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KINGDOM: EVIDENCE FROM THE BRITISH
HOUSEHOLD PANEL SURVEY**

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Multiple Job Holding in the United Kingdom: Evidence from the British Household Panel Survey

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Abstract. This paper examines the determinants of multiple job holding in the United Kingdom. We address these issues using data from the first eleven waves of the British Household Panel Survey, which covered the period from 1991 to 2001. Evidence from the BHPS does not support the hypotheses of main job hours constrained and main job insecurity. We argue that the incentive for moonlighting in the United Kingdom is due to financial pressures and the desire for heterogeneous jobs. The empirical work is carried out separately for men and women.

JEL classification: J22, J23

Key words: Moonlighting, Labour supply, Tobit model, Job satisfaction, the BHPS

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1. Introduction

Evidence from the eleventh wave of the British Household Panel Survey (BHPS) indicates that in 2001 approximately 10.5% of British workers held second jobs, while 56.6% of British people held main jobs (Table 1). Given that there were 27.5 million workers in the UK in 2001 (ONS 2003), it is estimated that approximately 2.888 million workers were engaged in multiple job holding in the UK in 2001. This far exceeds official figure of 1.158 million workers with second jobs (ONS, 2003), which is based on the Quarterly Labour Force Survey (QLFS). The large disparity between is mostly likely driven by the differences in the reference period across the two datasets: whereas the BHPS asks people about their second jobs in the last calendar month, the second jobs in the QLFS refer to jobs in the reference week (week ending last Sunday).

However, limited attention has been focused on examining the determinants of multiple job holding, for instance, UK research over the last 20 years is confined to the studies of Bell *et al.* (1997), Boheim and Taylor (2003) and Heineck and Schwarze (2004). Similarly, there is a paucity of contemporary research work on multiple job holding in other countries, most notably the United States (Shishko and Rostker, 1976; Hunt *et al.*, 1985; Paxson and Sicherman, 1996; Averett, 2001; Partridge, 2002), Canada (Weersink *et al.*, 1998), Poland (Bedi, 1998), Sweden (Lundborg, 1995), Italy (Masi, 1987), Yugoslavia (Reilly and Krstic, 2003), Russia (Foley, 1997) and France (Menger, 1999).

Hence, given both the contradiction between reality and official statistics, together with relatively little academic attention, this study seeks to shed light on the issue of who moonlights and why do some people choose to do so.

To answer this question there are four main hypotheses. Firstly, the main job hours constrained model is where an individual's willingness to take a second job depends on whether they can work enough hours at their prevailing primary wage rate to satisfy their income goals (Shishko and Rostker, 1976). Therefore, individuals take a second job in addition to their main job because their employers do not, for various reasons, offer enough hours on the main job. In relation to this, Friesen (2001) shows that the constraints created by overtime pay regulation appear to induce a considerable number of workers to take up a second job. Thus, hours constraint models assume that

the main job wage exceeds the second job wage, creating a convex kink in the budget constraint due to the hours constraint on the main job (Foley, 1997).

Secondly, the heterogeneous jobs model hypothesis suggests that labour supplied to different jobs may not be perfect substitutes or, put differently, the wage paid and utility lost from the foregone leisure may not completely reflect the benefits and costs of working (Conway and Kimmel, 1998). Therefore, the incentive for moonlighting is that having two jobs enables individuals to engage in activities of particular interest to them.

Thirdly, the main job insecurity model hypothesis is where an individual may hold a second job if they believe that their main job has a high risk of termination. Thus a second job may cushion the financial impact of losing their main source of earnings, especially if there is scope for increasing the number of hours worked in the second job. Therefore, multiple job holding may be a response to perceived job insecurity and may be a “hedge against unemployment” (Bell *et al.*, 1997). Alternatively, multiple job holding may be used as a way of smoothing uncertain incomes¹.

Finally, workers in jobs associated with non-pecuniary benefits are more prone to moonlighting whereby if earnings fall for such jobs, it is rational to have two jobs (Lundborg, 1995). In contrast, for jobs with no non-pecuniary benefits a fall in earnings causes a rational worker to leave that employment altogether. Consequently, we have the so-called target income model, in which the individual determines their allocation of work on different jobs to reach a certain income level.

The purpose of this paper is to examine the determinants of UK multiple job holding. Firstly, we investigate how many moonlighters there are in the United Kingdom and what activities they engage in for their second jobs. Secondly, we compare moonlighter to main job holder in terms of income, main job satisfaction, education, location, and main job occupation. Thirdly, we examine what characteristics of their main jobs favour or encourage moonlighting and what personal or family characteristics of the individuals increase the propensity for second job holding. We address these issues using data from the initial eleven waves (1991-2001) of the BHPS, with empirical work carried out separately for both men and women.

The remainder of this paper is organised as follows. Section two presents stylised facts about moonlighting in the UK. Section three develops a theoretical model to guide the empirical work. Section four discusses the data and the empirical results. Section five offers a brief conclusion.

2. Stylised facts of UK moonlighting

According to the BHPS, from 1991 to 2001, on average, main job holders (single and multiple job holders combined) worked 33.78 hours per week for their main jobs, which included both full-time and part-time work. In the same period, moonlighters worked 25.42 hours per month for their second jobs. The average number of hours worked for the main job (per week) was almost constant over the eleven waves, but the average number of hours worked for the second job (per month) varied over the eleven waves (Figure 1).

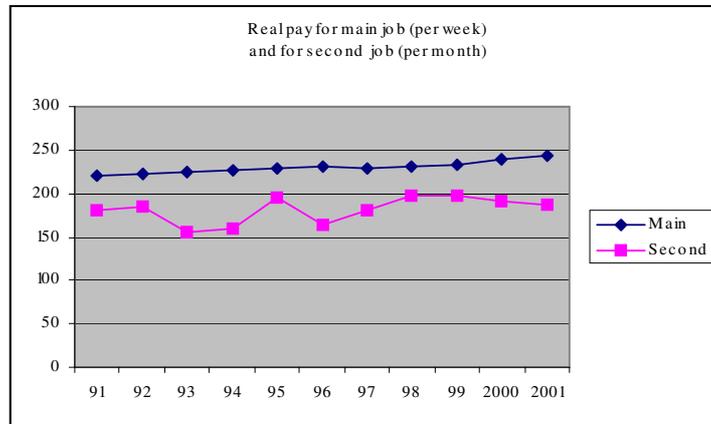
Figure 1



Source: Codebook, Wave 1 to 11, the British Household Panel Survey

In terms of remuneration, real pay per week for the main job, on average, increased from £220.43 in 1991 to £243.81 in 2001, a rise of 10.61 percent. In contrast, real earnings per month from the second job rose, on average, from £181.38 in 1991 to £185.78 in 2001 (a weekly equivalent of £41.89 and £42.91 respectively), an increase of only 2.43 percent (Figure 2). Thus not only are real earnings from second jobs less than those from the main job by a magnitude of some 80 percent, but their rate of increase over the period examined was also substantially smaller at approximately one-fifth of the rate for the main job.

Figure 2



Source: Codebook, Wave 1 to 11, the British Household Panel Survey

A reversal in the above trends occurs, however, when examining part-time employment. Of the total workforce, some 12.6% of main job holders were self-employed on their main job, whereas 45.3% of moonlighters were self-employed on their second job (Figure 3).

Figure 3



Source: Codebook, Wave 1 to 11, the British Household Panel Survey

Table 1 reports the numbers of main job holders and moonlighters from the initial eleven BHPS waves, whereby 7.8% of people held a second job whilst 56.5% of people held a main job. In terms of the nature of employment, almost half of moonlighters are self-employed on their second job. However, available data indicates that nearly 90% of moonlighters undertake their main job as an employee, while only just over 10% of moonlighters do their main job as self-employed. Hence,

moonlighters mainly work as employees rather than self-employed for their main job, while half of them work as self-employed on their second job.

Analysis by gender indicates that whilst 53.5% of total observations were female, they only account for 47.4% of main jobholders, reflecting the fact that women's overall participation rate is still much lower than that of men. Of the total of main job holder employees, 51% were female, but only 27.4% of self-employed people were female, suggesting that either women prefer to be employed rather than self-employed compared with men, or possess little other choice. However, more women take second jobs than men do, since 54.7% of the moonlighters were female. Again, while 62.1% of employed moonlighters were female, they only make up 46.2% of self-employed moonlighters reinforcing the notion that women prefer not to be self-employed, whether for the main job or for the second job.

Table 1. Number of Main Job Holders and Moonlighters

| | Total observations | Total observations (Female) | Main job holders | Main job holders (Female) | Second job holders | Second job holders (Female) |
|--------|--------------------|-----------------------------|------------------|---------------------------|--------------------|-----------------------------|
| Wave1 | 10264 | 5431 | 5794 | 2671 | 805 | 452 |
| Wave2 | 9845 | 5215 | 5480 | 2550 | 760 | 434 |
| Wave3 | 9600 | 5124 | 5390 | 2558 | 759 | 433 |
| Wave4 | 9481 | 5041 | 5371 | 2530 | 806 | 450 |
| Wave5 | 9249 | 4929 | 5295 | 2503 | 822 | 448 |
| Wave6 | 9438 | 5003 | 5465 | 2586 | 877 | 476 |
| Wave7 | 11193 | 5981 | 6353 | 2993 | 1033 | 569 |
| Wave8 | 10906 | 5851 | 6288 | 2997 | 923 | 503 |
| Wave9 | 15625 | 8436 | 8749 | 4215 | 1113 | 581 |
| Wave10 | 15605 | 8427 | 8793 | 4229 | 1075 | 592 |
| Wave11 | 18869 | 10238 | 10576 | 5170 | 1110 | 580 |
| Total | 130077 | 69678 | 73556 | 34941 | 10084 | 5519 |

Source: Codebook, Wave 1 to 11, the British Household Panel Survey

Finally, over the initial eleven waves of the BHPS, some 9,888 second job holders reported their second job occupations, and only 1,136 moonlighters reported their occupations as being the same as their main job occupations. Medical practitioners, nurses, motor mechanics, auto engineers, carpenters and joiners, cleaners and

domestics, together with authors, writers and journalists are more likely to take two similar jobs. Whilst the BHPS indicates that more than 88.5% of moonlighters have second jobs that are different from their main jobs which significantly exceeds that reported in the US (Paxson and Sicherman, 1996). Consequently, these facts would appear to lend more credibility to the existence of the heterogeneous jobs hypothesis in the UK.

3. The theoretical model

The theoretical framework for identifying the determinants of multiple job holding is well known (Shishko and Rostker, 1976; Krishnan, 1990; Ballou, 1995; Bell *et al.*, 1997; Foley, 1997; Conway and Kimmel, 1998).

Consider a representative individual with a well-behaved utility function

$$Utility = U(C, L) \quad (1)$$

where C is a composite consumption good and L is leisure. Suppose each person holds a main job and supplies h_1 hours of work at wage rate w_1 , which the main job holder is powerless to affect. The number of hours worked at a second job h_2 depends on the wage rate w_2 , which the second job holder is also powerless to affect. The worker faces a budget constraint restricting the level of consumption of C to the sum of all labour and non-labour income.

The utility function written in Eq. (1) is maximized subject to both a budget and a time constraint, or

$$C = w_1 h_1 + w_2 h_2 + Y \quad (2)$$

and

$$T = h_1 + h_2 + L \quad (3)$$

Where Y is non-wage income and T is the total amount of time available. Substituting Eqs. (2) and (3) into (1) gives the utility maximisation problem that the individual faces:

$$\underset{h_1, h_2}{Max} : U(C, L) = U(w_1 h_1 + w_2 h_2 + Y, T - h_1 - h_2) \quad (4)$$

Where h_1 and h_2 are two choice variables. The first order condition gives us the two necessary conditions:

$$\begin{aligned}\frac{\partial U}{\partial h_1} &= \frac{\partial U}{\partial C} \frac{\partial C}{\partial h_1} + \frac{\partial U}{\partial L} \frac{\partial L}{\partial h_1} = w_1 \frac{\partial U}{\partial C} - \frac{\partial U}{\partial L} = 0 \\ \frac{\partial U}{\partial h_2} &= \frac{\partial U}{\partial C} \frac{\partial C}{\partial h_2} + \frac{\partial U}{\partial L} \frac{\partial L}{\partial h_2} = w_2 \frac{\partial U}{\partial C} - \frac{\partial U}{\partial L} = 0\end{aligned}\tag{5}$$

On the conditions of both a budget and a time constraint from Eq. (2) and Eq. (3), we have $w_2 = \frac{\partial U}{\partial L} / \frac{\partial U}{\partial C}$. If $w_2 > \frac{\partial U}{\partial L} / \frac{\partial U}{\partial C}$, then the number of hours worked in the second job will increase. If $w_2 < \frac{\partial U}{\partial L} / \frac{\partial U}{\partial C}$, then the number of hours worked in the second job will decrease. The same analysis applies for the main job. Eq. (5) implies that $w_1 = w_2$ under a long-term general equilibrium condition. When $w_1 > w_2$, the most important reason for moonlighting is due to main job hours being constrained (hypothesis one). However, when $w_1 < w_2$, that is, the wage rate of the second job is greater than the wage rate of the main job, moonlighting has a strong tendency to continue.

4. Data and empirical results

The sample used in this paper includes all adults in the first eleven waves of the BHPS covering the period from 1991 to 2001. The BHPS is suitable for studying multiple job holding since, in each wave, five questions relating to an individual's second job were asked:

1. Do you currently earn any money from a second job or from work that you might do from time to time apart from your main job?
2. What is it that you do and what does the firm or person you work for make or do?
3. Are you an employee or self-employed?
4. How many hours do you usually work a month in your second job, excluding meal breaks but including any overtime you might do?
5. Before tax and other deductions how much did you earn from your second and all other occasional jobs in the last calendar month?

More questions relating to an individual's main job were asked in the BHPS, *inter alia*:

1. Did you do any paid work last week – either as an employee or self-employed?
2. What was your main job last week? Please tell me the exact job title and describe fully the sort of work you do.
3. What does the firm/organisation you work for actually make or do (at the place where you work?)
4. Are you an employee or self-employed?
5. How satisfied or dissatisfied are you with particular aspects of your own present job? a) The total pay, including any overtime or bonus. b) Your job security. c) The actual work itself. d) The hours you work. e) All things considered, how satisfied or dissatisfied are you with your present job overall using a 1 – 7 scale?
6. What type of organisation do you work for in your main job?
7. Thinking about your main job, how many hours, excluding overtime and meal breaks, are you expected to work in a normal week?
8. Is your job a permanent job or not?
9. Are you a member of a trade union/association?

Additionally, many questions regarding personal or family characteristics of the individuals are also contained in the BHPS relating to education, location, number of children, marriage, health, age and time spent travelling to work for the main job. These provide us with a suitable data set for assessing UK multiple job holding.

Table 2 defines the dependent and independent variables, whilst summary statistics of the sample are detailed in Table 3 for men and women. The first column describes the sample of moonlighters, the second column describes the sample of main job holders and the third column describes the full sample.

Averett (2001) points out that when studying moonlighting behaviour one must be careful about the tendency of moonlighters to fail to report their income. However, over the eleven waves of the BHPS, 4,663 workers (10,084 observations) reported that they had a second job and 4,301 workers (8,889 observations) reported their second job pay. Thus although 11.85% of moonlighters did not report their income, this did not just apply to second job holders as 17,702 workers (73,556 observations) reported that they have a main job, but 15,304 workers (61,733 observations) reported their main job salary. Hence, some 16.07% of main job holders failed to report their income from their main job. It therefore appears that the proportion of people failing

to report their income were consistent between the main and second job holders. Thus there appears no special tendency for UK moonlighters to fail to report their income.

A further consideration is that second jobs, on average, yield a much higher wage rate than main jobs (Foley, 1997). This begs the question why do workers who earn a higher wage in their second job not take it as their main job. One possible explanation is that so many of the second-jobs are in self-employment². Moreover, an exclusive focus on the mean wage ratio might be misleading if the distribution is highly skewed. In the US, the mean ratio of second job wage to main job wage is 1.839 for men and 1.715 for women with the median wage ratios being 1.05 and 1.00 respectively (Paxson and Sicherman 1996). Our own calculation based on the BHPS reveals that for the UK the mean ratio of second job wage to main job wage is 2.02 for men and 1.52 for women whilst the median ratios were 0.81 and 0.76 respectively. Hence, on average, the second job wage is much higher than the main job wage. However, if we exclude the wages of the top 5% of moonlighting earners, the mean second job wage is lower than the mean main job wage indicating that the main body of moonlighters are poorer rather than richer. In the case of an hours constrained moonlighter, the wage rate on the main job will be higher than the wage rate on the second job. However, in the case of an individual moonlighter for any reason other than hours constraint, the wage rate on the second job will not necessarily be lower than the wage rate on the main job (Averett 2001). Indeed, the BHPS indicates that over 70% of male and some 65% of female moonlighters earn more on their second jobs than their main jobs, suggesting a lack of support for the first hypothesis, namely that British moonlighters are motivated by having their main job hours constrained.

In relation to the second group of explanatory variables, the job satisfaction variables are derived from the BHPS with workers reporting in scales 5, 6 and 7 grouped as satisfied, while others are grouped as non-satisfied. However, it is important to note the presence of a participation effect whereby for cultural reasons, women who are dissatisfied at work may find it easier to leave the labour force than their male equivalents. Thus, satisfied women workers may be a statistical construct, as more of the women who would be dissatisfied at work are not working (Clark, 1996). Additionally, Booth *et al.* (2002) find that, in general terms that seasonal-casual men and women are significantly less likely to be satisfied with their jobs than permanent workers. However, no difference in overall job satisfaction emerges between workers in permanent jobs and those on fixed-term contracts. When

considering the different aspects of job satisfaction separately, Booth *et al.* (2002) find that temporary workers are less satisfied than permanent workers, who have promotion prospects and job security. Hence, the image of the worker with a second job is not that of someone who is necessarily satisfied with the world of work, consequently, they potentially possess an exaggerated tendency to report lower levels of job satisfaction, but this is less significant than their dissatisfaction with pay (Clark 1996).

We estimate the moonlighting labour supply equation via a Tobit Model separately for men and women using the maximum likelihood estimation (Greene, 2000). Tables 4 and 5 report the results of a Tobit work hours equation for male and female moonlighters with and without wave dummy variables. As Conway and Kimmel (1998) point out, given the large proportion of non-moonlighters, one would expect the participation decision to dominate the hours supplied decision in a Tobit model. To explore the robustness of the results to alternative techniques, we also estimate Probit Model and Logit Model³ in light of previous studies such as Averett (2001) which estimates a bivariate probit model and finds that the determinants of dual-job holding are fairly similar both for men and women.

In terms of what affects moonlighters' decisions to devote time and effort to their second jobs? Tables 4 and 5 indicate that income is a consistently significant criterion. The decision to moonlight involves a trade-off between income and leisure, whereby higher second job wages (J2WAGE) increase the labour supply of second jobs both for men and women, so that the substitution effect dominates the income effect. The labour supply curve of second jobs, however, has not reached the point of backward bending, although the average second job wage is much higher than the average main job wage (see Table 3). Higher main job wages reduce the incentive for moonlighting, by decreasing the labour supply for second jobs. Furthermore, higher levels of wealth and non-labour income (WEALTH) for all workers appear to increase the reservation wage, thereby lowering the propensity to take second jobs.

Table 2: Definitions of dependent and explanatory variables

| Variable name | Variable label |
|---------------|--|
| J2hours | Number of hours worked per month for second job |
| J2wage | Hourly real wage rate for second job |
| Jbwage | Hourly real wage rate for main job |
| Wealth | Annual non-labour real income |
| Satpay | Satisfied with total pay of main job |
| Satsecurity | Satisfied with job security of main job |
| Satwork | Satisfied with actual work itself of main job |
| Sathour | Satisfied with work hours of main job |
| Satall | Satisfied with all things of present main job |
| Travel | Minutes spent travelling to work for main job |
| Children | Number of children in household |
| Married | The person is married |
| Ownhealth | The person has excellent / good health |
| Age | Age at date of interview |
| Degree | First and higher degree, teaching qualification |
| GCSE | GCE O Levels / CSE |
| Alevel | A Levels |
| Otherhi | Other higher qualification |
| Permanent | Current main job: permanent |
| Public | Current main job: work for public sector |
| Fulltime | Current main job: working hours is more than 30 per week |
| Union | A member of trade union/association |
| London | The region is London |
| Southeast | The region is Southeast |
| Southwest | The region is Southwest |
| Eastern | The region is East Anglia and East Midlands |
| Westmidlands | The region is West Midlands |
| Northwest | The region is Manchester, Merseyside and rest of Northwest |
| North | The region is Yorkshire and rest of North |
| Agriculture | Current main job: in agriculture sector |
| Manufacturing | Current main job: in manufacturing sector |
| Hotels | Current main job: in hotels sector |
| Transport | Current main job: in transport sector |
| Finance | Current main job: in finance sector |
| Business | Current main job: in business sector |
| Publicadmin | Current main job: in public administration sector |
| Education | Current main job: in education sector |
| Health | Current main job: in health sector |
| Community | Current main job: in community sector |
| Households | Current main job: in households sector |

Table 3 Variable Means

| | Men | | | Women | | |
|---------------|----------------------------|-----------------------------------|----------------|----------------------------|-----------------------------------|-------------|
| | Moonlighters (j2wage>0) | Main Job holders (jbwage>0) | Full Sample | Moonlighters (j2wage>0) | Main Job holders (jbwage>0) | Full Sample |
| J2hours | 28.62 | 2.277 | 1.855 | 24.48 | 2.605 | 1.741 |
| J2has | 1 | 0.093 | 0.076 | 1 | 0.110 | 0.079 |
| J2wage | 15.88 | 1.135 | 0.933 | 8.780 | 0.827 | 0.581 |
| Jbwage | 4.417 | 7.782 | 3.732 | 3.558 | 5.723 | 2.607 |
| Wealth | 1362 | 641.9 | 2244 | 1321 | 1016 | 2159 |
| Satpay | 0.379 | 0.624 | 0.328 | 0.462 | 0.675 | 0.329 |
| Satsecurity | 0.473 | 0.715 | 0.374 | 0.537 | 0.779 | 0.378 |
| Satwork | 0.510 | 0.788 | 0.414 | 0.595 | 0.831 | 0.405 |
| Sathour | 0.451 | 0.685 | 0.359 | 0.558 | 0.779 | 0.379 |
| Satall | 0.498 | 0.769 | 0.404 | 0.599 | 0.843 | 0.410 |
| Travel | 14.16 | 23.79 | 12.43 | 12.54 | 20.06 | 9.744 |
| Children | 0.724 | 0.701 | 0.578 | 0.805 | 0.672 | 0.619 |
| Married | 0.489 | 0.562 | 0.573 | 0.486 | 0.554 | 0.521 |
| Ownhealth | 0.712 | 0.712 | 0.641 | 0.686 | 0.679 | 0.595 |
| Age | 36.03 | 36.58 | 43.76 | 35.92 | 36.95 | 45.35 |
| Degree | 0.175 | 0.166 | 0.123 | 0.169 | 0.158 | 0.117 |
| GCSE | 0.281 | 0.258 | 0.214 | 0.295 | 0.293 | 0.239 |
| Alevel | 0.143 | 0.148 | 0.124 | 0.132 | 0.131 | 0.103 |
| Otherhi | 0.232 | 0.251 | 0.202 | 0.179 | 0.173 | 0.124 |
| Permanent | 0.699 | 0.926 | 0.577 | 0.640 | 0.905 | 0.469 |
| Public | 0.161 | 0.177 | 0.094 | 0.244 | 0.314 | 0.156 |
| Fulltime | 0.545 | 0.914 | 0.501 | 0.266 | 0.547 | 0.269 |
| Union | 0.166 | 0.256 | 0.132 | 0.141 | 0.247 | 0.119 |
| London | 0.091 | 0.081 | 0.081 | 0.087 | 0.088 | 0.083 |
| Southeast | 0.214 | 0.170 | 0.159 | 0.239 | 0.177 | 0.158 |
| Southwest | 0.090 | 0.083 | 0.081 | 0.089 | 0.075 | 0.077 |
| Eastern | 0.133 | 0.112 | 0.112 | 0.124 | 0.103 | 0.104 |
| Westmidlands | 0.076 | 0.079 | 0.077 | 0.068 | 0.076 | 0.075 |
| Northwest | 0.061 | 0.091 | 0.091 | 0.079 | 0.091 | 0.090 |
| North | 0.118 | 0.136 | 0.134 | 0.109 | 0.132 | 0.133 |
| Agriculture | 0.028 | 0.015 | 0.019 | 0.012 | 0.006 | 0.005 |
| Manufacturing | 0.153 | 0.294 | 0.170 | 0.059 | 0.115 | 0.060 |
| Hotels | 0.029 | 0.034 | 0.023 | 0.065 | 0.075 | 0.042 |
| Transport | 0.045 | 0.084 | 0.055 | 0.019 | 0.033 | 0.017 |
| Finance | 0.023 | 0.039 | 0.021 | 0.018 | 0.048 | 0.024 |
| Business | 0.065 | 0.089 | 0.065 | 0.055 | 0.076 | 0.043 |
| Publicadmin | 0.063 | 0.080 | 0.043 | 0.035 | 0.066 | 0.033 |
| Education | 0.062 | 0.042 | 0.026 | 0.129 | 0.125 | 0.065 |
| Health | 0.033 | 0.022 | 0.014 | 0.077 | 0.108 | 0.055 |
| Community | 0.073 | 0.045 | 0.034 | 0.107 | 0.112 | 0.062 |
| Households | 0.012 | 0.005 | 0.006 | 0.042 | 0.021 | 0.017 |
| Observations | 3550 | 28968 | 60399 | 4610 | 31736 | 69678 |

Table 4 Random-effects Tobit Regression for Men

| J2hours | With wave dummy | | Without wave dummy | |
|--------------------|-----------------|-----------|--------------------|-----------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.034*** | 0.002 | 0.034*** | 0.002 |
| Jbwage | -0.010 | 0.010 | -0.010 | 0.010 |
| Wealth | -0.00002* | 0.00001 | -0.00002* | 0.00001 |
| Satpay | -0.396*** | 0.124 | -0.389*** | 0.124 |
| Satsecurity | 0.032 | 0.126 | 0.056 | 0.126 |
| Satwork | 0.217 | 0.153 | 0.215 | 0.153 |
| Sathour | 0.351*** | 0.128 | 0.353*** | 0.128 |
| Satall | -0.175 | 0.162 | -0.169 | 0.163 |
| Travel | -0.001 | 0.003 | -0.001 | 0.003 |
| Children | 0.113** | 0.056 | 0.114** | 0.058 |
| Married | -0.007 | 0.123 | -0.023 | 0.123 |
| Ownhealth | 0.161 | 0.102 | 0.092 | 0.085 |
| Age | -0.031*** | 0.004 | -0.030*** | 0.004 |
| Degree | 0.696*** | 0.203 | 0.747*** | 0.203 |
| GCSE | 0.739*** | 0.160 | 0.763*** | 0.159 |
| Alevel | 0.829*** | 0.184 | 0.871*** | 0.184 |
| Otherhi | 0.841*** | 0.163 | 0.878*** | 0.162 |
| Permanent | 0.410*** | 0.134 | 0.381*** | 0.134 |
| Public | 0.811*** | 0.218 | 0.789*** | 0.217 |
| Fulltime | -0.822*** | 0.145 | -0.813*** | 0.145 |
| Union | 0.189 | 0.149 | 0.257* | 0.146 |
| London | 0.368 | 0.235 | 0.420* | 0.231 |
| Southeast | 0.759*** | 0.185 | 0.825*** | 0.180 |
| Southwest | 0.598** | 0.237 | 0.660*** | 0.233 |
| Eastern | 0.616*** | 0.208 | 0.694*** | 0.205 |
| Westmidlands | -0.232 | 0.248 | -0.168 | 0.246 |
| Northwest | -0.352 | 0.233 | -0.298 | 0.229 |
| North | -0.129 | 0.202 | -0.078 | 0.198 |
| Agriculture | 1.256*** | 0.355 | 1.268*** | 0.355 |
| Manufacturing | -0.173 | 0.151 | -0.183 | 0.151 |
| Hotels | -0.373 | 0.302 | -0.360 | 0.302 |
| Transport | -0.442* | 0.226 | -0.458** | 0.226 |
| Finance | -0.423 | 0.355 | -0.450 | 0.355 |
| Business | -0.124 | 0.199 | -0.122 | 0.199 |
| Publicadmin | 0.437 | 0.290 | 0.404 | 0.289 |
| Education | 1.021*** | 0.350 | 0.996*** | 0.349 |
| Health | 1.233*** | 0.444 | 1.215*** | 0.444 |
| Community | 1.187*** | 0.258 | 1.191*** | 0.258 |
| Households | 1.688*** | 0.579 | 1.697*** | 0.249 |
| Sigma_u | 4.897*** | 0.062 | 4.901*** | 0.062 |
| Sigma_e | 8.477*** | 0.027 | 8.479*** | 0.027 |
| Rho | 0.250 | 0.005 | 0.250 | 0.005 |
| Log likelihood | -220911.39 | | -220932.96 | |
| Wald chi2 | 714.55*** | | 670.80*** | |
| Prob > chi2 | 0.0000 | | 0.0000 | |
| Number of obs | 60399 | | | |
| Number of groups | 12931 | | | |
| Obs per group: min | 1 | | | |
| Obs per group: avg | 4.7 | | | |
| Obs per group: max | 11 | | | |

Note: * p<0.10; ** p<0.05; *** p<0.01. Sigma_u and sigma_e denote the panel-level variance component and the overall variance respectively. Rho is the percent contribution to the total variance of the panel-level variance component. When rho equals zero, the panel estimator is no different from the pooled estimator.

Table 5 Random-effects Tobit Regression for Women

| J2hours | With wave dummy | | Without wave dummy | |
|--------------------|-----------------|------------|--------------------|------------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.137*** | 0.005 | 0.137*** | 0.005 |
| Jbwage | -0.021 | 0.013 | -0.022* | 0.013 |
| Wealth | -0.00005*** | 0.00001 | -0.0001*** | 0.00001 |
| Satpay | -0.093 | 0.110 | -0.117 | 0.109 |
| Satsecurity | 0.038 | 0.119 | 0.039 | 0.119 |
| Satwork | 0.571*** | 0.148 | 0.594*** | 0.148 |
| Sathour | 0.339*** | 0.123 | 0.340*** | 0.123 |
| Satall | -0.148 | 0.160 | -0.149 | 0.160 |
| Travel | -0.006** | 0.003 | -0.006** | 0.003 |
| Children | -0.188*** | 0.048 | -0.194*** | 0.047 |
| Married | -0.391*** | 0.091 | -0.392*** | 0.091 |
| Ownhealth | 0.065 | 0.083 | 0.114 | 0.071 |
| Age | -0.035*** | 0.003 | -0.036*** | 0.003 |
| Degree | 0.413** | 0.166 | 0.386** | 0.165 |
| GCSE | 0.387*** | 0.125 | 0.394*** | 0.125 |
| Alevel | 0.762*** | 0.159 | 0.766*** | 0.158 |
| Otherhi | 0.834*** | 0.148 | 0.793*** | 0.147 |
| Permanent | 0.272** | 0.129 | 0.249* | 0.129 |
| Public | 0.847*** | 0.165 | 0.858*** | 0.164 |
| Fulltime | -1.622*** | 0.113 | -1.634*** | 0.113 |
| Union | -0.242* | 0.137 | -0.186 | 0.135 |
| London | 0.008 | 0.187 | 0.207 | 0.183 |
| Southeast | 1.114*** | 0.149 | 1.310*** | 0.145 |
| Southwest | 0.421** | 0.194 | 0.608*** | 0.191 |
| Eastern | 0.466*** | 0.172 | 0.661*** | 0.169 |
| Westmidlands | -0.088 | 0.196 | 0.109 | 0.193 |
| Northwest | 0.179 | 0.183 | 0.374** | 0.179 |
| North | -0.188 | 0.160 | 0.005 | 0.157 |
| Agriculture | 2.820*** | 0.565 | 2.829*** | 0.565 |
| Manufacturing | 0.188 | 0.183 | 0.208 | 0.183 |
| Hotels | 0.298 | 0.193 | 0.313 | 0.193 |
| Transport | 0.774** | 0.301 | 0.769** | 0.301 |
| Finance | -0.229 | 0.284 | -0.212 | 0.284 |
| Business | 0.275 | 0.202 | 0.287 | 0.202 |
| Publicadmin | -0.183 | 0.269 | -0.208 | 0.269 |
| Education | 0.856*** | 0.217 | 0.842*** | 0.216 |
| Health | 0.537** | 0.218 | 0.517** | 0.217 |
| Community | 1.029*** | 0.179 | 1.029*** | 0.179 |
| Households | 0.919*** | 0.302 | 0.931*** | 0.302 |
| Sigma_u | 3.746*** | 0.049 | 3.744*** | 0.049 |
| Sigma_e | 7.961*** | 0.023 | 7.966*** | 0.023 |
| Rho | 0.181 | 0.004 | 0.181 | 0.004 |
| Log likelihood | | -248322.84 | | -248359.24 |
| Wald chi2 | | 1825.66*** | | 1752.43*** |
| Prob > chi2 | | 0.0000 | | 0.0000 |
| Number of obs | | | 69678 | |
| Number of groups | | | 14470 | |
| Obs per group: min | | | 1 | |
| Obs per group: avg | | | 4.8 | |
| Obs per group: max | | | 11 | |

Note: * p<0.10; ** p<0.05; *** p<0.01. For definitions of Sigma_u, sigma_e and rho, see note of Table 4.

Workers satisfied with their main job work hours (SATHOUR) are more likely to take second jobs. However, these do not suggest that British moonlighting is due to an hours constraint of main jobs. Male workers who are unhappy with the total pay of their main job (SATPAY) appear very keen to moonlight. The incentive for them to be multiple jobholders would appear to be due to financial pressures and the desire to raise standards of living, whilst female workers who are satisfied with the actual work of the main job (SATWORK) are more likely to undertake two jobs. Workers being satisfied or not with the job security of their main job (SATSECURITY) do not have a significant effect on moonlighting. These results provide no support for the hypothesis that job insecurity increases the probability of a worker holding a second job.

The more children a man has, the greater the probability of moonlighting, while for women having more children negatively affects taking a second job. This potentially reflects men taking more responsibility for financially supporting their children by taking a second job, while women have been discouraged from taking a second job because of the need to take care of their children either directly or indirectly through the prohibitive cost of childcare or its unavailability. Moreover, married women are less likely to moonlight, while marriage does not affect male moonlighting. For women a further apparent deterrent to moonlight is if they spend significant time travelling to work for their main job, which again could reflect their wider responsibilities. Finally, age has a significant negative effect on second job labour supply, with young workers being more likely to take second jobs, potentially through either a combination of financial necessity (repayment of student debt/loans, seeking to establish themselves in the housing market etc), or by simply possessing the necessary energy.

We also find that for workers education is associated with a higher probability of holding a second job in all categories relative to possessing no formal qualifications. As Abdukadir (1992) points out, workers are more likely to moonlight if they have low current incomes relative to their educational attainment. Furthermore, having permanent and public-sector jobs as main jobs encourages workers to moonlight, as their main jobs may help them to find second jobs. These estimates provide no support for the hypothesis that multiple job holding may be a response to perceived job insecurity and may be a safeguard against unemployment. However, possessing a

full time per se job discourages a worker from moonlighting, which is consistent with the time constraint condition of the theoretical model.

The geographical variables indicate that relative to the omitted regions (Wales, Scotland and Northern Ireland) people from Southeast, Southwest and Eastern England are more likely to be multiple job holders, perhaps reflecting the high cost of living, not least in terms of house prices, in those regions, or the greater opportunity of additional employment. Finally, main job occupations in agriculture, education, health, community and household encourage moonlighting across both men and women. Although employment in the transport sector affects moonlighting behaviour differently, with female workers more likely to moonlight than their male counterparts.

5. Conclusion

This paper examines the determinants of UK multiple job holding with data obtained from the initial eleven waves of the BHPS. Our analysis does not support the view that British moonlighting is due to main job hours constraint since workers who are satisfied with their main job work hours are more likely to take second jobs. BHPS data indicates that over 70% of male moonlighters earn more on second jobs than on main jobs, while about 65% of female moonlighters earn more on second jobs than on main jobs.

Satisfaction or otherwise with job security of the main job does not have a significant effect on moonlighting per se unless they are permanent and in the public-sector. However, these estimates provide no support for the hypothesis that multiple job holding may be a response to perceived job insecurity and may be a 'hedge against unemployment'.

Over the period of our study (1991-2001) more than 88.5% of moonlighters have second jobs that are different from their main job, which supports the heterogeneous jobs hypothesis. Male workers who are unhappy with the total pay of their main job are very keen to moonlight whilst higher second job wages increase the labour supply for second jobs both for men and women. The incentive for them to moonlight therefore appears to stem from financial pressures and the desire to raise, or secure, standards of living with multiple job holding as one dimension to achieving such goals.

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APPENDIX

We undertake robustness checks with respect to the exclusion of the self-employed and the exclusion of the job satisfaction variables in the following tables.

Table A1 and A2 present Random-effects Tobit estimates with and without job satisfaction variables for men and women respectively, using a sample without self-employed people in either the main or the second job. We do not report results with wave dummies as they are very similar. Comparing the first two columns to the corresponding columns in Tables 4 and 5 (i.e. specification without wave dummies), we can see that the estimates all have the same signs and if anything, become more significant statistically. For instance, the effect of the wage in the main job remains negative but turns from being statistically insignificant for men and marginally significant for women to significant at the 1% level for both gender. On the other hand, the effect of the second-job wage remains highly significant statistically but increases in size. Moreover, removing the job satisfaction variables appear to make virtually no difference to the estimates, with perhaps the exception of the main job wage for men, where it increases slightly in size.

Table A3 and A4 focus on the robustness of our main findings in Tables 4 and 5 with respect to the exclusion of the self-reported job satisfaction variables. It turns out that the two sets of estimates are remarkably similar. The only difference worth mentioning is the effect of the wage for the main job, which not only increases in size, but also become much more significant statistically, after we exclude the job satisfaction scores. This is not surprising, given that the job satisfaction variables are likely to partially capture the impact of various domains of the main job, including the satisfaction with pay.

Taken together, our sensitivity analyses suggest that our main findings are reasonably robust with respect to the exclusion of self-employed and the exclusion of the self-reported job satisfaction scores.

Table A1 Random-effects Tobit Regression for Men, Excluding all self-employed

| J2hours | With Job Satisfaction | | Without Job Satisfaction | |
|--------------------|-----------------------|------------|--------------------------|------------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.223*** | 0.007 | 0.224*** | 0.007 |
| Jbwage | -0.025*** | 0.008 | -0.032*** | 0.008 |
| Wealth | -0.00002 | 0.00001 | -0.00001 | 0.00001 |
| Satpay | -0.146*** | 0.031 | | |
| Satsecurity | -0.041 | 0.029 | | |
| Satwork | 0.012 | 0.039 | | |
| Sathour | 0.090*** | 0.033 | | |
| Satall | 0.051 | 0.047 | | |
| Travel | -0.002 | 0.002 | -0.003 | 0.002 |
| Children | 0.084* | 0.046 | 0.082* | 0.046 |
| Married | -0.128 | 0.100 | -0.131 | 0.100 |
| Ownhealth | 0.071 | 0.071 | 0.072 | 0.071 |
| Age | -0.023*** | 0.003 | -0.023*** | 0.003 |
| Degree | 0.296* | 0.164 | 0.253 | 0.164 |
| GCSE | 0.630*** | 0.128 | 0.609*** | 0.128 |
| Alevel | 0.533*** | 0.148 | 0.516*** | 0.147 |
| Otherhi | 0.577*** | 0.131 | 0.547*** | 0.130 |
| Permanent | 0.203 | 0.148 | 0.071 | 0.112 |
| Public | 0.427** | 0.176 | 0.463*** | 0.176 |
| Fulltime | -0.786*** | 0.169 | -0.729*** | 0.164 |
| Union | 0.262** | 0.116 | 0.250** | 0.116 |
| London | 0.006 | 0.185 | 0.022 | 0.185 |
| Southeast | 0.516*** | 0.145 | 0.515*** | 0.145 |
| Southwest | 0.296 | 0.186 | 0.299 | 0.186 |
| Eastern | 0.348** | 0.163 | 0.351** | 0.163 |
| Westmidlands | -0.052 | 0.187 | -0.051 | 0.187 |
| Northwest | -0.311* | 0.174 | -0.309* | 0.174 |
| North | -0.243 | 0.152 | -0.233 | 0.152 |
| Agriculture | 0.782** | 0.390 | 0.743* | 0.390 |
| Manufacturing | -0.136 | 0.124 | -0.152 | 0.122 |
| Hotels | -0.621** | 0.264 | -0.668** | 0.263 |
| Transport | -0.367* | 0.191 | -0.402** | 0.191 |
| Finance | -0.629** | 0.285 | -0.635** | 0.284 |
| Business | -0.193 | 0.178 | -0.212 | 0.177 |
| Publicadmin | 0.429* | 0.235 | 0.410* | 0.234 |
| Education | 0.666** | 0.305 | 0.642** | 0.303 |
| Health | 0.856** | 0.377 | 0.854** | 0.376 |
| Community | 0.601** | 0.234 | 0.576** | 0.233 |
| Households | 1.858*** | 0.648 | 1.835*** | 0.647 |
| Sigma_u | 3.374*** | 0.046 | 3.378*** | 0.046 |
| Sigma_e | 6.673*** | 0.022 | 6.674*** | 0.022 |
| Rho | 0.204 | 0.005 | 0.204 | 0.005 |
| Log likelihood | | -173908.36 | | -173922.97 |
| Wald chi2 | | 1389.10*** | | 1358.95*** |
| Prob > chi2 | | 0.0000 | | 0.0000 |
| Number of obs | | 51383 | | |
| Number of groups | | 11867 | | |
| Obs per group: min | | 1 | | |
| Obs per group: avg | | 4.3 | | |
| Obs per group: max | | 11 | | |

Note: * p<0.10; ** p<0.05; *** p<0.01. For definitions of Sigma_u, sigma_e and rho, see note of Table 4.

Table A2 Random-effects Tobit Regression for Women, Excluding all self-employed

| J2hours | With Job Satisfaction | | Without Job Satisfaction | |
|--------------------|-----------------------|-----------|--------------------------|-----------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.312*** | 0.008 | 0.312*** | 0.008 |
| Jbwage | -0.061*** | 0.012 | -0.060*** | 0.012 |
| Wealth | -0.00003*** | 0.00001 | -0.00003*** | 0.00001 |
| Satpay | 0.025 | 0.030 | | |
| Satsecurity | -0.031 | 0.029 | | |
| Satwork | 0.112** | 0.042 | | |
| Sathour | -0.006 | 0.035 | | |
| Satall | -0.105** | 0.048 | | |
| Travel | -0.013*** | 0.002 | -0.013*** | 0.002 |
| Children | 0.193*** | 0.045 | 0.192*** | 0.045 |
| Married | -0.468*** | 0.085 | -0.465*** | 0.085 |
| Ownhealth | 0.040 | 0.066 | 0.039 | 0.066 |
| Age | -0.026*** | 0.003 | -0.026*** | 0.003 |
| Degree | 0.260* | 0.157 | 0.262* | 0.157 |
| GCSE | 0.503*** | 0.117 | 0.499*** | 0.117 |
| Alevel | 0.874*** | 0.148 | 0.873*** | 0.148 |
| Otherhi | 0.627*** | 0.138 | 0.628*** | 0.139 |
| Permanent | 0.279* | 0.143 | 0.232** | 0.111 |
| Public | 0.826*** | 0.152 | 0.825*** | 0.152 |
| Fulltime | -1.505*** | 0.103 | -1.488*** | 0.096 |
| Union | -0.322*** | 0.123 | -0.323*** | 0.123 |
| London | 0.071 | 0.172 | 0.069 | 0.172 |
| Southeast | 0.696*** | 0.138 | 0.692*** | 0.137 |
| Southwest | 0.330* | 0.180 | 0.329* | 0.180 |
| Eastern | 0.373** | 0.159 | 0.373** | 0.159 |
| Westmidlands | 0.070 | 0.181 | 0.072 | 0.181 |
| Northwest | 0.290* | 0.167 | 0.290* | 0.167 |
| North | -0.133 | 0.146 | -0.132 | 0.146 |
| Agriculture | 3.449*** | 0.627 | 3.456*** | 0.626 |
| Manufacturing | -0.126 | 0.172 | -0.117 | 0.169 |
| Hotels | -0.029 | 0.188 | -0.029 | 0.185 |
| Transport | 0.367 | 0.282 | 0.378 | 0.281 |
| Finance | -0.435* | 0.262 | -0.429* | 0.260 |
| Business | 0.226 | 0.195 | 0.233 | 0.193 |
| Publicadmin | -0.401 | 0.249 | -0.397 | 0.247 |
| Education | 0.093 | 0.209 | 0.110 | 0.206 |
| Health | 0.061 | 0.206 | 0.072 | 0.203 |
| Community | 0.437** | 0.178 | 0.452** | 0.174 |
| Households | 0.746** | 0.347 | 0.754** | 0.345 |
| Sigma_u | 3.538*** | 0.043 | 3.538*** | 0.043 |
| Sigma_e | 7.086*** | 0.021 | 7.086*** | 0.021 |
| Rho | 0.200 | 0.004 | 0.199 | 0.004 |
| Log likelihood | -224157.24 | | -224161.86 | |
| Wald chi2 | 2494.93*** | | 2484.84*** | |
| Prob > chi2 | 0.0000 | | 0.0000 | |
| Number of obs | 65121 | | | |
| Number of groups | 14125 | | | |
| Obs per group: min | 1 | | | |
| Obs per group: avg | 4.6 | | | |
| Obs per group: max | 11 | | | |

Note: * p<0.10; ** p<0.05; *** p<0.01. For definitions of Sigma_u, sigma_e and rho, see note of Table 4.

Robustness checks with respect to the inclusion of job satisfaction variables

Table A3 Random-effects Tobit Regression for Men

| J2hours | With wave dummy | | Without wave dummy | |
|--------------------|-----------------|-----------|--------------------|-----------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.034*** | 0.002 | 0.034*** | 0.002 |
| Jbwage | -0.034*** | 0.010 | -0.034*** | 0.010 |
| Wealth | -0.00002* | 0.00001 | -0.00002* | 0.00001 |
| Travel | -0.0047* | 0.0025 | -0.0047* | 0.0025 |
| Children | 0.102* | 0.058 | 0.102* | 0.058 |
| Married | 0.029 | 0.126 | 0.021 | 0.126 |
| Ownhealth | 0.106 | 0.106 | 0.064 | 0.088 |
| Age | -0.025*** | 0.004 | -0.025*** | 0.004 |
| Degree | 0.971*** | 0.208 | 1.010*** | 0.207 |
| GCSE | 0.900*** | 0.162 | 0.922*** | 0.162 |
| Alevel | 0.947*** | 0.188 | 0.986*** | 0.188 |
| Otherhi | 0.944*** | 0.166 | 0.969*** | 0.165 |
| Permanent | 0.245* | 0.127 | 0.224* | 0.127 |
| Public | 0.469** | 0.225 | 0.454** | 0.224 |
| Fulltime | -1.643*** | 0.208 | -1.655*** | 0.208 |
| Union | 0.229 | 0.154 | 0.301** | 0.151 |
| London | 0.283 | 0.241 | 0.377 | 0.236 |
| Southeast | 0.703*** | 0.190 | 0.804*** | 0.185 |
| Southwest | 0.458* | 0.243 | 0.555** | 0.240 |
| Eastern | 0.518*** | 0.213 | 0.633*** | 0.210 |
| Westmidlands | -0.335 | 0.250 | -0.239 | 0.246 |
| Northwest | -0.492** | 0.234 | -0.408* | 0.230 |
| North | -0.244 | 0.204 | -0.155 | 0.200 |
| Agriculture | 1.195*** | 0.368 | 1.214*** | 0.367 |
| Manufacturing | -0.319** | 0.152 | -0.319** | 0.151 |
| Hotels | -0.780** | 0.315 | -0.766** | 0.315 |
| Transport | -0.585** | 0.232 | -0.599*** | 0.231 |
| Finance | -0.578 | 0.367 | -0.598 | 0.366 |
| Business | -0.239 | 0.205 | -0.238 | 0.205 |
| Publicadmin | 0.725** | 0.299 | 0.697** | 0.299 |
| Education | 0.878** | 0.363 | 0.861** | 0.363 |
| Health | 1.198*** | 0.455 | 1.184*** | 0.455 |
| Community | 0.999*** | 0.268 | 1.001*** | 0.268 |
| Households | 1.630*** | 0.599 | 1.637*** | 0.600 |
| Sigma_u | 4.898*** | 0.057 | 4.902*** | 0.057 |
| Sigma_e | 8.832*** | 0.027 | 8.836*** | 0.027 |
| Rho | 0.235 | 0.005 | 0.235 | 0.005 |
| Log likelihood | -221797.95 | | -221819.78 | |
| Wald chi2 | 724.18*** | | 679.80*** | |
| Prob > chi2 | 0.0000 | | 0.0000 | |
| Number of obs | 60394 | | | |
| Number of groups | 12927 | | | |
| Obs per group: min | 1 | | | |
| Obs per group: avg | 4.7 | | | |
| Obs per group: max | 11 | | | |

Note: * p<0.10; ** p<0.05; *** p<0.01. For definitions of Sigma_u, sigma_e and rho, see note of Table 4.

Table A4 Random-effects Tobit Regression for Women

| J2hours | With wave dummy | | Without wave dummy | |
|--------------------|-----------------|-----------|--------------------|-----------|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| J2wage | 0.144*** | 0.005 | 0.144*** | 0.005 |
| Jbwage | -0.056*** | 0.013 | -0.058*** | 0.013 |
| Wealth | -0.00004*** | 0.00001 | -0.0004*** | 0.00001 |
| Travel | -0.011*** | 0.003 | -0.011*** | 0.003 |
| Children | -0.183*** | 0.049 | -0.189*** | 0.049 |
| Married | -0.363*** | 0.093 | -0.365*** | 0.093 |
| Ownhealth | 0.018 | 0.084 | 0.080 | 0.073 |
| Age | -0.031*** | 0.003 | -0.031*** | 0.003 |
| Degree | 0.632*** | 0.169 | 0.605*** | 0.168 |
| GCSE | 0.516*** | 0.128 | 0.521*** | 0.128 |
| Alevel | 0.870*** | 0.162 | 0.872*** | 0.161 |
| Otherhi | 0.967*** | 0.152 | 0.927*** | 0.150 |
| Permanent | -0.074 | 0.117 | -0.098 | 0.117 |
| Public | 0.912*** | 0.169 | 0.918*** | 0.167 |
| Fulltime | -1.833*** | 0.105 | -1.843*** | 0.105 |
| Union | -0.305** | 0.140 | -0.249 | 0.138 |
| London | 0.028 | 0.189 | 0.222 | 0.186 |
| Southeast | 1.073*** | 0.152 | 1.263*** | 0.148 |
| Southwest | 0.385* | 0.197 | 0.565*** | 0.191 |
| Eastern | 0.428** | 0.175 | 0.616*** | 0.172 |
| Westmidlands | -0.107 | 0.199 | 0.085 | 0.196 |
| Northwest | 0.141 | 0.186 | 0.330* | 0.182 |
| North | -0.205 | 0.162 | -0.018 | 0.159 |
| Agriculture | 2.496*** | 0.578 | 2.500*** | 0.578 |
| Manufacturing | 0.138 | 0.183 | -0.122 | 0.183 |
| Hotels | -0.162 | 0.198 | -0.151 | 0.198 |
| Transport | 0.448 | 0.308 | 0.439 | 0.308 |
| Finance | -0.506* | 0.288 | -0.495* | 0.288 |
| Business | 0.039 | 0.204 | 0.049 | 0.204 |
| Publicadmin | -0.586** | 0.274 | -0.611** | 0.273 |
| Education | 0.419* | 0.221 | 0.405* | 0.220 |
| Health | 0.174 | 0.221 | 0.155 | 0.221 |
| Community | 0.662*** | 0.183 | 0.661*** | 0.182 |
| Households | 0.755** | 0.308 | 0.764*** | 0.309 |
| Sigma_u | 3.778*** | 0.046 | 3.776*** | 0.046 |
| Sigma_e | 8.166*** | 0.023 | 8.171*** | 0.023 |
| Rho | 0.176 | 0.004 | 0.176 | 0.004 |
| Log likelihood | -249312.35 | | -249344.84 | |
| Wald chi2 | 1865.82*** | | 1799.86*** | |
| Prob > chi2 | 0.0000 | | 0.0000 | |
| Number of obs | 69672 | | | |
| Number of groups | 14468 | | | |
| Obs per group: min | 1 | | | |
| Obs per group: avg | 4.8 | | | |
| Obs per group: max | 11 | | | |

Note: * p<0.10; ** p<0.05; *** p<0.01. For definitions of Sigma_u, sigma_e and rho, see note of Table 4.

Notes

¹ We thank an anonymous referee for pointing this out.

² There is a very small literature on the determinants of self-employment, see e.g. Ajayi-Obe and Parker (2005), Blau (1987), de Wit (1993) and Clark et al. (1998), Cueto and Mato (2006). However, to the best of our knowledge, no study has ever attempted to model self-employment and multiple-job-holding jointly, due to problems with measurement and identification. We argue that a full-treatment of self-employment is beyond the scope of this paper, but will show evidence in the Appendix that our main findings remain robust with respect to the exclusion of all self-employed (in either the main or the second-job).

³ Results of these estimations are available from the first author upon request.

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