



Paper 7: Life on the minimum wage: an empirical investigation

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Abstract

Federal minimum wages in Australia are now set by the Australian Fair Pay Commission. Since its establishment late in 2005 the Commission has handed down minimum wage determinations following annual wage reviews in 2006, 2007 and 2008. This paper uses data from the Household, Income and Labour Dynamics in Australia panel survey to investigate the circumstances of persons who are paid at or near the minimum wage, and thus potentially affected by the wage determinations. Net disposable incomes for actual and potential minimum wage workers are modelled in and out of work to investigate the implications of the wage determinations on work incentives. In addition a range of measures of socio-economic status and wellbeing are inspected. Comparisons are made with selected groups of non-employed persons to highlight the potential costs and benefits for affected individuals, and hence the potential trade-offs the Commission faces, if we accept that increases in minimum wages reduce employment opportunities.

Life on the minimum wage: An empirical investigation

1. Introduction

Commencing from 2006, the Australian Fair Pay Commission has determined a legally enforceable minimum wage that must be paid to all workers within the Federal jurisdiction, which covers the majority of employers and employees in Australia. The merit of minimum wage legislation remains a contentious issue within the economics discipline. The motivation behind imposing minimum wages lies in social objectives related to wellbeing and equity; notably the desire to ensure that an acceptable 'living wage' is afforded to support low wage workers and their families. However it can be argued that such objectives are best pursued through the welfare system rather than interfering with wage rates. The principal objection to the imposition of minimum wages is that they reduce employment opportunities. It is also argued that minimum wages suppress employer-provided training opportunities for low paid workers where that training would otherwise be financed by the employee receiving wages below the value of their marginal productivity (Hashimoto 1982). Even here, the issue of whether or not minimum wages do have a negative effect on employment remains unresolved, with much of the uncertainty stemming from Card and Krueger's (1994) widely cited study that found an *increase* in employment in the New Jersey fast food industry in response to an increase in that State's minimum wage.

Much of the focus of empirical research on minimum wages has been on estimating the elasticity of employment demand with respect to the minimum wage rate (see Lewis 2006). In contrast, the main issue we seek to cast light upon in this paper is, if there is a trade-off, how severe is that trade-off for the individuals concerned. That is, how much more 'worse off' would a worker be if they were displaced from a low paid job? Clearly empirical evidence on various dimensions of this trade-off is relevant to the implementation and setting of minimum wages in the Australian context. Using data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, we first look at the wellbeing of those on minimum wages compared to other Australians on a range of measures, and whether or not wellbeing changes as individuals move in and out of 'minimum wage' employment. Second we look at work incentives that apply to minimum wage workers, and the potential impact of wage rulings on these incentives. The approach taken is consistent with the microeconomic approach to monitoring the impact of the Commission's wage decisions recommended in Healy and Richardson (2007).

2. Data and methods

HILDA is Australia's first nationally representative household panel survey. The panel was established through the 'Wave 1' interviews of a randomly selected sample of 7,682 households commencing from late August 2001 (see <http://melbourneinstitute.com/hilda/> for details on the survey and sampling frame). HILDA contains rich information on personal characteristics, socio-economic background, family circumstances, current

activities and lifestyles along with a wealth of attitudinal data. Respondents are interviewed each year, as are any new persons who come into the scope of the survey: that is, persons aged 15 and over living in a HILDA household.

At the time of writing, survey data from waves 1 to 6, spanning 2001 to 2006 were available. The Fair Pay Commission (FPC) has delivered minimum wage determinations in 2006, 2007 and 2008. Hence there is only one year of survey data (2006) in which a Federal minimum wage was in place. For workers paid on an hourly basis, the Commission's inaugural decision set the minimum hourly wage rate at \$13.47 and, based on the assumption of a standard 38 hour week, a minimum weekly wage of \$511.86. Using the 2006 HILDA data, the hourly wage rates were calculated for all workers aged 21 to 64. For full-time employees, their usual weekly wage is divided by 38 to arrive at an hourly rate, consistent with the Commission's assumption of standard working week of 38 hours. For part-time employees, the hourly rate is defined as their usual weekly wage divided by usual hours worked. Based on this hourly wage, 'minimum wage workers' are defined as employees aged 21 to 64 whose hourly rate of pay is no more than 10 percent above the minimum rate set by the Commission. That is, all HILDA respondents with hourly wages below $\$13.47 \times 1.1 = \14.82 per hour. The justification for these criteria is as follows:

- Persons aged below 21 are excluded as these are the most likely to be receiving a formal training wage. A different wage schedule applies to these people, however, it is not possible with the HILDA data to ascertain with any certainty whether or not an individual is receiving a formal training wage, as opposed to simply a low wage. On similar grounds dependent students are also excluded.
- Our definition of minimum wage workers includes employees earning as much as 10 percent above the minimum wage, and all those earning below. This is because our interest is not in the exact coverage of the Fair Pay Commission's determinations, as would be the case in a quasi-experimental evaluation. Rather, we are interested in the effects of minimum wage legislation more generally. Those with earnings slightly above are included as persons potentially subject to future adjustments in the minimum wage. We note also that a figure of 10% above the Federal Minimum Wage was used by McGuinness, Freebairn and Mavromaras (2007) to define 'low waged employees' after consultation with the FPC. Those with earnings below the minimum wage are similarly included since they would be affected by a universally enforced minimum wage.

Figure 1(a)

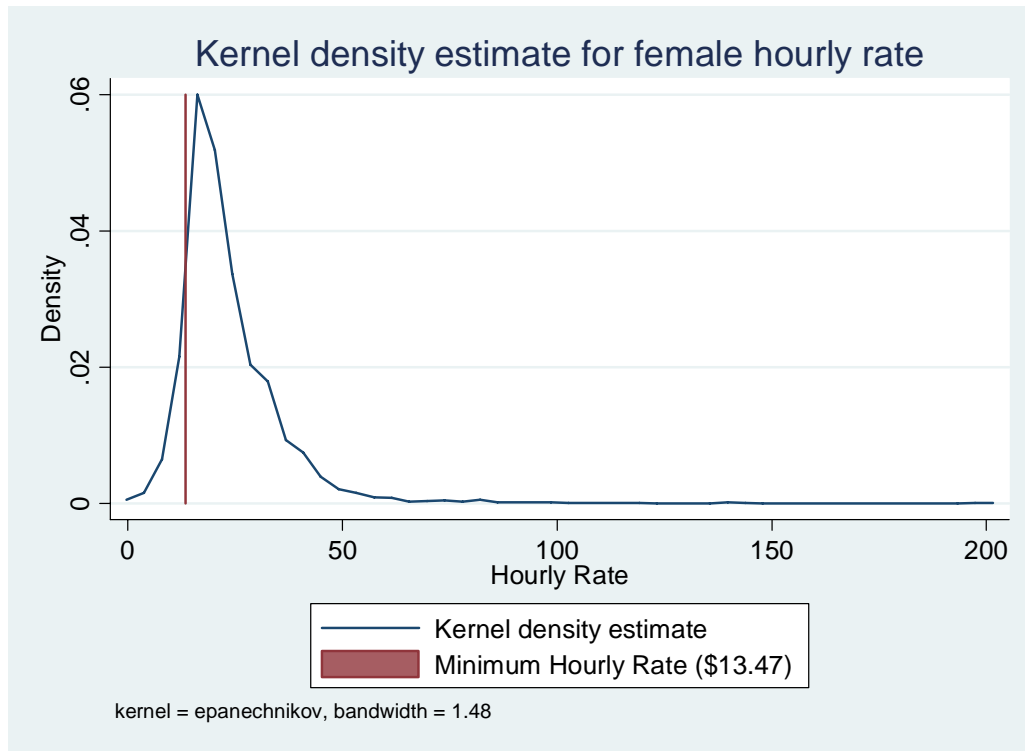
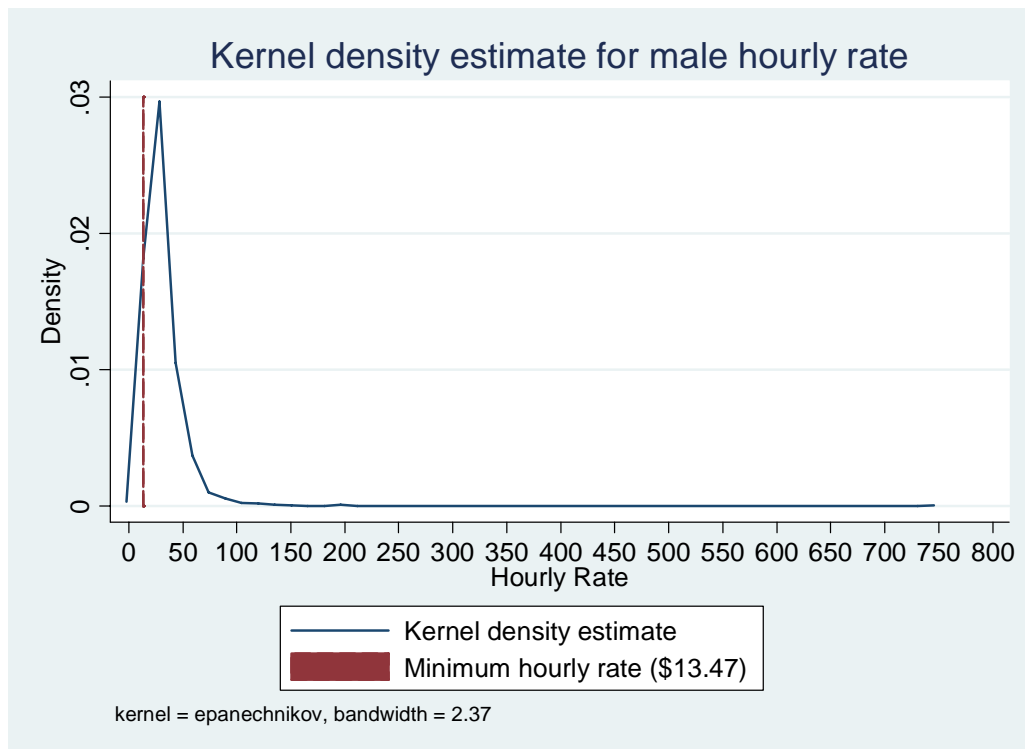


Figure 1(b)



We identify 640 such ‘minimum wage workers’ from the 2006 sample, representing 11% of all employees aged 21-64. Comparison groups of persons aged 21-64 are constructed representing the unemployed; those not in the labour force; medium-wage workers and high-wage workers. Medium wage workers are employees earning between \$14.82 and \$33.58, with this latter figure representing the 75 percentile of the hourly wage distribution in HILDA for 2006 for employees aged 21-64. High-wage employees are defined as those earning above \$33.58 per hour, and hence in the top twenty-five percent of the distribution. Figures 1(a) and 1(b) provide an idea of where the 2006 minimum wage sits within the wage distribution, after smoothing the distribution using a kernel density estimate.

3. Who is on minimum wages? A brief overview

Numerous studies have looked at the characteristics of low wage workers, including several commissioned by the Fair Pay Commission (McGuinness et al 2007, Healy and Richardson 2006). Here we are more interested in the circumstances of minimum wage workers, rather than the characteristics associated with a greater propensity to be in minimum wage jobs. However, there is obviously considerable overlap between the two perspectives and it is of interest to check that the characteristics of our sample of minimum wage workers broadly correlate with existing research.

As noted by Healy and Richardson (2006: 28), the picture one gets of minimum and low wage workers depends in part on whether they are considered among the population of workers or the wider population. Low wage or minimum wage workers tend to be female, young, single and with low levels of education (Leigh 2007; McGuinness et al 2007, Healy and Richardson 2006). Studies of the dynamics of poverty for developed countries have shown that generally households tend to enter relative poverty temporarily, although their probability of leaving poverty declines with duration in poverty. Buddelmeyer and Verick (2008) show this to be the case too for Australia, and find tertiary education and employment, whether full-time or part-time, to be the most important factors in insulating families from poverty.

In our sample, minimum wage workers make up 11 percent of all employees aged 21-64, and they are roughly evenly divided between full-time and part-time work. Consequently they are disproportionately found in part-time jobs, representing 8 percent of full-time employees and 20 percent of part-time employees. Table 1 shows that the characteristics of our sample are broadly consistent with previous findings. Each figure in the middle three columns reports the percentage of individuals in that row category who are minimum wage workers. Taking the first row, for example, it can be seen that women are more likely to be minimum wage workers, since 14.0 percent of women employees are minimum wage workers, which is higher than the 11 percent of all employees (see final row). Moreover, this is not only a result of more women being part-time workers. Among part-time employees, 18.6 percent of part-time women employees are minimum wage workers, compared to 20.5 percent for all part-time workers. Rather, it is within the full-time labour force that women are disproportionately found to be on minimum wages.

Conversely, male part-time employees have a very high likelihood of being minimum wage workers.

By and large, it is not the fact that part-time jobs are more likely to pay minimum wages that drives the differences in characteristics of the minimum wage workers relative to other employees. Where minimum wage work is more prominent, this generally applies irrespective of whether we consider the part-time or full-time workforce. The young, non-married, less educated and those in lower skilled occupations are all clearly more likely to be minimum wage workers. Among industries, agriculture stands out as the sector with the highest proportion of minimum wage employees, followed by accommodation, cafes and restaurants, consistent with previous research on the characteristics of employers of the low paid (Australian Centre for Research on Employment and Work 2006). The health and community services sector is unusual. Employees in this industry are more likely to be minimum wage workers, but this is because full-time employees in that industry are much more likely to be minimum wage workers than in other industries, while part-time employees are less likely to be minimum wage workers.

In terms of the characteristics among the sample of minimum wage employees, the final column of Table 1 shows almost two thirds are female, and 42 percent are married. Over half have no qualification beyond Year 12 and can be found in the two occupational categories of labourers and related workers and tradespersons and related workers. The latter is likely to be related to hairdressers and the food industry trades, but possibly also mature age apprentices on training wages. Health and community services and retail trade are the largest employers of minimum wage workers.

The data on household equivalence incomes demonstrate the significance of whether or not minimum wage workers are considered in the context of other employed persons or the wider population. The bands for the household equivalent deciles are calculated from the full population, including those not in the labour force, the unemployed and workers who are not employees (such as workers in family businesses or the self-employed). Employees in the poorest households are far more likely to be minimum wage workers than those in households with higher equivalised income, and the relationship is roughly monotonic. However, there are relatively few minimum wage workers in the lower income households, because these deciles are dominated by the non-employed. In fact, over half of all minimum wage employees are in households in the middle three (4th, 5th and 6th) deciles of household equivalised income.

Table 1: Incidence and profile of minimum wage workers by selected characteristics, employees aged 21-64.

Characteristic	Percent in category who are minimum wage workers			Percent of minimum wage Workers ^d
	Part-time employees ^a	Full-time Employees ^b	All employees ^c	
Female	18.6	10.5	14.0	63.4
Male	28.1	6.0	8.4	36.6
Married	16.6	5.7	8.9	42.0
Aged 21-24	28.7	15.1	19.0	18.9
Highest educational qualification				
Year 11	28.7	12.4	18.1	33.6
Year 12	21.8	10.9	14.2	18.3
Cert I/II	37.6	16.4	23.2	3.3
Occupation				
Labourers & Related Workers	38.4	26.2	22.9	20.5
Elementary Clerical, Sales & Service	27.0	17.0	31.7	13.1
Tradespersons & Related Workers	31.3	8.9	10.7	32.7
Industry				
Agriculture	43.8	28.8	33.1	5.8
Retail Trade	29.5	10.9	18.4	16.7
Accommodation, Cafes & Restaurants	28.5	19.4	24.0	9.3
Health and Community Services	15.2	13.9	14.5	19.6
Cultural and Recreational Services	30.6	9.4	16.1	3.9
Personal and other services	30.2	10.7	15.1	4.6
Household equivalence income ^e				
10th (bottom) percentile	42.9	19.5	33.7	5.3
20th percentile	42.6	35.6	39.6	6.6
30th percentile	29.9	20.5	25.2	11.3
40th percentile	23.1	20.7	21.7	17.2
50th percentile	21.6	15.5	17.6	18.0
60th percentile	23.0	9.6	13.4	16.3
70th percentile	12.8	4.8	6.9	8.6
80th percentile	12.7	5.3	6.8	9.1
90th percentile	14.2	2.4	4.3	5.8
100th percentile	6.5	1.0	1.8	2.0
All	20.5	7.7	11.2	100.0

Notes:

- a. Percent of part-time employees with row characteristics e.g. 18.6% of female part-time employees are minimum wage workers.
- b. Percent of full-time employees with row characteristics e.g. 10.5% of female full-time employees are minimum wage workers.
- c. Percent by row e.g., 14.0% of females are minimum wage workers.
- d. Percent by column e.g. 63.4% of minimum wage workers are female.
- e. Percentile bands relate to equivalence income for the full population.

4. How do minimum wage workers fare?

Table 2 presents a selected range of measures relating to individuals' wellbeing and socio-economic circumstances and provides comparisons to the unemployed and the other selected groups outlined above. Data in the first three rows relate to various subjective measures of wellbeing – self assessed health status, a rating of life satisfaction similar to those now used in a growing volume of 'happiness studies', and overall job satisfaction. As argued above, the most salient comparison is between the minimum wage workers and the unemployed. It can be seen that unemployed persons have a significantly lower self-assessed level of wellbeing than persons working in a minimum wage job. This relates both to general health and a broader assessment of their overall quality of life. Although the numerical difference in mean life satisfaction between the minimum wage workers and the unemployed seems small (0.57 on an 11 point scale), this is in fact a sizeable difference in the context of other empirical findings in happiness research, due to the tendency of responses to be tightly clustered around scores of 7 or 8 on such scales. In statistical terms, the difference is highly significant. The question relating to job satisfaction is of course not applicable to the unemployed.

Table 2: Means for selected indicators of well-being, persons aged 21-64 by workforce status.

	Minimum wage workers	NILF	Unempl'd	Medium wage workers	High wage workers
Self-assessed General Health [1-5] ^{a,b}	3.44	2.95***	3.11***	3.55***	3.63***
Life Satisfaction [0-10] ^{a,b}	7.74	7.68	7.17***	7.76	7.87**
Job Satisfaction [0-10] ^{a,b}	7.61	N/A	N/A	7.56	7.71
Household Equivalence Income	\$30,983	\$28,572*	\$25,637***	\$42,379***	\$66,926***
Financial Stress [1-6] ^{a,c}	3.39	3.40	3.79***	3.24***	2.86***
Home Owner (No=0/Yes=1)	0.55	0.64***	0.40***	0.66***	0.78***
Renting Public (No=0/Yes=1)	0.05	0.10***	0.09**	0.02***	0.01***
(Observations) ^d	(640)	(1819)	(260)	(3862)	(1297)

Notes: ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, according to the standard t-test for the difference in means between the reported figure and the corresponding figure for minimum wage workers. a. The statistical significance of the differences in responses across categories is confirmed using the Mantel-Haenszel chi-square test. b. underlying variable is coded such that a higher number on the scale represents a more positive outcome; c. Response options are from a scale ranging from 1='prosperous' to 6='very poor'; d. Not all observations are included in each calculation due to missing values on some of the variables.

It is also clear that the unemployed face significantly worse financial circumstances than those in minimum wage employment. In order to compare household incomes in a way that takes into account differences in household composition (and thus financial needs), a commonly used figure is the OECD Household Equivalence Scales. This represents a weighted 'income per head' figure, where the first adult in the household has a weighting of 1, additional adults a weighting of 0.7 (to allow for economies of scale) and each child a weighting of 0.5. On this measure, the HILDA data show that unemployed persons

live in households with, on average, almost \$5000 per annum less in 'equivalised' income per person. This evidence of lower income in dollar terms is reinforced by self-assessments of prosperity relative to 'current needs and financial responsibilities', in which the average unemployed person is found on a point on the scale close to 'just getting along' and the average minimum wage worker closer to 'reasonably comfortable'. Again the differences in means for these measures of financial wellbeing are highly significant in the statistical sense.

The final two rows of Table 2 relate to housing status, a factor known to have a strong correlation with individuals' socio-economic opportunity and labour market outcomes (See Wood, Ong and Dockery 2008). The unemployed are significantly less likely to own their own home (either outright or with a mortgage) and almost twice as likely to be in public housing as those workers in minimum wage jobs.

In summary then, inspection of key indicators across a range of aspects of socio-economic status suggests that the unemployed are considerably worse off than persons who are in a job but paid at around the minimum wage or lower. With many qualifications, this provides a *prima facie* case that any unemployment created by minimum wage legislation will be associated with a substantial decline in the wellbeing of those workers affected.

The comparisons to the other groups also provide some interesting results. Working age persons who are not participating in the labour force report worse health, and indeed this may be their reason for non-participation, but otherwise display better outcomes than the unemployed and relatively similar outcomes to minimum wage workers. Compared to minimum wage workers, medium and high wage workers report better health and better financial and housing outcomes, with the high wage employees clearly faring best on each measure. In terms of overall life satisfaction the differences are more marginal. Only the high wage workers display higher average self-assessed life satisfaction compared to minimum wage workers, and even here the difference is significant only at the 5% level. As for job satisfaction, there is in fact no robust evidence that workers in minimum wage jobs find those jobs less satisfying than do those with medium-wage or even high-wage jobs.

An important qualification to these comparisons is that the minimum wage workers may be quite unlike persons in the other workforce categories. Say, for example, the typical minimum wage worker has markedly different human capital characteristics to the typical unemployed person. Would we then expect a minimum wage worker who became unemployed to report the similar levels of life satisfaction to the current stock of unemployed persons? We consider this further in two ways. First, still using only the most recent cross-section of data (2006), we attempt to move closer to a quasi-experimental or 'matching' approach by identifying persons within the pool of unemployed and of non-participants who are likely to be minimum-wage workers if they were employed. That is, we attempt to match the minimum wage workers to those most like them among the unemployed and non-participants in terms of their predicted wage as

a means of identifying the likely welfare of the minimum wage workers if they were instead to be unemployed or outside the labour force.

The potential wage for the unemployed and individuals not in the labour force is estimated using a Heckman two-step regression to correct for sample selection bias. The dependent variable was the natural log of the hourly wage rate of those employed. The explanatory variables included human capital characteristics such as marital status, highest educational qualification, work experience, English proficiency, location, number of children and disability status. Separate regressions were run for males and females to allow for gender differences in the magnitude and significance of explanatory variables. Details of the regression models are provided in Appendix A.

This allows us to generate two comparison groups: those unemployed persons and those persons outside of the labour force who are predicted to be minimum wage workers if they were in a job. As shown in Table 3, these comparisons reveal even more starkly the decline in welfare associated with unemployment, as opposed to having work in a minimum wage job.

Table 3: Means for selected indicators of well-being, persons aged 21-64 by workforce status.

	Minimum wage workers	Predicted minimum wage workers from among:	
		NILF	Unemployed
Self-assessed General Health [1-5] ^{a,b}	3.44	2.85***	2.96***
Life Satisfaction [0-10] ^{a,b}	7.74	7.63	7.21***
Household Equivalence Income	\$30,983	\$23,449***	\$19,973***
Financial Stress [1-6] ^{a,c}	3.39	3.54***	3.81***
Home Owner (No=0/Yes=1)	0.55	0.55	0.33***
Renting Public (No=0/Yes=1)	0.05	0.14***	0.12***
(Observations) ^d	(640)	(785)	(89)

Notes: See notes to Table 2.

The second refinement is to utilise the longitudinal nature of the HILDA data to compare the wellbeing of the same people as they move between different labour market states. As identified above, this is problematic in that there is only one year of survey data (2006) in which a minimum wage determination applied. To define the groups in the previous years (2001 to 2005), the threshold used for defining the minimum wage workers is obtained by deflating the 2006 figure of \$14.82 per hour by the consumer price index. The threshold separating medium and high wage workers is kept at the 75th percentile of the wage distribution calculated for each year.

Restricting the sample to persons observed in one of the five labour force categories defined above in both 2005 and 2006, Table 4 provides some gauge of the degree of persistence in each category and the flows between states. Of the persons who were minimum wage workers in 2005, 40 percent were also minimum wage workers in the 2006. A larger proportion (47 percent) had moved into medium wage work. Just under 10 percent left the labour force altogether, and very few became unemployed or high-

wage workers. Conversely, looking at the minimum wage workers in 2006, around 40 percent were minimum wage workers in the previous year and a similar proportion were medium wage workers in 2005. Very few high wage workers move into minimum wage work. The general picture for minimum wage workers is one of relatively low persistence - more than half leave this category each year – with most movement to (and from) medium paid employment.

Table 4: Transition matrix between labour force states, Wave 5 to Wave 6

Labour force status in 2005	Labour force status in 2006					Total
	Not in the labour force	Unemployed	Minimum wage workers	Medium wage workers	High wage workers	
Not in the labour force	1301	79	54	128	28	1590
Unemployed	51	48	33	67	12	211
Minimum wage workers	43	11	203	236	9	502
Medium wage	153	47	212	2557	240	3209
High wage	34	6	11	319	890	1260
Total	1582	191	513	3307	1179	6772

To account for fixed individual effects, HILDA respondents are classified into these same five labour force states in each year from 2001 to 2006 using the deflated 2006 basic minimum wage and random effects and fixed effects panel models estimated to identify the impact of labour force state on life satisfaction and financial stress. For life satisfaction, a panel linear regression model is estimated. With the dependent variable being an ordered categorical variable ranging from 0 to 10, the linear model is not the ideal specification but is the preferred model to report here. The relative magnitude and significance of the estimated coefficients are consistent with those obtained using a random effects probit or logit model, and the coefficients in the linear model have a more straightforward interpretation.¹ Only a handful on additional explanatory variables that are largely unrelated to the job are included; namely gender, age, marital status and disability status. The number of explanatory variables is deliberately limited since the main interest is in the ‘gross’ wellbeing of the minimum wage workers, rather than identifying the factors contributing to their level of wellbeing. For example, including occupation, industry or education level would likely capture much of the ‘minimum wage worker’ effect, but our interest is in the full impact of being in a minimum wage job, not the impact after controlling for such attributes.

¹ For an ordered categorical variable, the ordered probit model is generally seen as the more appropriate specification. However, using STATA, the longitudinal panel version of the probit model (XTPROBIT) requires the dependent variable to be binary, and thus the responses on the 0 to 10 scale must be arbitrarily divided into a ‘satisfied’ and ‘not satisfied’ dichotomy. Responses tend to cluster around 7, 8 and 9 towards the ‘completely satisfied with my life’ end of the scale. Using a split of 7 and below as ‘dissatisfied’ and 8 and above as ‘satisfied’ leads to essentially the same conclusions as in the random effects linear regression models. However, inference in the fixed effect model is severely limited due to the small proportion of the sample observed to move between the ‘dissatisfied’ and ‘satisfied’ states within the 6 year period. This is less of a concern in the linear fixed effects model which allows greater variation in the dependent variable.

The results of the random and fixed effects panel models for life-satisfaction are reported in models (1) and (2) of Table 5. The results on individual characteristics are consistent with those well established in empirical ‘happiness’ studies: married people are more satisfied with their lives; persons with a disability less satisfied, and life satisfaction reaches a nadir at age 35-45. The important result is with respect to the effect of labour force status variables. Minimum wage workers have been modeled as the default category, so that the coefficients on the other labour force states can be interpreted as the effect *relative* to being a minimum wage worker. Being unemployed significantly reduces life satisfaction compared to being in a minimum wage job, and this is confirmed in both the random effects and the fixed effects models. The magnitude of this effect is quite large – the coefficient is close to -0.3 in the random effects model, which is around one-fifth of the standard deviation in the life-satisfaction variable for the pooled date. In magnitude it equates to around half the effect of being unmarried as opposed to married, which is consistently found in empirical studies to be one of the largest and most robust effects on subjective wellbeing.

In contrast, the estimates suggest no significant effect upon life satisfaction of having a job with medium wages as opposed to a minimum wage job. Even being in a high wage job has a small and significant positive effect only in the random effects model. Persons outside of the labour force have lower life satisfaction than the employed, but far less so than the unemployed. The estimated effect of being out of the labour force is considerably reduced in both magnitude and statistical significance in the fixed effects model which controls more stringently for individual effects.

Models (3) and (4) investigate the impact of labour force status on financial stress based on the HILDA survey question on prosperity given current needs. In order to estimate a panel model the independent variable is recoded as a dummy variable, with those indicating they are ‘just getting along’, ‘poor’ or ‘very poor’ coded as experiencing financial stress, and those who indicated that they are ‘reasonably comfortable’, ‘very comfortable’ or ‘prosperous’ as not in financial stress. A positive coefficient indicates a greater likelihood of the respondent indicating that they are in financial stress. The results indicate that people in their prime working age (25-44 years) and divorcees are the most likely to face financial stress.

In terms of labour force status, the panel models confirm that it is the unemployed who are the most likely to experience financial stress and, to a lesser extent, non-participants. Being unemployed has a broadly similar level of impact on the incidence of financial stress as a marital breakdown. In contrast to life satisfaction, having a medium wage job as opposed to a minimum wage job does significantly improve individual’s assessment of their financial position, but the effect is not as strong in magnitude as the impact of unemployment. As would be expected, high wage earners are significantly less likely to report being in financial stress.

Given the large proportion minimum wage workers who are also part-time employees, a variable for part-time work was also included in the models (results not reported). The

variable is insignificant in the models for life satisfaction and its inclusion and has only trivial effects on the other coefficients. In models (3) and (4), working part-time is associated with a significantly greater chance of reporting financial stress. Its inclusion accentuates the estimated detrimental impact of unemployment on individuals' financial circumstances and reduces the estimated positive effects of being in jobs offering earnings above the minimum wage.

Table 5: Panel model estimates of life-satisfaction and incidence of financial stress: HILDA Waves 1 to 6.

	Life Satisfaction (0 to 10) Linear regression				Likelihood of being in financial stress (logit model)			
	Random effects (1)		Fixed effects (2)		Random effects (3)		Fixed effects (4)	
	Coef.	P> z	Coef.	P> t	Coef.	P> z	Coef.	P> z
Intercept	7.958	0.00	7.861	0.00	-1.120	0.00	n.a.	
Male	-0.164	0.00	n.a.		0.393	0.00	n.a.	
Age:								
21 to 24 years	0.189	0.00	0.183	0.00	-0.476	0.00	-0.027	0.85
25 to 34 years	0.080	0.00	0.090	0.01	-0.126	0.05	0.077	0.42
35 to 44 years	—		—		—		—	
45 to 54 years	0.119	0.00	0.026	0.41	-0.340	0.00	-0.351	0.00
55 to 64 years	0.375	0.00	0.093	0.06	-1.029	0.00	-0.746	0.00
Marital status:								
Married	—		—		—		—	
Separated	-0.587	0.00	-0.419	0.00	1.464	0.00	0.621	0.00
Never married	-0.427	0.00	-0.338	0.00	0.467	0.00	0.073	0.54
Widow	-0.385	0.00	-0.268	0.00	0.487	0.00	0.133	0.21
Labour force status								
Unemployed	-0.298	0.00	-0.208	0.00	1.054	0.00	0.626	0.00
Not in the labour force	-0.095	0.00	-0.049	0.09	0.566	0.00	0.369	0.00
Minimum wage worker	—		—		—		—	
Medium wage worker	0.020	0.33	0.021	0.34	-0.456	0.00	-0.255	0.00
High wage worker	0.066	0.01	0.044	0.16	-1.745	0.00	-0.721	0.00
Has long-term disability	-0.269	0.00	-0.113	0.00	0.494	0.00	0.019	0.74
Observations	48917		48917		44527		17771	
Individuals	12512		12512		11856		3677	
Obs. Per individual								
Minimum	1		1		1		2	
Average	3.9		3.9		3.8		4.8	
Maximum	6		6		6		6	
R-sq: within	0.01		0.01					
between	0.09		0.07					
overall	0.06		0.05					
Wald/LR chi-sq	1298.8	0.00			1650.0	0.00	229.2	0.00
F-statistic			23.1	0.00				

5. Minimum wage workers and work incentives

It is well established that the interaction between Australia's tax and benefit system results in many persons facing very low financial incentives to either enter the labour force or, for current employees, to expand the number of hours they work. Two commonly used measures of work disincentives are the effective marginal tax rate (EMTR) and the replacement rate (RR). The effective marginal tax rate is the proportion of an incremental increase in earnings that the worker loses through higher taxes and reduction in benefit entitlements. The RR measures disposable income while not working as a proportion of disposable income while employed. It measures how much of disposable income while employed is 'replaced' or 'retained' when a person becomes displaced from employment. Hence, the higher the RR, the blunter the work incentives to remain employed in low paid jobs. Thus EMTRs are most appropriate to capturing disincentives associated with an increase in hours worked or the net effect of wage increases, while the RR is a measure of the disincentive to working as opposed to not working.

Moreover, recent work based on the HILDA data and the tax-benefit component of the AHURI-3M microsimulation model has provided evidence that the replacement rates individuals face do indeed have a considerable impact upon their propensity to gain employment (Dockery, Ong and Wood 2008). Therefore, the RRs facing minimum wage workers are another important dimension of their circumstances, and potentially of their future labour market outcomes. This section examines the work incentives faced by minimum wage workers by comparing their disposable incomes while employed with the disposable incomes they would have if they were to become unemployed or to withdraw from the labour force. This comparison gives an indication of how much more financially worse off a worker would be if displaced from a low paid job. A second issue relevant to the trade-off between positive equity effects and negative displacement effects of minimum wages is the degree to which increases in workers' wages due to minimum wage rulings translate into increased net income. This relates directly to the EMTRs facing minimum wage workers, and is considered in the next section.

Given that minimum wage workers are on low pay, almost half are in income units that are in receipt of government benefits in the form of income support, family payments and/or housing assistance while working, though these may be at reduced rates. If they become unemployed or leave the labour force, their benefit entitlements will increase while their tax liabilities will decline with the loss of wage income. If minimum wage workers' incomes are largely similar in the employed and non-employed states, then leaving a low paid job does not leave them much worse off in financial terms.

For each minimum wage worker, disposable income is defined as their income unit private income and government benefits less income unit tax liabilities². The calculation of disposable income on an income unit basis allows for interdependencies between adults belonging to the same income unit. Disposable incomes in each labour force state

² Even though public housing subsidy is an in-kind subsidy, for the purposes of this exercise the amount of in-kind subsidy is added to disposable income as though it is a cash entitlement.

are computed using the 2006-07 tax-benefit component of a microsimulation model, AHURI-3M (Wood and Ong, forthcoming). The model is able to calculate disposable incomes for actual income units in the HILDA Survey (as opposed to hypothetical income units) taking into account the interactions of the tax-benefit parameters.

A minimum wage worker's income in an unemployed or not-in-the-labour-force (NILF) state is imputed using the following assignment rules. First, the means-tested income support type the individual receives while employed remains unchanged if the individual is displaced from his/her job. For example, if a minimum wage worker reports receiving Parenting Payment while employed, it is assumed that if the minimum wage worker were to become unemployed or NILF, s/he would still receive Parenting Payment but at a higher rate. Second, disabled minimum wage workers who do not receive a means-tested income support payment while employed (13% are in this category) are assumed to receive DSP if unemployed or NILF.

There are, however, three critical differences between movements into the unemployed and NILF states. First, a non-disabled minimum wage worker who does not receive a means-tested income support payment while employed is assumed to receive NewStart Allowance if s/he becomes unemployed, but no means-tested income support payments if s/he leaves the labour force because persons who are NILF do not meet the activity test requirements associated with eligibility for NewStart Allowance. Similarly, a non-disabled minimum wage worker receiving NewStart Allowance while employed does not receive any means-tested income support payment if s/he becomes NILF as a result of not meeting the activity test requirements. Third, in a NILF state, an individual is assumed to be eligible for retirement annuities if aged 55 or over³.

Table 6 below compares the mean disposable incomes and income components of full-time and part-time minimum wage workers if they were to become unemployed and NILF. The disposable income estimates indicate to what extent minimum wage workers overall net position changes when moving into unemployment or out of the labour force. The table estimates indicate that full-time minimum wage workers will experience a mean decline in income unit disposable income of \$14,100 if displaced from their full-time jobs and become unemployed, as compared to \$7,100 if part-time workers become unemployed. If the minimum wage workers were to move out of the labour force, they would be ineligible for NewStart Allowance leading to a larger decline in income unit disposable income of \$18,600 and \$9,200 for full-time and part-time workers respectively (see Table 6b).

The breakdown of income components provides some insight into the extent to which a loss of wage is offset by increases in government benefits and reductions in tax liabilities. Among both full-time and part-time minimum wage workers, the mean decline in income

³ Retirement annuities are imputed for minimum wage workers aged 55 or over who move into a NILF state by taking the mean values of the retirement annuities of a comparable group of actual NILF individuals who are predicted to be minimum wage workers in the Heckman regression. We calculate the mean retirement annuities by age for this comparison group and find the mean values to range from \$0 to \$4,400. This equates to a mean of only \$2,100 as over 88% of them do not have retirement annuities.

unit private income is offset by over 40% (over one-quarter) by a simultaneous increase in benefits and reduction in tax liabilities if they become unemployed (NILF).

Table 6: Net annual income unit disposable income of minimum wage workers in \$'000s, by labour force state

(a) Employed to unemployed

		Income while employed	Income while unemployed	Change in income
Full-time MW workers	Private income	44.8 ^a	18.8	-25.9
	Government benefits	3.0	11.1	8.1
	Tax liabilities	6.2	2.5	-3.7
	Disposable income	41.6	27.5	-14.1
Part-time MW workers	Private income	45.4 ^a	32.9	-12.5
	Government benefits	7.7	12.0	4.3
	Tax liabilities	7.5	6.4	-1.1
	Disposable income	45.5	38.5	-7.1
All MW workers	Private income	45.1	25.6	-19.5
	Government benefits	5.3	11.6	6.3
	Tax liabilities	6.8	4.4	-2.5
	Disposable income	43.5	32.8	-10.7

(b) Employed to NILF

		Income while employed	Income while NILF	Change in income
Full-time MW workers	Private income	44.8 ^a	19.0	-25.7
	Government benefits	3.0	6.3	3.3
	Tax liabilities	6.2	2.3	-3.8
	Disposable income	41.6	23.0	-18.6
Part-time MW workers	Private income	45.4 ^a	33.1	-12.3
	Government benefits	7.7	9.6	1.9
	Tax liabilities	7.5	6.3	-1.2
	Disposable income	45.5	36.4	-9.2
All MW workers	Private income	45.1	25.8	-19.2
	Government benefits	5.3	7.9	2.6
	Tax liabilities	6.8	4.3	-2.6
	Disposable income	43.5	29.4	-14.1

Source: Authors' own calculations from confidentialised unit record files of the HILDA Survey wave 6

Note:

a. The mean income unit private income of part-time minimum wage workers is slightly higher than for full-time minimum wage workers. This is a reflection in the differences in income unit types between the two groups. Part-time minimum wage workers are much more likely to be partnered than full-time minimum wage workers.

Table 7 contains estimates of replacement rates. Part-time minimum wage workers have significantly blunter work incentives than full-time workers. If a part-time minimum wage worker becomes unemployed (NILF), 84% (71%) of the part-time worker's income will be retained as compared to 65% (46%) for full-time workers. Hence, workers clearly experience a greater decline in financial well-being if they were displaced from full-time

jobs than if they were displaced from part-time jobs. The estimates also indicate that part-time minimum wage workers have lower incentives to remain in their jobs than full-time minimum wage workers. In fact, over 8% (5%) of part-time minimum wage workers have RRs of over 100% if they become unemployed (NILF) indicating that their households would in fact be financially better off if they quit their jobs. Nonetheless, the RR distribution indicates that the majority of minimum wage workers, regardless of whether they are in full-time or part-time jobs, would find that over half of their incomes would be replaced if they were to become unemployed or leave the labour force.

Table 7: RR of minimum wage workers, by labour force state

(a) Employed to unemployed

	Full-time MW workers	Part-time MW workers	All MW workers
<i>Mean RR (%)</i>	64.8	84.4	74.3
<i>RR distribution (%)</i>			
RR ≤ 25%	1.3	0.0	0.7
25% < RR ≤ 50%	20.4	0.7	10.9
50% < RR ≤ 75%	52.5	25.6	39.5
75% < RR ≤ 100%	23.6	65.7	43.9
RR > 100%	2.2	8.1	5.0
Total	100.0	100.0	100.0

(B) Employed to NILF

	Full-time MW workers	Part-time MW workers	All MW workers
<i>Mean RR (%)</i>	46.1	70.6	57.9
<i>RR distribution (%)</i>			
RR ≤ 25%	30.8	12.8	22.1
25% < RR ≤ 50%	9.4	3.4	6.5
50% < RR ≤ 75%	43.1	23.9	33.8
75% < RR ≤ 100%	15.1	54.9	34.3
RR > 100%	1.6	5.1	3.3
Total	100.0	100.0	100.0

Source: Authors' own calculations from confidentialised unit record files of the HILDA Survey wave 6

The question of how much more financially worse off a worker would be if displaced from a low paid job can be further addressed by computing RRs for those observed out of employment in the HILDA Survey, but who would have received the minimum wage if they were employed (the 'predicted minimum wage workers' discussed above). A comparison of their income while not employed with their income if they were employed gives an indication of how much financially worse off individuals would be if they were offered a low paid job but chose to remain not employed. RR estimates are generated for this pool of predicted minimum wage workers assuming first that they have been offered a full-time job at 38 hours and then assuming that they have been offered a part-time job at the 2006 average part-time hours of 18 hours.

The estimates in Table 8 support the estimates presented in Table 7. The mean estimates indicate that for a non-employed individual, income in the non-employed state is in fact almost four-fifths of the income the individual would get if employed part-time. This finding is significant as the RR measure does not take into account work-related expenses that would be incurred by individuals who move into employment. After taking into account such expenses as transport costs, work clothing and child care expenses, the incentive to move into part-time work might be eroded altogether. The mean RR for one moving into full-time employment is slightly lower at 68%, but nevertheless, almost 90% of individuals in the predicted minimum wage worker sample still have RRs of over 50% and over one-third have RRs of over 75%.

Table 8: RR of predicted minimum wage workers, by labour force state

	Predicted status = full-time employed	Predicted status = part-time employed
<i>Mean RR estimate (%)</i>	67.6	79.3
<i>RR distribution (%)</i>		
RR ≤ 25%	2.8	1.5
25% < RR ≤ 50%	7.9	2.2
50% < RR ≤ 75%	55.2	29.0
75% < RR ≤ 100%	32.9	64.3
RR > 100%	1.2	3.0
Total	100.0	100.0

Source: Authors' own calculations from confidentialised unit record files of the HILDA Survey wave 6

6. Minimum wage decisions & EMTRs

In its inaugural 2006 ruling, the Fair Pay Commission set the basic minimum wage at \$13.47 per hour. In 2007, this was increased by \$0.27 per hour to \$13.74 per hour. Two important issues in assessing the impact of these policy developments on workers' financial situation are:

1. What is the impact of having the minimum wage as opposed to not having a minimum wage? and
2. Once in place, what is the impact of an increase in the minimum wage?

Turning to the first of these questions, 404 workers in our sample were receiving below the minimum wage. In 2006, the minimum wage was \$13.47 per hour. For a full-time minimum wage worker working 38 hours per week, this is equivalent to a weekly wage of \$511.86. The impact of the presence of the minimum wage on work incentives, assuming it is universally binding, can be tested by comparing the disposable income of these 404 workers based on their reported (below minimum) wage with their disposable income if they were all instead to receive the minimum wage.

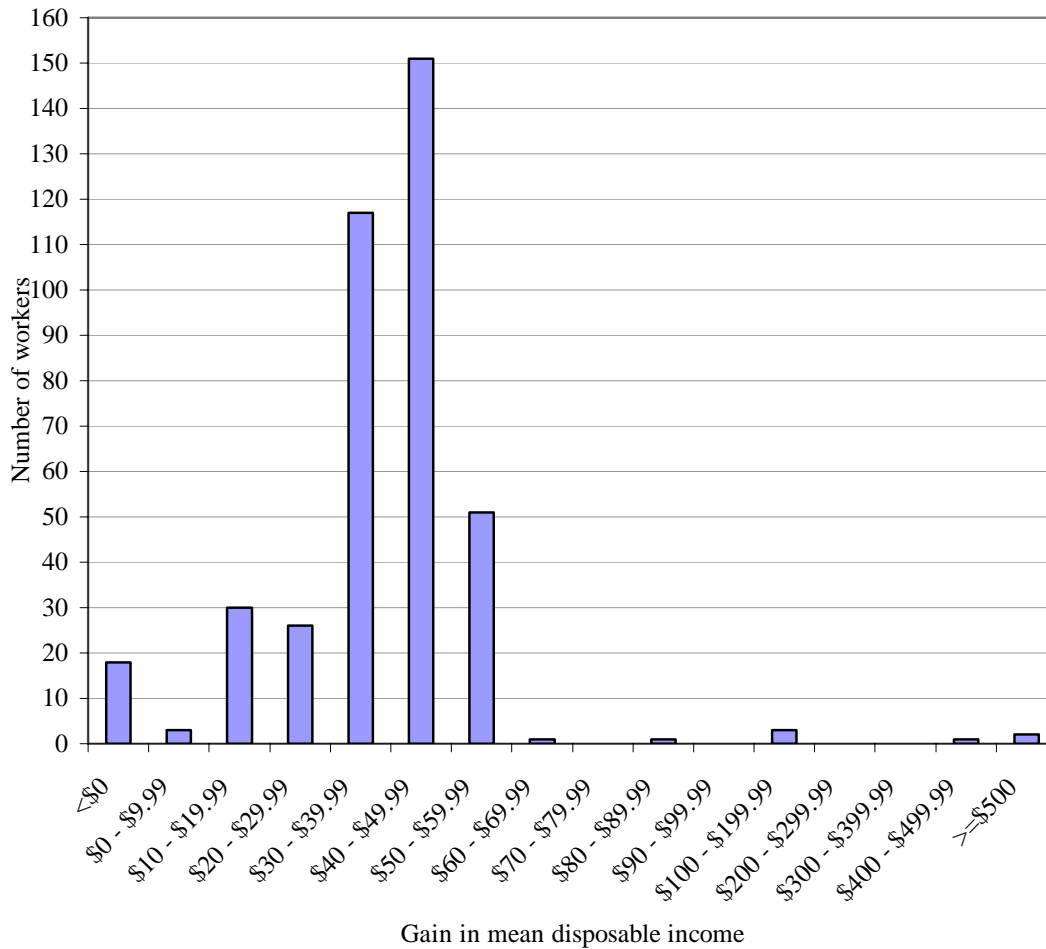
Table 9 shows that for all workers, the gain in mean wage (and therefore mean private income) under the 2006 minimum wage ruling is \$5000 per year. Full-time workers gain \$6800, more than twice the gain experienced by part-time workers. However, for full-

time (part-time) workers approximately one-quarter (one-third) of this gain is eroded by a reduction in government benefits together with an increase in tax liabilities, resulting in an increase in mean disposable income of \$5000 (\$2200) per year. The impact of the 2006 minimum wage ruling appears to have more impact on full-time workers, who retain approximately three-quarters of the minimum wage increase compared to part-time workers who lose around two-thirds of the minimum wage increase in government benefit reductions and tax increases. Figure 2 below shows the distribution of gains in mean disposable income. It indicates that the majority of the workers receiving below minimum wage would receive annual gains of up to \$3000 under the 2006 minimum wage ruling had it been imposed on their employers.

Table 9: Comparison of net annual income unit disposable income when receiving below minimum wage with receiving the minimum wage (\$'000)

		Income while receiving below MW	Income while receiving MW	Change in income
Full-time workers	Private income	37.8	44.6	6.8
	Government benefits	3.3	2.7	-0.6
	Tax liabilities	4.4	5.7	1.2
	Disposable income	36.7	41.6	5.0
Part-time workers	Private income	41.3	44.7	3.3
	Government benefits	7.9	7.2	-0.7
	Tax liabilities	6.8	7.2	0.4
	Disposable income	42.5	44.7	2.2
All workers	Private income	39.6	44.6	5.0
	Government benefits	5.6	5.0	-0.7
	Tax liabilities	5.6	6.4	0.8
	Disposable income	39.6	43.2	3.6

Figure 2: Distribution of gains in weekly mean disposable income



Finally, the decision to increase the basic minimum wage by \$0.27 per hour in 2007 is equivalent to a ‘marginal’ increase, to which the EMTR measure is directly applicable. We examine the impacts of the 2007 minimum wage increase by examining the EMTRs of minimum wage workers when their wages are increased by \$0.27 per hour, as under the 2007 ruling. The mean EMTR estimates show that the average minimum wage worker (full-time and part-time) would retain approximately two-thirds of a wage increase under the 2007 ruling. For the majority of both full-time and part-time workers, EMTRs are less than or equal to 50 percent, so their income units will pocket most of any incremental increase in the minimum wage rate if it were passed on. This also suggests that, despite the high replacement rates minimum wage workers are likely to face when out of employment, the disincentives to increase work efforts among existing minimum wage workers are relatively minor.

Note, however, that this simulation is likely to have under-estimated the EMTRs and therefore work disincentive effects of the 2007 wage ruling. Under this simulation all minimum wage workers’ hourly rates were increased by \$0.27 per hour, including the hourly rates of 404 workers in the sample who were in fact earning below the minimum

wage rate and who were therefore very likely to be in the income test free area even when their hourly rates are increased by \$0.27 per hour. The simulation was re-run assuming that all those earning below the minimum wage were in fact earning the minimum wage rate of \$13.47 per hour. Under this scenario the proportion of workers with EMTRs of less than or equal to 25% decreases from 44.2% (as indicated in the table below) to 24.5%, and mean EMTRs rise from 31.8% to 37.3%.

Table 10: EMTR of minimum wage workers when wages are increased by \$0.27 per hour (2007 ruling), per cent

	Full-time MW workers	Part-time MW workers	All MW workers
<i>Mean EMTR (%)</i>	32.7	30.8	31.8
<i>EMTR distribution (%)</i>			
EMTR ≤ 25%	35.8	53.2	44.2
25% < EMTR ≤ 50%	50.9	25.9	38.9
50% < EMTR ≤ 75%	9.7	17.8	13.7
75% < EMTR ≤ 100%	1.3	1.7	1.5
EMTR > 100%	2.2	1.3	1.8
Total	100.0	100.0	100.0

Source: Authors' own calculations from confidentialised unit record files of the HILDA Survey wave 6

7. Conclusion

In this paper we have investigated the circumstances of persons paid near or below the Federal Minimum Wage with respect to a range of aspects of their lives, and the financial incentives they face to engage with the labour market. While such a descriptive overview is of interest in its own right, another motivating theme has been to contrast the wellbeing of the unemployed and those not in the labour force with those in minimum wage jobs. This contrast is crucial to minimum wage determinations if we are to accept that there is a trade-off between higher wages and employment opportunity.

Our overall conclusion is that the Commission should be extremely wary of the potential impact of higher minimum wages on employment. The evidence is that unemployment is associated with substantially worse outcomes—in terms of general wellbeing and financial prosperity—than those experienced by people working in minimum wage jobs. On the other side of the coin, it seems that increases in the minimum wage will have virtually no effect on the wellbeing of those affected and lead to relatively minor improvements in disposable incomes. The financial effect is modest because the tax and welfare system in Australia already operates to supplement the incomes of the low paid, although this in turn contributes to work disincentives for the low paid and non-employed. The main findings leading to this conclusion are as follows.

In terms of wellbeing, the main indicator used is individuals' reported satisfaction with their life as a whole. Using several approaches it is found that the unemployed have far lower life satisfaction than minimum wage workers, while medium wage workers are not any more satisfied with their lives than minimum wage workers. Recall that our

definition of minimum wage workers includes many who are earning below - often well below - the minimum wage; while the definition of medium wage workers extends from 10 percent above the minimum wage to the 75th percentile of the employee wage distribution. If no difference in life satisfaction can be identified between two broad groups taking in 75 percent of the wage distribution, then the effect of a marginal increase in earnings from the minimum wage rate to just above it would be trivial in the extreme. Workers in the top 25 percent of the wage distribution are happier than minimum wage workers, but the effect is small relative to the magnitude of the impact of unemployment on life satisfaction. There is also no evidence that minimum wage workers are less satisfied with their job than are higher paid employees.

In terms of loss of household income, it is true that minimum wage workers would be cushioned to a considerable extent by the welfare system if they were to lose their jobs. This is particularly so for part-time workers. The vast majority face replacement rates above 50 percent and a small proportion of minimum wage workers would actually find their income units financially better off if they were not working. However, this also means that many displaced workers would end up in unemployment traps, with very low incentive to regain employment and potentially leading to longer term unemployment. The incentive to accept part-time work, which accounts for around half of all minimum wage jobs, is particularly muted. Even if the temporary financial impact on the household of a minimum wage worker being displaced from work would be minor, previous research suggests that employment, even part-time employment, is important in protecting families from poverty (Buddelmeyer and Verick 2008).

Against these effects must be considered the gains in income for minimum wage workers. Had the 2006 minimum wage ruling been applied universally to all low paid employees, we estimate that the disposable incomes of their households would increase by just under 10 percent. We also find that minimum wage workers face relatively low EMTRs, such that they would retain the majority of any increase in the minimum wage rate. It should be remembered, however, that only around 10 percent of minimum wage workers in 2006 were in households in the bottom two deciles of equivalised household income. Most are in the 4th to 6th decile and a significant proportion live in higher income households. Hence we would concur with Leigh's (2007) conclusion that the imposition of minimum wages and further increases in the minimum wage will do little to reduce income inequality between households. To the extent that it reduces employment opportunities for the existing unemployed and those out of the labour force, it may accentuate it.

Exploration of these issues has been constrained by the fact that, at the time of writing, there is only one year of overlap in which a Fair Pay Commission determination was in force and survey data from that year was available through HILDA. As further waves of HILDA data become available, it is hoped that it will be possible to say much more about the impacts of the Commission's rulings on wellbeing (or at least to say it more definitively), and perhaps even the effect on employment opportunity.

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Appendix A: Regression models for estimating ‘potential’ wages of the unemployed and non-participants

The potential wage for the unemployed and individuals not in the labour force was estimated using a Heckman two-step regression to correct for sample selection bias. The dependent variable was the natural log of the hourly wage rate of those employed. The explanatory variables included human capital characteristics, i.e. marital status, highest educational qualification, work experience, English proficiency, location, number of children and disability status. Separate regressions were run for males and females to allow for gender differences in the magnitude and significance of explanatory variables. The results are presented in Table A1 below.

We find the inverse Mills’ ratio to be mildly significant (10% level) for males – evidence of sample selection bias, which is corrected for by the inclusion of the inverse Mills’ ratio into the regression. However, the inverse Mills’ ratio was insignificant for females. The Chi square for both the male and female models were highly significant. The results indicate that males who were married, previously married, and/or those with children earned higher wages. For females, the time spent in paid employment and being resident in Sydney both result in higher wages. Conversely, not speaking English as their first language and the presence of disability both result in lower wages for females. The results also indicate that for both males and females, there are strong positive returns to higher education, i.e. as the highest educational qualification level increases, wage rises.

Table A1: Heckman regression, wave 6

Explanatory variables		Males			Females		
		Coef.	Std. Error	Sig.	Coef.	Std. Error	Sig.
Constant		2.968	0.095	0.000	0.913	0.096	0.000
Marital status	Married	0.109	0.028	0.000	0.055	0.067	0.413
(never married omitted)	Divorced/Separated/Widowed	0.130	0.042	0.002	-0.068	0.091	0.456
Education	Year 12	0.065	0.040	0.102	0.190	0.077	0.014
	Certificate not defined	-0.024	0.210	0.910	-0.338	0.355	0.341
	Certificate I or II	-0.170	0.094	0.069	0.387	0.200	0.053
	Certificate III or IV	0.065	0.033	0.049	0.156	0.059	0.008
	Diploma/Advance diploma	0.154	0.039	0.000	0.082	0.082	0.317
	Bachelor	0.303	0.042	0.000	0.234	0.078	0.003
Work experience	Graduate diploma	0.383	0.060	0.000	0.402	0.116	0.001
	Postgraduate degree	0.425	0.050	0.000	0.113	0.114	0.320
	Years in paid work	0.007	0.005	0.183	0.037	0.006	0.000
	Years in paid work squared	0.000	0.000	0.982	-0.001	0.000	0.000
English proficiency (English 1st language omitted)	Years unemployed	-0.016	0.013	0.238	-0.091	0.012	0.000
	Good	-0.004	0.050	0.934	-0.343	0.079	0.000
State/Capital city (Sydney omitted)	Poor	-0.209	0.153	0.172	-0.744	0.221	0.001
	Rest of New South Wales	-0.062	0.051	0.219	-0.348	0.082	0.000
	Melbourne	-0.022	0.032	0.496	-0.049	0.077	0.525
	Rest of Victoria	-0.115	0.063	0.069	-0.421	0.098	0.000
	Brisbane	-0.079	0.038	0.038	0.030	0.094	0.754
	Rest of Queensland	-0.053	0.045	0.238	-0.273	0.085	0.001
	Adelaide	-0.158	0.046	0.001	-0.162	0.102	0.114
	Rest of South Australia	-0.050	0.099	0.614	-0.657	0.130	0.000
	Perth	-0.018	0.042	0.671	-0.108	0.099	0.275
	Rest of Western Australia	0.093	0.068	0.170	-0.231	0.141	0.102
Tasmania	Tasmania	-0.161	0.068	0.017	-0.313	0.131	0.017
	North Territory	-0.021	0.099	0.832	0.256	0.284	0.367
	Australia Capital Territory	0.033	0.067	0.623	0.166	0.177	0.348
Lambda	Number of children	0.027	0.013	0.030	-0.081	0.020	0.000
	Disabled	0.069	0.101	0.497	-0.765	0.051	0.000
Observations		4395.000			4897.000		
Wald chi2		1068.990		0.000	1144.310	0.000	

Source: Authors' own calculations from the HILDA survey wave 6.