

Hourly Wages of Full-Time and Part-Time Employees in Australia

By

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This study uses the unit-record file from the Department of Family and Community Services' (FACS) Household, Income and Labour Dynamics in Australia (HILDA) Survey, which was conducted by the Melbourne Institute for Applied Economic and Social Research. The research findings included in this document are the product of the author and the views expressed by the author should not be attributed to FACS or the Melbourne Institute.

Abstract

This study investigates some aspects of part-time and full-time employment in Australia. The main objective is to analyze whether part-time employees receive lower hourly wages than full-time employees who have similar levels of human capital and similar jobs. The study is based on unit-record data from Wave I of the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The part-time wage penalty for men that is observed in aggregate disappears when controls for occupation, industry, size of workplace, type of business, geographical location, union membership, tenure and education are introduced. There is no significant difference between the average hourly wages of all female, part-time and full-time workers but after controlling for the characteristics of the job and employee a part-time wage premium of approximately seven percent is observed for females.

1. Introduction

Currently, approximately 27 percent of employed Australians work part-time, almost double the rate of part-time employment in the mid-1970s (ABS, 6203.0 and 6204.0). Under the OECD's common definition of part-time employment (30 or fewer usual hours per week in the main job) Australia's part-time employment rate was 27.2 percent in 2002 while the OECD average was 14.3 percent. Of 30 countries only the Netherlands (33.0 percent) had a higher rate of part-time employment. Australia's rate exceeded those of New Zealand (24.2 percent), Canada (18.1 percent), the United States (13.0 percent) and the United Kingdom (23.0 percent in 2000) (OECD, 2002, p.224). The incidence of part-time employment and its growth over the last few decades are among the most significant features of the Australian labour market.

Some argue that part-time jobs are bad jobs: they are poorly paid, they have few entitlements, they provide little opportunity for career advancement, they involve undesirable work schedules and poor working conditions. But the vast majority of part-time workers do not want to work full-time, most do not want to work longer hours.¹ This suggests that for many people part-time jobs are preferred jobs, providing flexibility for people who are heavily involved in activities outside the labour market such as child care and education, acting as an entry point to full-time jobs and allowing the semi-retired to earn an income and continue to utilize their human capital.

This paper examines some aspects of part-time and full-time employment in Australia using a new data set, the Household, Income and Labour Dynamics in Australia (HILDA) Survey, conducted by the Melbourne Institute for Applied Economic and Social Research. The main objective is to analyze whether part-time workers receive lower hourly wages than full-time workers who have similar levels of human capital and perform similar jobs. As there appears to be no other published study of the full-time-part-time wage

¹ In 2001, only 7 percent of all part-time workers wanted to work full-time and were looking for full-time work. A similar proportion prevailed throughout the 1990s (see ABS, 6203.0, *Labour Force, Australia*, October 2001, p.7). In 2001, 25 percent of all part-time workers preferred to work more hours (ABS, 6203.0, *Labour Force, Australia*, August 2001, Table 33). Since 1990 this proportion has varied from a high of 28 percent in 1993 to a low of 23 percent in 2000 (see ABS, 6204.0, *Labour Force, Australia, 1978-95*, Table 10; *Labour Force, Australia*, August 1996 through 2000, Table 20).

differential in Australia, the results presented in this paper contribute to current knowledge of the phenomenon.

As explained in Section 2 economic theory suggests that part-time jobs will incur a wage penalty, although there are circumstances when this is not the case. Section 3 presents a summary of the findings of empirical studies of part-time-full-time wage differentials in other countries. Section 4 discusses the data set that is used in this paper to measure wage differentials in Australia. Section 5 presents basic information on part-time and full-time employment as recorded in the HILDA data and documents differences between part-time and full-time workers. Section 6 uses regression analysis to measure the effect of part-time employment on wages after controlling for various factors that reflect either the nature of the job and the nature of the employee. Section 7 concludes the paper with a summary of its major findings.

2. The Theory of Wage Differentials

Workers with high opportunity costs of the time spent in employment are likely to work part-time rather than full-time at low wage rates. Women with young children, students and the semi-retired are examples. But differences in labour supply alone will not lead to a difference between the full-time and part-time wage; something is needed to distinguish full-time labour from part-time labour from the employer's perspective. Productivity differences, either because of the nature of the job or the nature of the employee, will suffice to produce a wage differential between part-time and full-time work in a competitive labour market under neoclassical assumptions. The differential will be a part-time wage penalty if part-time employees are less productive, perhaps because they have less education or work experience than full-time employees. Blank (1998) examined variation in hours of work over time for workers in the Panel Study of Income Dynamics (PSID) and found that that current work hours are highly correlated with past hours of work. As Hirsch (2002) points out this implies that part-time workers typically have accumulated lower levels of skills on-the job than full-time workers with the same duration of job tenure.

The usual explanation for a part-time wage penalty, however, relies upon the existence of quasi-fixed labour costs. These are costs that are directly proportional to the number of employees rather than to hours of work. Quasi-fixed costs include the administrative costs of maintaining records for each employee, recruitment and training costs and any components of fringe benefits that are independent of hours worked.² In the presence of quasi-fixed labour costs the wages of full-time and part-time labour will differ even if both types of labour are equally productive and the labour market is competitive because the average cost of output produced by a full-time worker will be lower than the average cost of output produced by a part-time worker.

A third explanation for a difference between part-time and full-time wages can be found in industries that face seasonal or fluctuating demand for, or supply of, their output that cannot be managed through the carrying of inventories. In such cases a part-time wage premium may be observed because employers will pay high wages during peak periods when productivity is high and most of the employees willing to work these short intensive shifts will be part-time workers.

3. Previous Research

The only study of the difference between full-time and part-time wages in Australia of which I am aware is a working paper by Miller and Mulvey (1994) that appears to be out of print. According to Dawkins and Norris (1995) the Miller-Mulvey study found that part-time employees earn a premium of 15 percent over full-time workers, after controlling for the industry of employment and human capital levels. Miller and Mulvey acknowledge that with the data available at the time of their study it was impossible to distinguish permanent employees, who receive paid sick leave and paid holiday leave, from casual employees, who typically receive a wage premium in lieu of these benefits. As many part-time workers are casual employees, the observed part-time wage premium could reflect the casual loading.

² It follows that the incidence of part-time employment is likely to be smaller in jobs that involve large quasi-fixed costs. Montgomery (1988) confirms, using U.S. data, that the higher are quasi-fixed costs the less likely is a firm to hire part-time workers.

Simpson (1986) estimated that Canadian part-time workers incur a wage penalty of 10 percent. The penalty is smaller for married females (three percent) and for males (five percent) than for single females (18 percent). Main (1988) estimated that in Britain the wage penalty incurred by female part-time workers was between seven and eight percent. Ermisch and Wright (1992) also found a part-time wage penalty for British women. Several cross-section studies have been conducted using U.S. data. Blank (1990) found no part-time penalty for women; in fact, female part-time workers earn a little more than female full-time workers in the same occupation. A part-time wage penalty of 20 to 30 percent was observed for men. Lettau (1995) found a part-time wage penalty of 15 percent but he was unable to control for several human-capital variables that are likely to be correlated with part-time status. Montgomery and Cosgrove (1995) found no difference between the wages of part-time and full-time teachers but part-time teaching aids earned seven percent less than full-time teaching aids in the same child-care establishment. Hirsch (2002), using panel data from the Current Population Survey, Outgoing Rotation Group, found that workers who switched between full-time and part-time jobs experienced only small wage changes. He observed a small part-time wage penalty for men but little evidence of a wage differential for women.

4. The Data Set

This study uses the unit-record file from Wave I of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, which was conducted between August 2001 and January 2002 by the Melbourne Institute for Applied Economic and Social Research. The HILDA data are a complex random sample of 7,682 Australian households, which contain 13,969 people aged 15 years and older. The data allow an estimate of each wage and salary earner's usual hourly wage in his or her main job by dividing the usual gross earnings per week in the main job by the usual hours of work per week in the main job.³

³ The main job is the job in which the worker usually gets the most pay in each week. The variables AWSCMGA, AWSCMU, AWSCMUGA and AWSCMF were used to calculate usual weekly earnings in the main job. The variables AJBN, AJBHRU and AJBMHRU were used to calculate usual hours of work per week in the main job, including paid and unpaid overtime.

The HILDA data have several major advantages for this study compared with other Australian data sets. First, the HILDA data allow us to observe the wages of employees who are entitled to both paid holiday leave and paid sick leave as well as the wages of employees who receive only one or neither of these two entitlements. As pointed out in relation to the Miller-Mulvey study, this is important because employment contracts that do not provide paid holiday or sick leave typically specify a substantial 'casual loading' on the hourly rate of pay. As the majority of employees on such 'casual' contracts work part time, the mean hourly wage differential of *all* part-time and *all* full-time employees will be distorted by the casual loading. In this study employees who receive entitlements to both paid holiday leave and paid sick leave are distinguished from other employees in the comparison of full-time and part-time wages.⁴ For simplicity, in the remainder of this paper the former group are called 'permanent' employees and the latter group are called 'casual' employees.

Second, the HILDA data set distinguishes wage and salary earners who are employed in someone else's business from persons working in their own incorporated enterprise and paying themselves a wage or salary. The former are the focus of this study because the suggestion that part-time workers are poorly paid applies to employees, not to the self-employed. In other ABS unit-record data sets, the term 'employees' covers both groups. In this paper 'employees' are people who work for someone else.

Third, the HILDA data allow the main jobs of workers to be classified as part-time or full-time. Multi-job holders are identifiable and usual hours worked per week in the main job can be calculated. In this study a part-time worker is defined as someone who usually works less than 35 hours per week in his or her main job. Most other data sets classify workers according to the standard ABS definitions: (a) a part-time worker is an employed person who usually works less than 35 hours per week in all jobs and who worked less than 35 hours during the reference week of the survey in which data were collected; (b) A full-time worker is an employed person who usually works 35 hours or

⁴ The variables used to identify casual and permanent workers are AJBMHL, AJBMSL and AJBMCNT.

more per week in all jobs or someone who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week. Under the ABS definition, all part-time workers hold part-time jobs but not all full-time workers necessarily hold full-time jobs. The rate of part-time employment is therefore lower under the ABS definitions than under the conventions adopted in this paper.

The fourth advantage of the HILDA is that it provides a considerable amount of data on the demographic characteristics of employed persons, such as age, sex, education and job tenure. There is also data on the attributes of respondents' jobs, such as occupation, industry, workplace size and firm size.

5. The Nature of Part-Time and Full-Time Employment

The HILDA data indicate that 31.1 percent of all employed persons in Australia worked part-time in their main jobs in 2001. This paper focuses upon the 82 percent of part-time workers who were employees, 31.1 percent of whom also worked part time. The part-time employment rate was much lower for male employees (16.9 percent) than for female employees (47.3 percent). Most part-time employees (71.4 percent) are female.

Males and females have different reasons for working part-time (see Table 1). Among males 'going to school, college or university' (47.8 percent), 'could not find full-time work' (19.9 percent) and 'prefer part-time work' (15.2 percent) are the most frequently stated reasons. The most common reasons stated by females are 'caring for children' (29.6 percent), 'going to school, college or university' (23.6 percent) and 'prefer part-time work' (22.2 percent). Only 9.3 percent of all female employees nominated 'could not find full-time work' as their main reason for working part-time. The employee responses in Table 1 suggest that much part-time employment is 'voluntarily' undertaken, particularly by females. Therefore, males and females are analysed separately in this paper.

Part-time employees experience similar levels of job satisfaction as do full-time employees, which is further evidence of the voluntary nature of much part-time employment (see Table 2). When asked to rate their level of job satisfaction on a scale of zero (completely dissatisfied) through ten

(completely satisfied) 8.7 percent of male, part-time employees and 6.7 percent of male, full-time employees rated their job satisfaction at 4 or less; 53.2 percent of male, part-time employees and 56.2 percent of male, full-time employees rated their job satisfaction at 8 or more. Among females, 6.6 percent of part-time employees and 6.3 percent of full-time employees stated job satisfaction levels of 4 or less, while job satisfaction ratings of 8 or more were given by 65.8 percent of part-time employees and 61.5 percent of full-time employees.

Male, part-time employees earned, on average, \$16.23 per hour compared with an average of \$21.09 per hour earned by male, full-time employees. Therefore, at the aggregate level the part-time wage penalty for male employees is \$4.86 per hour (or 23.0 percent) and the penalty is statistically significant. No significant difference was detected between the hourly wages of part-time and full-time, female employees. Both earned approximately \$18 per hour. However, to understand the wage differentials, or – in the case of females – the lack thereof, it is necessary to take account of differences between part-time and full-time (main) jobs and part-time and full-time employees. Table 3 gives descriptive statistics for the variables that are held constant as part-time-full-time wage differentials are analysed in the next section.

The major differences between part-time and full-time jobs and employees that are observable in the HILDA data are:

- (a) Part-time jobs occur in different occupations to full-time jobs. Part-time jobs are more likely than full-time jobs to occur in clerical, sales and service occupations and labouring occupations, which tend to pay low wages. Part-time jobs are less likely than full-time jobs to occur in managerial, administrative and professional occupations, associate professional occupations, and in trades occupations. Many of these jobs pay high wages.
- (b) Part-time jobs occur in different industries to full-time jobs. Part-time jobs are more likely found in retailing, accommodation, cafes and restaurants and less likely found in manufacturing, construction and wholesaling, and in finance, property and business services compared with full-time jobs.
- (c) Whereas full-time jobs are evenly distributed across small, medium-size and large workplaces, part-time jobs tend to be concentrated in small

workplaces; only 20 percent of part-time jobs occur in workplaces of 100 or more people.

(d) A larger proportion of part-time jobs occur in the private sector and a smaller proportion in the government sector, compared with full-time jobs.

(e) Although male, part-time and full-time employees are similarly dispersed across geographic locations, female, part-time employees are less concentrated in major cities and more concentrated in inner regional locations than their full-time counterparts.

(f) A much larger proportion of part-time jobs than full-time jobs are 'casual', meaning they do not provide *both* paid holiday leave and paid sick leave.

(g) Part-time employees are less unionized than full-time employees.

(h) Employees were asked how long they had worked in their current occupation and how long they had worked for their current employer. The responses, particularly from males, indicated that part-time employees have shorter tenure both in their current jobs and in their current occupations than full-time employees. We do not know, however, whether the previous employment was on a full-time or part-time basis. If current work hours are positively correlated with previous work hours, the differences in tenure reported in Table 3 may understate the true experience differentials.

(i) Part-time employees, particularly males, have lower education levels than full-time employees. Sixty percent of male, part-time employees and 46 percent of female, part-time employees have no education beyond year twelve. Comparable figures for full-time employees are 32 percent (for males) and 31 percent (for females). Seventeen percent of male, part-time employees and 23 percent of female, part-time employees have a university qualification, compared with 24 percent of male, full-time employees and 36 percent if female, full-time employees.

(j) Male, part-time employees tend to be younger than male, full-time employees.

(k) Both male and female, part-time employees (who have left school) are more likely to be enrolled in part-time or full-time education than full-time employees.

(l) Among females, part-time employees are more likely than full-time employees to be married with children younger than 15 years. The opposite is true for males. Among both males and females, part-time employees are more likely than full-time employees to be married with dependent or nondependent children older than 15 years ('other couples') but less likely to be married without dependents ('couples without children'). Female, part-time employees are less likely to be single persons than their full-time counterparts.

6. The Effect of Part-Time Employment on Hourly Wages

In this section regression analysis is used to estimate reduced-form equations that measure the effect of part-time status on the wages of employees who have similar levels of human capital and who work in similar jobs. Males and females are analysed separately. The single equation regression model that is estimated is:

$$\text{Log}(w_i) = \alpha + \gamma \text{PT}_i + \mathbf{B}'\mathbf{X}_i + \varepsilon_i \quad (1)$$

where PT_i is a dummy variable equal to one if the i^{th} employee holds a part-time main job and zero otherwise, \mathbf{X}_i is a vector of attributes of the i^{th} employee and characteristics of his or her main job, and $\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$, is a random disturbance. The parameter, γ , measures the effect of part-time employment on hourly wages, given that the variables in \mathbf{X} are held constant. Specifically, the part-time wage differs from the full-time wage by $100(e^\gamma - 1)$ percent, which is approximately equal to γ , when γ is small.⁵

The control variables in \mathbf{X}_i were introduced into the regression equation one at a time in the order listed in Table 3, allowing the behaviour of the part-time-full-time wage differential to be observed (see Table 4). Generalized least squares with White's correction for heteroscedasticity was used to estimate the versions of Model (1) whose γ -estimates appear on lines 2 through 11 of Table 4. Introducing the control variables systematically reduced the size of the part-time wage penalty for men and, at the same time, reduced its level of statistical significance.

⁵ $\log(w^{\text{PT}}) - \log(w^{\text{FT}}) = \log(w^{\text{PT}}/w^{\text{FT}}) = \gamma$. Therefore, $w^{\text{PT}}/w^{\text{FT}} = e^\gamma$ and $(w^{\text{PT}} - w^{\text{FT}}) / w^{\text{FT}} = e^\gamma - 1$.

The final version of the model, on line 12, included all of the control variables in the model on line 10 and a correction for selection into part-time employment status. In this case the model consisted of Equation (1) and the following probit equation:

$$I^* = \theta'Z + u \quad (2)$$

I^* is an indicator variable that is unobservable but if $I^* > 0$ then the individual works part-time and if $I^* \leq 0$ then the individual works full-time. An observable binary variable, I , equals 1 for part-time work and 0 for full-time work. Z is a vector containing the demographic variables in Table 3 and θ is a vector of parameters, including a constant. The error terms u and ε are assumed to have a bivariate normal distribution with zero means and correlation ρ .

The maximum likelihood estimate of γ was small and non significant (see line 12 of Table 4). The conclusion drawn from this analysis is that there is no significant difference between the mean wages of male, part-time employees and male, full-time employees who have the same occupation, work in the same industry, at workplaces of similar size, in the same type of business, in the same general geographical location, and who are employed on the same type of contract (casual or permanent), have the same union status (member or non-member), and have the same levels of tenure and education.

The situation for women is quite different. There is no statistically significant difference between the mean wages of female, part-time employees and female, full-time employees at the aggregate level. But as control variables are introduced a part-time wage premium emerges and increases in size and in statistical significance. Including a correction for selection into part-time employment status has little effect on the size or statistical significance of the part-time wage premium. It is estimated that female, part-time employees earned 7.4 percent more per hour than female, full-time employees, given that occupation, industry, workplace size, type of business, geographical location, type of contract (casual or permanent), union status (member or non-member), tenure and education are held constant.

Tables 5 and 6 give the full set of maximum-likelihood estimates of the parameters in the probit equation (Equation (2)) and the log-wage equation

(Equation (1)). and (2) whose estimates of γ for males and females appears on line 12 of Table 4. All coefficients have the expected signs and most are statistically significant.

Finally, the sensitivity of the above results to the inclusion of students in the data set was tested. This was done by excluding from the data set employees younger than 25 years who are full-time or part-time students and any remaining employees who are still in full-time education with no break between school and further education. The coefficients in the re-estimated model appear in Tables 7, 8 and 9. The conclusions are fundamentally unchanged: no significant wage differential is detected for males and a wage premium of 7.1 percent is observed for female, part-time employees.

7. Conclusion

Part-time employment has become an increasingly common phenomenon in the Australian labour market. This paper investigated whether part-time employees are paid a lower hourly rate than full-time employees. On average, all male part-time employees receive \$4.86 per hour (or 23.0 percent) less than their full-time counterparts. Female part-time employees earn an average hourly wage of \$18.81, approximately the same as female full-time employees.

A multivariate statistical analysis investigated the effect of part-time employment on wages after controlling for various attributes of the job, various characteristics of the employee and self-selection into part-time employment. The part-time wage penalty observed for men in aggregate does not occur when the controls are included. However, for women the equality of wages observed for part-time and full-time employees in aggregate was replaced by a part-time wage premium of 7.4 percent when job and employee characteristics were held constant and corrections were made for selection into part-time employment.

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Table 1
Main Reasons for Working Part Time, 2001

	Male PT Employees (%)	Female PT Employees (%)
Own illness or disability	4.5	2.4
Caring for children	2.9	29.6
Caring for disabled or elderly relatives	0.0	0.3
Other personal or family responsibilities	0.6	4.5
Going to school, college, university	47.8	23.6
Could not find full-time work	19.9	9.3
Prefer part-time work	15.2	22.2
Involved in voluntary work	0.6	0.2
Attracted to pay premium attached to part-time/casual work	0.6	1.0
Welfare payments or pension may be affected by working full-time	0.9	0.4
Getting business established	0.3	0.1
Prefer job - part time hours are part of that job	0.8	0.2
NEI to classify	4.9	4.8
Other (Specify)	1.0	1.4
	100.0	100.0

Based on samples of 560 male, part-time employees and 1641 female, part-time employees.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave 1.*

Table 2
Degree of Job Satisfaction, 2001

	<u>Male Employees</u>		<u>Female Employees</u>	
	Part-Time (%)	Full-Time (%)	Part-Time (%)	Full-Time (%)
0. Totally dissatisfied	0.4	0.6	0.5	0.7
1.	1.5	0.7	0.6	0.5
2.	1.1	1.2	1.2	1.1
3.	2.3	2.1	1.3	2.1
4.	3.4	2.1	3.0	1.9
5.	7.6	7.5	6.2	6.7
6.	11.5	9.3	8.0	7.8
7.	19.0	20.3	13.4	17.7
8.	23.0	26.3	24.5	26.3
9.	15.8	17.1	19.2	20.5
10. Totally satisfied	14.4	12.8	22.1	14.7
	100.0	100.0	100.0	100.0

Based on samples of 3441 male employees and 3397 female employees.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 3
Descriptive Statistics on Part-Time and Full-Time Employees

	Males			Females		
	Part Time	Full-Time		Part Time	Full-Time	
Hourly wage	16.23	21.09	***	18.81	18.04	
Hours worked per week	16.97	45.37	***	18.60	41.90	***
<u>Occupation</u>						
Mgers, admin, professionals	0.14	0.31	***	0.21	0.39	***
Associate professionals	0.06	0.12	***	0.07	0.15	***
Tradespersons	0.08	0.20	***	0.02	0.03	
Clerical, sales, service workers	0.37	0.16	***	0.58	0.36	***
Production, transport workers	0.12	0.14		0.03	0.02	
Labourers	0.22	0.08	***	0.10	0.05	***
<u>Industry</u>						
Agriculture, forestry, fishing	0.02	0.04		0.01	0.01	
Mining	0.00	0.03	***	0.00	0.00	*
Manufacturing	0.07	0.19	***	0.03	0.09	***
Electricity, gas, water	0.00	0.02	**	0.00	0.00	*
Construction & wholesaling	0.05	0.15	***	0.03	0.05	**
Retailing, accomm, restaurants	0.45	0.12	***	0.33	0.13	***
Transport & storage	0.04	0.07	**	0.01	0.02	
Finance, property services	0.10	0.18	***	0.12	0.23	***
Govt, educ, health services	0.17	0.16		0.40	0.40	
Recreation, cultural services	0.11	0.06	***	0.06	0.06	
<u>Size of workplace</u>						
Small (fewer than 20)	0.48	0.35	***	0.48	0.32	***
Medium (20 to 99)	0.32	0.32		0.31	0.34	*
Large (100 or more)	0.20	0.33	***	0.21	0.33	***
<u>Type of Business</u>						
Private sector, for profit	0.78	0.74		0.65	0.58	***
Government	0.15	0.22	***	0.24	0.33	***
Other	0.07	0.04	***	0.11	0.09	
<u>Geographical Location</u>						
Major city	0.67	0.67		0.63	0.71	***
Inner regional	0.24	0.24		0.26	0.19	***
Other	0.09	0.10		0.11	0.10	

Continued ...

Table 3 continued
Descriptive Statistics for Part-Time and Full-Time Employees

	Males		Females		
	Part Time	Full-Time	Part Time	Full-Time	
Casual status	0.79	0.13 ***	0.59	0.11 ***	
Member of a union	0.21	0.35 ***	0.24	0.35 ***	
<u>Tenure</u>					
Time in occupation (yrs)	5.06	9.45 ***	7.29	8.20 **	
Time in current job (yrs)	2.89	8.22 ***	4.61	6.12 ***	
<u>Education</u>					
Postgraduate degree	0.02	0.04 **	0.01	0.04 ***	
Grad dip, certificate	0.03	0.05 *	0.06	0.08	
Bachelor degree	0.12	0.15 *	0.16	0.24 ***	
Adv diploma, diploma	0.06	0.09 *	0.08	0.12 ***	
Certificate iii or iv	0.13	0.27 ***	0.10	0.10	
Certificate i or ii	0.03	0.04	0.06	0.07	
Certificate not defined	0.02	0.03	0.06	0.04 *	
Year 12	0.27	0.12 ***	0.16	0.14 *	
Year 11 and below	0.33	0.20 ***	0.30	0.17 ***	
<u>Demographical characteristics</u>					
Age (yrs)	30.84	37.68 ***	35.97	36.83	
Student (full or part-time)	0.28	0.14 ***	0.18	0.13 ***	
With a disability	0.09	0.07	0.07	0.06	
<u>Family Type</u>					
Couples, without children	0.13	0.24 ***	0.18	0.32 ***	
Couples, with kids <15yrs	0.25	0.35 ***	0.37	0.16 ***	
Other couples	0.31	0.20 ***	0.22	0.19 *	
1-parent, with kids <15yrs	0.03	0.01 **	0.08	0.04 ***	
1-parent, with others	0.07	0.04 ***	0.05	0.08 **	
Single person	0.10	0.10	0.05	0.13 ***	
Others	0.10	0.06 ***	0.05	0.07 *	

Based on samples of 3134 male employees and 3003 female employees.
*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.
Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 4
Estimates of the Part-Time Wage Penalty* 2001

	<u>Males</u>	<u>Females</u>
	$\frac{100(w^{PT} - w^{FT})}{w^{FT}}\%$	$\frac{100(w^{PT} - w^{FT})}{w^{FT}}\%$
1. Raw data, no controls	-23.0 ***	4.3
<u>Log(wage) regressions</u>		
2. occupations	-19.8 ***	-0.9
3. 2 plus industries	-12.4 ***	3.2
4. 3 plus size of workplace	-9.9 ***	4.4 *
5. 4 plus type of business	-9.1 ***	4.7 **
6. 5 plus geographical location	-9.3 ***	4.7 **
7. 6 plus casual status	-5.8 *	7.8 ***
8. 7 plus union membership	-6.1 *	7.8 ***
9. 8 plus tenure	-5.0	7.5 ***
10. 9 plus education	-4.5	7.8 ***
11. 10 plus demographic characteristics	3.5	8.4 ***
12. 10 plus self-selection variable	4.9	7.4 **

* $(w^{PT} - w^{FT})/w^{FT}$ is calculated as $\exp(\gamma) - 1$.

Models 2 through 11 were estimated using GLS, with White's correction for heteroscedasticity. Model 12 was estimated using maximum likelihood.

Based on samples of 3134 male employees and 3003 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 5
ML Estimates of Probability of Part-Time Employment

	<u>Males</u>		<u>Females</u>	
	coeff	P-value	coeff	P-value
constant	3.593	0.000	3.279	0.000
Age	-0.260	0.000	-0.163	0.000
Age squared	0.003	0.000	0.002	0.000
Student (full or part-time)	0.385	0.000	0.341	0.000
With a disability	0.298	0.003	0.176	0.066
Couples, without children	-0.363	0.000	-1.111	0.000
Other couples	0.055	0.520	-0.686	0.000
1-parent, with kids <15yrs	0.358	0.071	-0.105	0.332
1-parent, with others	0.098	0.489	-1.039	0.000
Single person	0.217	0.031	-1.415	0.000
Others	0.187	0.113	-1.059	0.000

Based on samples of 3134 male employees and 3003 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 6
ML Estimates of Log(wage) Equations 2001

		<u>Males</u>		<u>Females</u>	
		coeff	P-value	coeff	P-value
	constant	2.292	0.000	2.229	0.000
	Part-time dummy	0.047	0.133	0.071	0.002
<u>Occup</u>	Managers, admin, professionals	0.198	0.000	0.248	0.000
	Associate professionals	0.189	0.000	0.146	0.000
	Tradespersons	-0.005	0.877	-0.061	0.195
	Production, transport workers	-0.040	0.229	-0.135	0.019
	Labourers	-0.097	0.001	-0.089	0.012
<u>Indust</u>	Agriculture, forestry, fishing	0.068	0.113	0.024	0.717
	Mining	0.511	0.000	0.419	0.022
	Manufacturing	0.212	0.000	0.165	0.001
	Electricity, gas, water	0.258	0.002	0.051	0.828
	Transport & storage	0.198	0.000	0.214	0.000
	Finance, property services	0.236	0.000	0.253	0.000
	Govt, educ, health services	0.312	0.000	0.216	0.000
	Recreation, cultural services	0.152	0.000	0.109	0.000
	Transport & storage	0.081	0.015	0.048	0.214
<u>Size</u>	Small workplace (fewer than 20)	-0.078	0.000	-0.012	0.542
	Large workplace (100 or more)	0.080	0.000	0.073	0.001
<u>Type</u>	Private sector, for profit, business	0.179	0.000	0.106	0.002
	Government business	0.168	0.000	0.104	0.002
<u>Locn</u>	Major city location	-0.032	0.094	-0.014	0.512
	Inner regional location	-0.046	0.081	-0.062	0.040
	Casual status	-0.023	0.294	-0.047	0.038
	Union member	0.061	0.001	0.020	0.381
<u>Tenure</u>	Years in current occupation	0.008	0.000	0.006	0.000
	Years in current job	0.003	0.007	0.004	0.025
<u>Educ</u>	Postgraduate degree	0.349	0.000	0.298	0.000
	Grad dip, certificate	0.316	0.000	0.295	0.000
	Bachelor degree	0.258	0.000	0.189	0.000
	Adv diploma, diploma	0.169	0.000	0.173	0.000
	Certificate iii or iv	0.116	0.000	0.065	0.044
	Certificate i or ii	-0.008	0.838	0.090	0.080
	Certificate not defined	0.014	0.773	0.162	0.000
	Year 12	0.064	0.010	0.102	0.000
	Sigma	0.408	0.000	0.423	0.000
	Rho	-0.234	0.000	0.098	0.125
	Log Likelihood	-2728.5		-3508.0	

Based on samples of 3134 male employees and 3003 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 7
Estimates of the Part-Time Wage Penalty* 2001
Excluding Students Younger than 25.

	<u>Males</u>	<u>Females</u>
	$\frac{100(w^{PT} - w^{FT})}{w^{FT}}\%$	$\frac{100(w^{PT} - w^{FT})}{w^{FT}}\%$
Raw data, no controls	-23.2 ***	6.7
Log(wage) regressions		
2. occupations	-21.1 ***	-0.2 *
3. 2 plus industries	-14.0 ***	3.7 **
4. 3 plus size of workplace	-11.3 ***	4.8 **
5. 4 plus type of business	-10.5 ***	5.0 **
6. 5 plus geographical location	-10.5 ***	5.1 ***
7. 6 plus casual status	-6.0	7.6 ***
8. 7 plus union membership	-5.8	7.6 ***
9. 8 plus tenure	-5.2	7.2 ***
10. 9 plus education	-4.8	7.8 ***
11. 10 plus demographic characteristics	0.1	7.5 *
12. 10 plus self-selection variable	-2.9	7.1 **

* $(w^{PT} - w^{FT})/w^{FT}$ is calculated as $\exp(\gamma) - 1$.

Models 2 through 11 were estimated using GLS, with White's correction for heteroscedasticity. Model 12 was estimated using maximum likelihood.

Based on samples of 2948 male employees and 2833 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey*, Wave I.

Table 8
ML Estimates of Probability of Part-Time Employment
Excluding Students Younger than 25.

	<u>Males</u>		<u>Females</u>	
	coeff	P-value	coeff	P-value
constant	3.845	0.000	2.978	0.000
Age	-0.272	0.000	-0.147	0.000
Age squared	0.003	0.000	0.002	0.000
Student (full or part-time)	0.326	0.001	0.201	0.040
With a disability	0.383	0.000	0.150	0.061
Couples, without children	-0.441	0.000	-1.094	0.000
Other couples	0.010	0.912	-0.757	0.000
1-parent, with kids <15yrs	0.251	0.233	-0.098	0.374
1-parent, with others	0.079	0.627	-1.083	0.000
Single person	0.166	0.118	-1.449	0.000
Others	-0.009	0.946	-1.220	0.000

Based on samples of 2948 male employees and 2833 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, *Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.*

Table 9
ML Estimates of Log(wage) Equations 2001,
Excluding Students Younger than 25.

		<u>Males</u>		<u>Females</u>	
		coeff	P-value	coeff	P-value
	constant	2.259	0.000	2.204	0.000
	Part-time dummy	-0.030	0.431	0.068	0.006
<u>Occup</u>	Managers, admin, professionals	0.225	0.000	0.263	0.000
	Associate professionals	0.216	0.000	0.153	0.000
	Tradespersons	0.068	0.025	-0.059	0.220
	Production, transport workers	-0.024	0.453	-0.127	0.034
	Labourers	-0.075	0.015	-0.103	0.004
<u>Indust</u>	Agriculture, forestry, fishing	0.071	0.101	0.036	0.592
	Mining	0.523	0.000	0.413	0.027
	Manufacturing	0.223	0.000	0.170	0.001
	Electricity, gas, water	0.284	0.000	0.052	0.821
	Transport & storage	0.207	0.000	0.220	0.000
	Finance, property services	0.246	0.000	0.267	0.000
	Govt, educ, health services	0.325	0.000	0.227	0.000
	Recreation, cultural services	0.165	0.000	0.125	0.000
	Transport & storage	0.103	0.006	0.050	0.238
<u>Size</u>	Small workplace (fewer than 20)	-0.071	0.000	-0.004	0.846
	Large workplace (100 or more)	0.084	0.000	0.076	0.001
<u>Type</u>	Private sector, for profit, business	0.207	0.000	0.122	0.001
	Government business	0.191	0.000	0.108	0.002
<u>Locn</u>	Major city location	-0.037	0.054	-0.018	0.411
	Inner regional location	-0.053	0.038	-0.059	0.060
	Casual status	-0.047	0.033	-0.034	0.158
	Union member	0.060	0.002	0.028	0.241
<u>Tenure</u>	Years in current occupation	0.007	0.000	0.006	0.000
	Years in current job	0.003	0.008	0.003	0.041
<u>Educ</u>	Postgraduate degree	0.318	0.000	0.291	0.000
	Grad dip, certificate	0.285	0.000	0.291	0.000
	Bachelor degree	0.230	0.000	0.177	0.000
	Adv diploma, diploma	0.140	0.000	0.173	0.000
	Certificate iii or iv	0.087	0.001	0.071	0.033
	Certificate i or ii	-0.019	0.638	0.095	0.077
	Certificate not defined	-0.025	0.597	0.160	0.000
	Year 12	0.058	0.049	0.122	0.000
	Sigma	0.393	0.000	0.426	0.000
	Rho	-0.046	0.471	0.114	0.079
	Log Likelihood	-2410.0		-3321.4	

Based on samples of 2948 male employees and 2833 female employees.

*, **, *** is statistically different at the 5%, 1% and 0.1% levels of significance.

Source: Unit-record data, Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave I.