nelson-Tasman	6.8	13.1	8.0	22.0	5.2	19.8	25.2	100.0	5.9	9.2	15.6	29.8	4.3	13.3	22.0	100.0
Marlborough	6.5	23.7	7.9	24.1	5.6	16.0	16.2	100.0	4.4	17.0	14.9	25.6	5.4	15.3	17.4	100.0
<b>New Zealand</b>	<b>10.2</b>	<b>17.4</b>	<b>8.7</b>	<b>24.8</b>	<b>6.4</b>	<b>23.2</b>	<b>9.3</b>	<b>100.0</b>	<b>10.6</b>	<b>15.8</b>	<b>15.9</b>	<b>31.8</b>	<b>5.6</b>	<b>11.7</b>	<b>8.6</b>	<b>100.0</b>
<i>Range</i>	<i>11.1</i>	<i>10.7</i>	<i>4.4</i>	<i>7.0</i>	<i>6.4</i>	<i>11.9</i>	<i>22.6</i>		<i>12.4</i>	<i>11.4</i>	<i>8.6</i>	<i>9.9</i>	<i>2.4</i>	<i>11.0</i>	<i>27.0</i>	

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified see Appendix Table 3)

(continues of next page)



**Appendix Table 5:** (continued)

**b) 25-44 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	4.6	20.6	7.9	18.2	12.2	15.3	21.2	100.0	8.5	27.4	7.3	19.5	8.0	12.2	17.1	100.0
Auckland	10.9	20.8	6.2	24.8	7.5	26.8	3.1	100.0	19.8	23.5	6.1	25.8	7.1	15.6	2.1	100.0
Waikato	5.4	22.7	6.3	17.6	7.7	17.1	23.1	100.0	10.2	26.5	6.2	19.2	7.3	14.2	16.3	100.0
Bay of Plenty	6.4	20.0	8.2	20.8	8.2	19.2	17.2	100.0	10.5	26.6	7.1	21.4	8.4	15.2	10.8	100.0
Gisborne	5.2	23.4	6.1	19.2	7.1	16.2	22.9	100.0	7.3	29.7	5.2	17.0	6.7	10.5	23.6	100.0
Hawke's Bay	5.6	20.9	6.2	19.6	6.3	24.2	17.2	100.0	8.9	24.4	6.0	19.9	6.1	18.5	16.2	100.0
Taranaki	5.4	19.6	6.4	18.1	8.1	18.9	23.6	100.0	10.5	23.9	6.1	18.0	6.1	17.0	18.4	100.0
Manawatu-Wanganui	5.3	28.6	6.4	19.5	6.8	18.1	15.3	100.0	8.5	33.6	5.8	19.3	5.9	14.2	12.6	100.0
Wellington	13.3	30.6	5.6	24.2	6.4	16.7	3.1	100.0	23.9	32.5	5.6	20.2	6.3	9.0	2.4	100.0
West Coast	3.4	24.3	8.6	18.3	7.7	14.5	23.2	100.0	5.6	25.6	11.8	19.7	6.6	11.0	19.6	100.0
Canterbury	6.8	25.2	7.1	23.3	5.9	21.9	9.8	100.0	12.5	25.5	7.3	23.0	6.6	17.6	7.5	100.0
Otago	6.2	26.7	7.6	21.2	8.6	17.6	12.0	100.0	9.4	31.2	8.6	19.0	6.8	14.9	10.1	100.0
Southland	5.0	19.5	6.6	19.2	4.8	23.1	21.8	100.0	8.0	21.2	6.6	19.2	5.6	20.3	19.1	100.0
Nelson-Tasman	5.2	22.9	7.1	19.6	7.1	16.5	21.6	100.0	9.9	22.6	7.5	21.7	6.8	14.1	17.4	100.0
Marlborough	4.6	25.3	7.0	22.5	7.2	13.8	19.7	100.0	7.6	23.4	7.8	18.2	6.9	17.8	18.2	100.0
<b>New Zealand</b>	<b>8.1</b>	<b>23.6</b>	<b>6.6</b>	<b>22.0</b>	<b>7.3</b>	<b>21.0</b>	<b>11.4</b>	<b>100.0</b>	<b>15.0</b>	<b>26.4</b>	<b>6.5</b>	<b>22.1</b>	<b>6.9</b>	<b>14.9</b>	<b>8.2</b>	<b>100.0</b>
<i>Range</i>	<i>9.9</i>	<i>11.2</i>	<i>3.1</i>	<i>7.2</i>	<i>7.4</i>	<i>13.0</i>	<i>20.5</i>		<i>18.2</i>	<i>12.4</i>	<i>6.6</i>	<i>8.7</i>	<i>2.8</i>	<i>11.3</i>	<i>21.5</i>	

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified see Appendix Table 3)

(continues of next page)

**Appendix Table 5:** (continued)

**c) 45-64 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	3.9	20.7	7.0	20.0	9.0	14.7	24.7	100.0	9.2	29.2	6.7	19.3	6.9	9.3	19.4	100.0
Auckland	8.7	22.4	4.9	27.1	6.9	26.4	3.7	100.0	17.7	28.2	4.8	24.3	6.6	15.4	3.0	100.0
Waikato	4.9	24.4	5.6	18.7	7.3	15.6	23.4	100.0	10.2	30.2	6.1	18.8	6.4	11.5	16.9	100.0
Bay of Plenty	5.3	22.5	6.6	23.2	7.5	17.0	17.9	100.0	11.0	28.9	6.3	21.2	7.0	12.5	13.0	100.0
Gisborne	4.4	24.3	6.3	19.4	7.5	16.3	21.8	100.0	7.1	31.6	5.8	18.8	6.1	8.8	21.7	100.0
Hawke's Bay	4.7	22.2	5.3	23.2	6.0	22.2	16.3	100.0	9.5	29.8	5.2	18.9	5.5	14.6	16.5	100.0
Taranaki	4.5	22.5	5.3	21.8	6.5	16.3	23.0	100.0	10.1	27.7	5.7	18.5	5.6	14.0	18.4	100.0
Manawatu-Wanganui	4.4	27.8	5.5	20.6	6.9	18.0	16.8	100.0	8.7	34.6	5.7	18.3	5.6	12.2	14.9	100.0
Wellington	10.1	32.9	4.2	26.4	6.1	17.3	2.9	100.0	18.8	38.6	4.5	19.2	5.7	9.8	3.4	100.0
West Coast	2.2	22.5	9.8	20.3	8.8	14.6	21.8	100.0	6.1	29.1	11.2	19.2	7.0	10.4	17.1	100.0
Canterbury	5.4	24.7	6.0	24.4	5.6	23.0	10.9	100.0	11.7	30.4	6.3	21.2	5.5	15.4	9.5	100.0
Otago	4.6	27.9	6.5	22.9	7.7	18.3	12.1	100.0	9.2	34.4	7.4	18.8	6.0	12.6	11.7	100.0
Southland	3.9	19.3	5.7	21.2	5.5	20.9	23.6	100.0	7.5	25.0	5.6	18.5	5.1	16.8	21.4	100.0
Nelson-Tasman	4.9	25.9	6.1	21.2	5.8	15.1	21.1	100.0	10.2	28.6	6.7	19.2	6.3	12.3	16.6	100.0
Marlborough	3.5	23.4	7.7	24.1	6.9	13.7	20.7	100.0	7.5	23.9	7.8	19.0	5.7	14.8	21.3	100.0
<b>New Zealand</b>	<b>6.5</b>	<b>24.8</b>	<b>5.5</b>	<b>23.9</b>	<b>6.7</b>	<b>20.5</b>	<b>12.0</b>	<b>100.0</b>	<b>13.2</b>	<b>30.6</b>	<b>5.7</b>	<b>20.9</b>	<b>6.1</b>	<b>13.4</b>	<b>10.0</b>	<b>100.0</b>
<i>Range</i>	<i>7.9</i>	<i>13.7</i>	<i>5.6</i>	<i>8.4</i>	<i>3.5</i>	<i>12.6</i>	<i>21.8</i>		<i>12.7</i>	<i>14.7</i>	<i>6.7</i>	<i>6.1</i>	<i>1.9</i>	<i>8.0</i>	<i>18.7</i>	

**1** Business and Financial Services

**2** Public Services, Social Services, Utilities

**3** Personal, Household, Restaurants and Hotels

**4** Distribution and Exchange (retail and wholesale)

**5** Building and Construction

**6** Manufacturing

**7** Primary

**8** Total of all industries (excluding Not Specified see Appendix Table 3)

**Appendix Table 6: Pakeha Workers in Each Industrial Sector as a Standardised<sup>1</sup> Percentage of Employed Pakeha by Region, 1986 and 2001**

Region	Industrial Group							
	1	2	3	4	5	6	7	8
	<b>1986</b>							
Northland	5.7	19.8	8.2	20.7	9.9	13.6	22.0	100.0
Auckland	11.9	21.2	6.4	27.3	7.0	23.0	3.3	100.0
Waikato	6.4	23.0	6.6	19.8	6.6	15.1	22.5	100.0
Bay of Plenty	7.4	20.6	8.3	23.6	7.3	15.9	17.0	100.0
Gisborne	7.3	23.7	7.0	22.9	6.5	12.8	19.9	100.0
Hawke's Bay	6.7	21.8	6.7	22.9	5.8	20.3	15.9	100.0
Taranaki	5.8	21.0	6.4	20.3	6.8	17.0	22.7	100.0
Manawatu-Wanganui	6.0	28.4	6.6	21.3	6.1	16.9	14.8	100.0
Wellington	14.2	30.8	5.7	25.3	6.0	14.9	3.0	100.0
West Coast	3.8	24.2	9.9	20.2	6.6	14.9	20.3	100.0
Canterbury	7.1	24.9	7.3	24.1	5.3	21.6	9.8	100.0
Otago	6.4	27.0	8.0	22.6	7.5	17.2	11.4	100.0
Southland	5.9	20.4	7.4	21.7	4.7	18.6	21.3	100.0
Nelson-Tasman	5.6	23.1	7.4	20.4	6.0	15.8	21.8	100.0
Marlborough	4.9	25.6	7.7	23.4	6.2	13.0	19.2	100.0
<b>New Zealand</b>	<b>8.9</b>	<b>24.0</b>	<b>6.8</b>	<b>23.9</b>	<b>6.5</b>	<b>18.7</b>	<b>11.3</b>	<b>100.0</b>
<i>Range</i>	<i>10.4</i>	<i>11.0</i>	<i>4.2</i>	<i>7.4</i>	<i>5.2</i>	<i>10.2</i>	<i>19.7</i>	
	<b>2001</b>							
Northland	9.5	22.8	8.1	22.4	8.0	11.1	18.2	100.0
Auckland	20.2	23.6	6.4	27.0	7.4	13.0	2.4	100.0
Waikato	10.3	24.2	7.4	21.9	7.1	12.1	16.9	100.0
Bay of Plenty	11.2	23.3	8.3	24.6	8.5	13.4	10.7	100.0
Gisborne	8.8	24.8	6.8	22.0	7.0	9.7	20.7	100.0
Hawke's Bay	9.3	23.3	7.2	23.3	6.2	15.0	15.6	100.0
Taranaki	10.1	21.9	6.9	20.7	5.9	15.2	19.2	100.0
Manawatu-Wanganui	8.7	30.5	7.1	21.8	5.9	12.4	13.6	100.0
Wellington	22.3	31.5	6.8	22.1	6.3	8.0	3.0	100.0
West Coast	5.6	23.0	12.9	22.0	6.7	10.9	18.9	100.0
Canterbury	11.7	24.6	8.4	24.7	6.3	15.9	8.4	100.0
Otago	9.0	28.9	10.2	21.0	6.5	13.6	10.8	100.0
Southland	7.8	20.1	7.7	21.0	5.2	17.6	20.5	100.0
Nelson-Tasman	9.3	21.6	8.8	23.1	6.5	13.0	17.7	100.0
Marlborough	7.2	22.2	8.9	20.4	6.4	15.7	19.1	100.0
<b>New Zealand</b>	<b>14.4</b>	<b>25.2</b>	<b>7.5</b>	<b>23.9</b>	<b>6.8</b>	<b>12.9</b>	<b>9.3</b>	<b>100.0</b>
<i>Range</i>	<i>16.7</i>	<i>11.4</i>	<i>6.6</i>	<i>6.6</i>	<i>3.3</i>	<i>9.6</i>	<i>18.3</i>	

1 Business and Financial Services

5 Building and Construction

2 Public Services, Social Services, Utilities

6 Manufacturing

3 Personal, Household, Restaurants and Hotels

7 Primary

4 Distribution and Exchange (retail and wholesale)

8 Total of all industries (excluding Not Specified)

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Excluding Not Specified see Appendix Table 2.

**Appendix Table 7: Maori Workers in Each Industrial Sector as a Standardised<sup>1</sup> Percentage of Employed Maori by Region, 1986 and 2001**

Region	Industrial Group							
	1	2	3	4	5	6	7	8
	<b>1986</b>							
Northland	2.1	26.4	8.8	15.9	10.9	20.7	15.2	100.0
Auckland	4.2	20.7	6.2	23.1	8.4	34.7	2.8	100.0
Waikato	2.2	25.4	7.3	14.4	9.5	23.9	17.4	100.0
Bay of Plenty	2.9	22.5	8.6	16.0	7.3	25.9	16.9	100.0
Gisborne	2.2	25.3	5.2	13.5	6.9	22.5	24.3	100.0
Hawke's Bay	1.6	17.8	4.7	13.1	5.2	38.7	19.0	100.0
Taranaki	2.8	21.0	8.9	15.5	8.2	29.8	13.8	100.0
Manawatu-Wanganui	2.2	30.2	5.9	14.5	7.6	26.9	12.7	100.0
Wellington	5.9	27.4	5.5	24.7	8.2	25.0	3.2	100.0
West Coast	2.3	21.2	14.9	17.9	9.2	16.3	18.2	100.0
Canterbury	2.7	27.0	8.6	17.7	6.6	31.1	6.2	100.0
Otago	2.5	22.1	9.9	17.1	10.2	24.6	13.6	100.0
Southland	1.9	17.6	8.3	13.9	3.6	36.5	18.1	100.0
Nelson-Tasman	1.9	20.3	4.8	14.4	7.1	26.0	25.5	100.0
Marlborough	2.3	20.8	10.5	18.7	4.7	26.7	16.3	100.0
<b>New Zealand</b>	<b>3.2</b>	<b>23.5</b>	<b>6.8</b>	<b>18.1</b>	<b>8.0</b>	<b>29.0</b>	<b>11.4</b>	<b>100.0</b>
<i>Range</i>	<i>4.3</i>	<i>12.7</i>	<i>10.1</i>	<i>11.6</i>	<i>7.2</i>	<i>22.4</i>	<i>22.7</i>	
	<b>2001</b>							
Northland	5.3	31.3	9.1	19.3	7.2	12.6	15.3	100.0
Auckland	12.1	26.1	7.0	26.8	9.9	15.9	2.3	100.0
Waikato	6.7	30.0	9.1	16.9	7.5	17.2	12.5	100.0
Bay of Plenty	6.1	29.3	8.9	19.7	6.4	17.4	12.1	100.0
Gisborne	4.2	29.9	6.4	14.7	5.5	10.9	28.4	100.0
Hawke's Bay	4.7	23.7	5.7	15.8	4.7	26.3	19.0	100.0
Taranaki	7.5	27.5	7.9	16.7	5.2	24.7	10.5	100.0
Manawatu-Wanganui	5.1	34.6	7.0	15.8	5.3	19.2	13.0	100.0
Wellington	14.0	33.7	7.1	21.7	8.6	11.5	3.4	100.0
West Coast	5.8	25.6	15.6	15.4	5.1	14.9	17.6	100.0
Canterbury	8.2	27.6	9.4	21.4	7.4	20.2	5.8	100.0
Otago	5.7	28.9	11.7	15.5	6.4	19.3	12.6	100.0
Southland	6.2	21.2	8.3	15.2	4.2	28.1	16.6	100.0
Nelson-Tasman	8.8	21.7	7.9	16.7	4.0	18.9	22.0	100.0
Marlborough	5.2	21.7	9.5	16.0	5.7	23.6	18.3	100.0
<b>New Zealand</b>	<b>8.6</b>	<b>28.7</b>	<b>7.9</b>	<b>20.5</b>	<b>7.5</b>	<b>17.1</b>	<b>9.7</b>	<b>100.0</b>
<i>Range</i>	<i>9.7</i>	<i>13.4</i>	<i>9.9</i>	<i>12.1</i>	<i>5.9</i>	<i>17.3</i>	<i>26.1</i>	

1 Business and Financial Services

5 Building and Construction

2 Public Services, Social Services, Utilities

6 Manufacturing

3 Personal, Household, Restaurants and Hotels

7 Primary

4 Distribution and Exchange (retail and wholesale)

8 Total of all industries (excluding Not Specified)

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole.

Excluding Not Specified see Appendix Table 2.

**Appendix Table 8: Percentage Point Change 1986-2001 in Workers in Each Industrial Sector as an Age Standardised<sup>1</sup> Percentage of Total Employed by Region**

	Business and Financial Services	Public Services, Social Services, Utilities	More Skilled Tertiary (Sub-Total)	Personal, Household, Restaurants and Hotels	Distribution and exchange (retail and wholesale)	Less Skilled Tertiary (Sub-Total)	Building and Construction	Manufacturing	Secondary (Sub-Total)	Primary
Northland	3.3	3.8	<b>7.1</b>	0.3	1.9	<b>2.1</b>	-2.6	-3.5	<b>-6.0</b>	<b>-3.2</b>
Auckland	7.7	2.5	<b>10.2</b>	1.1	1.2	<b>2.3</b>	0.2	-11.8	<b>-11.7</b>	<b>-0.8</b>
Waikato	3.8	1.9	<b>5.7</b>	1.2	2.0	<b>3.3</b>	0.1	-3.4	<b>-3.3</b>	<b>-5.7</b>
Bay of Plenty	3.5	3.6	<b>7.1</b>	0.4	1.3	<b>1.7</b>	0.7	-3.8	<b>-3.2</b>	<b>-5.6</b>
Gisborne	1.3	2.5	<b>3.8</b>	0.3	-0.6	<b>-0.3</b>	-0.4	-5.8	<b>-6.2</b>	<b>2.7</b>
Hawke's Bay	2.5	2.1	<b>4.6</b>	0.6	0.3	<b>0.9</b>	0.1	-6.1	<b>-6.0</b>	<b>0.5</b>
Taranaki	4.3	1.5	<b>5.7</b>	0.7	0.2	<b>0.9</b>	-1.1	-1.7	<b>-2.8</b>	<b>-3.8</b>
Manawatu-Wanganui	2.6	2.7	<b>5.4</b>	0.7	0.3	<b>1.0</b>	-0.5	-4.7	<b>-5.2</b>	<b>-1.2</b>
Wellington	7.9	1.2	<b>9.1</b>	1.6	-2.8	<b>-1.2</b>	0.2	-8.0	<b>-7.8</b>	<b>-0.1</b>
West Coast	2.0	-0.7	<b>1.3</b>	3.1	1.4	<b>4.5</b>	-0.4	-4.1	<b>-4.5</b>	<b>-1.3</b>
Canterbury	4.6	-0.2	<b>4.4</b>	1.4	0.7	<b>2.0</b>	0.9	-5.9	<b>-5.0</b>	<b>-1.5</b>
Otago	2.5	2.3	<b>4.8</b>	2.4	-1.7	<b>0.8</b>	-1.2	-3.7	<b>-4.9</b>	<b>-0.7</b>
Southland	2.0	0.0	<b>2.0</b>	0.4	-0.7	<b>-0.3</b>	0.5	-1.5	<b>-1.0</b>	<b>-0.7</b>
Nelson-Tasman	3.9	-1.3	<b>2.6</b>	1.5	2.1	<b>3.7</b>	0.4	-2.7	<b>-2.3</b>	<b>-3.9</b>
Marlborough	2.2	-3.1	<b>-1.0</b>	1.1	-3.2	<b>-2.0</b>	0.4	2.5	<b>2.9</b>	<b>0.1</b>
New Zealand	<b>5.5</b>	<b>1.6</b>	<b>7.2</b>	<b>1.2</b>	<b>0.6</b>	<b>1.7</b>	<b>0.1</b>	<b>-6.8</b>	<b>-6.7</b>	<b>-2.2</b>

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified category (see Appendix Table 2).

**Appendix Table 9: Percentage Difference Between Expected<sup>1</sup> and Observed Shares on Each Industry in 2001, by Industry, Age Group and Region, 1986-2001**

Region	Business and Financial Services				Public Services, Social Services, Utilities				Personal, Household, Restaurants and Hotels				Distribution and Exchange (retail and wholesale)			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Northland	-22.2	44.6	57.8	44.0	-30.1	18.1	23.4	17.5	38.0	-17.2	-16.0	-3.2	28.1	2.9	-6.7	4.4
Auckland	16.7	44.2	51.0	42.7	5.2	8.9	15.8	11.1	41.2	-1.4	-4.6	12.6	22.1	3.5	-11.3	3.1
Waikato	-12.0	45.9	51.5	40.9	-17.6	9.6	13.1	8.5	49.2	-7.9	-1.3	12.9	24.9	6.3	-1.8	8.1
Bay of Plenty	-21.6	37.8	52.3	38.1	-7.0	19.0	15.3	15.4	40.8	-21.7	-12.8	0.1	26.2	1.1	-8.6	2.9
Gisborne	-47.4	27.3	35.7	21.7	-66.5	15.6	17.2	11.3	50.7	-27.7	-17.1	-0.9	15.6	-15.6	-2.2	-4.4
Hawke's Bay	-54.3	34.7	49.7	33.5	-27.1	9.1	19.7	11.6	44.9	-9.8	-14.5	4.8	23.2	0.1	-22.1	-2.6
Taranaki	-8.0	48.5	56.0	45.4	-35.8	11.7	11.4	8.1	41.9	-14.0	-2.9	4.4	22.9	-2.2	-16.7	-1.7
Manawatu-Wanganui	-16.6	35.6	49.8	34.4	-16.2	11.0	14.7	9.5	45.7	-17.6	-2.6	7.6	17.8	-0.9	-13.0	-0.4
Wellington	-4.2	44.6	45.5	38.5	-12.8	2.3	11.6	4.4	48.2	-0.6	3.7	19.3	18.3	-18.6	-35.9	-14.6
West Coast	-38.0	43.3	59.9	41.4	-65.4	-1.6	13.7	1.7	44.3	17.8	-0.1	17.7	19.0	4.4	-5.1	3.9
Canterbury	-8.6	44.4	53.3	41.6	-24.0	-4.2	12.5	1.0	46.3	-2.2	-3.8	13.2	23.7	-0.6	-13.0	0.9
Otago	-46.8	33.9	51.0	30.6	-5.8	7.9	12.6	8.5	48.9	5.0	3.6	20.1	10.3	-11.6	-19.6	-9.1
Southland	-44.7	36.4	46.3	29.7	-53.9	0.7	14.7	2.9	31.7	-8.9	-16.0	1.2	4.0	-2.0	-14.1	-4.9
Nelson-Tasman	-16.7	47.8	53.8	44.1	-41.4	-7.1	4.1	-3.9	48.3	0.2	3.2	14.5	24.5	10.4	-7.5	7.4
Marlborough	-61.4	39.5	54.1	36.3	-37.2	-10.7	-5.5	-11.6	43.8	1.9	-11.0	8.2	3.7	-24.2	-21.7	-17.7
<b>NEW ZEALAND</b>	<b>0.8</b>	<b>45.0</b>	<b>50.4</b>	<b>41.3</b>	<b>-12.0</b>	<b>6.1</b>	<b>13.5</b>	<b>7.4</b>	<b>44.6</b>	<b>-4.9</b>	<b>-3.2</b>	<b>11.9</b>	<b>21.7</b>	<b>0.3</b>	<b>-13.8</b>	<b>0.6</b>
<i>Range</i>	<i>78.2</i>	<i>21.2</i>	<i>24.3</i>	<i>23.8</i>	<i>71.7</i>	<i>29.7</i>	<i>28.9</i>	<i>29.1</i>	<i>19.0</i>	<i>45.5</i>	<i>20.8</i>	<i>23.2</i>	<i>24.4</i>	<i>34.6</i>	<i>34.1</i>	<i>25.8</i>

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**Appendix Table 9:** (continued)

Region	Building and Construction				Manufacturing				Primary			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Northland	-62.8	-31.4	-10.5	-27.2	-63.1	-16.3	-42.7	-31.8	8.5	-20.8	-26.2	-19.4
Auckland	0.2	1.4	6.4	2.8	-155.1	-69.0	-66.9	-78.6	-24.7	-47.6	-20.5	-33.2
Waikato	-0.9	3.9	1.7	2.4	-65.2	-13.9	-25.5	-25.8	-22.3	-38.3	-35.2	-34.8
Bay of Plenty	-1.6	13.0	7.1	9.1	-58.6	-18.3	-26.8	-26.6	-55.8	-55.9	-36.0	-47.4
Gisborne	-49.3	7.6	-10.0	-5.5	-58.9	-47.3	-74.0	-58.2	29.6	8.2	2.7	10.2
Hawke's Bay	-19.2	7.6	3.7	2.9	-62.5	-24.4	-42.7	-36.0	19.1	-4.2	2.0	2.2
Taranaki	-43.9	-16.6	-1.2	-14.8	-34.3	-4.3	-8.0	-10.2	4.7	-26.6	-23.8	-21.3
Manawatu-Wanganui	-24.3	-3.9	-7.8	-8.3	-69.9	-20.9	-40.6	-35.3	20.0	-18.5	-10.4	-8.6
Wellington	-4.7	6.5	2.8	3.6	-175.8	-81.7	-72.2	-89.1	13.7	-26.4	17.7	-2.2
West Coast	-21.0	0.7	-4.2	-3.5	-74.4	-25.7	-33.5	-36.4	19.3	-11.2	-16.7	-8.5
Canterbury	5.0	19.5	11.4	14.8	-85.0	-18.8	-41.8	-35.6	0.2	-29.1	-12.6	-17.9
Otago	-58.3	-9.7	-12.2	-16.7	-60.6	-10.9	-37.9	-27.6	8.3	-15.9	-0.9	-6.0
Southland	-15.3	21.8	4.9	10.8	-17.9	-2.9	-12.8	-8.3	28.3	-14.1	-8.1	-4.8
Nelson-Tasman	-17.9	3.6	22.0	8.3	-48.3	-12.3	-16.6	-19.2	-12.9	-22.4	-28.8	-22.9
Marlborough	4.1	8.1	0.5	4.7	-3.2	24.5	12.0	16.0	10.1	-6.5	2.2	-0.4
<b>NEW ZEALAND</b>	<b>-9.1</b>	<b>3.7</b>	<b>3.5</b>	<b>1.9</b>	<b>-95.5</b>	<b>-36.2</b>	<b>-46.6</b>	<b>-47.7</b>	<b>-5.9</b>	<b>-36.2</b>	<b>-16.8</b>	<b>-23.9</b>
<i>Range</i>	<i>67.8</i>	<i>53.1</i>	<i>34.2</i>	<i>42.0</i>	<i>172.6</i>	<i>106.2</i>	<i>86.0</i>	<i>105.1</i>	<i>85.3</i>	<i>64.0</i>	<i>53.7</i>	<i>57.6</i>

(1)  $R_{ixgr}^{1986} = \frac{O_{ixgr}^{1986}}{\sum_i O_{ixgr}^{1986}}$ , with  $E_{ixgr}^{2001} = R_{ixgr}^{1986} \times \sum_i O_{ixgr}^{2001}$ , and the results  $IS_{ir}^{2001} = \frac{\sum (O_{ixgr}^{2001} - E_{ixgr}^{2001})}{\sum O_{ixgr}^{2001}} \times 100$  summing the appropriate gender and age group to get rate.

Where i = industry, x = age, g = gender, r = region, O = Observed, E = Expected, R = Rate, IS = Industry Shift.

**Appendix Table 10: Distribution by Region of Total Employed 15-64 Years by Age Groups and Industrial Sectors, 1986 and 2001: Percentage of New Zealand Total Employed**

**a) 15-24 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	2.2	2.8	3.2	2.8	5.7	2.4	5.5	3.1	1.5	2.0	2.4	2.6	3.1	2.4	5.3	2.6
Auckland	33.9	24.6	29.7	31.6	27.4	34.5	7.9	28.6	44.3	32.2	29.9	34.5	32.9	29.1	7.3	31.4
Waikato	7.2	9.4	8.5	8.4	10.4	8.7	18.8	9.6	6.5	9.0	9.4	8.9	11.4	10.4	16.4	9.7
Bay of Plenty	4.1	4.5	6.3	5.0	5.9	4.8	9.3	5.3	3.3	4.6	5.8	5.3	6.3	5.8	6.2	5.3
Gisborne	1.0	1.4	0.9	1.0	1.5	1.0	2.9	1.3	0.5	0.7	0.8	0.8	0.8	0.9	3.2	1.0
Hawke's Bay	2.8	3.2	3.2	3.6	3.5	4.5	6.8	3.9	1.6	2.4	2.8	3.2	2.8	4.7	7.8	3.4
Taranaki	2.3	3.0	2.7	2.9	3.9	3.2	5.7	3.3	1.6	1.8	1.9	2.2	2.3	3.5	4.8	2.4
Manawatu-Wanganui	4.6	9.3	5.8	6.3	6.6	6.2	8.4	6.8	3.4	7.8	5.2	5.3	5.2	6.3	9.9	6.0
Wellington	21.2	15.9	12.6	13.4	12.2	9.5	3.4	12.6	20.0	15.8	13.4	12.8	12.6	6.7	4.2	12.6
Canterbury	0.6	0.9	1.2	0.9	0.9	0.9	1.7	1.0	10.6	13.3	14.9	14.2	12.9	16.1	12.3	13.8
Otago	10.9	13.9	13.5	12.9	10.5	14.3	10.9	12.9	3.1	6.0	7.2	4.7	4.4	5.8	6.6	5.4
Southland	4.5	5.4	6.3	5.2	6.2	4.6	5.6	5.2	1.5	1.6	2.2	2.1	2.0	3.7	6.4	2.5
Nelson-Tasman	2.7	2.8	3.5	3.2	2.8	3.0	5.6	3.3	1.2	1.3	2.1	2.0	1.7	2.5	5.6	2.2
West Coast	1.4	1.5	1.9	1.8	1.7	1.8	5.6	2.1	0.3	0.4	0.9	0.6	0.6	0.7	1.7	0.7
Marlborough	0.6	1.3	0.9	0.9	0.8	0.7	1.7	1.0	0.4	1.2	1.0	0.9	1.0	1.4	2.2	1.1
<b>New Zealand</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified see Appendix Table 3)

(continues of next page)



Appendix Table 10: (continued)

**b) 25-44 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	2.0	3.1	4.3	3.0	6.0	2.6	6.6	3.6	1.6	3.0	3.2	2.5	3.4	2.4	6.0	2.9
Auckland	37.1	24.4	26.1	31.4	28.6	35.5	7.4	27.8	42.7	28.8	30.5	37.7	33.6	34.0	8.1	32.3
Waikato	6.4	9.3	9.4	7.8	10.3	7.9	19.5	9.7	6.2	9.1	8.7	7.9	9.7	8.7	18.1	9.1
Bay of Plenty	4.3	4.6	6.8	5.2	6.2	5.0	8.2	5.5	3.9	5.7	6.1	5.4	6.9	5.8	7.3	5.6
Gisborne	0.8	1.3	1.2	1.1	1.3	1.0	2.6	1.3	0.5	1.1	0.8	0.8	1.0	0.7	2.8	1.0
Hawke's Bay	2.8	3.6	3.9	3.7	3.6	4.7	6.2	4.1	2.1	3.2	3.2	3.1	3.1	4.4	6.9	3.5
Taranaki	2.1	2.7	3.2	2.7	3.7	2.9	6.7	3.3	1.8	2.4	2.4	2.1	2.3	3.0	5.8	2.6
Manawatu-Wanganui	4.2	7.7	6.2	5.6	5.9	5.5	8.5	6.4	3.1	6.9	4.8	4.7	4.6	5.2	8.3	5.4
Wellington	21.1	16.8	11.0	14.3	11.5	10.3	3.6	13.0	20.3	15.6	11.0	11.6	11.6	7.7	3.7	12.7
Canterbury	0.4	1.0	1.3	0.8	1.1	0.7	2.1	1.0	11.2	12.9	15.0	13.9	13.0	15.9	12.1	13.4
Otago	10.8	13.7	13.9	13.6	10.5	13.4	11.0	12.9	3.0	5.7	6.4	4.2	4.8	4.8	5.9	4.8
Southland	4.0	6.0	6.2	5.1	6.3	4.4	5.6	5.3	1.4	2.1	2.6	2.2	2.1	3.5	6.0	2.6
Nelson-Tasman	2.0	2.6	3.2	2.8	2.1	3.5	6.1	3.2	1.5	1.9	2.6	2.2	2.2	2.1	4.7	2.2
West Coast	1.3	2.0	2.3	1.9	2.1	1.7	4.0	2.1	0.3	0.8	1.4	0.7	0.8	0.6	1.9	0.8
Marlborough	0.6	1.0	1.0	1.0	1.0	0.6	1.7	1.0	0.5	0.9	1.2	0.8	1.0	1.2	2.3	1.0
<b>New Zealand</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified see Appendix Table 3)

(continues of next page)

Appendix Table 10: (continued)

c) 45-64 years

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	2.2	3.1	4.7	3.1	4.9	2.6	7.6	3.7	2.5	3.5	4.3	3.4	4.1	2.5	7.0	3.6
Auckland	36.5	24.7	24.3	31.1	28.1	35.1	8.4	27.4	38.5	26.4	24.4	33.5	30.9	33.0	8.6	28.7
Waikato	7.0	9.1	9.6	7.3	10.2	7.1	18.2	9.3	7.3	9.4	10.2	8.5	10.0	8.2	16.0	9.5
Bay of Plenty	4.5	5.1	6.8	5.5	6.3	4.7	8.4	5.6	5.2	5.9	7.0	6.4	7.1	5.8	8.1	6.3
Gisborne	0.9	1.3	1.5	1.1	1.5	1.0	2.4	1.3	0.6	1.1	1.1	1.0	1.1	0.7	2.3	1.1
Hawke's Bay	3.0	3.7	4.0	4.0	3.7	4.5	5.7	4.2	2.9	3.9	3.7	3.6	3.6	4.4	6.6	4.0
Taranaki	2.2	2.9	3.0	2.9	3.0	2.5	6.1	3.1	2.1	2.6	2.8	2.5	2.6	2.9	5.2	2.8
Manawatu-Wanganui	4.3	7.3	6.5	5.6	6.6	5.7	9.1	6.5	3.8	6.6	5.8	5.1	5.3	5.3	8.6	5.8
Wellington	20.2	17.2	10.0	14.4	11.8	10.9	3.2	13.0	16.4	14.6	9.2	10.6	10.7	8.4	4.0	11.6
Canterbury	0.3	0.8	1.7	0.8	1.2	0.7	1.7	0.9	12.3	13.8	15.4	14.1	12.5	16.0	13.2	13.9
Otago	11.0	13.2	14.4	13.5	11.0	14.8	12.0	13.2	3.6	5.8	6.8	4.7	5.1	4.9	6.1	5.2
Southland	3.8	6.1	6.4	5.2	6.2	4.8	5.5	5.4	1.5	2.2	2.7	2.4	2.3	3.4	5.8	2.7
Nelson-Tasman	1.9	2.5	3.4	2.9	2.6	3.3	6.4	3.2	1.9	2.3	3.0	2.3	2.6	2.3	4.1	2.5
West Coast	1.6	2.2	2.3	1.8	1.8	1.5	3.6	2.1	0.4	0.8	1.7	0.8	1.0	0.7	1.5	0.9
Marlborough	0.5	0.9	1.4	1.0	1.0	0.7	1.7	1.0	0.7	1.0	1.8	1.2	1.2	1.4	2.7	1.3
<b>New Zealand</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Personal, Household, Restaurants and Hotels

4 Distribution and Exchange (retail and wholesale)

5 Building and Construction

6 Manufacturing

7 Primary

8 Total of all industries (excluding Not Specified see Appendix Table 3)

**Appendix Table 11: Occupation categories and Concordance over time**

<b>NZSCO68 (1986-1996)</b>	<b>NZSCO99 v1 (2001) Codes</b>
1 Professional, Technical and Related Workers	2, 31, 32, 3311, 33132, 3314, 33172, 332-338
2 Administrative and Managerial	11, 121, 1221-1225, 1227-1229
3 Clerical and Related Workers	4
4 Sales	12261-12263, 33121, 33131, 33151-33171, 33181, 33191, 52
5 Service	12264-12267, 51, 82641-82644, 82646, 91111
6 Agriculture, Forestry, Fishery and Hunters	6
7-9 Production, Transport, Trades and Elementary	7, 81, 83, 84, 82645, 8261-8263, 8265, 821-825, 827, 828, 91112, 91113, 912-915
Unidentifiable/Not specified	97, 99

**Appendix Table 12: Workers Reporting “Occupation Not Specified” as an Standardised<sup>1</sup> Percentage of Total Employed by Ethnicity and Region, 1986-2001**

Region	Pakeha				Maori				Total			
	1986	1991	1996	2001	1986	1991	1996	2001	1986	1991	1996	2001
Northland	0.5	1.8	2.1	3.9	1.5	4.3	4.7	8.4	0.8	2.3	3.8	5.9
Auckland	0.8	1.3	2.4	3.0	2.1	3.1	4.8	7.0	1.1	1.7	4.2	5.3
Waikato	0.6	1.8	2.2	3.6	1.7	4.1	5.2	8.8	0.8	2.1	3.2	5.1
Bay of Plenty	0.7	2.2	2.2	3.5	1.8	6.2	5.3	8.1	1.0	3.0	3.5	5.2
Gisborne	0.3	1.6	2.0	3.2	1.1	3.4	5.6	9.0	0.7	2.1	3.9	6.1
Hawke's Bay	0.5	1.0	1.8	3.5	1.3	2.4	4.0	9.0	0.6	1.3	3.0	5.5
Taranaki	0.7	1.1	2.1	4.9	1.8	2.2	4.9	10.2	0.8	1.2	2.9	5.7
Manawatu-Wanganui	0.5	1.2	1.9	3.7	1.3	2.4	4.2	8.4	0.6	1.3	2.8	4.9
Wellington	0.6	1.2	2.5	3.3	1.8	2.7	4.9	7.1	0.9	1.4	3.5	4.5
West Coast	0.7	1.5	2.6	4.3	1.7	3.4	3.1	6.8	0.7	1.6	3.1	5.0
Canterbury	0.7	1.2	2.2	3.5	1.8	2.3	4.0	5.7	0.8	1.3	3.0	4.3
Otago	0.5	1.2	2.2	3.5	1.3	2.2	3.7	6.3	0.6	1.3	2.8	4.3
Southland	0.6	1.2	1.6	4.0	1.1	2.3	3.5	6.9	0.6	1.3	2.1	4.6
Nelson-Tasman	0.6	1.1	2.4	3.9	1.6	2.1	4.8	6.2	0.7	1.2	3.2	4.8
Marlborough	0.7	1.3	2.4	3.8	1.8	2.5	4.5	5.2	0.7	1.5	3.1	4.4
<b>New Zealand</b>	<b>0.6</b>	<b>1.4</b>	<b>2.2</b>	<b>3.4</b>	<b>1.7</b>	<b>3.3</b>	<b>4.7</b>	<b>7.7</b>	<b>0.9</b>	<b>1.6</b>	<b>3.4</b>	<b>5.0</b>
<i>Range</i>	<i>0.5</i>	<i>1.2</i>	<i>1.0</i>	<i>1.9</i>	<i>1.1</i>	<i>4.1</i>	<i>2.5</i>	<i>5.0</i>	<i>0.6</i>	<i>1.8</i>	<i>2.1</i>	<i>1.8</i>

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole

**Appendix Table 13: Workers Reporting “Occupation Not Specified” as a Percentage of Total Employed by Age Group and Region, 1986-2001**

Region	15-24 years				25-44 years				45-64 years			
	1986	1991	1996	2001	1986	1991	1996	2001	1986	1991	1996	2001
Northland	1.4	2.6	5.0	7.2	0.7	1.9	3.6	5.3	0.8	2.6	3.3	6.5
Auckland	1.4	1.9	4.6	6.4	1.1	1.6	4.1	5.0	1.0	1.6	4.0	5.2
Waikato	1.1	2.6	3.9	5.9	0.7	1.8	3.0	4.6	0.8	2.3	3.3	5.5
Bay of Plenty	1.3	4.3	4.5	5.7	0.9	2.5	3.1	4.9	1.0	2.8	3.5	5.5
Gisborne	0.8	2.7	5.6	7.5	0.5	2.0	3.5	5.6	0.9	2.2	4.1	6.8
Hawke's Bay	0.9	1.4	3.8	6.6	0.5	1.1	2.7	5.1	0.6	1.4	2.8	5.5
Taranaki	1.1	1.3	3.4	6.4	0.7	1.1	2.6	5.3	0.9	1.3	3.3	6.4
Manawatu- Wanganui	0.8	1.4	2.9	5.4	0.6	1.2	2.7	4.4	0.7	1.5	2.8	5.5
Wellington	1.0	1.7	3.2	4.7	0.8	1.3	3.4	4.1	0.9	1.4	3.6	5.0
West Coast	0.7	1.5	3.2	5.8	0.6	1.3	2.7	4.4	0.9	2.1	3.9	5.5
Canterbury	0.9	1.4	3.3	5.3	0.7	1.2	2.8	3.9	0.8	1.4	3.0	4.6
Otago	0.5	1.5	2.8	5.0	0.5	1.1	2.6	3.8	0.7	1.4	3.2	4.8
Southland	0.7	1.2	2.6	4.7	0.5	1.0	1.7	4.0	0.8	1.7	2.4	5.9
Nelson-Tasman	0.8	1.2	3.8	5.8	0.6	0.9	3.1	4.6	0.8	1.4	3.2	4.4
Marlborough	0.9	1.3	3.8	4.4	0.7	1.0	2.6	4.1	0.8	2.0	3.4	5.0
<b>New Zealand</b>	<b>1.1</b>	<b>1.9</b>	<b>3.8</b>	<b>5.8</b>	<b>0.8</b>	<b>1.5</b>	<b>3.3</b>	<b>4.6</b>	<b>0.9</b>	<b>1.7</b>	<b>3.4</b>	<b>5.2</b>
<i>Range</i>	<i>0.9</i>	<i>3.1</i>	<i>3.0</i>	<i>3.1</i>	<i>0.6</i>	<i>1.6</i>	<i>2.4</i>	<i>1.8</i>	<i>0.4</i>	<i>1.5</i>	<i>1.7</i>	<i>2.4</i>



**Appendix Table 14:** (continued)

Region	Occupational Group							
	1	2	3	4	5	6	7	8
	<b>1996</b>							
Northland	15.8	4.0	13.2	11.4	11.8	19.5	24.3	100.0
Auckland	20.3	9.8	19.3	12.7	11.0	2.9	24.1	100.0
Waikato	17.0	5.1	13.8	11.1	11.6	17.6	23.8	100.0
Bay of Plenty	16.8	5.6	14.4	12.4	12.8	12.3	25.7	100.0
Gisborne	17.0	3.7	13.7	10.8	11.0	19.7	24.2	100.0
Hawke's Bay	16.1	4.8	13.6	10.9	11.4	16.8	26.5	100.0
Taranaki	17.2	4.8	12.9	10.9	11.2	18.6	24.5	100.0
Manawatu-Wanganui	18.5	4.9	14.7	11.1	14.5	13.7	22.5	100.0
Wellington	25.1	9.3	20.6	11.7	11.9	3.1	18.2	100.0
West Coast	14.5	4.0	12.8	10.0	16.0	15.1	27.6	100.0
Canterbury	18.0	6.5	15.9	12.2	13.4	9.1	24.9	100.0
Otago	18.6	4.9	14.3	11.5	15.2	11.1	24.3	100.0
Southland	14.1	4.0	12.6	10.1	12.1	19.7	27.4	100.0
Nelson-Tasman	16.0	5.1	13.0	10.8	11.7	17.3	26.2	100.0
Marlborough	14.7	4.1	13.1	10.5	14.5	18.1	25.0	100.0
<b>New Zealand</b>	<b>19.1</b>	<b>7.1</b>	<b>16.6</b>	<b>11.8</b>	<b>12.2</b>	<b>9.6</b>	<b>23.7</b>	<b>100.0</b>
<i>Range</i>	<i>11.0</i>	<i>6.0</i>	<i>8.0</i>	<i>2.7</i>	<i>5.0</i>	<i>16.8</i>	<i>9.3</i>	
	<b>2001</b>							
Northland	19.1	6.5	10.5	10.7	13.4	15.7	24.1	100.0
Auckland	25.4	12.1	15.4	12.6	11.1	2.4	21.0	100.0
Waikato	19.9	7.5	11.6	10.8	12.6	14.3	23.4	100.0
Bay of Plenty	19.9	7.9	11.5	11.6	13.4	10.2	25.4	100.0
Gisborne	20.2	6.4	10.3	9.7	12.1	18.8	22.6	100.0
Hawke's Bay	18.5	6.7	11.0	10.3	12.6	14.7	26.2	100.0
Taranaki	19.1	6.6	10.4	10.2	11.9	17.1	24.7	100.0
Manawatu-Wanganui	20.7	6.9	11.9	10.8	15.4	11.8	22.4	100.0
Wellington	30.0	11.3	15.7	11.5	12.0	2.8	16.7	100.0
West Coast	16.5	5.6	9.7	9.3	18.3	14.8	25.8	100.0
Canterbury	22.1	8.4	12.4	11.8	14.2	7.5	23.6	100.0
Otago	21.5	6.6	11.7	10.8	16.4	9.6	23.4	100.0
Southland	15.8	5.7	9.6	9.8	12.9	18.0	28.1	100.0
Nelson-Tasman	19.3	6.6	10.0	10.3	14.0	15.2	24.5	100.0
Marlborough	17.1	6.3	9.4	9.6	16.4	17.1	24.1	100.0
<b>New Zealand</b>	<b>23.1</b>	<b>9.3</b>	<b>13.2</b>	<b>11.5</b>	<b>12.8</b>	<b>8.0</b>	<b>22.2</b>	<b>100.0</b>
<i>Range</i>	<i>14.2</i>	<i>6.5</i>	<i>6.3</i>	<i>3.2</i>	<i>7.2</i>	<i>16.4</i>	<i>11.5</i>	

*Note:* 1 = Professional workers

2 = Administrative and Managerial workers

3 = Clerical and Related workers

4 = Sales workers

5 = Service workers

6 = Agriculture, Forestry, Fishery and Hunter workers

7 = Production, Transport, Trade & Elementary workers

8 = Total excluding Not Specified

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified as reported in Appendix Table 12.

**Appendix Table 15: Percentage of Workers Employed by Occupation, by Age Group and Region, 1986 and 2001**

**a) 15-24 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	7.6	0.4	17.8	9.9	8.0	16.6	39.7	100.0	9.4	1.3	11.8	16.4	18.7	16.9	25.5	100.0
Auckland	10.1	1.3	25.2	11.2	10.8	3.0	38.4	100.0	16.1	2.7	19.5	19.3	18.7	2.4	21.2	100.0
Waikato	8.3	0.5	18.3	10.1	7.9	17.2	37.7	100.0	10.5	1.5	12.7	16.3	18.6	14.1	26.2	100.0
Bay of Plenty	8.0	0.5	18.4	11.3	9.2	15.9	36.6	100.0	10.1	1.4	12.0	17.7	21.1	9.8	27.8	100.0
Gisborne	7.0	0.4	17.9	9.5	8.5	21.6	35.2	100.0	10.0	1.1	9.1	15.4	14.3	25.0	25.0	100.0
Hawke's Bay	7.3	0.5	18.5	9.9	7.5	15.9	40.6	100.0	8.7	1.3	10.3	15.6	17.4	17.8	29.0	100.0
Taranaki	9.9	0.4	19.3	10.1	6.8	14.7	38.9	100.0	10.2	1.3	11.3	16.1	16.2	16.5	28.3	100.0
Manawatu-Wanganui	9.5	0.4	19.1	10.2	14.1	11.5	35.1	100.0	10.9	1.4	12.6	15.7	22.2	13.0	24.1	100.0
Wellington	13.2	1.4	32.7	10.1	10.6	2.9	29.1	100.0	17.5	2.1	20.0	19.3	21.3	2.9	16.9	100.0
West Coast	7.7	0.4	18.2	10.2	11.5	12.1	39.7	100.0	7.3	1.3	11.1	14.0	21.3	17.6	27.4	100.0
Canterbury	9.3	0.7	21.6	10.6	12.3	8.2	37.3	100.0	12.0	1.7	13.4	17.5	22.4	7.7	25.2	100.0
Otago	9.9	0.4	20.8	10.9	11.9	10.1	36.0	100.0	11.1	1.2	12.8	15.7	25.7	10.2	23.3	100.0
Southland	7.7	0.3	20.3	10.1	9.1	15.8	36.7	100.0	8.2	0.9	9.5	13.1	17.1	20.2	31.0	100.0
Nelson-Tasman	6.5	0.4	17.0	10.2	7.7	22.0	36.3	100.0	7.9	1.0	10.2	14.3	20.5	19.2	26.9	100.0
Marlborough	6.1	0.3	16.9	11.0	18.5	15.6	31.5	100.0	8.2	0.9	9.2	13.2	25.4	17.1	26.1	100.0
<b>New Zealand</b>	<b>9.6</b>	<b>0.8</b>	<b>22.8</b>	<b>10.6</b>	<b>10.5</b>	<b>9.3</b>	<b>36.5</b>	<b>100.0</b>	<b>13.1</b>	<b>1.9</b>	<b>15.5</b>	<b>17.6</b>	<b>20.2</b>	<b>8.3</b>	<b>23.4</b>	<b>100.0</b>
<i>Range</i>	<i>7.0</i>	<i>1.2</i>	<i>15.8</i>	<i>1.8</i>	<i>11.8</i>	<i>19.1</i>	<i>11.4</i>		<i>10.2</i>	<i>1.8</i>	<i>10.9</i>	<i>6.3</i>	<i>11.4</i>	<i>22.6</i>	<i>14.1</i>	

Note: 1 = Professional workers

2 = Administrative and Managerial workers

3 = Clerical and Related workers

4 = Sales workers

5 = Service workers

6 = Agriculture, Forestry, Fishery and Hunter workers

7 = Production, Transport, Trade and Elementary workers

8 = Total excluding Not Specified see App. Table 13

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**Appendix Table 15:** (continued)

**b) 25-44 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	14.9	3.2	12.8	8.6	8.7	20.5	31.4	100.0	21.1	7.3	10.5	9.4	12.4	15.1	24.2	100.0
Auckland	18.2	8.7	18.4	10.8	9.0	3.2	31.7	100.0	28.4	13.7	14.7	11.0	9.5	2.0	20.7	100.0
Waikato	15.5	4.1	12.6	8.9	8.8	21.2	28.9	100.0	22.2	8.4	11.3	9.4	10.9	14.2	23.6	100.0
Bay of Plenty	15.1	4.6	14.2	10.2	9.5	15.8	30.6	100.0	22.6	8.8	11.8	10.2	11.7	9.6	25.3	100.0
Gisborne	15.0	2.7	13.4	8.8	9.4	21.8	28.8	100.0	23.1	7.2	10.7	7.9	11.0	17.5	22.6	100.0
Hawke's Bay	15.1	4.0	13.6	9.1	8.8	16.5	33.0	100.0	20.4	7.3	11.1	9.1	11.6	14.0	26.5	100.0
Taranaki	15.7	4.3	12.1	8.6	8.3	20.7	30.3	100.0	21.5	7.4	10.2	8.6	10.6	17.2	24.5	100.0
Manawatu-Wanganui	17.0	4.0	14.2	9.0	12.5	15.1	28.2	100.0	23.2	7.5	11.9	9.5	14.2	11.0	22.6	100.0
Wellington	24.3	8.0	21.8	9.5	9.3	3.2	24.0	100.0	34.6	12.8	15.1	9.7	9.9	2.4	15.6	100.0
West Coast	15.2	2.9	11.9	6.8	12.5	17.3	33.3	100.0	18.5	6.2	9.8	8.0	16.9	14.8	25.9	100.0
Canterbury	17.8	5.6	15.4	10.1	11.3	9.8	30.1	100.0	24.8	9.5	12.4	10.7	12.3	6.8	23.6	100.0
Otago	19.1	4.2	14.1	9.4	11.3	11.7	30.3	100.0	24.3	7.4	12.0	9.8	14.2	8.9	23.5	100.0
Southland	13.8	3.4	11.6	8.6	9.7	21.0	31.9	100.0	17.6	6.4	9.6	9.4	11.2	17.1	28.7	100.0
Nelson-Tasman	16.6	3.8	12.5	8.6	9.8	19.0	29.7	100.0	21.3	7.4	10.2	9.5	12.5	14.4	24.7	100.0
Marlborough	14.8	3.6	12.2	8.6	14.2	19.1	27.4	100.0	19.4	7.0	9.7	9.0	14.3	16.2	24.4	100.0
<b>New Zealand</b>	<b>17.9</b>	<b>6.0</b>	<b>16.0</b>	<b>9.7</b>	<b>9.8</b>	<b>10.9</b>	<b>29.8</b>	<b>100.0</b>	<b>26.0</b>	<b>10.5</b>	<b>12.9</b>	<b>10.1</b>	<b>11.1</b>	<b>7.3</b>	<b>22.0</b>	<b>100.0</b>
<i>Range</i>	<i>10.5</i>	<i>6.0</i>	<i>10.2</i>	<i>3.9</i>	<i>5.9</i>	<i>18.7</i>	<i>9.3</i>		<i>17.0</i>	<i>7.5</i>	<i>5.5</i>	<i>3.0</i>	<i>7.4</i>	<i>15.5</i>	<i>13.2</i>	

Note: 1 = Professional workers

2 = Administrative and Managerial workers

3 = Clerical and Related workers

4 = Sales workers

5 = Service workers

6 = Agriculture, Forestry, Fishery and Hunter workers

7 = Production, Transport, Trade and Elementary workers

8 = Total excluding Not Specified see App. Table 13

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**Appendix Table 15:** (continued)

**c) 45-64 years**

Region	1986								2001							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Northland	12.9	4.3	11.7	10.1	10.1	23.9	27.0	100.0	21.4	8.5	10.4	10.0	12.1	17.0	20.6	100.0
Auckland	16.0	9.3	18.4	11.9	9.4	3.9	31.0	100.0	26.3	15.3	15.2	11.1	9.1	2.9	20.2	100.0
Waikato	13.4	5.0	13.2	10.7	10.0	21.8	25.9	100.0	21.5	9.9	11.4	9.8	11.9	14.9	20.6	100.0
Bay of Plenty	13.8	5.4	13.1	11.9	10.3	16.9	28.6	100.0	21.5	10.5	11.4	10.8	12.3	11.8	21.8	100.0
Gisborne	13.7	4.1	12.1	9.3	11.5	20.9	28.4	100.0	21.2	8.3	10.8	9.4	12.7	17.2	20.4	100.0
Hawke's Bay	13.2	5.2	13.8	11.0	9.9	15.9	31.0	100.0	21.3	9.0	11.7	9.4	12.1	14.2	22.4	100.0
Taranaki	12.9	4.7	11.8	10.9	10.5	22.4	26.9	100.0	20.4	8.8	10.2	9.6	11.8	17.6	21.7	100.0
Manawatu-Wanganui	14.5	4.8	14.8	10.4	11.7	16.8	27.1	100.0	22.9	9.3	11.9	9.8	13.1	12.9	20.1	100.0
Wellington	19.7	9.1	24.2	10.2	9.2	3.1	24.6	100.0	30.6	14.4	15.6	9.7	10.0	3.2	16.5	100.0
West Coast	11.1	4.3	11.2	7.7	15.1	15.3	35.3	100.0	18.9	7.2	8.4	8.6	18.3	13.8	24.7	100.0
Canterbury	14.4	6.5	14.9	11.0	11.4	11.1	30.6	100.0	23.8	10.7	12.3	9.9	12.9	8.8	21.6	100.0
Otago	15.7	4.9	14.4	10.5	12.0	12.3	30.3	100.0	23.7	8.9	11.2	9.5	15.2	10.3	21.3	100.0
Southland	10.6	4.3	11.1	9.8	10.5	22.5	31.1	100.0	16.6	7.7	9.6	8.4	12.8	19.3	25.7	100.0
Nelson-Tasman	15.6	4.8	12.2	10.0	11.2	18.9	27.3	100.0	23.0	8.9	9.9	9.6	12.9	14.1	21.6	100.0
Marlborough	13.0	4.6	13.0	9.3	12.9	19.7	27.4	100.0	18.1	8.5	9.3	8.9	14.8	18.8	21.6	100.0
<b>New Zealand</b>	<b>15.2</b>	<b>6.8</b>	<b>16.2</b>	<b>10.9</b>	<b>10.3</b>	<b>11.7</b>	<b>28.8</b>	<b>100.0</b>	<b>24.2</b>	<b>11.8</b>	<b>12.9</b>	<b>10.1</b>	<b>11.5</b>	<b>9.0</b>	<b>20.5</b>	<b>100.0</b>
<i>Range</i>	<i>9.1</i>	<i>5.2</i>	<i>13.0</i>	<i>4.2</i>	<i>6.0</i>	<i>20.8</i>	<i>10.7</i>		<i>14.0</i>	<i>8.1</i>	<i>7.2</i>	<i>2.7</i>	<i>9.2</i>	<i>16.5</i>	<i>9.2</i>	

Note: 1 = Professional workers

2 = Administrative and Managerial workers

3 = Clerical and Related workers

4 = Sales workers

5 = Service workers

6 = Agriculture, Forestry, Fishery and Hunter workers

7 = Production, Transport, Trade and Elementary workers

8 = Total excluding Not Specified see App. Table 13





**Appendix Table 18: Percentage Point Change 1986-2001 in Workers in Each Occupational Group as an Age Standardised<sup>1</sup> Percentage of those Employed by Region**

Region	Occupational Group						
	1	2	3	4	5	6	7
Northland	5.5	3.6	-4.4	1.1	3.6	-4.5	-5.0
Auckland	9.2	4.8	-5.2	1.3	1.4	-1.0	-10.6
Waikato	5.9	4.0	-3.7	0.8	2.8	-5.9	-4.0
Bay of Plenty	6.1	4.0	-4.5	0.5	3.0	-5.6	-3.6
Gisborne	6.5	3.8	-4.9	0.3	1.2	-1.8	-5.2
Hawke's Bay	5.0	3.2	-4.7	0.3	3.1	-1.1	-5.7
Taranaki	5.0	3.1	-4.3	0.4	2.4	-2.8	-3.7
Manawatu-Wanganui	5.4	3.4	-4.6	1.0	2.2	-2.6	-4.8
Wellington	9.2	4.4	-9.6	1.6	2.3	-0.2	-7.6
West Coast	3.2	3.0	-4.6	1.1	3.3	-0.1	-6.0
Canterbury	6.6	3.7	-5.2	1.1	1.9	-2.1	-6.1
Otago	4.7	3.1	-4.8	0.5	3.9	-1.6	-5.9
Southland	3.5	2.9	-5.3	0.1	1.7	-1.9	-1.0
Nelson-Tasman	4.5	3.4	-4.0	1.0	3.4	-4.1	-4.1
Marlborough	3.8	3.3	-5.4	0.1	1.0	-0.9	-1.9
<b>New Zealand</b>	<b>7.3</b>	<b>4.2</b>	<b>-5.3</b>	<b>1.1</b>	<b>2.2</b>	<b>-2.6</b>	<b>-6.9</b>

Note: 1 = Professional workers

2 = Administrative and Managerial workers

3 = Clerical and Related workers

4 = Sales workers

5 = Service workers

6 = Agriculture, Forestry, Fishery and Hunter workers

7 = Production, Transport, Trade & Elementary workers

(1) Standardised for age and gender to the employed population in 1996 for New Zealand as a whole. Adjusted to exclude Not Specified as reported in Appendix Table 12.

**Appendix Table 19: Percentage Difference Between Expected<sup>1</sup> and Observed Shares on Each Occupation in 2001, by Occupation, Age Group and Region, 2001**

Region	Professional, Technical and Related Workers				Administrative and Managerial Workers				Clerical and Related Workers				Sales Workers			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Northland	19.9	26.3	36.9	30.6	69.4	56.7	54.0	55.6	-60.6	-40.3	-28.5	-38.6	35.7	2.0	-9.3	4.6
Auckland	34.8	35.1	38.6	36.2	50.9	37.0	44.0	40.3	-33.7	-34.4	-33.6	-34.0	42.8	1.4	-10.2	8.6
Waikato	21.1	28.6	34.8	30.3	67.8	51.3	54.6	53.3	-51.0	-24.4	-30.0	-31.2	36.3	0.5	-13.5	5.0
Bay of Plenty	23.2	31.4	32.9	31.4	66.2	48.3	53.3	51.1	-60.4	-35.0	-29.4	-36.7	33.0	-4.8	-13.9	0.4
Gisborne	35.5	32.7	31.6	32.4	77.9	61.7	53.4	58.4	-99.4	-42.0	-22.8	-42.2	31.9	-18.4	0.7	0.7
Hawke's Bay	21.8	23.7	35.7	28.7	64.4	46.2	49.3	48.3	-83.5	-34.8	-32.0	-40.3	33.4	-5.9	-22.8	-2.9
Taranaki	6.7	25.9	34.0	27.6	71.0	42.1	51.3	47.1	-75.1	-33.7	-27.4	-37.9	34.8	-6.7	-16.6	-0.5
Manawatu-Wanganui	12.9	23.8	35.1	27.3	71.7	45.9	53.0	50.1	-56.6	-31.9	-37.2	-38.2	33.7	3.1	-8.6	7.0
Wellington	24.6	29.6	35.4	31.0	32.0	38.3	42.2	39.7	-68.4	-54.7	-67.0	-61.4	47.8	1.1	-7.9	11.8
West Coast	-3.6	14.9	36.8	23.1	70.0	56.6	48.2	53.3	-65.9	-37.6	-49.3	-46.1	23.7	6.7	2.0	8.8
Canterbury	23.4	26.5	37.7	30.5	59.0	42.7	44.9	44.1	-67.7	-36.1	-34.8	-41.1	38.2	4.1	-15.3	6.6
Otago	11.1	18.8	30.8	22.8	70.1	44.1	50.5	47.8	-70.7	-30.9	-40.4	-41.5	28.3	0.7	-14.5	2.8
Southland	11.9	18.9	32.3	23.5	75.9	48.2	49.5	49.6	-123.8	-38.5	-31.2	-48.9	16.5	2.3	-24.9	-3.4
Nelson-Tasman	22.0	19.9	29.6	24.3	75.7	49.8	50.7	50.9	-72.8	-30.8	-33.8	-38.3	25.9	7.2	-5.5	6.7
Marlborough	29.6	21.3	25.0	23.6	60.7	48.8	53.3	51.6	-91.4	-42.8	-59.6	-56.7	10.1	-1.6	-6.5	-1.0
<b>NEW ZEALAND</b>	<b>26.6</b>	<b>30.0</b>	<b>35.9</b>	<b>31.8</b>	<b>57.0</b>	<b>43.7</b>	<b>47.2</b>	<b>45.6</b>	<b>-53.1</b>	<b>-35.6</b>	<b>-39.5</b>	<b>-40.1</b>	<b>39.1</b>	<b>2.0</b>	<b>-11.5</b>	<b>7.0</b>
<i>Range</i>	<i>39.1</i>	<i>20.2</i>	<i>13.6</i>	<i>13.4</i>	<i>45.8</i>	<i>24.7</i>	<i>12.4</i>	<i>18.8</i>	<i>90.2</i>	<i>30.3</i>	<i>44.3</i>	<i>30.2</i>	<i>37.7</i>	<i>25.6</i>	<i>27.0</i>	<i>15.1</i>

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**Appendix Table 19:** (continued)

Region	Service Workers				Agriculture, Forestry, Fishery and Hunters Workers				Production, Transport, Trades and Elementary Workers			
	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total	15-24	25-44	45-64	Total
Northland	55.3	21.3	4.9	21.6	3.6	-32.5	-38.5	-30.1	-48.8	-13.8	-12.8	-18.6
Auckland	41.9	3.9	-10.7	10.5	-22.9	-56.5	-32.6	-41.5	-75.2	-45.2	-43.3	-49.6
Waikato	56.0	11.7	3.1	19.7	-19.2	-46.0	-43.4	-40.7	-39.7	-11.3	-9.8	-16.2
Bay of Plenty	54.6	10.3	4.0	18.4	-58.4	-60.1	-42.7	-52.5	-27.7	-8.7	-15.2	-14.1
Gisborne	38.5	5.0	-4.2	7.5	15.4	-17.2	-17.0	-10.5	-37.4	-16.2	-25.7	-23.1
Hawke's Bay	55.5	17.0	5.7	20.7	11.1	-14.8	-9.3	-8.1	-37.9	-14.2	-24.6	-21.7
Taranaki	56.7	11.4	-2.2	15.3	11.8	-20.7	-25.7	-18.1	-34.8	-9.5	-10.5	-14.2
Manawatu- Wanganui	35.5	7.2	0.1	12.1	12.9	-32.9	-26.4	-21.9	-42.0	-12.6	-21.5	-21.0
Wellington	49.6	2.8	2.8	16.8	2.2	-24.4	7.8	-7.7	-65.9	-43.0	-37.6	-45.2
West Coast	45.0	13.1	-0.9	12.9	31.7	-12.7	-2.4	-1.6	-42.8	-13.4	-24.6	-21.9
Canterbury	43.7	0.8	-0.3	11.4	-3.3	-40.0	-21.6	-26.5	-43.4	-16.7	-28.0	-25.2
Otago	51.6	11.2	10.5	21.8	3.8	-26.9	-15.3	-16.9	-47.7	-14.3	-27.6	-24.7
Southland	44.0	2.7	1.9	11.0	23.7	-22.8	-14.1	-11.6	-14.4	2.3	-6.2	-3.4
Nelson-Tasman	60.6	14.4	4.1	21.0	-12.5	-30.0	-34.8	-28.4	-33.0	-11.8	-14.1	-16.2
Marlborough	26.2	-4.0	2.9	5.7	10.8	-15.4	-4.6	-6.8	-16.6	-0.8	-11.8	-7.5
<b>NEW ZEALAND</b>	<b>46.9</b>	<b>6.4</b>	<b>0.1</b>	<b>14.8</b>	<b>-8.7</b>	<b>-45.2</b>	<b>-26.3</b>	<b>-31.8</b>	<b>-51.2</b>	<b>-24.5</b>	<b>-27.5</b>	<b>-30.1</b>
<i>Range</i>	<i>34.4</i>	<i>25.3</i>	<i>21.2</i>	<i>16.0</i>	<i>90.1</i>	<i>47.3</i>	<i>51.2</i>	<i>50.9</i>	<i>60.8</i>	<i>47.4</i>	<i>37.1</i>	<i>46.2</i>

(1)  $R_{ixgr}^{1986} = \frac{O_{ixgr}^{1986}}{\sum_i O_{ixgr}^{1986}}$ , with  $E_{ixgr}^{2001} = R_{ixgr}^{1986} \times \sum_i O_{ixgr}^{2001}$ , and the results  $OS_{ir}^{2001} = \frac{\sum (O_{ixgr}^{2001} - E_{ixgr}^{2001})}{\sum O_{ixgr}^{2001}} \times 100$  summing the appropriate gender and age group to get rate.

Where i = occupation, x = age, g = gender, r = region, O = Observed, E = Expected, R = Rate, OS = Occupation Shift.

**Appendix Table 20: Average Business size by Industry and Region, 1987 and 1994**

Region	Industrial Group						
	1	2	3	4	5	6	7
	<b>1987</b>						
Northland	4.5	8.1	4.8	3.5	12.8	2.7	5.6
Auckland	5.1	10.6	6.6	3.7	14.1	2.7	7.5
Waikato	5.5	9.5	4.8	3.9	14.4	6.0	6.7
Bay of Plenty	4.8	8.6	5.4	3.3	14.2	5.4	6.5
Gisborne	5.8	8.5	5.1	3.9	18.6	4.9	6.7
Hawke's Bay	5.3	8.6	5.4	3.5	20.8	4.3	7.1
Taranaki	4.4	7.7	5.3	3.7	16.4	6.7	6.8
Manawatu-Wanganui	5.1	10.6	5.3	4.1	16.2	4.1	7.3
Wellington	7.4	13.9	7.1	3.7	15.4	3.5	8.6
West Coast	3.5	6.4	4.5	4.5	12.7	5.9	5.7
Canterbury	5.1	10.4	6.0	3.6	15.6	3.6	7.5
Otago	4.9	9.8	5.7	4.6	18.5	4.5	7.3
Southland	5.5	8.3	5.9	3.4	24.2	4.2	7.5
Nelson-Tasman	4.8	9.2	5.6	3.1	12.2	4.0	6.3
Marlborough	4.0	10.3	4.8	3.4	12.3	2.5	5.9
<b>New Zealand</b>	5.4	10.2	6.0	3.7	15.2	4.2	7.3
	<b>1994</b>						
Northland	3.6	6.7	4.1	2.7	8.5	2.4	4.6
Auckland	3.6	8.2	5.3	2.5	10.5	2.2	5.5
Waikato	4.0	8.3	4.3	3.0	11.2	4.2	5.6
Bay of Plenty	3.5	7.9	4.5	2.9	10.4	4.1	5.3
Gisborne	5.2	8.3	4.4	3.6	11.7	4.7	5.9
Hawke's Bay	4.0	8.1	4.5	3.2	16.3	3.7	6.2
Taranaki	3.7	7.4	4.6	3.2	13.1	5.4	5.8
Manawatu-Wanganui	3.9	11.6	4.5	3.2	11.7	3.3	6.4
Wellington	4.3	12.0	5.4	2.6	10.8	2.6	6.2
West Coast	3.3	6.8	4.4	3.6	9.2	3.6	5.0
Canterbury	3.8	9.1	5.0	3.1	12.0	2.7	6.0
Otago	3.5	8.8	4.8	3.6	15.0	3.1	6.0
Southland	4.3	7.8	5.0	3.3	18.2	3.9	6.3
Nelson-Tasman	3.3	8.2	4.6	2.8	11.8	3.4	5.4
Marlborough	3.3	9.0	4.3	3.0	11.0	2.5	5.2
<b>New Zealand</b>	3.8	8.9	4.9	2.8	11.4	3.3	5.7

1 Business and Financial Services

2 Public Services, Social Services, Utilities

3 Distribution and Exchange (retail and wholesale)

4 Building and Construction

5 Manufacturing

6 Primary

7 Total of all industries

Source: Statistics New Zealand, Business Demography

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