

Minimum wage workers in New Zealand: Who are they?

JASON TIMMINS¹

Abstract

The New Zealand minimum wage rate has recently experienced a sustained period of growth that looks set to continue under the current Labour-led government. Since 2002 the adult minimum wage rate has increased by 28% from \$8 an hour to the current rate of \$10.25. This rise in the minimum wage has outstripped average wages, which increased by 15% over the same period. This paper uses the New Zealand Household Labour Force Survey and its Income Supplement to identify minimum wage workers and describe their demographic and job characteristics. In particular, the paper examines changes in the characteristics of minimum wage workers between 2002 and 2005. Minimum wage workers, over this period, are relatively young (over a half are aged 16-25 years), predominantly female, working part-time and are likely to be employed in a Services and Sales related occupation and in the Retail and Hospitality industries. Between 2002 and 2005 there was a three-fold increase in the share of wage and salary workers identified as minimum wage workers. Minimum wage workers in 2005 were slightly older and more likely to be female, compared with 2002. In particular, the share of married females among minimum wage workers doubled and there was an increase in the share of minimum wage workers in the Health and Community Services industry sector.

Introduction

The New Zealand minimum wage rate has recently experienced a sustained period of growth that looks set to continue under the current Labour-led government. Since 2002 the adult minimum wage rate has increased by 28% (17% in real terms) from \$8 an hour to the current 2006 rate of \$10.25. In her address to the New Zealand Council of Trade Unions (NZCTU) on 18 October 2005, the Prime Minister indicated that "the aspiration over the next four adjustments is to see it move close to \$12 an hour for the adult rate". What is of particularly interest is that since 2002 the minimum wage has outstripped average wages, which increased by 15%².

There has been a substantial amount of debate around the effect of raising the minimum wage on labour market outcomes, in particular employment³. New Zealand studies by Maloney (1995), Chapple (1997) and Maloney and Pacheco (1999) provide mixed evidence that the minimum wage has an adverse impact on employment for specific (vulnerable) groups. Hyslop and Stillman (2004) examined the effect of an unusually large increase (40%-60%) in the minimum wage for young workers aged 16-19 on their employment prospects and labour market outcomes. The study found no immediate effect on the employment rate of 16-19 year olds, but weak evidence of a negative effect on employment two years out from the minimum wage change. Hyslop and Stillman (2004) did find a negative and significant impact on study rates and a positive and significant effect on unemployment rates, benefit receipt and inactivity. Estimating the direction and magnitude of the minimum wage effect is difficult, particularly within New Zealand given currently available data sources (e.g. a short time-series of wage data and relatively small annual changes in the minimum wage). Quasi-experimental approaches that make use of an unusually large change in the minimum

¹ Jason Timmins, Work Directions, Department of Labour, Wellington

wage rate, as used by Hyslop and Stillman (2004), can produce robust results, but are a rare event in New Zealand. Hyslop and Stillman (2004) note that the direction of minimum wage research has moved from the assumption that a rise in the minimum wage is always associated with negative employment effects to investigating under what circumstances do negative employment effects occur.

Given that a change in the minimum wage may potentially affect labour market outcomes the purpose of this paper is to identify who is likely to be impacted. In particular, following the recent and relatively large increases in the New Zealand minimum wage, whether there has been a change in the types of workers affected by minimum wage changes.

New Zealand's Minimum Wage Legislation

The New Zealand Minimum Wage legislation⁴ decrees that the minimum wage rate must be reviewed each year by 31st December. Any changes in the minimum are typically implemented in the following March. The New Zealand minimum wage was brought into law in 1983 and set a binding wage floor for all workers aged 20 years or older. In March 1994 a youth minimum wage was introduced for 16-19 year olds and was set at 60% of the adult minimum. On 14th December 2000 it was announced that the eligibility age for the adult minimum wage would be lowered from 20 to 18 years of age and that the youth minimum wage would be increased from 60% to 80% of the adult minimum. The change in the eligibility age for the adult minimum wage was made on 5th March 2001 together with a 10 percentage point increase in the youth minimum wage from 60% to 70% of the adult minimum. On 18th March 2002 the youth minimum wage was increased by a further 10 percentage points from 70% to 80% of the adult minimum.

Data Description

The data used in the analysis in this paper comes from the New Zealand Household Labour Force Survey and its Income Supplement (HLFS-IS). Since 1997, the Income Supplement (also known as the New Zealand Income Survey, NZIS) has been included as an annual supplement to the June quarter HLFS, to collect information on income from a variety of sources. The HLFS sample frame uses an eight-quarter panel, and samples approximately 15,000 households and 30,000 individuals aged 15 and over each quarter. The HLFS-IS collects information on wages and salaries earned in a reference period (typically the week prior to the survey). In addition to collecting information on wages and salaries the HLFS-IS also collects information on the number of hours worked in each wage and salary job (up to a maximum of three jobs) during the reference period related to the reported earnings. Statistics New Zealand (SNZ) convert the information collected on wages and salaries and hours worked to a weekly measure of earnings and hours worked and an hourly wage rate, which are presented as such in the HLFS-IS data extract.

The minimum wage legislation covers all those employed for wages or salaries aged over 16 years of age. For this study we focus on individuals aged 16-64 years, employed in wage and salary jobs (excludes the self-employed). This paper focuses on the years 2002-2005, which covers a period of relatively large and year-on-year increases in the minimum wage. Between 2002-2005, on average, 73.9% of the working age population were in employment, of which nearly 80% are only employed in wage and salary jobs. The differences in the population characteristics of the employed and wage and salary working age population are not particularly large.

To analyse the characteristics of minimum wage workers, it is first necessary to identify workers that are affected by a change in the minimum wage. Interviews for the HLFS-IS are carried out

during the months of April, May and June. The majority of changes to the minimum wage rate are made during the month of March, therefore, all the wage and salary information collected by the HLFS-IS should reflect the recent change in the minimum wage rate. We define minimum wage workers as those being paid between the current minimum wage and next year's minimum wage. For example, using the 2005 HLFS-IS minimum wage workers are those earning between the 2005 minimum wage of \$9.50 for adults and \$7.60 for youth workers (aged 16 and 17 years) and just less than next year's (2006) minimum wage of \$10.25 for adults and \$8.20 for youth workers. This approach excludes workers earning below the current minimum wage. This is done for two reasons. First, the New Zealand Minimum Wage Review, conducted each December by the Department of Labour, uses the same definition for identifying minimum wage workers. Second, this approach enables below minimum wage workers to be analysed separately.⁵ An important problem is that this approach assumes that the hourly wage rates collected by the HLFS-IS are correct. One of the problems with using an hourly wage measure is the amount of noise introduced if the hourly wage is derived using reported gross earnings and hours of work. Measurement error occurs when the number of hours reported does not correctly match the reported earnings. In the 2005 HLFS-IS over two-thirds (65.5%) of respondents had their hourly wage rate derived.

It is likely that the level of measurement error associated with an hourly wage rate that is reported directly by a respondent is lower compared with an hourly wage rate derived using reported gross earnings and usual weekly hours of work. Therefore, it is possible that individuals could be falsely identified as minimum wage workers because their hourly wage has not been measured correctly in the HLFS-IS. However, it would not be sensible in this case to only include individuals that report an hourly wage rate. First, only one-third of the wage and salary sample in the HLFS-IS report an hourly wage rate. Second, it is unlikely that these workers are representative of the population of wage and salary workers because they may reflect jobs that are paid by the hour. There are distinct differences between the characteristics of derived hourly wage workers and reported hourly wage workers. Over the period 2002-2005 derived hourly wage workers are, on average, older, less likely to be female, more likely to be Pakeha and more likely to have a post-school qualification. The job characteristics are also quite different. Derived hourly wage workers are more likely to work full-time and less likely to work in a Services and Sales related occupation and in the Retail and Hospitality industry sectors. Derived hourly wage workers are paid, on average, \$21.18, compared with \$14.20 for workers that report an hourly wage. The remaining analyses will include both derived and reported hourly workers.⁶

Analysis of Minimum Wage Workers

This section examines the impact of minimum wage changes over the period 2002-2005 by describing the population and job characteristics of individuals identified as minimum wage workers. Minimum wage workers are those paid an hourly wage between the current minimum wage and next year's minimum wage.

Minimum wage impacts

Table 1 calculates the number of workers, between 2002 and 2005, that were likely to be affected by a change in the minimum wage. The number of minimum wage workers tripled from 32,700 in 2002 to 96,200 in 2005. This means that at the time of the 2005 HLFS-IS survey it is estimated that 96,200 wage and salary workers were being paid between the 2005 minimum wage of \$9.50 and just less than the next year's (2006) minimum of \$10.25. In comparison the wage and salary workforce increased by only 9.2%, whereas, the share of workers affected by a minimum wage change grew from 2.3% to 6.1%, an increase of nearly 200%. The share of workers that reported

below minimum wages also increased by nearly 50% from 40,200 to 59,700 and made up 3.8% of the wage and salary workforce in 2005. The annual increases in the minimum wage between 2002-03 and 2005-06 were 6.3%, 5.9%, 5.6% and 7.9% respectively. Therefore, it is not necessarily surprising that there were more minimum wage workers identified in 2005, compared with in 2002, because the 2005-06 minimum wage increase was larger than the increase in 2002-03. To test the effect of different sized minimum wage increases between 2002 and 2005 we use the percentage increase in the minimum wage over the period 2002-03 to identify minimum wage workers in 2003, 2004 and 2005. The share of minimum wage workers in 2002, 2003, 2004 and 2005 using the 2002-03 minimum wage increase is 2.3%, 3.1%, 3.7% and 5.7% respectively. This suggests that the density of workers earning just above the minimum wage has increased between 2002 and 2005. In other words a 1% increase in the minimum wage rate in 2005 will affect a larger share of the wage and salary workforce compared with in 2002.

Table 1. Estimated impacts of minimum wage changes

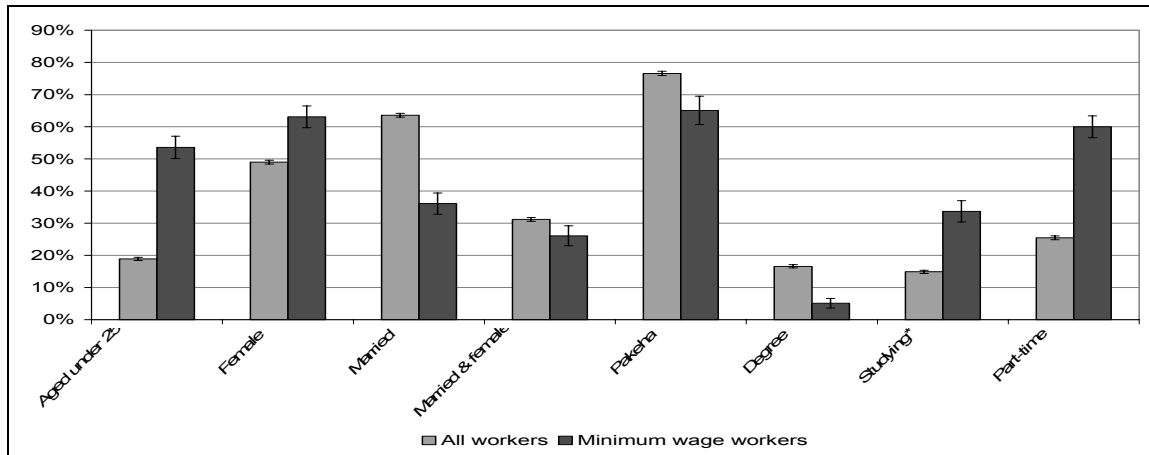
Year	All workers	MW workers	Below MW workers
2002	1,439,000	32,700 (2.3%)	40,200 (2.8%)
2003	1,470,200	26,000 (1.8%)	56,600 (3.8%)
2004	1,525,100	39,000 (2.6%)	45,900 (3.0%)
2005	1,571,600	96,200 (6.1%)	59,700 (3.8%)
Change 02/05	9.2%	194.2%	48.3%

Source: Statistics New Zealand, HLFS-IS

Characteristics of Minimum Wage Workers

Figure 1 compares the demographic and job characteristics for all workers with minimum wage workers. The light grey bar represents all workers and the dark grey bar represents minimum wage workers. The whisker plot on each bar is the confidence interval at the 95% level. Minimum wage workers have an average age of 30 years, compared with 38 years for all workers. In particular, there is a relatively high incidence of minimum wage workers aged under 25 years. For all workers just under 20% are aged 16-24 years, compared with just under half (53.6%) of minimum wage workers. Nearly two-thirds of minimum wage workers (63.1%) are female, compared with just under half of all workers (49.0%). Minimum wage workers are less likely to be married (36.1%) compared with all workers (63.6%). However, of the minimum wage workers that are married, nearly three quarters are female, compared with just under half of all married workers. The share of all workers that relate to the Pakeha ethnic group (76.6%) is slightly higher compared with the share of minimum wage workers (65.2%). There is weak evidence to suggest that there is a slightly higher incidence of Maori and Pacific Islanders among the minimum wage group, however, these differences are not statistically significant from zero at the 5% level. Study rates are much higher among minimum wage workers, with 33.7% of workers studying towards a qualification, compared with 14.9% of all workers.

Figure 1 Demographic and job characteristics, pooled 2002-2005



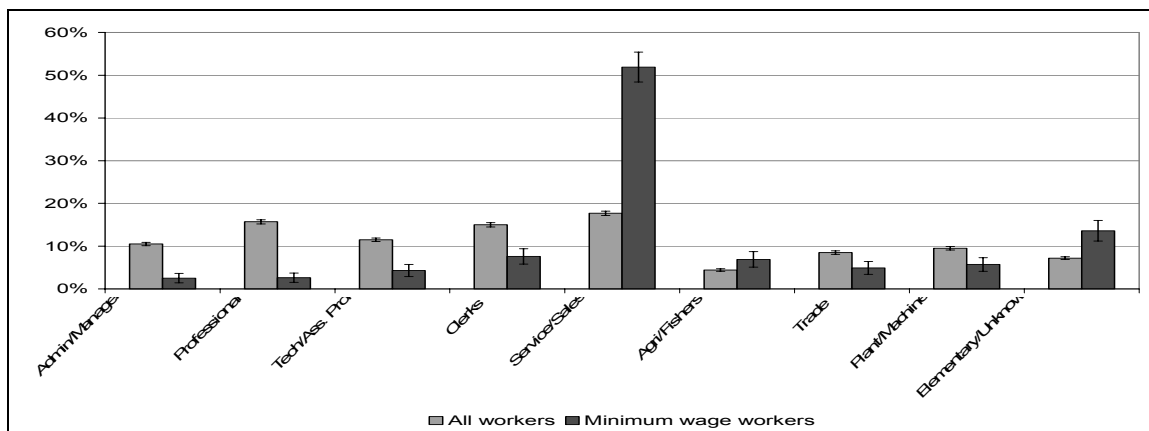
Source: Statistics New Zealand, HLFS-IS

Notes: * The study question has been pooled across the 2004 and 2005 HLFS-IS surveys because the question was introduced for respondents in the labour force in 2004. Whisker plots are 95% confidence intervals.

Not surprisingly, there is a clear difference in the education levels of minimum wage workers, compared with all workers. Among all workers 16.6% have a degree level qualification, compared with 5.1% of minimum wage workers. There is a higher incidence of part-time (less than 30 hours a week) work among minimum wage workers with 60.0% of minimum wage workers employed part-time, whereas among all workers nearly three-quarters are employed in full-time jobs (74.5%).

Figure 2 presents the share of all workers and minimum wage workers across different occupation groups. Over half (51.9%) of minimum wage workers are employed in a Services and Sales related occupation, compared with 17.7% of all workers. Minimum wage workers are also over-represented in the Agriculture and Fishers (6.9%) and the Elementary and Unknown (13.6%) occupation groups, compared with all workers (4.4% and 7.2% respectively). Unsurprisingly, minimum wage workers are under-represented within relatively high skilled occupations, in particular, Administration and Management and Professional related occupations.

Figure 2 Occupation group shares, pooled 2002-2005



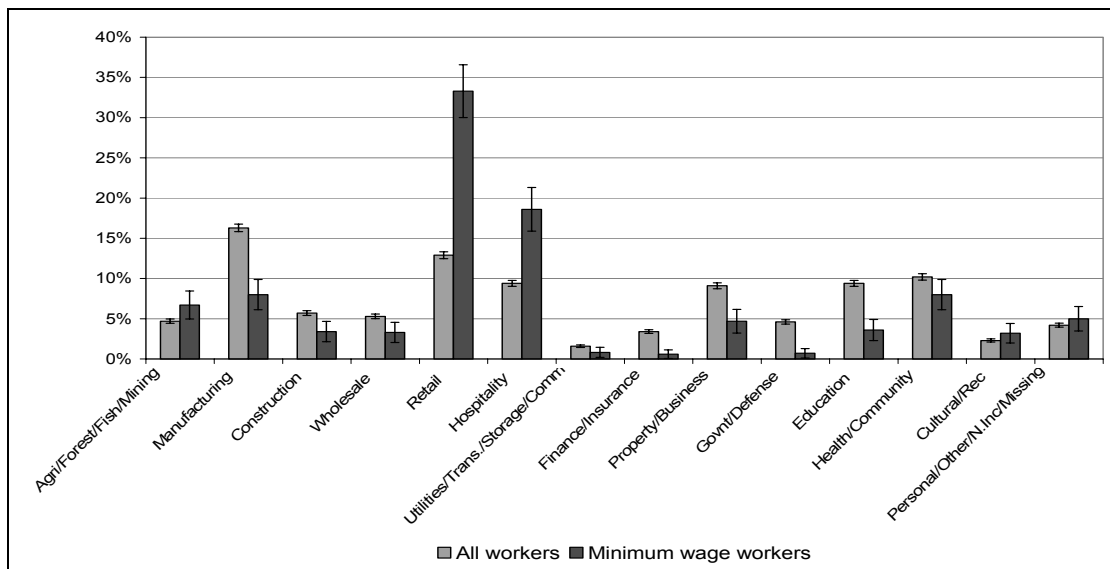
Source: Statistics New Zealand, HLFS-IS

Notes: Individuals have been classified using the 1 digit NZSCO99 occupation classification system. Whisker plots are 95% confidence intervals.

Figure 3 presents the share of all workers and minimum wage workers across different industries. The Retail and Hospitality industries contain over half of all minimum wage workers (33.3% and 18.6% respectively), compared with 22.3% of all wage and salary workers. Minimum wage workers have a slightly higher concentration in the Agriculture, Forestry, Fishery and Mining industry (6.7%), compared with all workers (4.7%).

Table 2 compares the demographic and job characteristics of all workers with minimum wage workers, separately for workers aged 16-24 years and those aged 25-64 years. For both groups of workers, aged 16-24 years and 25-64 years, just under half are female. However, among the older group of minimum wage workers nearly three quarters (72.6%) are female, compared with just over half (54.9%) of minimum wage workers aged 16-24 years. For both minimum wage age groups the share of workers that identify with the Pakeha ethnic group is lower, compared with all workers. For the Pacific ethnic group there is a distinct difference in the shares among minimum wage and all workers for the older age group. The share of older workers that are in the Pacific ethnic group is 5.1%, but among older minimum wage workers the share of Pacific workers is almost double at 10.4%. There is almost no significant difference in the shares of Maori and Pacific between the young all workers and minimum wage group.

Figure 3 Industry sector shares, pooled 2002-2005



Source: Statistics New Zealand, HLFS-IS

Notes: Individuals have been classified using the 1 digit ANZSIC96 industry classification system. The Personal/Other/N.Inc/Missing industry group contains individuals employed in the following 1 digit industries: Personal Services, Other services, Not included and Missing. Some 1 digit industries have been combined to protect confidentiality. Whisker plots are 95% confidence intervals.

Table 2 Demographic and job characteristics of minimum wage workers, pooled 2002-2005

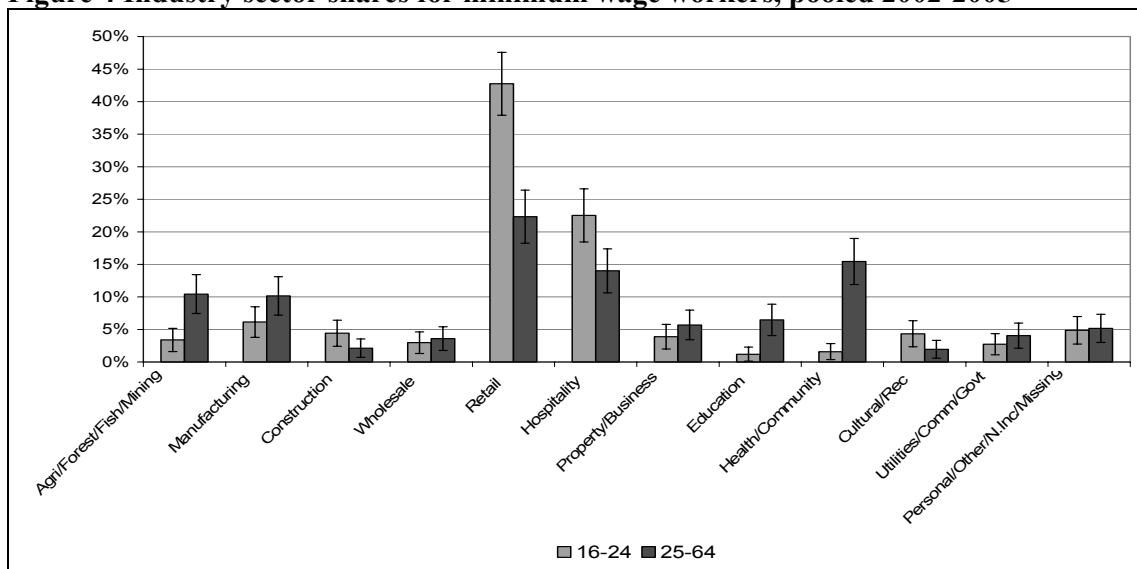
	16-24		25-64	
	All workers	MW	All workers	MW
Female	47.1%	54.9%*	49.5%	72.6%*
Pakeha	73.3%	67.8%	77.3%	62.0%*
Maori	12.0%	12.3%	9.9%	11.8%
Pacific	5.9%	5.5%	5.1%	10.4%*
Studying ¹	39.9%	58.7%*	9.1%	8.8%
Part-time	39.2%	64.9%*	22.3%	54.4%*
PT & female	23.4%	38.8%*	18.8%	46.6%*
MJH	3.3%	2.3%	2.5%	5.7%*
Hourly wage	12.7	8.9*	20.1	9.5*

Source: Statistics New Zealand, HLFS-IS

Notes: 1. The study question has been pooled across the 2004 and 2005 HLFS-IS surveys because the question was introduced for respondents in the labour force in 2004. * indicates that the difference between the minimum wage population percentage and the all workers population percentage is significantly greater than zero at the 95% level.

Nearly 60% of young minimum wage workers combine work with studying for a formal qualification, which is higher than the respective share among all young workers (39.9%). There is almost no difference between the study rates of older minimum wage workers, compared with all workers aged 25-64 years. Part-time work is more prevalent among younger workers, with around two thirds (64.9%) of young minimum wage workers in a part-time job. Although older workers are more likely to be in full-time employment, nearly 90% of part-time minimum wage jobs are held by females. Older minimum wage workers are more likely to have more than one job (5.7%), compared with younger minimum wage workers (2.3%) and older minimum wage workers report a slightly higher hourly wage.

Figure 4 Industry sector shares for minimum wage workers, pooled 2002-2005



Source: Statistics New Zealand, HLFS-IS

Notes: Whisker plots are 95% confidence intervals. Individuals have been classified using the 1 digit ANZSIC96

classification system. The Utilities/Comm//Govt industry group contains individuals employed in the following 1 digit industries: Utilities, Transport, Storage and Communications, Finance and Insurance, and Government and Defence. The Personal/Other/N.Inc/Missing industry group contains individuals employed in the following 1 digit industries: Personal Services, Other services, Not included and Missing. Some 1 digit industries have been combined to protect confidentiality.

Figure 4 presents the industry sector shares for minimum wage workers over the period 2002-2005, separately for 16-25 year olds (light grey bar) and 25-64 year olds (dark grey bar). Younger minimum wage workers are concentrated in the Retail and Hospitality industries, which account for around two thirds (65.2%) of minimum wage workers aged 16-25 years. Older minimum wage workers, aged 25-64 years, are concentrated in a larger range of industries, compared with younger minimum wage workers. Older minimum wage workers are less concentrated in the Retail and Hospitality industry sectors (36.3%) and are more concentrated in the Agriculture, Education and Health and Community services industries, compared with younger minimum wage workers.

Changes in the Characteristics of Minimum Wage Workers

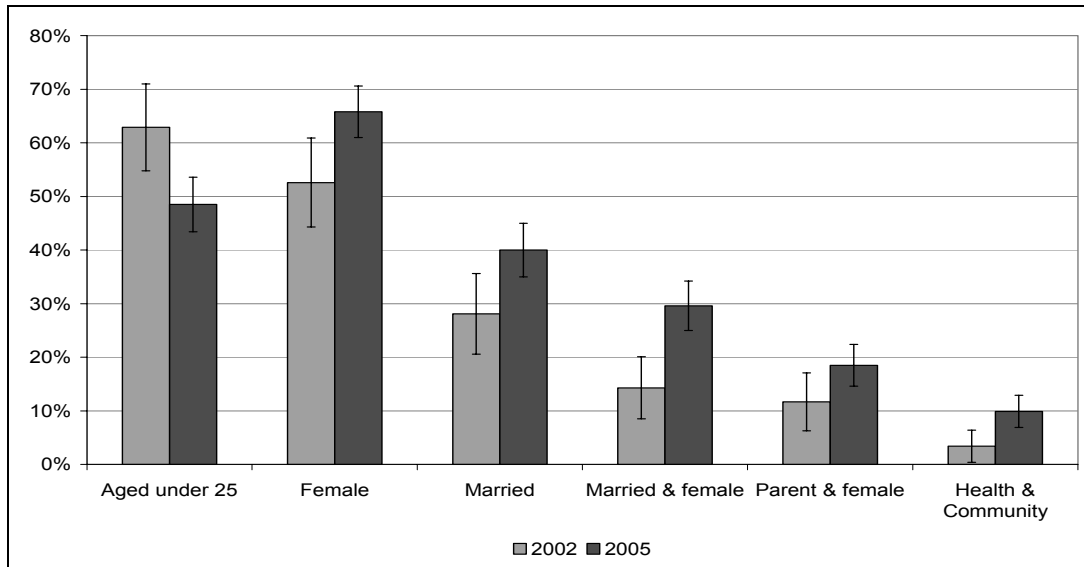
Since 2002 the New Zealand minimum wage has experienced a period of sustained growth. Between April 2002 and April 2006 the adult minimum wage increased from \$8.00 per hour to \$10.25 per hour. The minimum wage has also outpaced average wages. Over the same period the share of wage and salary workers affected by changes in the minimum wage has also increased from 2.3% in 2002 to 6.1% in 2005 (Table 1).

Figure 5 compares the population group shares for minimum wage workers between 2002 and 2005. For each population group, listed on the horizontal axis, the first (light grey) bar plots the 2002 population group percentages and the second (dark grey) bar plots the corresponding percentages in 2005. The largest and statistically significant changes are related to age, marital status and gender. The average age of a minimum wage worker increased by 18.6%, from 26 to 31 years. The incidence of females among minimum wage workers increased by 25.1% from around half (52.6%) to nearly two-thirds (65.8%). The share of minimum wage workers that are married increased by 42.4% from 28.1% to 40.0%, however the share of minimum wage workers that are married and female doubled from 14.3% to 29.6%. There was a large increase (57.2%) in the share of minimum wage workers that were also mothers (parent and female), however this increase is not statistically significant from zero.

The increase in the average age of minimum wage workers, between 2002 and 2005, appears to have been driven by a decline in the share of young workers aged 16-24 years, from 62.9% to 48.5%, and a corresponding increase in the share of workers aged 25-64 years. In comparison there was almost no change in the age structure for all workers. The percentage change in the occupation and industry mix of minimum wage workers and all wage and salary workers is less clear. The only statistically significant difference, among occupations, for minimum wage workers was a 50% decline in the share of minimum wage workers in Agricultural and Fishery related occupations. There was also a decrease in the share of all workers in Agricultural and Fishery related occupations of 17%. Although the share of young workers among minimum wage workers declined between 2002 and 2005, there was little change in the share of minimum wage workers employed in the Retail and Hospitality sectors. The largest percentage change was in the share of workers in the Health and Community sector, which increased by nearly 200% from 3.4% to 9.9%. There is some evidence to suggest that the share of minimum wage workers employed in the

Agricultural and Manufacturing industry also declined, however, these changes are not statistically significant.

Figure 5 Changes in demographic and job characteristics of minimum wage workers between 2002 and 2005



Source: Statistics New Zealand, HLFS-IS

Notes: Whisker plots are 95% confidence intervals.

Summary

The purpose of this study was to better understand the types of workers affected by minimum wage changes in New Zealand by describing their demographic and job characteristics. In particular, following a relatively large increase in the minimum wage over the period 2002-2005, the aim was to investigate whether the characteristics of minimum wage workers have changed.

A typical minimum wage worker over the period 2002-2005 is relatively young (over half are aged 16-24 years), female, working part-time and employed in a Services and Sales related occupation and in the Retail and Hospitality industries. There were distinct differences between minimum wage workers aged 16-24 years and 25-64 years. Younger minimum wage workers were less likely to be female, more likely to be engaged in studying for a formal qualification, working part-time and employed in the Retail and Hospitality industries. Whereas, older minimum wage workers are more likely to be female, of Pacific ethnicity and working full-time. Compared with younger minimum wage workers, older minimum wage workers are spread across a wider range of industries, in particular they are more concentrated in the Health and Community industry sector.

Between 2002 and 2005 there was a three-fold increase in the share of wage and salary workers identified as minimum wage workers. The small sample sizes made it difficult to identify statistically significant changes in the demographic and job characteristics of minimum wage

workers between 2002 and 2005. What is clear is that minimum wage workers in 2005 were slightly older and more likely to be female, compared with 2002. In particular, the share of married females among minimum wage workers doubled. There was a decline in the share of minimum wage workers in an Agriculture and Fishery related occupation and an increase in the share of minimum wage workers in the Health and Community services industry. Although the number of workers affected by minimum wage changes between 2002 and 2005 has increased the observed changes in the characteristics of minimum wage workers, over this period, appear to support a disproportional increase in the share of older minimum wage workers, aged 25 years and over.

There is, however, a need for further research and in particular a need to understand why the characteristics of minimum wage workers are changing. One hypothesis is that the composition of minimum wage workers has changed. On the other hand it is possible that the relatively large recent increases in the minimum wage are affecting a new set of workers (paid just above previous minimum wage changes) that have not been directly impacted by minimum wage changes in the past. This second hypothesis may occur because the minimum wage change between 2005 and 2006 was larger (7.9%), compared with the increase in the minimum between 2002 and 2003 (6.3%). Alternatively, the minimum wage increases between the years 2002-2005 may have had a compressing effect on the wage distribution resulting in a new set of workers (with different characteristics) further up the wage distribution being affected by minimum wage changes.

Acknowledgements

The author wishes to thank Dean Hyslop, Sarah Crichton, Sylvia Dixon and participants at the November 2006 meeting of the Department of Labour Research and Evaluation Group for their comments. Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The views expressed in this paper do not necessarily represent those of the Department of Labour and any remaining errors are my responsibility.

Notes

1. Department of Labour, PO Box 3705, Wellington, New Zealand. jason.timmins@dol.govt.nz.
2. The ratio of the minimum wage to the average wage (measured using the New Zealand Quarterly Employment Survey) was 42.7% in 2002 and 47.2% in 2005.
3. For example, see the Card versus Neumark debate in the US.
4. For a detailed description of New Zealand's minimum wage legislation and the recent reforms of the youth minimum wage see Hyslop and Stillman (2004).
5. For a detailed description of below minimum wage workers in New Zealand see Timmins (2006).
6. Over the period 2002-2005 around one third (39.0%) of minimum wage workers had a derived hourly wage. The demographic and job characteristics of minimum wage workers that report an hourly wage, compared with those with a derived hourly wage, are very similar. See Timmins (2006) for a detailed description of the characteristics of workers that report an hourly wage in the HLFS-IS, compared with those with a derived hourly wage.

References

Chapple, S. (1997) 'Do minimum wages have an adverse impact on employment? Evidence from New Zealand'. *Labour Market Bulletin* 1997(2): 25-50.

Hyslop, D. and S. Stillman (2004). 'Youth minimum wage reform and the labour market'. New Zealand Treasury, Wellington.

NZJER 31(3): 66-76, 2006, Timmins 'Minimum wage workers in New Zealand: Who are they?'

Maloney, T. (1995). 'Does the adult minimum wage affect employment and unemployment in New Zealand.' *New Zealand Economic Papers* 29(1): 1-19.

Maloney, T. and G. Pacheco (1999). 'Does the minimum wage reduce the employment prospects of unqualified New Zealand women.' *Labour Market Bulletin* 1: 51-69.

Timmins, J. (2006). 'A description of minimum wage workers in New Zealand, 2002-2005'. Department of Labour, Wellington.