

The Changing Role of Minimum Wage in New Zealand

GAIL PACHECO*

Abstract

This article provides a descriptive portrait of the changing characteristics of workers in New Zealand earning at or below the minimum wage in the last decade. With substantial increases made to both the adult and youth minimum wage over the last 10 years, the variety of impacts the minimum wage can have on a labour market need to be explored. Much of the increase in the adult and youth minimum wage in NZ has occurred post 2000. This therefore, presents as a unique opportunity to compare two key time periods of pre and post 2000 in order to highlight which sub-groups of individuals are more at risk (in terms of their employment status) when the minimum wage is raised. One of the main findings is that age appears to be the most important factor in determining minimum wage status.

Introduction and Background

Minimum wage legislation represents the role of the state in regulating the level of wages in the labour market. It is one of the oldest and most basic forms of income protection. Such legislation usually has tremendous public policy implications. This can be seen by the sheer number of workers that are affected by changes in the minimum wage. In the United States (U.S.), in 1995, nearly 2 million workers received the \$4.25 federal minimum.¹ It is also estimated in the U.S., “that more than 60% of all workers have worked for the minimum wage at some time during their careers” (Card and Krueger, 1995:5).

While a rise of the statutory minimum wage can lift the income levels of low paid workers, there may also be negative employment effects. Consequently, whether or not to increase the minimum wage is a common question debated by politicians. In a 1990 survey of New Zealand (NZ) economists, 72% of respondents generally agreed or agreed with reservations that a higher minimum wage increases unemployment among young and unskilled workers (Coleman, 1992). An even higher proportion of economists were concerned about the ill effects of minimum wage rises in the U.S. and Australia. In a 1990 survey of over one thousand economists in the U.S., 78.9% agreed, or agreed with provisos, that a minimum wage increases unemployment among young and unskilled workers (Alston et al, 1992). Similarly, in a 1992 survey of Australian Economics Professors, 84.9% was the comparable figure for agreeing or agreeing with provisions² to the same proposition (Anderson and Blandy, 1992).

These beliefs by the majority of economists are more than likely rooted in the standard textbook prediction that a binding wage floor such as an effective minimum wage reduces employment of the affected workers. These workers are generally believed to

* Dr Gail Pacheco, Department of Economics, Faculty of Business, Auckland University of Technology, Private Bag 92006, Auckland 1142, NZ, gail.pacheco@aut.ac.nz

be younger and less skilled. This expectation of dis-employment is based on the long held assumption that labour markets are competitive, and is also backed by numerous empirical studies (e.g. Brown et al, 1982) finding a negative relationship between minimum wages and employment levels in the low-wage labour market. However, several studies since the early 1990s have emerged that do not find significant negative employment effects of the minimum wage, and in some cases, even find positive employment effects. Studies such as Wellington (1991), Katz and Krueger (1992), Card and Krueger (1994, 1995) question the theoretical basis for negative employment effects. Most new research along this vein has relied on quasi-natural experiments and cross-sectional or longitudinal data, in comparison to the time-series evidence produced in the past³.

Other studies have found negative employment effects from the minimum wage, (e.g. Neumark and Wascher, 1992; Kim and Taylor, 1995) that are more in line with the traditional view. Overall, research into the effects of the minimum wage has most definitely experienced an upsurge, and writers on either side of the debate have rigorously questioned each others findings (e.g. Card et al, 1994; Neumark and Wascher, 1995; Deere et al, 1995)⁴.

In the NZ context, there has been limited research into the impacts of the minimum wage in this country, which also has produced inconsistent results. Issues with past studies⁵ have been lack of data, difficulty in choosing the appropriate model specification and not knowing which groups of individuals are most likely to be impacted by rises in the minimum wage. It is therefore understandable why one of the main motivations for carrying out the work contained within this study is the ability to access individual unit-record data from the Household Labour Force Survey – Income Supplements (HLFS-IS) from June 1997 to June 2004 in the secure data laboratory of Statistics NZ. The use of this data over this time period allows determination of which individuals earn minimum wage or below it. As already stated, the other motivation for this analysis is the large increases in the minimum wage for both adults and youth in recent years. To date, there has been only one study on the youth minimum wage since its introduction in 1994 (Hyslop and Stillman, 2004). The lack of past studies on the impact of the minimum wage in this country is hard to understand since the relative minimum wage⁶ in NZ has been higher than the comparable measure for the U.S. since the mid-80s and has also experienced more variation (Pacheco, 2007). Therefore, the ‘bite’ of the minimum wage in this country certainly seems to be larger than the U.S., where the bulk of the minimum wage research emanates from.

NZ was in fact the first country to introduce minimum wage regulation in 1894, through its establishment of arbitration boards with the Industrial Conciliation and Arbitration Act. During this early time period, minimum rates for men and women differed. For example, in 1949, the Arbitration Court set the minimum rate for women at 70% of the male rate. By the 1983 Minimum Wage Act (MWA), both men and women were on equal footing.

Section 4 of the 1983 MWA stipulates that the Governor General may “by Order in council, prescribe the minimum rates of wages payable to any class or classes of worker” (s4, MWA). Class is defined as a particular age group in this Act. The Act

initially set a binding wage for all workers aged 20 years old or above, and in 1994, the youth minimum was introduced for 16-19 year olds.

During this time, and through most of the twentieth century, a system of occupational “awards” determined wages and governed employment relations. Basically, employers were expected to adhere to the minimum wages and other conditions contained within an award and all workers had to be a member of the union that negotiated the wages and conditions. This system was weakened with the introduction of the Labour Relations Act (LRA) in 1987 and met its final demise with the Employment Contracts Act in 1991. With the ending of the award system, the statutory minimum wage has possibly become more effective as a wage floor, in comparison to under the prior award system (Chapple, 1997). This is because, if most workers were covered by an award and the minimum wage fell below award minima, then statutory minimum wages were likely to have had little influence on the wages of low paid adult workers.

Workers in NZ “must be paid no less than the statutory minimum wage for your age whether you are a full-time, part-time or casual employee, a home-worker, or paid wholly or partly by commission or on a piece rate” (Contract, May 1994:12)⁷. There are very few exemptions from paying the minimum wage in this country. It does not apply to those who hold under rate permits⁸, and until June 2003, didn’t apply to persons undergoing training recognised under the Industry Training Act.

The remainder of this paper is organized as follows: Section 2 provides a summary of the changes to the minimum wage since the introduction of the 1983 MWA and over the last 20 years. Section 3 presents a brief outline of the unit record data that allowed in-depth analysis into the characteristics of minimum wage workers and also illustrates the changes to the minimum wage that have occurred over the sample period under study (1997 to 2004). Section 4 investigates the changing size of the number of workers affected by the minimum wage over the period of 1997 to 2004 and summarises some of the main impacts affected workers and their employers may experience with continued rises in the minimum wage. Section 5 then investigates the changing characteristics of minimum wage workers in NZ, to show which types of workers are most at risk in recent times, and section 6 of this paper finishes with summarising the main conclusions.

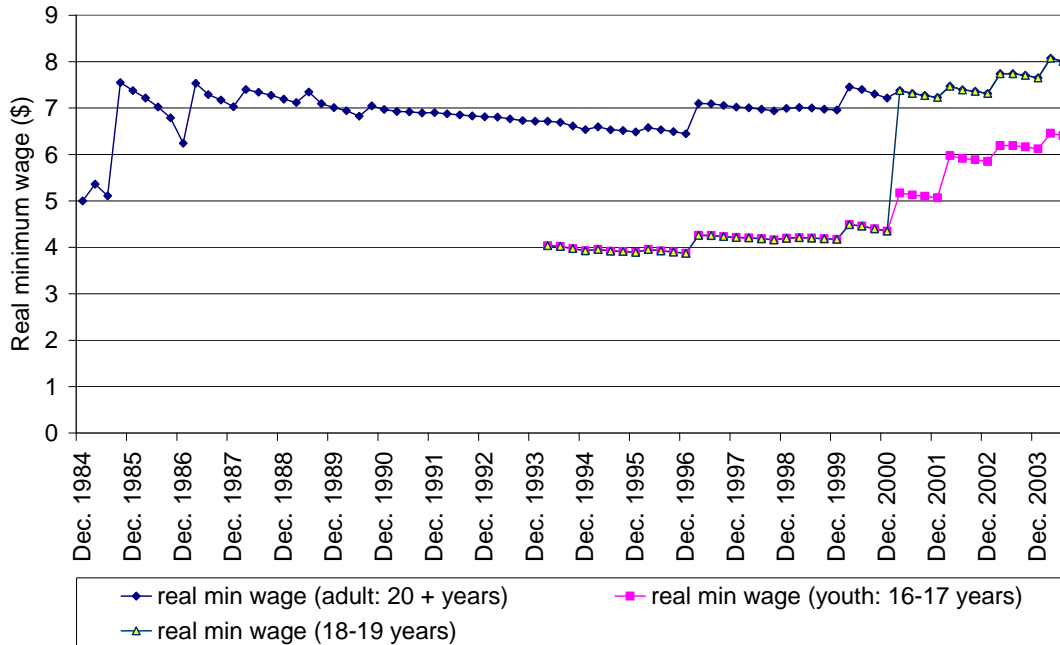
Changes to the minimum wage

Figure 1 illustrates the trends in the real minimum wage (in constant June 1999 dollars) for the three main age categories (youth: 16–17 years, 18-19 years, adults: 20+ years) over the period 1984 to 2004. The diagram displays a common trend in the real minimum wage, where legislated increases in the minimum are quickly eroded by inflation. This appears to be particularly prevalent for the adult minimum in the 1980s when the yearly inflation rate averaged at 11.9%, compared to the 1990s when the corresponding average inflation figure was 2.1% in NZ⁹.

The real minimum wage figures graphed in Figure 1 are produced using the consumer price index as the deflator. The reason why the minimum wage increases are not benchmarked against the average wage, which is commonly done in overseas studies, is due to the difficulty in finding reliable average wage information in NZ for specific age

groups prior to the introduction of the Income Supplement in 1997. Up until 1989 the Department of Labour collected the information and then there was a break in the data series as Statistics NZ began to collect average wage information.

Figure 1: The real minimum wage for adults since 1984 and youth since 1994



Source: Minimum wage levels supplied by the labour market policy group (Department of Labour), consumer price index from the Reserve Bank of NZ.

Note: Nominal adult minimum wages over the period 1984:4 – 2004:2 and nominal youth minimum wages over the period 1994:1 – 2004:2 are deflated by the consumer price index, with a base year of 1999:2.

As Figure 1 indicates there are two periods of large increases in the real adult minimum wage. They are September 1985 to March 1987, and December 1996 to March 2004. There was approximately a 50% increase in the first time period. The real minimum was then allowed to slowly decline during the 1990s until increases in 1997, 2000 and every year since then have reversed this effect and put the real minimum for adults slightly higher than it was in September 1985.

Figure 1 also highlights the importance of investigating the impact of the youth minimum. The leaps the real minimum for youth has taken since it was first introduced in March 1994 equate to an increase of around 52%. Additionally, the group of teenagers aged 18 – 19 year olds have experienced a 91% rise in their real minimum, since they were initially able to receive a minimum as part of the youth group in March 1994.

Data

Unit record data from the Household Labour Force Survey (HLFS) and its supplement, the Income Survey (IS), over the period 1997 to 2004 is used in this study. HLFS is an excellent source for the purpose of this study, in that it is a large sample of 16-32000 households surveyed per quarter¹⁰ since 1986. Since minimum wage incidence is

relatively low, a large sample helps improve the accuracy of analysis conducted here. The IS is an annual supplement run in conjunction with the HLFS every June quarter since 1997 to provide detailed wage information. Such earnings information allows isolation of the groups of workers earning at or below the minimum wage. This study therefore uses the HLFS-IS over the period for which they overlap and are available (June 1997 to June 2004). Access to the micro-data for this time period was provided through the use of a secure data laboratory on Statistics NZ premises, as Statistics NZ is legally required to protect confidential individual and corporate information under Statistics Act 1975.

Table 1 shows the nominal minimum wages for the three age groups of interest for the sample period under study here.

Table 1: Nominal hourly minimum wage changes between 1997 and 2004

Date of change	Age groups		
	16-17 years	18-19 years	20 years +
March 1997	4.20	4.20	7.000
March 2000	4.55 (8.3)	4.55 (8.3)	7.550 (7.9)
March 2001	5.40 (18.7)	7.70 (69.2)	7.700 (2.0)
March 2002	6.40 (18.5)	8.00 (3.9)	8.000 (3.9)
March 2003	6.80 (6.3)	8.50 (6.3)	8.500 (6.3)
March 2004	7.20 (5.9)	9.00 (5.6)	9.000 (5.6)

Information supplied by the Labour Market Policy Group, Department of Labour. All figures for nominal hourly wages are gross \$ per hour. The statistics in parenthesis are the percentage change in the nominal hourly wage.

As Table 1 shows, from March 1997, there was no change to the nominal minimum for either youth (16-19 years) or adults (20 years plus) for three years. After which, two reforms to the youth minimum took place: (i) in March 2001, the youth minimum for 16-17 year olds increased from 60 to 70% of the adult minimum and 18-19 year olds (previously receiving the youth minimum) became part of the adult minimum group, (ii) in March 2002, the youth minimum for 16-17 year olds further increased to 80% of the adult minimum wage.

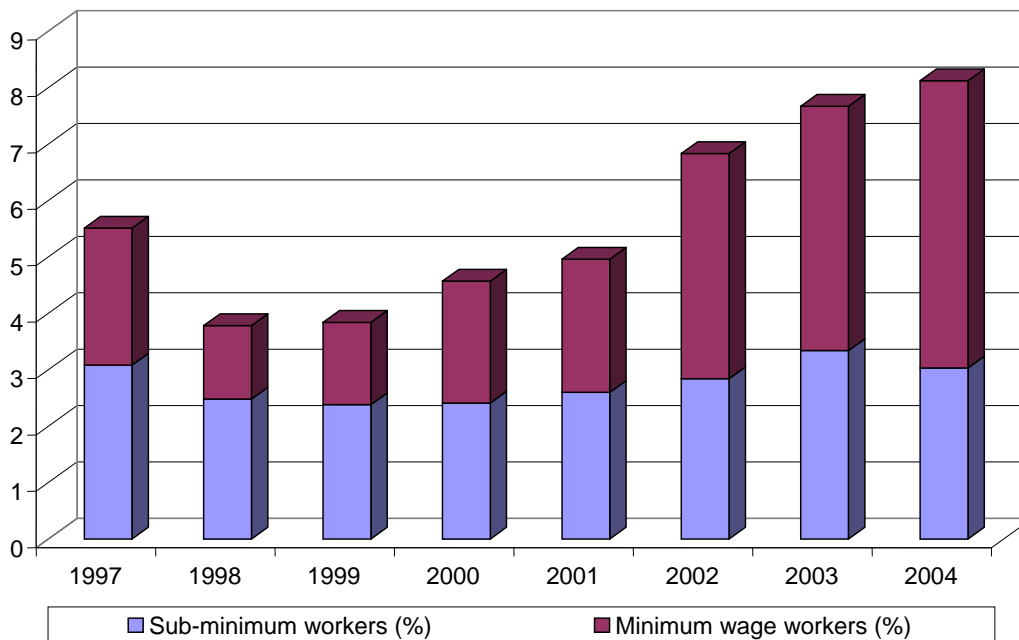
Impacts of minimum wage increases

Based on a regular usual hourly earnings measure derived from the IS, two wage groups are set up to focus on: (i) Individuals earning below current minimum wage (“sub-minimum workers”) and (ii) Individuals earning more than or equal to the current minimum wage but less than 10% above that minimum (“minimum wage workers”).

This separation of workers was done for all eight years of data from the IS. Figure 2 shows there is a steady decrease in the fraction of all workers classified as sub-minimum or minimum wage earners over the time period 1997 to 1999 when no increases were made to the nominal minimum. There were also significant increases in the proportions of these groups relative to the sample size for each year, from 2000

onwards. This corresponds to the time period when annual increases were made to the minimum wage for both adults and youth and there was a noticeable upward trend in the relative minimum wage for most workers. By 2004, affected workers, which comprise all workers earning at or below the minimum wage, made up 8.12% of the workers in this sample.

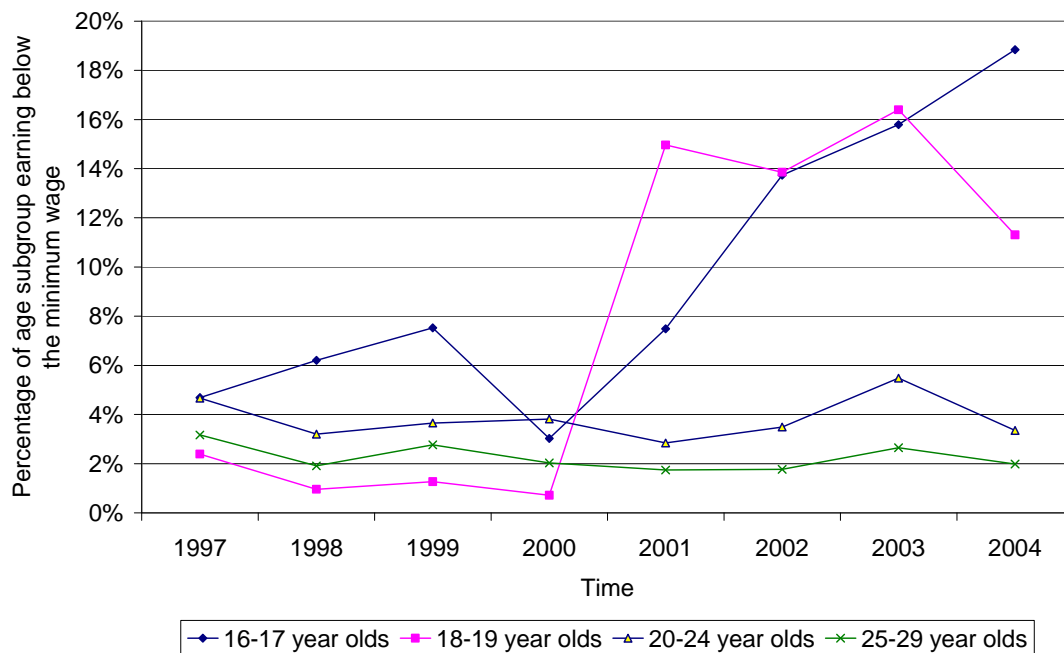
Figure 2: Affected wage groups as a percentage of data sample in each year: June 1997 to June 2004



Source: HLFS and IS data. Author's compilation.

At first, it is difficult to understand the increasing fraction of sub-minimum workers over the period 2000 to 2004, because exemptions from the minimum wage in NZ are few and far between, with close to full coverage for minimum wage legislation in this country. Consequently, the level of enforcement of the statutory minimum wage is the next logical question, to check the existence and significance of any illegal uncovered sectors in the labour market. In terms of enforcement, if an employee is receiving a sub-minimum wage they can make a complaint to a Department of Labour Inspector, who are charged with the duty of enforcing the 1983 MWA. Data pertaining to the enforcement of the minimum wage in Pacheco (2007)¹¹ showed a substantially higher average number of minimum wage complaints and investigations per year from 2000 onwards, versus 1998 to 1999. Therefore, if it is assumed that an increased number of enquiries and complaints are due to poorer enforcement of the minimum wage, then this explains the increasing size of the sub-minimum group from 2000 onwards.

To further investigate which types of individuals are earning below minimum wage, the following graph (Figure 3) splits the bulk of the sub-minimum workers into four age categories – 16-17, 18-19, 20-24 and 25-29 year olds.

Figure 3: Sub-minimum workers for 16-17, 18-19, 20-24 and 25-29 year olds

Source: HLFS and IS data. Author's compilation.

Figure 3 shows that earning below minimum wage is increasing for 16 to 19 year olds over the time period 1997 to 2004, but remaining steady for 20 to 29 year olds. Specifically, the percentage of 16-17 and 18-19 year olds earning below the minimum wage increased from 4.67% and 2.39% to 18.84% and 11.3% respectively, from 1997 to 2004. This is in comparison to 20-24 and 25-29 year olds, where their comparable percentages actually decreased from 4.67% and 3.17% to 3.35% and 1.99% respectively. These figures obviously assume complete accuracy in the earnings and hours information in the 'cleaned'¹² final sample used in this analysis. However, it is worth noting that similar trends were observed by Hyslop and Stillman (2004) in their analysis of youth over the time period 1997 to 2003. Such a large increase in the numbers of sub-minimum workers in recent years may include employers who are not aware of current minimum wage levels or take longer than three months to adjust wages to the minimum statutory levels (this is because increases are usually legislated in March and the IS is conducted in June) or are aware of the legal minimum but refuse to comply with it.

Card and Krueger (1995) who conducted a similar analysis for the U.S. also found evidence of a sub-minimum group, which was proportionately larger for teenagers. In particular, they found that 7.4% of working teenagers earned less than the prevailing federal minimum wage in 1989. They also found that after two consecutive annual increases in the federal minimum in April 1990 and 1991, by the second quarter of 1991, 17.4% of teens earned less than the prevailing minimum.

Given the rising numbers of workers and consequently proportion of the working age population affected by the minimum wage in NZ, it is necessary to outline its potential impacts. Pacheco (2007) has covered many of these impacts (using the HLFS-IS data) in more detail. In summary, the main findings are that a higher minimum wage:

May affect the number of households living in poverty

The minimum wage is often touted as an anti-poverty tool. Pacheco (2007)¹³ did find a strong link between affected workers being located more heavily in low household income deciles. However, simulations showed that even in a best case scenario, where individuals receiving a higher minimum wage are assumed to suffer no loss in hours worked, the poverty rate for the sample only fell 0.46%. Consequently, questioning the anti-poverty effect of raising the minimum wage.

May affect wage inequality

Several studies in the U.S. (e.g. Card and DiNardo, 2002) find wage inequality being inversely linked to the level of the real minimum wage in the 1980s. Similarly, Pacheco (2007)¹⁴ accepted the hypothesis that large rises in the real minimum wage for teenagers (16-19 year olds) had a significant negative influence on the level of wage dispersion for this group from 2000 onwards.

May affect employment propensity

Pacheco (2007) attempted to isolate the impact of the minimum wage on individuals expected to find the minimum wage binding. In doing this, negative employment effects were generally found for most groups within the overall category of 16 to 29 year olds. 16-17 year olds and Maoris stood out as sub-groups most adversely affected by a higher minimum wage.

May affect educational enrolments

Pacheco and Cruickshank (2007) found for 16-19 year olds that minimum wage rises have a statistically significant negative effect on enrolment levels. This result also helps to explain the link found between higher minimum wage levels and increased labour force participation rates.

May affect shareholder's wealth

This could occur through reduced profit expectations for low wage employers. Pacheco and Naiker (2006) actually found that investors in low wage firms seem to find news of minimum wage rises irrelevant, resulting in an insignificant impact on profit expectations for low wage employers by investors.

Given the myriad of outcomes affected workers may experience when the minimum wage is increased, it is useful to examine who these workers are and how they are changing, given the recent increases in the adult and youth minimum wage in NZ. This is investigated in the following section.

Changes in characteristics of all workers affected by the minimum wage

This section provides analysis of the key demographic, household, educational and industry characteristics of individuals who are affected by the minimum wage. By comparing two time periods of 1997-1999 and 2002-2004, we are able to see what types of individuals are most 'at risk' when the minimum wage increases. These time periods are used because in the first there were no changes to the nominal minimum wage for any age group, whereas in the latter period, two reforms to the youth minimum wage had occurred and yearly increases were being made to the nominal

minimum for both adults and youth. Past research by Card and Krueger (1995) also tabulated wage data against other characteristics of individuals to find which sub-group(s) of workers were more at risk when the minimum wage was raised¹⁵. However, they viewed one time period of just before the April 1990 increase in the minimum wage. This analysis goes one step further and compares two important time periods in NZ's unique situation to show exactly which groups were more affected by a rising minimum. Most importantly, it provides policymakers with a better picture of which groups of individuals are most likely to be impacted when they decide to further increase the minimum wage.

The descriptive statistics provided in the following table (Table 2) is shown for each of the two three year time periods, as averages across the merged data give more consistent and robust results, rather than individual year snapshot estimates.

Table 2: Characteristics of all sub-minimum and minimum wage workers: 1997-1999 and 2002-2004

Characteristics of workers	(1997-1999)		(2002-2004)	
	Sub-minimum workers	Minimum wage workers	Sub-minimum workers	Minimum wage workers
Total (% of sample)	2.63	1.71	3.07	4.46
Individual characteristics:				
Average age (years)	40.25	38.98	32.08***	31.45***
Percentage aged 16 – 17	1.46	0.68	16.02***	12.00***
Percentage aged 18 – 19	0.57	0.00	14.91***	16.74***
Percentage aged 20 – 24	7.92	12.27	12.16***	17.58***
Percentage aged 25 +	90.04	87.05	56.90***	53.67***
Percentage female	61.97	65.80	59.09***	67.55***
Percentage Maori	21.24	16.50	15.37***	14.01***
Percentage Pacific Islander	7.00	8.67	4.96***	6.65***
Percentage NZ born	84.26	79.70	80.30***	81.36***
Average years in NZ	3.07	3.40	2.45***	1.70***
Education (highest qualification):				
Percentage with no school qualifications	43.74	47.18	31.89***	32.86***
Percentage with school certificate	12.96	14.15	22.25***	23.26***
Percentage with Sixth Form or Bursary	9.01	14.64	19.16***	20.96***
Percentage with diploma	28.26	20.80	21.31***	18.76***
Percentage with bachelor's degree	3.80	3.23	4.55***	3.42
Percentage with masters degree	2.22	0.00	0.85***	0.74***
Hours of work & Earnings characteristics:				

Percentage working full-time	60.40	56.71	44.64***	49.76***
Usual total weekly hours	31.57	29.81	25.78***	26.40***
Usual overtime weekly hours	0.10	0.05	0.13***	0.21***
Hourly wage as a proportion of relevant minimum wage	0.74	1.05	0.81***	1.04***
Real average usual hourly wage exclusive of overtime (\$)	5.05	7.24	5.97***	7.79***
Real usual weekly overtime earnings (\$)	4.23	3.08	4.68	2.71**
Share of household income from earnings of main job (%)	29.99	40.32	26.74***	30.33***
Share of household income from earnings of all wage and salary jobs (%)	30.13	40.47	27.45***	31.11***
Percentage receiving any transfer income	32.61	34.03	20.77***	23.10***

Household characteristics:

Real average weekly household income (\$)	751.90	713.14	907.06**	999.35**
Percentage married	60.49	65.07	43.68***	42.54***
Percentage one person households	4.50	4.39	6.87***	4.61
Percentage single-parent households with dependents	14.54	12.78	15.51***	16.83***
Percentage two-parent households with dependents	48.80	49.31	51.85***	47.26***
Average household size	3.17	3.09	3.44***	3.43***

Industry characteristics:

Percentage in each earnings category working in:

Agriculture, Forestry and Fishing	13.27	12.60	9.52***	9.68***
Manufacturing	11.86	18.07	7.24***	11.23***
Construction	4.85	2.36	3.80***	2.77***
Wholesale trade	1.34	1.13	2.26***	2.40***
Retail trade	14.85	25.35	22.36***	29.63***
Accommodation, Cafes and Restaurants	3.63	6.98	9.53***	15.00***
Transport and Storage	4.77	2.62	2.84***	1.68***
Finance and Insurance and Communication Services	4.76	0.98	3.49***	1.47***
Property and business Services	14.13	8.12	6.36***	4.28***
Education	7.98	6.61	8.15	4.23***
Health and Community Services	8.47	7.28	10.32***	11.03***
Cultural and Recreational Services	1.09	0.51	3.07***	1.90***

Personal and Other Services	6.02	3.25	9.36***	3.40***
Other Services	2.50	4.16	1.55***	0.95***
Sample size	848	550	1179	1713

Source: HLFS and IS data. Author's compilation.

Note: *10%, ** 5%, ***1% significance level difference in characteristics of sub-minimum and minimum wage workers between 1997-1999 and 2002-2004.

Table 2 reveals several interesting trends in characteristics of affected workers, in terms of their demographic, education, hours of work and earnings, household and industry information. To indicate which characteristics changed significantly t-tests were also conducted. This was done to test whether the average characteristics of affected workers were significantly different between 1997-1999 and 2002-2004.

The results of the t-tests for sub-minimum and minimum wage workers show many characteristics changed significantly between the two time periods¹⁶. Specifically, the percentage of minimum wage workers aged 16-17, 18-19, 20-24, all increased significantly at a 1% level. It is very noticeable that barely one-percent of the sub-minimum or the minimum wage workers group (1.46% and 0.68% respectively) were aged 16-17 in the time period 1997-1999, whereas by 2002-2004, 16-17 year olds accounted for 16.02% and 12.00% of these two wage groups. Similarly, large increases in the number of 18-19 and 20-24 year olds as a proportion of the sub-minimum and minimum wage workers group were also witnessed. At the same time, as expected, the proportion of workers over 25 earning the minimum wage significantly decreased (from 87.05% to 53.67%).

There was a small increase in the proportion of minimum wage workers that are female, (significant at the 1% level), and a small fall in the proportion of these workers that are Maori or Pacific Islander (both again significant at the 1% level). The latter result is somewhat unexpected. Given the higher incidence of Maori or Pacific Islanders in general in the minimum wage group over the time period of the sample, relative to their incidence in the full sample of workers, it would be normal to expect these ethnic minorities to be more likely to receive the minimum wage in the second time period of 2002-2004. Since this is not the case, this may be an indication that age, rather than ethnicity, is more important in determining an individual's minimum wage status.

There are six levels of highest educational attainment that are consistent across the sample period. The first being individuals with no school qualifications. Just above this are individuals with a school certificate and then individuals who have either completed sixth form or bursary (the last two years of schooling). The next three levels encompass post-school qualifications, namely a diploma, Bachelor's degree and finally a Master's degree. Table 2 provides evidence of the increased minimum wage in NZ impacting further up the wage distribution in the latter time period due to the change in the educational characteristics of the affected workers. In 2002-2004, both sub-minimum and minimum wage workers were much more likely to have more educational qualifications compared to the affected group in 1997-1999. This is shown by a significant fall in affected workers having no qualifications, and corresponding

increases in the proportion of affected workers with school certificate or with sixth form or bursary as their highest qualification.

The next noteworthy trend is in the Hours of work and Earnings characteristics section in Table 2. The percentage of affected workers working full-time has fallen considerably for both sub-minimum and minimum wage workers. The usual total weekly hours has also fallen between the two time periods, and the decrease is significant at the 1% level. These two findings may be an indication that the recent rises in the minimum wage have reduced the hours for affected workers and forced some into part-time employment. Although, it is also likely that this is not a behavioural effect, but a compositional effect, (i.e. since minimum wage earners are more likely to be teenagers and young adults in the second time period, this may be what results in minimum wage earners being comprised of more part-time workers and having fewer hours of employment).

Minimum wage workers are also contributing less to their household income than before. Previously, their earnings from their main job accounted for close to 40% of the household income, whereas in the time period 2002-2004, it only contributed to 30.33% of the weekly household income. However, this finding is not complemented by significant increases in the percentage of affected workers receiving transfer income. In fact, these figures have decreased significantly, at the 1% level. Therefore, a possible explanation for this may be that in the latter time period, other household members increased their work hours and hence, their contribution to the household income. This may have been motivated by the higher minimum wage levels in the labour market at that time, or also by the considerable economic growth NZ experienced during this time. Again, it may be possible that compositional effects dominate any behavioural effects induced by the higher minimum wage (i.e. since minimum wage earners are more likely to be teenagers in the latter time period, this is possibly what causes the drop in average contribution to household income from minimum wage workers).

The household characteristics of the affected workers have also changed between 1997-1999 and 2002-2004. Firstly, the real average weekly household income has significantly increased. It is impossible to say how much of this rise for households affected by the minimum wage is due to minimum wage increases, and how much can be attributed to the growth in NZ at that time or due to compositional effects of the rising minimum wage. There was also a significant fall in the proportion of minimum wage workers that are married. This corresponds to the significant increases in youth affected by the minimum wage.

Lastly, the industry characteristics of affected workers in Table 2 have also significantly changed. Minimum wage workers are noticeably less likely to work in agriculture, forestry and fishing and manufacturing. They are more likely to work in retail trade and accommodation, cafes and restaurants. Once again, these findings are more than likely due to the increase in youth affected by the minimum wage, i.e. compositional effects¹⁷.

Conclusion

This paper presents a brief look at the rising number of workers affected by the minimum wage in New Zealand. It provides a summary of the ways in which workers receiving at or below the minimum wage may be affected and presents a descriptive analysis of the changing characteristics of minimum and sub-minimum workers in NZ. The descriptive analysis points to two important outcomes. Firstly, the characteristics of minimum wage workers change over time. Given the vast changes exhibited in just an 8 year time span, talking about a 'typical' minimum wage worker is made difficult. Secondly, age appears to be an important factor in determining minimum and sub-minimum wage status. This seems to be more important than other individual characteristics such as belonging to an ethnic minority, educational attainment, household characteristics and also industry characteristics.

References

- Alston, R., Kearl, J.R and Vaughn, M.B. (1992). Is There A Consensus Among Economists in the 1990s? *American Economic Review*. 82(2): 203-209.
- Anderson, M. and Blandy, R. (1992). What Australian Economics Professors Think. *The Australian Economic Review*. 100, 17-40.
- Brown, C., Gilrow, C. and Kohen, A. (1982). The effect of the minimum wage on employment and unemployment. *Journal of Economic Literature*. 20(2): 487-528.
- Card, D., Katz, L. and Krueger, A. (1994). Comment on David Neumark and William Wascher. Employment effects of minimum and sub-minimum wages: panel on state minimum wage laws. *Industrial and Labour Relations Review*. 46(3): 487-96.
- Card, D. and DiNardo, J. (2002). Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles. *Journal of Labour Economics*. 20(4): 733-83.
- Card, D. and Krueger, A.B. (1994). Minimum wages and employment: a case study of the fast-food industry in New Jersey and Pennsylvania. *American Economic Review*. 84(4): 772-93.
- Card, D. and Krueger, A.B. (1995). *Myth and measurement: the new economics of the minimum wage*. Princeton, New Jersey: Princeton University Press.
- Chapple, S. (1997). Do minimum wages have an adverse impact on employment? Evidence from New Zealand. *Journal of Labour Market Research*. 2: 25-50.
- Coleman, W. (1992). Concord and Discord Amongst New Zealand Economists: the Results of an Opinion Survey. *New Zealand Economic Papers*. 26(1): 47-82.
- Contract. (1994). The report on current industrial relations in New Zealand. Vol. 9. Department of Labour.

Deere, D., Murphy, K.M., and Welch, F. (1995). Reexamining methods of estimating minimum-wage effects: employment and the 1990-1991 minimum-wage hike. *American Economic Review Papers and Proceedings*. 85(2): 232-37.

Department of Labour. 2006. Retrieved March 15, 2006 from the World Wide Web: <http://www.ers.govt.nz/pay/disabled.html>.

Hyslop, D. and Stillman, S. (2004). *Youth minimum wage reform and the labour market*. Working Paper 04/03. The New Zealand Treasury: Wellington.

Katz, L., and Krueger, A.B. (1992). The effect of the minimum wage on the fast-food industry. *Industrial and Labour Relations Review*. 46: 6-21.

Kim, T. and Taylor, L. (1995). The employment effect in retail trade of California's 1988 minimum wage increase. *Journal of Business and Economic Statistics*. 13: 175-182.

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. (1997). The 'new economics' of the minimum wage? Evidence from New Zealand. *Agenda*. 4(2): 185-96.

Neumark, D. and Wascher, W. (1992). Employment effects of minimum and sub-minimum wages: panel data on state minimum wage laws. *Industrial and Labour Relations Review*. 46(1): 55-81.

Neumark, D. and Wascher, W. (1995). The effect of New Jersey's minimum wage increase on fast-food employment: a re-evaluation using payroll records. *NBER Working Paper*. No. W5224.

Neumark, D. and Wascher, W. (2006). Minimum Wages and Employment: A Review of Evidence from the New Minimum Wage Research. *NBER Working Paper*. No. 12663

Pacheco, G. (2007). *Minimum Wage in New Zealand: An Empirical Enquiry. Doctoral Dissertation. University of Auckland.*

Pacheco, G. and Maloney, T. (1999). Does the minimum wage reduce the employment prospects of unqualified New Zealand women? *Journal of Labour Market Research*. 4: 51-69.

Pacheco, G. and Cruickshank, A. (2007). Minimum wage effects on educational enrollments in New Zealand. *Economics of Education Review*, 26(5): 574-587.

Pacheco, G. and Naiker, V. (2006). Impact of the Minimum Wage on Expected Profits. *International Review of Applied Economics*, 20(4): 469-90.

Statistics NZ (2007) Retrieved August 1, 2007 from the World Wide Web: <http://www2.stats.govt.nz/domino/external/omni/omni.nsf/outputs/new+zealand+income+survey>.

Wellington, A.J. (1991). Effects of the minimum wage on the employment status of youths: an update. *Journal of Human Resources*. 26(1): 27-46.

Notes

¹ This estimate is based on data from a National Longitudinal Survey of Youth. Specifically, Card and Krueger (1995) tracked a 1964-birth cohort between 1979 and 1991 to estimate the percentage of workers who were ever paid within five cents of the federal minimum

² There is no further detail on what 'provisions' Australian Economic Professors considered when answering this survey question

³ See Neumark and Wascher (2006) for a review of this recent research on minimum wages and employment.

⁴ See also the UK low pay commission for recent deliberations on the effects of the minimum wage.

⁵ See Maloney (1995 and 1997), Chapple (1997), Pacheco and Maloney (1999) and Hyslop and Stillman (2004). A review of all these studies (summarising findings and indicating potential issues) is provided in Chapter 4 of Pacheco (2007).

⁶ Relative minimum wage = minimum wage for workers aged 20 or over / median wage for fulltime employees aged 20 or over.

⁷ Contract is 'The Report on Current Industrial Relations in New Zealand' produced by the Department of Labour.

⁸ An under rate permit lets a person work for less than the minimum wage. It is granted by Labour Inspectors to a person with a recognised disability that significantly slows down their work and who is incapable of earning the minimum wage (Department of Labour, 2006).

⁹ Source: Historical inflation rates from the Reserve Bank of New Zealand (See www.rbnz.govt.nz).

¹⁰ The HLFS sample frame uses a rotating panel for every eight quarters (i.e. one eighth of households are rotated out each quarter). For a detailed explanation of the selection of a household in the sampling frame see Statistics NZ (2007).

¹¹ See Chapter 2 of this reference for further details on minimum wage enquiries, complaints and investigations over the period 1997 to 2004.

¹² The HLFS-IS data was cleaned to remove outliers, individuals with missing information and possible cases of measurement error.

¹³ See Chapter 6 of this reference for further details.

¹⁴ See Chapter 7 of this reference for further details

¹⁵ Specifically, the 1990 increase in the U.S. federal minimum.

¹⁶ Note that other factors besides the level of the minimum wage have changed between these two time periods, such as increasing educational attainment of the workforce, changing composition of employment between industries, etc. These factors may also explain changes in the composition of minimum wage workers that are observed.

¹⁷ For example, sectoral shifts in the labour market over the time period under study in NZ have resulted in the agriculture, forestry and fishing industry employing a lower proportion of the working age population and the retail trade and accommodation, cafes and restaurants sector employing a higher proportion. Consequently, this then makes it understandable why more youth would be employed in the latter industry.