

*Preliminary, subject to change*

*Please do not quote without permission of authors*

## **Did The Minimum Wage Affect the Incidence of Second Job Holding in Britain?**

**Helen Robinson<sup>1</sup> and Jonathan Wadsworth<sup>2</sup>**

1. Cardiff Business School, Cardiff University
2. Royal Holloway College, University of London and Centre for Economic Performance at the London School of Economics.

Corresponding author:

Helen Robinson

Cardiff Business School,

Cardiff University

Aberconway Building,

Cardiff, UK.

CF10 3EU

RobinsonHJ@cf.ac.uk

## **Abstract**

One reason individuals will take second jobs is if faced with a combination of low wages and hours constraints in their primary job. In this case the imposition of a minimum wage, such as recently introduced in Britain, might be expected to reduce the number of individuals in second jobs. This paper uses difference-in-differences estimation on a panel of individuals matched across successive Labour Force Surveys to estimate the impact of the minimum wage, and subsequent upratings, on the incidence of second job holding. There is little evidence to suggest that the introduction of the minimum wage had a large effect on the incidence of second job working.

JEL classification: J6, J23, J31

Keywords: Second jobs, minimum wage, difference-in-differences,

## **Acknowledgements**

The data used in this paper is Crown Copyright; has been made available by the Office for National Statistics through the ESRC Data Archive; and has been used by permission. Neither the ONS nor The Data Archive bear any responsibility for the analysis or interpretation of the data reported here. Andrew Sharpe and Becky Warpole provided useful comments.

# **Did The Minimum Wage Affect the Incidence of Second Job Holding in Britain?**

Helen Robinson and Jonathan Wadsworth

1	Introduction	1
2	Labour Force Survey data	6
3	Incidence of Second Jobs	8
4	Impact of the NMW across the wage distribution	10
5	Conclusion	12

References

Figures

Tables

Data Appendix

## **1. Introduction**

Economic theory suggests that individuals take second jobs if the wage in the primary job is below the desired wage and if there are constraints on hours that prevent individuals from working more hours on the primary job to make up any income shortfall. If some workers take second jobs because the hours/wage combination provided by the first job is low, then we might expect the imposition of a minimum wage to reduce the number of individuals in second jobs. This is because, in the presence of hours constraints, the effect of a minimum wage would be to raise the offered wage closer to the desired wage, with the hours constraint in the first job restricting the substitution effect, so that the income effect dominates. In this case, the optimal hours-wage combination moves closer to the hours-wage package provided in the primary job. Other things equal, this should reduce the incidence of second jobs among low paid workers, specifically among those initially below the minimum wage.

Britain introduced a national minimum wage, (NMW), in April 1999, which has since been subsequently updated on an approximately yearly basis. This effectively provides a quasi-natural experiment with which to analyse the impact of the minimum wage on second jobholders. Individuals may also hold second jobs for reasons other than income constraints – labour in the two jobs may not be perfect substitutes, (Lilja (1991), Conway and Kimmell (1998) – and these other factors may also vary over time. We therefore compare the change in circumstances of two groups of individuals – those affected by the minimum wage and those not over a period before and after the minimum wage was introduced. The change in second job holding for those whose wages would have been raised to comply with the new minimum wage is compared with the change in

the incidence of a control group - those earning just above the minimum when it was introduced. Since the level of the NMW is different for youths compared to adults we analyse the changes among these groups separately.

There has been relatively little research on second job holding,<sup>1</sup> in part because of lack of data. Yet second job holding is an important issue in the debate as to whether individuals really are able to adjust their hours of work on the job in response to a change in wage rates. The existence of second job holding is harder to reconcile with the simple competitive labour supply model of unconstrained, flexible hours in the job. If firms have preferences for fixed working hours, then individuals may only be able to adjust hours following a wage change by moving to a different job. This may be difficult if there are frictions imposed by costs of mobility and information gathering. Altonji and Paxson (1989) provide evidence for the United States that is supportive of this hypothesis, (see Robinson and Wadsworth (2004) for some UK evidence on hours constraints and hours changes following a wage shift). In this context, taking a second job could be viewed as one way of increasing hours of labour supplied without incurring all the costs of job change.<sup>2</sup> In what follows we also document the characteristics of individuals in, and firms most likely to provide, second jobs and how these characteristics have changed over time, around the advent of the NMW.

---

<sup>1</sup> See Paxson and Sichermand (1996), Conway and Kimmel (1998) and Bluestone and Rose (1998) for the most recent U.S. studies; Fredriksen, Gravesen and Smith, (2001) for Denmark; and Boheim and Taylor (2003) for Britain.

<sup>2</sup> There will of course be fixed costs associated with the take up of a second job.

### **The National Minimum Wage and the Choice to Hold a Second Job**

*A priori*, the introduction of a decent minimum wage might be expected to reduce the number of individuals who hold two jobs. For example, in Figure 1, an individual who supplies 35 hours of work a week at wage  $w_0$  would prefer to take up a second job for an extra 10 hours a week at the same wage. However, if the wage rate improves to  $w_1$ , as a result of minimum wage legislation, the worker would cut hours and move to a higher level of utility on  $IC_3$  at 40 hours of work a week. A characteristic of the British labour market is that second jobs command a wage premium (see Table 3). In accordance with the diagram in the lower panel of Figure 1, a rise in the wage rate following the introduction of the NMW would enable a worker to reduce hours to 40 hours a week. Whether this did in fact occur in the advent of minimum wage legislation is the empirical matter we investigate here.

### **Difference-in-differences**

The introduction of the NMW created a treatment effect of differing intensity across the working population. Those workers whose pay was initially below the NMW received a larger pay rise than most people whose pay was above the NMW, (Figure A1 in the appendix confirms this). The same applies, although to a lesser extent, for subsequent upratings of the NMW. This enables us to assess how the introduction of the NMW altered the second job share for those below, and those above, the minimum wage. By using difference-in-differences estimation we ensure that our results on multiple jobs are not biased by any unobservable fixed effects.

We are interested in the probability that an individual  $i$  holds a second job at time  $t$  conditional on the wage category an individual belongs to in the primary job,

$$\Pr(Two_{it}) = a_i + g + d * TREAT_{it} \quad (1)$$

where  $Two_i = 1$  is observed for individual  $i$  if in a second job, = 0 otherwise,  $a$  is an individual specific time invariant fixed effect,  $g$  is a time effect common to all individuals at time  $t$  and  $TREAT_{it}$  is a dummy variable denoting whether the individual belonged to the treatment group – those initially below the NMW. The unadjusted difference-in-differences estimator, (DID), can be obtained simply by looking at the difference in the change in the sample probabilities of holding a second job of the treatment and control group over the period in which the NMW was introduced

$$\theta = [Two^{treat}_{99} - Two^{treat}_{98}] - [Two^{control}_{99} - Two^{control}_{98}]$$

This estimate can be obtained by pooling data over successive time periods and running logit or probit estimation on the following:

$$\Pr(Two_{it} = 1) = F[\alpha + \beta Treat_i + \eta Year_{99} + \theta Year_{99} * TREAT_i] \quad (2)$$

$Year_{99}$  is a 1999 year dummy for the second year of observation – after the introduction of the NMW. The term  $\mathbf{b}$  reflects time-invariant second job differences. The main coefficient of interest is  $\mathbf{q}$ . The coefficient on the year and treatment interaction term gives the change in the second job holding differential over the period in which the NMW was introduced. This is the DID estimator and is given by the marginal effect from the probit/logit estimation of (2). If the parameter  $\mathbf{q}$  is negative, it shows that second job holding fell relative to the control group between 1998 and 1999 (or any subsequent uprating period), other things equal. The size of the coefficient tells us, in percentage points, by how much the differential between treatment and control group changed.

Differencing in this way removes any unobservable individual/group specific fixed effects. As with all DID estimation this assumes that in the absence of the NMW the difference in the probability of holding a second job between treatment and control groups is the same in each period. It may of course be that the incidence of second jobs would develop differently over time for individuals in different parts of the wage distribution. We can test this by examining whether there was a wage effect, before the intervention took place. If so, this suggests that there may have been differential trends in second job holding among different income groups regardless of the NMW. The DID approach also assumes that the wage taken in the primary job is not influenced by the probability of having a second job and that there are no differential employment effects on the number of primary jobs across groups following the NMW. In order to allow for observable differences between treatment and control group not captured by the time and treatment dummies, (2) is augmented with a set of controls that include both individual and job characteristics. The sensitivity of the DID estimates to variations in controls is explored below.

The size of the treatment effect also varies across individuals for several other reasons. First, those furthest below the minimum receive a larger increase than those closer to the minimum. It seems important therefore to try and test for this possible differential effect in what follows by using distance from the minimum rather than a simple dummy variable as the central variable of concern. Second, those individuals with two jobs could, in theory, receive two treatments, since the NMW applies to both jobs. In practice, as the top panel of Table 3 shows, just 5% of those with a second job had both jobs paying initially below the NMW, though we allow the estimates to be sensitive to



this concern. Finally, Working Families Tax Credit (WFTC) replaced Family Credit (FC) in October 1999. Both schemes are supplements to households in low paid work with children, bringing their income up to a guaranteed minimum threshold. WFTC is more generous in both the level of minimum guaranteed income and the rate of supplement withdrawal. However, it remains true that any household in receipt of FC (WFTC) would have received less benefit from the introduction, or uprating, of the NMW, since state benefits would have been reduced at the rate of 70 (55) pence for each 1£ increase in household income. Given the presence of in-work benefits, eligible households would be less likely to take a second job, since much of the additional income would be offset by reduced welfare payments. This suggests the need to try to distinguish between households in receipt of WFTC in what follows.

## **2. Labour Force Survey data**

The LFS is a quarterly survey of around 60,000 households that extracts detailed information on individual characteristics and labour market status. Each UK Labour Force Survey asks those in employment whether during the reference week they held an additional paid job other than that classified as the main job and that the individual had not changed jobs during the reference week. The answers to these questions form the basis for the main variable of interest used in this study. In order to facilitate the difference-in-differences estimation we use the longitudinal element of the LFS to match individuals over a period of one year. In what follows we present aggregate estimates and separate estimates for men and women, youths and adults. The sample is restricted, initially, to those in the treatment group and those in the control group whose wages lie

just above the NMW in the main job and then estimated again over the full sample of employees. All estimation is carried out on the sample of individuals in the working age population.

Individuals in the LFS are followed for 5 successive quarters within a rolling panel framework. Since the spring of 1997, wage information has been ascertained on the 1<sup>st</sup> and 5<sup>th</sup> waves of the interview process. It is the wage response from the 1<sup>st</sup> wave that allows us to construct treatment and control groups. To assess the initial impact of the NMW, we take all those in 1998 earning below the initial national minimum wage of £3.60 as the treatment group, some 9% of the sample of employees in 1998, and take those earning just above the minimum, between £3.60 and £4.20 – around 20% of all employees – for the control. The labour market experience of this group is assumed to be closest to that of the treatment group. We then create a residual third group that incorporates the remainder in the upper part of hourly wage distribution.<sup>3</sup> In what follows we assess the sensitivity of the results to changes in the composition of the control group and the sensitivity of the estimates to the construction of the hourly wage on which the treatment and control groups are defined. One disadvantage that surrounds the LFS is that the hourly wage has to be derived for all employees before March 1999 and for all salaried employees after this date. This generates a degree of measurement error for one of the principal variables in this study: the variable is used to define the treatment and control groups for this study. Stewart (2003) offers a potential solution to the problem – that involves matching those without an hourly wage to those with similar

---

<sup>3</sup> Stewart (2003) uses a similar strategy in his analysis of employment changes following the minimum wage.

characteristics with an hourly wage. Moreover, the only hours information for second jobs is total actual hours including overtime (paid or unpaid).

We therefore construct the hourly wage variable in both jobs by dividing actual weekly pay derived from the last pay received by actual hours worked in the reference week. Since we do have information on usual as well as actual hours worked for the main job, we test the sensitivity of the results to variations in the definition of the hourly wage in the main job in what follows. Figure A1 in the appendix does suggest however that the pattern of change in the hourly wage variables is consistent with what one would expect given the introduction of the NMW. The estimates from kernel regressions indicate that the percentage rise in wages, for job stayers, was indeed much larger for those initially below the NMW than for those above. Those furthest below the NMW also received the largest increase.

Around 9% of those with second jobs report working no hours in the second job during the reference week, but do report a weekly wage for the second job.<sup>4</sup> This is because, as with the main job, the LFS obtains information on earnings relating to the last time an individual was paid and not specific to the reference week of the survey. We cannot therefore compute an hourly wage for this group, but retain the group in the data set to facilitate robustness tests. We also remove outliers from the data - those earning below 50p an hour and those earning above £1000 an hour from the data. All results should be interpreted accordingly. The LFS identifies individuals in receipt of any “family related benefits” in addition to child benefit. We use this variable to separate

---

<sup>4</sup> Around 11% of those with 1 job only also report zero hours worked in the reference week.

individuals into those likely to be receiving in-work benefits and those not in order to allow further variation in the size of the treatment.

### **3. The Incidence of Second Jobs**

Around 4% of employees currently admit to having a second job, more than double the share observed in the late seventies, (Table 1). However, as Figure 2 shows, the second job share appears to have reached a peak of around 5% of all employees in 1995 and has been falling steadily since then, that is, before the NMW was introduced. There are around twice as many women with a second job than men.

Individuals working in the education, health, retail and financial sectors make up the majority of second job holders, (Table 2). Health and education are particularly over-represented in supplying more second job workers. This is because many second job holders are nurses, doctors or university teachers. Cleaners and childcarers are also much more likely to be working in a second job. This dispersion in occupations is reflected in the distribution of wages in second jobs, (Table 3 and Figure 3). Hourly wages of second job holders are lower in both primary and second job compared to average hourly wages of single job holders.<sup>5</sup> Average hourly wages in second jobs appear higher than hourly wages in the primary job of second job holders. The higher mean conceals the fact that, in 1998, 15% of all main jobs of two job holders paid below the minimum wage of £3.60 compared to 26% of second jobs. The hourly wage in 52% of all second jobs is less than that in the primary job. Again, it is hard to reconcile this observation with the simple

---

<sup>5</sup> As Table 2 shows around one-quarter of the second jobs of employees are classified as self-employed. The LFS does not collect income information for self-employment.

competitive model of unconstrained hours. It is easier to set this observation within a framework of income and hours constraints.

Figure 3 also shows evidence of a pronounced spike in the distribution of hours worked at around 40 for those with one job only. This spike is less pronounced for hours worked in main jobs for those with two jobs, though this partly reflects the gender division of second job holders, (see Figures A2 and A3 in the appendix). Average usual hours worked by second jobholders in the primary job are some 25% lower than the average usually worked by single jobholders. The average second job is worked for around 10 hours a week. Fifty percent of all second jobs are worked for 8 hours or less and 75% of all second jobs last less than 12 hours. Hence, average total hours usually worked by second jobholders is around 3 hours more than that worked by single jobholders. The distribution of total hours worked for 2<sup>nd</sup> job holders is noticeably flatter than that for those with one job only, again consistent with the idea that hours flexibility can be achieved mainly across, rather than within, jobs.

The reward for taking a second job is not the same across gender. Unsurprisingly mean real hourly wages for women in second jobs are less than those for males and more women with two jobs are in low paid primary jobs compared to men. Despite working longer hours in total, average weekly earnings for those with two jobs are lower than average earnings, particularly among women.

#### **4. Impact of the NMW across the wage distribution**

We would expect that, if the NMW were to have an effect on whether an individual takes a second job, it would have the greatest influence on men and women paid below the NMW before its introduction. In order to investigate this, we split the sample

according to the worker's position in the 1998 wage distribution. Figure 4 traces the share of second jobs conditional on the level of an individual's hourly wage in 1998. The two lines on the graph represent the share in 1998 and the share in 1999 conditional on the 1998 wage. The difference between the two lines gives the change in the second job share at each wage level over the period in which the minimum wage was introduced.<sup>6</sup>

The Figure confirms that the incidence of second job holding is higher the lower the hourly wage in the main job and highest of all for those below the level of the NMW. However, the change in second job holding over the period is quite small and there is little suggestion from the Figure that second job holding fell more for those below the NMW. The same figure on the sub-sample of those without children, the group most likely to benefit from the NMW, shows a similar pattern in the lower panel.

Table 4 tests more formally for a minimum wage effect, giving the difference-in-differences marginal effect estimates from a probit on the likelihood of having a second job. The Table confirms the earlier results.<sup>7</sup> Second job holding is higher among the low paid, but there is no statistically significant effect on the change in the probability of second job holding for those below the NMW relative to either the chosen control group or the rest of the sample of employees. Table 5 repeats the exercise for different sub-samples and for variations to the definition of control and treatment groups. All specifications are reported without and with a full set of control variables (unadjusted and adjusted columns) as detailed above. In most cases the difference-in-differences estimate is statistically insignificant. There is even some evidence of a rise in the proportion of

---

<sup>6</sup> The data are rounded to the nearest pound to smooth the graph. All those below £3.60 and above £3 are round to £3, all those between £3.60 and £3.99 are rounded to £4.

<sup>7</sup> We implicitly assume, for the time being, that hours used to construct the hourly wage are exogenous.

second jobholders with no dependent children over this time. As an additional check, Table 6 reports the results of probit estimates of the probability that the second job will end conditional on the sub-sample of those with a second job before the NMW. Just under 50% of all those with a second job in 1998 no longer had a second job one year later.<sup>8</sup> However, Table 6 suggests that there is little evidence that the loss of a second job was correlated with the level of the hourly wage whether in the main or second job.

With little sign of any change in the incidence of second job working, we next examine whether there is any evidence that hours worked in second jobs changed over the period and whether there is any evidence that hours worked changed more for those affected by the NMW. We take the sub-set of all those with a second job before and after the NMW and run difference-in-differences estimation using number of hours worked in the second job as dependent variable. Again, subject to any concerns regarding division bias given the presence of a right hand side variable – below the NMW in the 2<sup>nd</sup> job - that depends in part on the level of the left hand side variable, Table 7 suggests little evidence of any minimum wage effect on hours worked.

## **5. Conclusion**

The lower the (hourly) pay an individual receives, the more likely they are to have a second job. Using difference-in-differences estimation on a panel of individuals matched across successive Labour Force Surveys we do not find much evidence of a reduction in the proportion of second jobholders following the introduction of a mandatory minimum. Around 4 % of employees currently admit to having a second job with around twice as

---

<sup>8</sup> Just 0.9% of those with only 1 job were not working one year later and 0.5% of those with a second job.

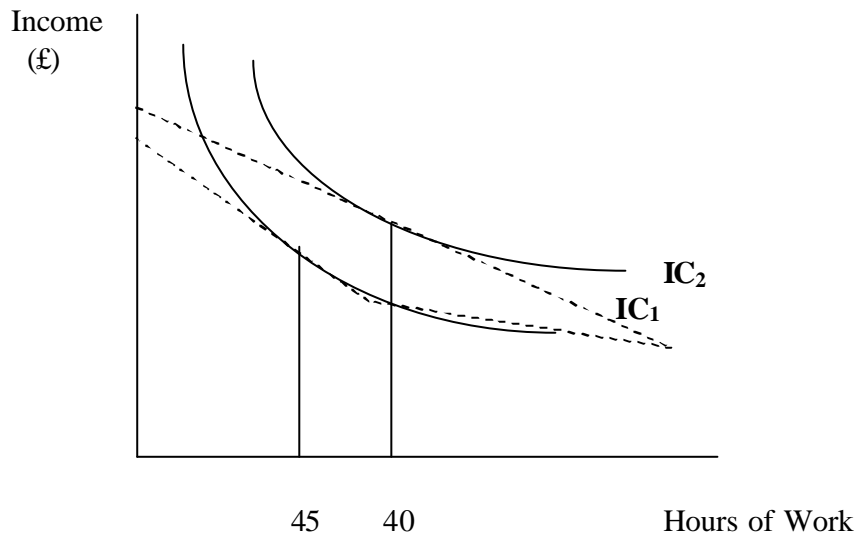
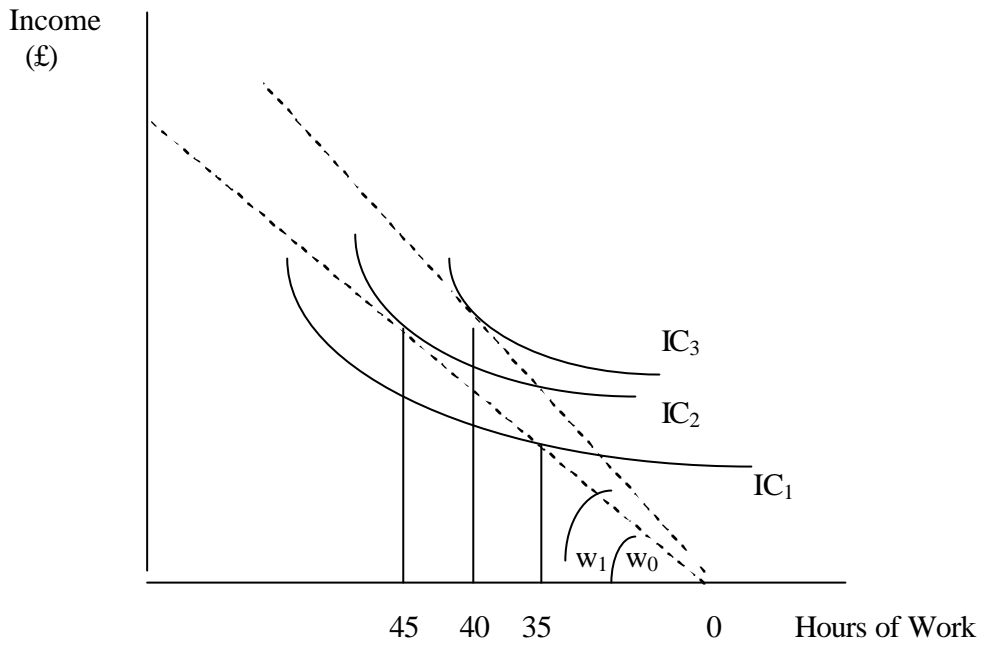
many women holding two jobs as men. Fifty per cent of second jobs are worked for 8 hours or less. The incidence of multiple job holding reached a peak in 1995, but we find it difficult to associate the subsequent downturn in the proportion of second job holders to the introduction of the minimum wage legislation.



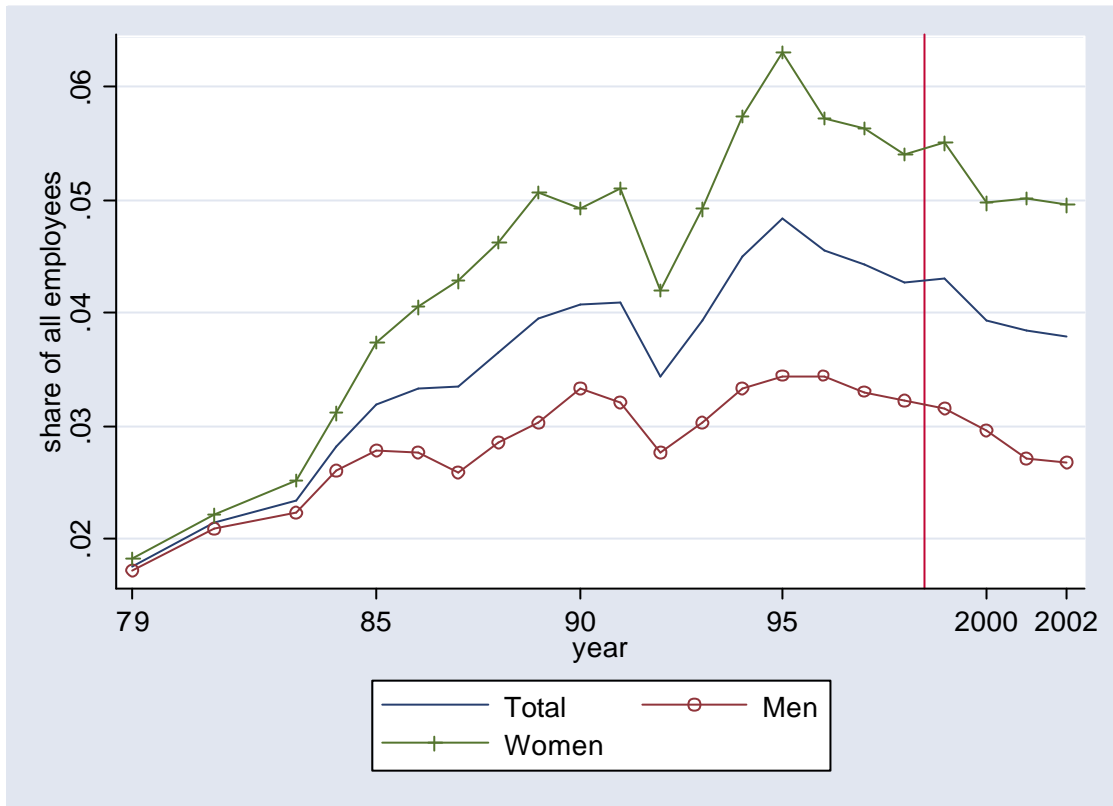
## References

- Altonji, J. and Paxson, C., (1989), "Labor Supply, Preferences, Hours Constraints and Hours-Wage Trade-offs", Journal of Labor Economics, Vol. 6, April, pp. 254-76.
- Bluestone, B and Rose, S. (1998) "The unmeasured Labor Force", Levy Institute Working Paper No. 40
- Boheim, R. and Taylor, M. P. (2003) "And in the evening she's a singer with the band – Second jobs, plight or pleasure?", ISER Discussion Paper, University of Essex.
- Conway, K. and Kimmel, J., (1998) "Male Labor supply estimates and the decision to moonlight", Labour Economics, Vol. 5, No. 2, pp. 135-66.
- Fredriksen, A., Gravesen E. and Smith, N., (2001), 'Overtime Work, Dual Job Holding and Taxation', IZA Discussion Paper No. 323, IZA, Bonn.
- Kimmel, J., and Smith-Conway, K, (1995) "Who Moonlights and Why?", Upjohn Institute Staff Working Paper No. 95-40.
- Krishnan, P., (1990) "The Economics of Moonlighting", Review of Economics and Statistics, Vo. 72, May, pp. 361-67.
- Lilja, R., (1991), "The Problematic and Unproblematic Second Job", Labour Institute for Economic Research Discussion Paper No. 107, Helsinki.
- Paxson, C. and Sicherman, N., (1996), 'The Dynamics of Dual Job Holding', Journal of Labor Economics, Vol. 14, No. 3, pp. 357-393.
- Robinson H. and Wadsworth, J., (2004), 'Is Labour Supply Constrained? Hours of Work and the Minimum Wage', Centre for Economic Performance Working Paper
- Stewart, M. (2003) "The Impact of the Introduction of the UK Minimum Wage on the Employment Probabilities of Low Wage Workers" forthcoming Journal of the European Economic Association

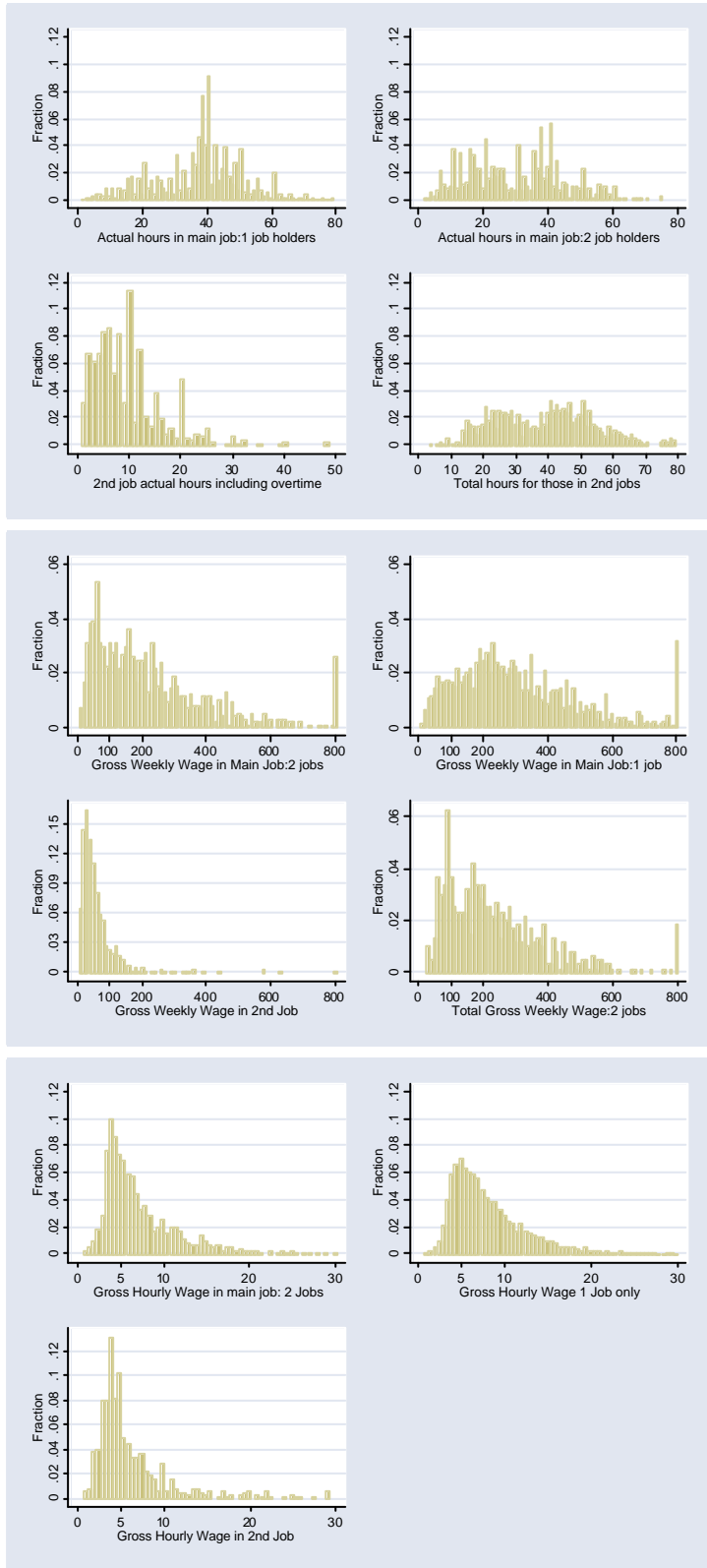
**Figure 1. Labour Supply Effect of an Increase in NMW**



**Figure 2. Proportions of Employees with Second Jobs, 1979 – 2002**

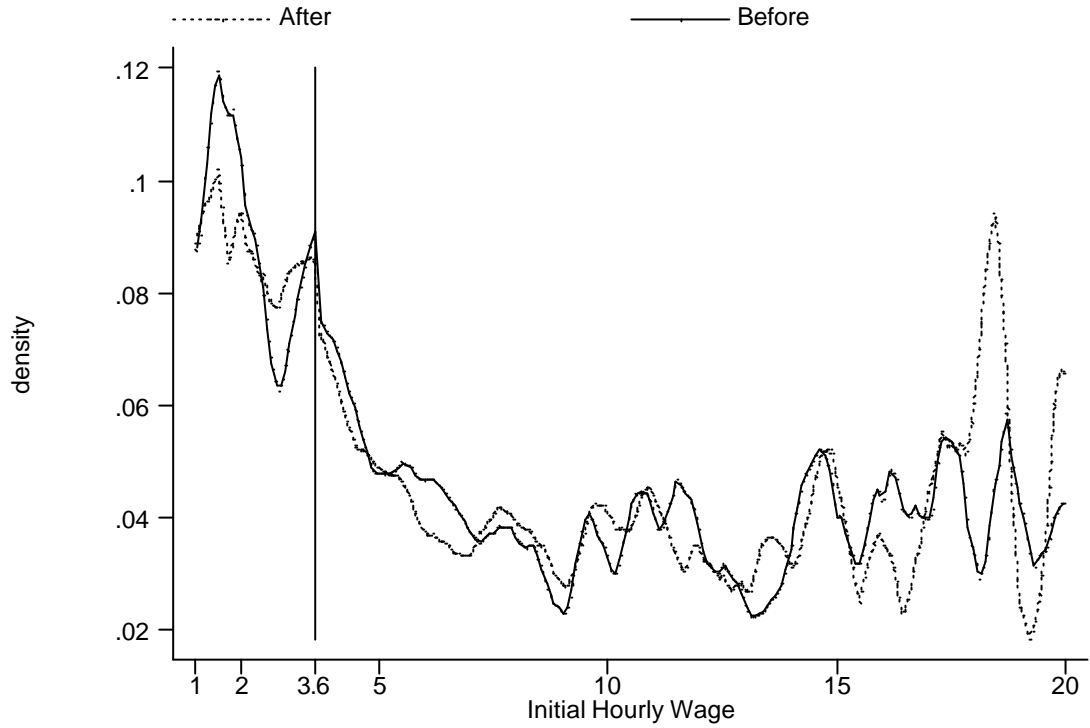


**Figure 3. Hours and Wage Distributions by Jobs Held: 1998**

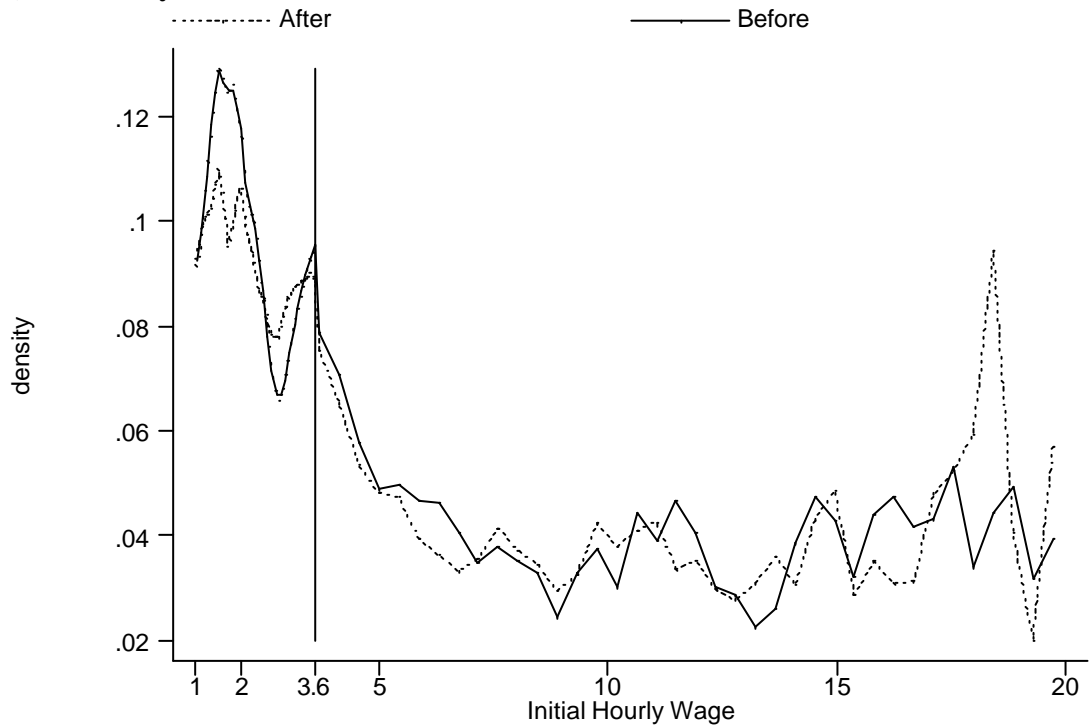


**Figure 4. Kernel Regression Estimates of Incidence of Second Jobs by Initial Hourly Wage in Primary Job Before and After the Introduction of the NMW, (Adults 22+)**

**a) Total**



**b) No Family In-Work Benefits**



**Table 1. Share of Employees with Second Jobs, 1979 – 2002**

	1979	1981	1985	1990	1995	1998	1999	2000	2001	2002
<b>All</b>										
Age 22+	1.8	2.1	3.2	4.1	4.8	4.3	4.3	3.9	3.8	3.8
18-21	3.0	1.6	3.1	4.2	6.3	6.0	5.6	5.0	4.8	4.4
<b>Men</b>										
Age 22+	1.7	2.1	2.8	3.3	3.4	3.2	3.2	3.0	2.7	2.7
18-21	2.9	1.3	2.5	3.4	4.4	4.5	4.2	3.4	3.5	3.3
<b>Women</b>										
Age 22+	1.8	2.2	3.7	5.0	6.3	5.4	5.5	5.0	5.0	5.0
18-21	3.1	1.8	3.6	4.7	8.2	7.6	6.9	6.7	6.2	5.3

Source: LFS. Standard errors of proportions around 0.05 for 22+ and 0.2 for 18-21 year olds.

**Table 2. Sectoral and Occupational Distribution of Second Job Holders (1998)**

% of employees					
	All Employees	Second Jobs		All Employees	Second Jobs
Female	50.7	65.5	Part-Time	24.2	46.2
Age (years)	39.8	39.9	Temporary	6.4	11.8
			Self-Employ		23.8
Sector			Occupation		
Agriculture	1.3	1.0	Managers	16.1	11.8
Manufacturing	20.5	9.3	Professions	11.1	17.2
Energy	0.8	0.6	Ass. Prof.	10.1	12.3
Construction	5.1	3.5	Clerical	16.8	15.1
Retail	13.6	11.6	Skill Man.	9.8	5.1
Hotels	3.5	4.0	Personal servs.	11.3	15.5
Transport	6.7	4.4	Sales	6.9	6.1
Finance	14.4	11.6	Other manual	17.8	16.9
Public Admin.	7.3	7.2	<i>Of which:</i>		
Education	9.3	20.9	<i>Medics</i>	0.4	1.6
Health	12.7	19.7	<i>Univ. teachers</i>	0.5	2.0
Other services	4.9	6.2	<i>Nurses</i>	2.1	3.7
			<i>Firefighters</i>	0.1	0.6
			<i>Childcare</i>	0.9	2.5
			<i>Sales assist'nt</i>	5.5	5.7
			<i>Cleaners</i>	2.9	6.8

**Table 3. Hours and Wages in Second Jobs and the NMW, 1998: Adults 22+**

	1 Job Only	1 <sup>st</sup> Job	2 Jobs 2 <sup>nd</sup> Job
<b>Total</b>			
<b>Hours</b>			
Mean	36.9 (12.1)	29.3 (14.2)	10.1 (9.7)
10 <sup>th</sup> percentile	20	11	3
50 <sup>th</sup> percentile	38	30	8
90 <sup>th</sup> percentile	50	46	20
<b>Hourly Wage</b>			
Mean	8.40 (5.1)	6.60 (5.3)	7.80 (14.2)
10 <sup>th</sup> percentile	3.80	3.40	2.70
50 <sup>th</sup> percentile	7.00	6.00	4.80
90 <sup>th</sup> percentile	14.50	14.30	14.30
% below £3.60	8.0	14.9	26.2
% both below £3.60			4.7
% 2 <sup>nd</sup> jobs pay < 1st			52.0
<b>Men</b>			
<b>Hours</b>			
Mean	43.0 (9.1)	39.9 (11.9)	11.1 (10.8)
10 <sup>th</sup> percentile	35	23	3
50 <sup>th</sup> percentile	40	40	8
90 <sup>th</sup> percentile	55	54	20
<b>Hourly Wage</b>			
Mean	9.60 (5.6)	9.30 (6.1)	9.80 (23.4)
10 <sup>th</sup> percentile	3.90	4.00	2.50
50 <sup>th</sup> percentile	8.20	7.40	5.00
90 <sup>th</sup> percentile	16.40	17.30	16.70
% below £3.60	4.0	6.0	25.9
% both below £3.60			1.8
% 2 <sup>nd</sup> jobs pay < 1st			58.6
<b>Women</b>			
<b>Hours</b>			
Mean	30.8 (11.3)	23.6 (11.8)	9.6 (9.1)
10 <sup>th</sup> percentile	15	10	2
50 <sup>th</sup> percentile	35	22	8
90 <sup>th</sup> percentile	42	40	18
<b>Hourly Wage</b>			
Mean	7.10 (4.0)	6.70 (4.6)	7.30 (8.7)
10 <sup>th</sup> percentile	3.50	3.20	2.70
50 <sup>th</sup> percentile	6.00	5.10	4.70
90 <sup>th</sup> percentile	12.40	12.2	13.80
% below £3.60	12.1	19.6	26.4
% both below £3.60			6.2
% 2 <sup>nd</sup> jobs pay < 1st			49.7

Note. 1. Source. Labour Force Survey matched panel. 2. Standard deviations are reported in parentheses.

**Table 4. Difference-in-Difference Estimates on Probability of 2<sup>nd</sup> Job 1998:1999**

	<i>Treatment &amp; Control only</i>		<i>Treatment, Control &amp; Others</i>	
	<i>Unadjusted</i> <i>(1)</i>	<i>Adjusted</i> <i>(2)</i>	<i>Unadjusted</i> <i>(3)</i>	<i>Adjusted</i> <i>(4)</i>
Below NMW	0.011 (0.009)	0.009 (0.008)	0.035 (0.006)**	0.018 (0.006)**
Year1999	-0.007 (0.006)	-0.007 (0.008)	-0.001 (0.002)	-0.001 (0.001)
<b>Below*Year1999</b>	<b>0.009</b> <b>(0.009)</b>	<b>0.008</b> <b>(0.012)</b>	<b>0.004</b> <b>(0.004)</b>	<b>0.003</b> <b>(0.004)</b>
Near NMW			0.031 (0.006)*	0.014 (0.006)*
Near*Year1999			-0.004 (0.004)	-0.003 (0.004)
Observations	6839	6839	40648	40648

Note. 1. Standard errors adjusted for clustering in brackets. 2 \*\* notes significance at 5% level.

3. Industry, marital status, education, ethnicity, temporary job status, size of firm, job tenure, age of youngest child and number of dependent children also included in adjusted columns but results not reported. 4. Dependent Variable: probability of having a second job in the reference week. 5. Each year estimate runs from April to the following March respectively. 6. Sample: adults 22+



**Table 5. Sensitivity of Difference-in-Difference Results to Different Specifications**

	<i>Treatment &amp; Control only</i>		<i>Treatment, Control &amp; Others</i>	
	<i>Unadjusted</i>	<i>Adjusted</i>	<i>Unadjusted</i>	<i>Adjusted</i>
(1) All: using distance from NMW	0.002 (0.008)	0.003 (0.007)	0.001 (0.004)	0.001 (0.004)
(2) All: not receiving in-work benefits	0.007 (0.010)	0.005 (0.009)	0.002 (0.005)	0.002 (0.004)
(3) As (2) using distance	0.001 (0.008)	0.001 (0.008)	0.001 (0.004)	0.001 (0.004)
(4) All: July-February	-0.001 (0.011)	-0.003 (0.010)	0.001 (0.005)	0.001 (0.005)
(5) All: July-December	0.005 (0.013)	0.005 (0.011)	0.003 (0.007)	0.003 (0.006)
(6) All: Control Group £3.80-£4.30	0.011 (0.010)	0.011 (0.009)	0.003 (0.005)	0.002 (0.004)
(7) All: Control Group £3.80-£4.60	0.008 (0.009)	0.008 (0.008)	0.003 (0.005)	0.002 (0.004)
(8) All: using usual hours	0.016 (0.011)	0.012 (0.010)	0.003 (0.005)	0.003 (0.005)
(9) Men	0.012 (0.018)	0.011 (0.015)	-0.001 (0.009)	-0.001 (0.008)
(10) Women	0.008 (0.011)	0.006 (0.010)	0.007 (0.007)	0.006 (0.006)
All: 2 <sup>nd</sup> Job in 98 above NMW	0.004 (0.006)	0.004 (0.005)	0.002 (0.003)	0.002 (0.003)

Notes. See Table 4. Coefficients are the estimates for the interaction of treatment and second sample year dummy variables for each reported sample.

**Table 6. Probability of Stopping 2<sup>nd</sup> Job 1998-1999**

	<i>Treatment &amp; Control only</i>		<i>Treatment, Control &amp; Others</i>	
	<i>Unadjusted</i> (1)	<i>Adjusted</i> (2)	<i>Unadjusted</i> (3)	<i>Adjusted</i> (4)
Below NMW	-0.005 (0.061)	-0.018 (0.065)	-0.036 (0.047)	-0.052 (0.051)
Below NMW 2 <sup>nd</sup> Job	-0.014 (0.070)	0.005 (0.074)	-0.032 (0.049)	-0.047 (0.051)
Observations	263	263	1062	1062

Note. 1. Robust standard errors in brackets. 2 \*\* notes significance at 5% level. 3. Industry, marital status, education, ethnicity, temporary job status, size of firm, job tenure, age of youngest child and number of dependent children also included in adjusted columns but results not reported. 4. Sample: adults 22+ with second jobs in 1st period. 5. Sample mean of dependent variable 0.436 in columns 1 & 2 and 0.465 in columns 3 & 4.

**Table 7. Difference-in-Difference Estimates on Hours Worked in 2<sup>nd</sup> Job 1998:1999**

	<i>Treatment &amp; Control only</i>		<i>Treatment, Control &amp; Others</i>	
	<i>Unadjusted</i> (1)	<i>Adjusted</i> (2)	<i>Unadjusted</i> (3)	<i>Adjusted</i> (4)
Below NMW	-0.600 (1.030)	-0.525 (0.929)	-0.621 (1.036)	-0.665 (0.895)
Year1999	0.138 (1.053)	0.282 (0.633)	-0.165 (0.601)	-0.084 (0.469)
<b>Below*Year1999</b>	<b>0.566</b> <b>(1.457)</b>	<b>0.665</b> <b>(1.081)</b>	<b>0.798</b> <b>(1.465)</b>	<b>0.943</b> <b>(0.964)</b>
2 <sup>nd</sup> Below NMW	4.324** (1.030)	3.536** (0.944)	4.304** (1.036)	4.151** (1.030)
<b>2<sup>nd</sup>Below*Year1999</b>	<b>-1.844</b> <b>(0.744)</b>	<b>-1.975</b> <b>(1.132)</b>	<b>-1.612</b> <b>(1.465)</b>	<b>-1.759</b> <b>(1.057)</b>
Observations	420	420	920	920

Note. 1. Standard errors adjusted for clustering in brackets. 2 \*\* notes significance at 5% level. 3. Industry, marital status, education, ethnicity, temporary job status, size of firm, job tenure, age of youngest child and number of dependent children also included in adjusted columns but results not reported. 4. Sample: adults 22+ with second jobs in both periods.

## Appendix

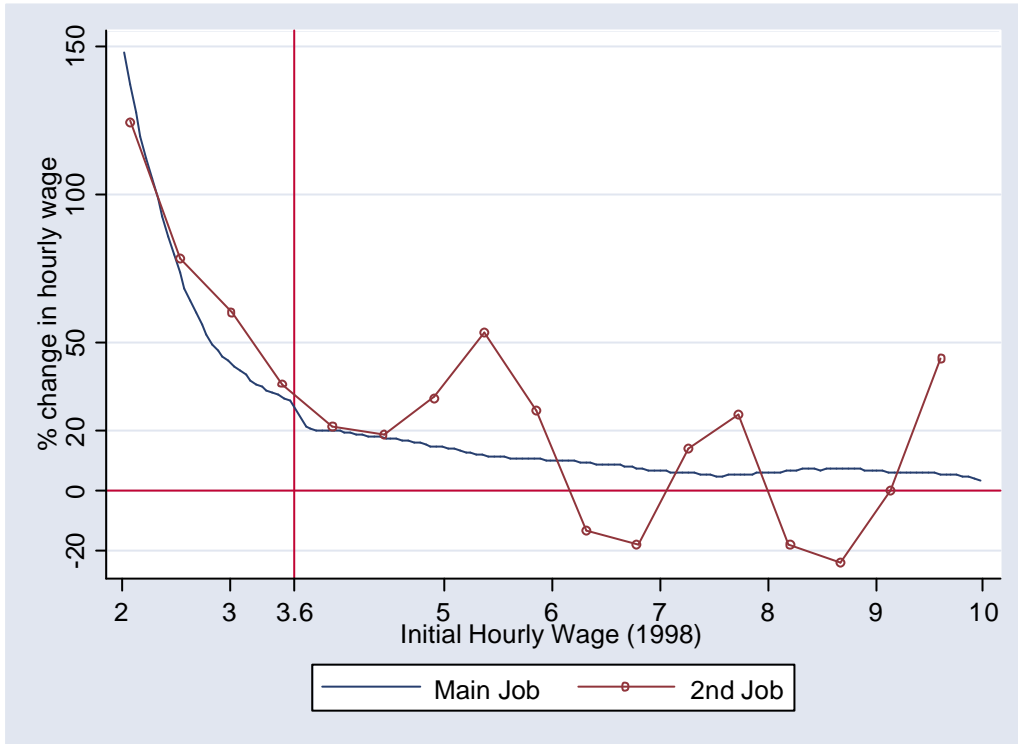
**Table A1. Difference-in-Difference Estimates on Probability of 2<sup>nd</sup> Job 1998:1999  
(Youth sample: 18-21 year olds)**

	<i>Treatment &amp; Control only</i>		<i>Treatment, Control &amp; Others</i>	
	<i>Unadjusted (1)</i>	<i>Adjusted (2)</i>	<i>Unadjusted (3)</i>	<i>Adjusted (4)</i>
Below NMW	0.003 (0.047)	-0.001 (0.039)	-0.016 (0.024)	-0.013 (0.021)
Year1999	-0.026 (0.061)	-0.017 (0.045)	0.002 (0.011)	-0.002 (0.012)
<b>Below*Year1999</b>	<b>0.060</b> <b>(0.084)</b>	<b>0.037</b> <b>(0.059)</b>	<b>0.024</b> <b>(0.036)</b>	<b>0.032</b> <b>(0.040)</b>
Near NMW			-0.023 (0.023)	-0.012 (0.031)
Near*Year1999			-0.007 (0.045)	-0.016 (0.044)
Observations	274	274	1381	1381

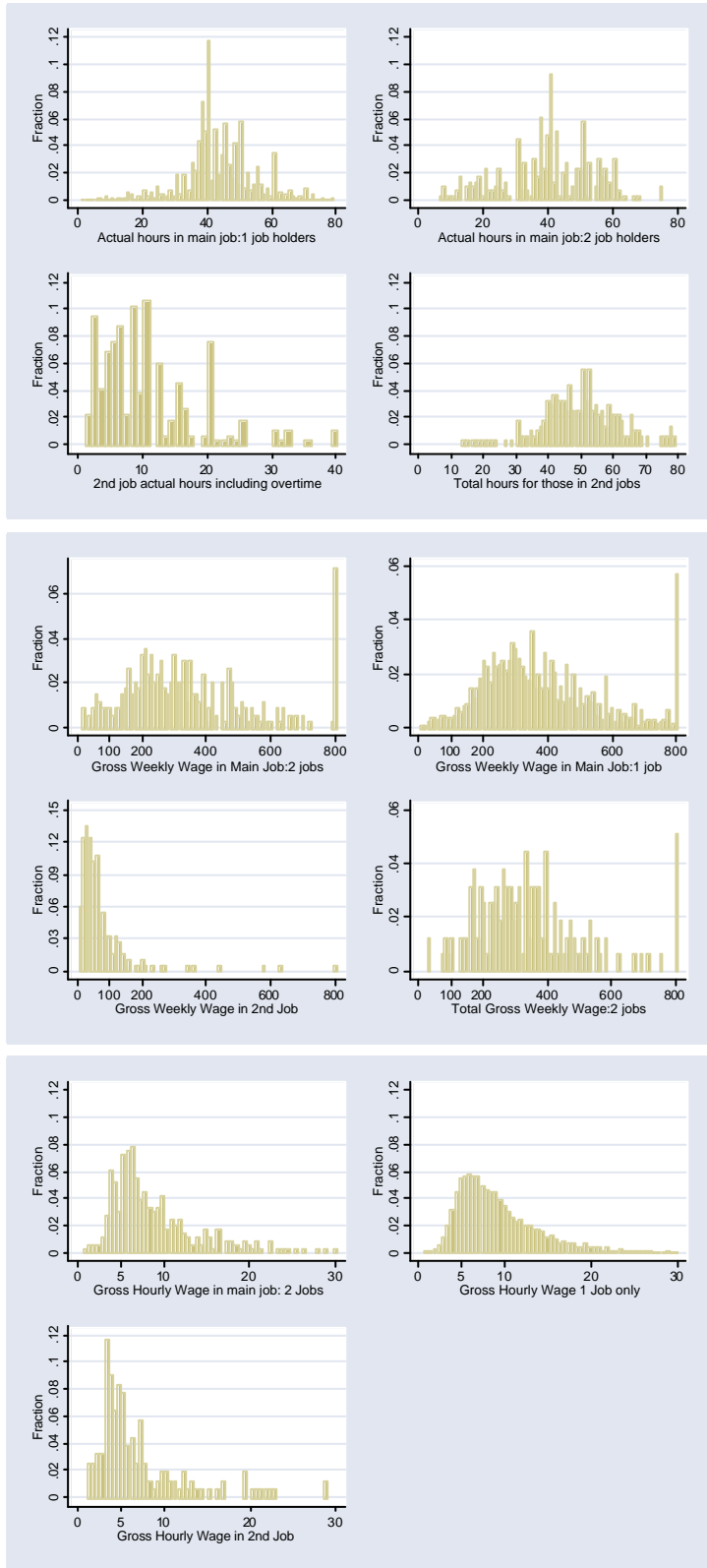
Note. 1. Standard errors adjusted for clustering in brackets. 2. \*\* notes significance at 5% level.

3. Industry, marital status, education, ethnicity, temporary job status, size of firm, job tenure, age of youngest child and number of dependent children also included in adjusted columns but results not reported. 4. Dependent Variable: probability of being in a second job in the reference week. 5. Each year estimate runs from April to the following March respectively.

**Figure A1. % Change in Hourly Wage After Minimum Wage: Job Stayers  
(Kernel regression estimates)**



## Appendix Figure A2. Hours and Wage Distributions by Gender: Men



### Appendix Figure A3. Hours and Wage Distributions by Gender: Women

