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JOB CHANGES, HOURS CHANGES AND LABOUR
MARKET FLEXIBILITY:
PANEL DATA EVIDENCE FOR BRITAIN

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THE INSTITUTE FOR FISCAL STUDIES
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Job Changes, Hours Changes and Labour Market Flexibility: Panel Data Evidence for Britain*

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Abstract

This study uses the first twelve waves of the British Household Panel Survey covering the period 1991-2002 to investigate the extent of constraints on desired hours of work within jobs and the degree of flexibility of the labour market for a sample of women. Our main findings are as follows. First, the largest movements in hours worked are observed for workers who change their jobs. Second, about 40 percent of the women in the sample are not putting in the hours they would like. Most of them (mainly full-timers) would like to work fewer hours at the prevailing hourly wage. Again, women who change job experience the greatest hours changes, especially if they are over- or under-employed. Third, there is evidence of hours constraints. The hours movements among quitters are up to 5 hours greater than the movements among stayers. Fourth, we do not detect systematic time trends in the relationship between hours changes and job changes. But there is some evidence that overemployed women find it increasingly more difficult to move towards their desired hours even after changing job. Fifth, the evidence on a flexible labour market is mixed. We find only partial support for the hypothesis that overemployed or underemployed quitters receive compensating wage differentials if the new job does not satisfy their hours preferences, as well as for the hypothesis that quitters get a wage premium when they end up moving to jobs that constraint their desired hours.

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1. Introduction

Are workers free to choose the number of hours they work in the jobs they do? The ‘canonical’ labour supply model assumes that they are. It postulates that workers making decisions on which job to work in, and for how many hours per week, are faced with a parametric hourly wage rate (corresponding to their productivity in work) and have a free choice over how many hours per week to work (Pencavel, 1986; Blundell and MaCurdy, 1999). But various strands of labour economics research have suggested alternative models of hours choice where hours are fixed within jobs. Altonji and Paxson (1988, 1992) analyse models where jobs are ‘packages’ of fixed hours-wage combinations.¹ The monopsony framework recently developed by Manning (2003) suggests that employer preferences will play a key role in determining hours of work in a given job, which also suggests that workers are constrained in choosing hours within jobs. In reality, we know that workers sometimes do change hours within a given job. But do they have full flexibility to do this in every case? And if not, what are the implications for labour market dynamics and for policy makers?²

Each employee’s freedom to vary the hours he or she works is a key assumption underpinning the concept of the ‘flexible labour market’. However, even if hours were completely fixed *within* jobs but mobility *between* jobs is costless, we would still expect workers to be located on their labour supply curve, i.e. at their most preferred level of hours given the market wage.³ But if there are costs to moving between jobs, then workers will face constraints (at least in the short run) on the hours they can work. This has implications for the

¹ Their analysis builds on earlier studies by Barzel (1973), Rosen (1976), Ham (1982), Moffitt (1984), and Lundberg (1985). For a recent survey, see Lang and Khan (2001).

² Little is known on hours flexibility for Britain. Two studies that have investigated the extent of constraints on desired hours are Steward and Swaffield (1997) and Bryan (2000). Using data from the British Household Panel Survey, they both find that a substantial proportion of male workers (Steward-Swaffield) and male and female workers (Bryan) are not putting in the hours they would like, with most of the dissatisfied workers wishing to work fewer hours per week. Both studies, however, abstract from the issue of how changes in hours, hours preferences and jobs affect wages.

³ Most of the early studies that analysed labour supply under the assumption that workers face a wage-hours locus rather than a fixed wage rate have also assumed that workers may costlessly find a job that offers their preferred hours-wage combination.

interpretation of data on actual and preferred hours of work, rates of mobility between jobs, and for estimating models of labour supply.

In this study, we use individual-level longitudinal data on women from the first twelve waves of the British Household Panel Survey (BHPS) covering the period 1991 to 2002 to analyse the extent of hours constraints within jobs. Our aim is to see whether changes in labour supply preferences produce much larger effects on worked hours when workers change job. Given the length of the panel, we also test whether the patterns are constant over time, or whether there are systematic trends in hours movements and job changes over time. We are particularly interested in checking if and how employees vary their hours in response to exogenous changes in the incentives to work a given level of hours, under the null hypothesis of complete flexibility in hours choice within the job. For this purpose, we use reforms to the tax and benefit system that changed the hours conditions for Family Credit in 1992 and 1995 and the attractiveness of work through the Working Families' Tax Credit in 1999 to test the 'canonical' model of complete hours flexibility. Finally, we look at how changes in wages relate to changes in hours both within and between jobs. The idea here is that, in a labour market with tied hours-wage packages, constrained workers may be willing to sacrifice wage gains (even to face wage reductions) for better hours when changing jobs. Similarly, workers may accept jobs offering undesirable hours only if the corresponding wage gains are greater. A labour market with these features is arguably 'flexible'.

This research is likely to be relevant for the design of two major sets of employment related policies. One is employment protection and employment rights policies. If it is difficult to change hours of work within a job then the implication is that people who want to change their working hours (for example, because of their family responsibilities) may have to change jobs altogether. If employment rights are conditional on a certain length of tenure in the job, then these forced tenure breaks could negatively affect employment rights and conditions. In addition, if pay is partly determined by job tenure, such breaks could also

curtail lifetime earnings over workers' life cycle. This could have clear implications for equality of treatment in the workplace, for example for mothers of young children. The other important area is the design of tax credit and benefit policies which specify a minimum number of hours of work per week as a precondition for entitlement to a given payment (for example, the Working Tax Credit, and the current pilot for the Employment Retention and Advancement Scheme). If hours are not flexible within jobs, then changes to the tax/benefit incentive to work a given number of minimum hours are likely to affect rates of job-to-job transitions for the affected groups of workers.

In the next section we briefly describe the view of the labour market that underlies our empirical analysis and interpretation. Section 3 describes the data. Section 4 presents our main results on the relationship between job changes and hours changes, the role of labour supply preferences, patterns of changes in hours, jobs and labour supply preferences over time, and wages. Section 5 concludes.

2. Conceptual Framework

In the last twenty years, a number of theoretical models and empirical studies have suggested that hours of work cannot be freely changed within jobs, but are instead mainly determined by employer preferences.⁴ Such studies begin with the observation that most jobs appear to permit only a limited variation in hours worked at the discretion of the employee (e.g., standard 9-to-5/five-days-a-week jobs and regular shifts). This indicates that fixed hours per week may be part of a package including the wage rate and other working conditions. If there is a locus of wage-hours combinations representing different jobs, then workers make their decisions subject to this constraint, and the wage would be endogenous.⁵ This is not in line

⁴ See Lang and Kahn (2001) for a survey.

⁵ Consistent with the notion that there is a substantial amount of rationing in hours, most of the above-mentioned (and other) studies of labour supply based on hedonic models (e.g., Rosen, 1976; Biddle and Zarkin, 1989; Dickens and Lundberg, 1993; Moffitt, 1984; Altonji and Paxson, 1992) find that hourly earnings are not independent of hours worked.

with conventional models of labour supply, according to which individuals face an exogenously given wage rate that is independent of hours worked, and freely choose hours of work subject to the resulting linear budget constraint.

Given this unconstrained choice, labour supply has no implications for job mobility. Exactly because hours are freely chosen within jobs, hours do not have an independent effect on job choice when the wage is accounted for (Altonji and Paxson, 1988). Likewise, the effect of changes in labour supply preferences on hours will not be affected by whether a worker changes job. But if jobs are packages of fixed hours and wages, then overemployed or underemployed workers can change their actual hours of work more easily only if they change jobs. In addition, nonzero mobility costs (or any type of imperfection in the labour market) may prevent workers from moving to jobs with more desirable hours conditions. In this case, changes in labour supply preferences will lead to changes in actual hours only if workers can find a better package of hours-wage combinations.

One way to check for the presence of hours constraints is to compare hours movements among workers who change job with movements among workers who stay in the same job from one year to the next. For this purpose we estimate hours-change equations of the following form:

$$\Delta H_{it} = \gamma Q_{it} + \delta \Delta Z_{it} + \varepsilon_{it}, \quad (1)$$

where ΔH_{it} is the change in worked hours per week between time $t-1$ and t for woman i , Q_{it} is a dummy variables which is equal to 1 if a quit occurred between $t-1$ and t , and zero if there was no quit, ΔZ_{it} is a vector of control variables (some of which are measured in terms of changes between $t-1$ and t , such as marital status and health, others are measured in levels at time $t-1$, such as education and age), and ε_{it} is a residual. A positive estimate of γ would suggest that workers who change job have greater hours changes than stayers. But this relationship cannot adequately inform us on the presence of hours constraints because it does

not account for individuals' labour supply preferences. To test the hypothesis that changes in labour supply preferences can affect actual hours only if workers move to another job, we follow Altonji and Paxson (1992) and estimate hours-change equations allowing the effects of changes in hours preferences to vary depending on whether a quit has occurred, that is:

$$\Delta H_{it} = P_{it-1}(\mu + \phi Q_{it}) + \delta \Delta Z_{it} + \varepsilon_{it}, \quad (2)$$

where P_{it-1} is a vector of variables measuring hours preferences at time $t-1$. A finding that ϕ is close to 0 and μ is nonzero indicates that the effect of past preferences on hours is independent of whether we observe a job change, implying hours flexibility within jobs. Conversely, estimates of μ close to zero and ϕ nonzero support the hypothesis of hours constraints within jobs. If all jobs have different degrees of hours (in)flexibility and hours constraints exist for the whole population, then μ and ϕ are likely to have the same sign, and the sum $\mu + \phi$ is expected to be greater than μ in absolute value. The result that past labour supply preferences affect actual hours more for quitters than stayers can be seen as providing evidence that hours constraints within jobs are important.

As argued above, hours of work may not freely vary within jobs. In addition, the labour market may have costs of mobility and imperfect information such that workers would not be able to move to jobs that offer the hours-wage combinations on the labour supply schedule or a hedonic hours-wage locus. However, the labour market could still be 'flexible' in the sense that workers may be able to trade off changes in the desirability of worked hours against wage gains when they move across jobs (Altonji and Paxson, 1988). Specifically, in a flexible labour market we expect to observe that the effect of an increase in hours by quitters who were overemployed in their old job is to increase the wage gain required to induce the job change. Likewise, the effect of an increase in hours by job changers who were underemployed is expected to decrease the size of the wage gain upon quitting. Similar arguments hold when the hours constraints are in the new job.

The empirical specification used in the wage analysis follows that introduced by Altonji and Paxson (1988) and has the form⁶

$$\begin{aligned}
\ln(W_t) - \ln(W_{t-1}) = & \beta_0 + \beta_1 X + \beta_2 |\Delta H \cdot \text{UP}| + \beta_3 |\Delta H \cdot \text{DOWN}| \\
& + \beta_4 \text{UNDER}_{t-1} + \beta_5 \text{OVER}_{t-1} + \beta_6 \text{UNDER}_t + \beta_7 \text{OVER}_t \\
& + \alpha_{01} |\Delta H \cdot \text{UP}| \text{UNDER}_{t-1} + \alpha_{02} |\Delta H \cdot \text{UP}| \text{OVER}_{t-1} \\
& + \alpha_{03} |\Delta H \cdot \text{DOWN}| \text{UNDER}_{t-1} + \alpha_{04} |\Delta H \cdot \text{DOWN}| \text{OVER}_{t-1} \\
& + \alpha_{11} |\Delta H \cdot \text{UP}| \text{UNDER}_t + \alpha_{12} |\Delta H \cdot \text{UP}| \text{OVER}_t \\
& + \alpha_{13} |\Delta H \cdot \text{DOWN}| \text{UNDER}_t + \alpha_{14} |\Delta H \cdot \text{DOWN}| \text{OVER}_t,
\end{aligned} \tag{3}$$

where W_t is the hourly wage measured at time t , and X is a vector of controls for education, work experience, race, changes in marital and health status, changes in union status and local unemployment rate, number of and changes in the number of children, and a set of year dummies.⁷ The variable $|\Delta H \cdot \text{UP}|$ is equal to the change in hours given that the hours change is positive and zero if the change in hours is negative, while the variable $|\Delta H \cdot \text{DOWN}|$ is equal to the absolute value of the change in hours if the change is negative and zero if the change in hours is positive. These two variables allow the effect of increases in hours to be different from the effect of hours reductions ($\beta_2 \neq \beta_3$). The terms UNDER_j and OVER_j ($j=t, t-1$) are indicators of whether the difference between actual and desired hours in each period j are positive or negative. Finally, the variables related to parameters $\alpha_{01} - \alpha_{14}$ are meant to capture the hours-wage tradeoffs and the flexibility of the labour market. Basically, after a quit, a change in hours that tightens the constraint on the initial job should be associated with a larger wage gain, and similarly a change in hours that tightens the constraint on the new job should be associated with a larger wage gain. For example, in a flexible labour market, women who reduce their hours of work when initially they wanted to work more should have a larger wage gain ($\alpha_{03} > 0$). The lack of this effect is evidence of tied hours-wage packages. Similarly, individuals who increase their hours when moving into a job where they want to

⁶ For simplicity, we drop the individual subscript from all variables.

⁷ Changes in the variables in the vector X are measured between $t-1$ and t , while the other variables (such as education and work experience) are measured at time $t-1$.

work less should be compensated with larger wage gains ($\alpha_{12} > 0$). Using the same reasoning, the expected signs for the α_{01} - α_{14} parameters are: α_{01} , α_{04} , α_{11} , and $\alpha_{14} < 0$, and α_{02} , α_{03} , α_{12} , and $\alpha_{13} > 0$.

Equation (3) refers to quitters only. Instead, as in Altonji and Paxson (1988), we estimate it over the sample of women who did and did not quit, which excludes those who were laid off. But we allow the coefficients on all variables (except those in the vector of control variables X) to vary between quitters and stayers. So the observations on stayers help us identify the effect of the control variables, such as education and marital status.

3. Data

The data we use come from the first twelve waves of the British Household Panel Survey (BHPS) collected over the period 1991-2002. Since Autumn 1991, the BHPS has annually interviewed a representative sample of about 5,500 households covering more than 10,000 individuals. All adults and children in the first wave are designated as original sample members. On-going representativeness of the non-immigrant population has been maintained by using a ‘following rule’ typical of household panel surveys: at the second and subsequent waves, all original sample members are followed (even if they moved house or if their households split up), and there are interviews, at approximately one-year intervals, with all adult members of all households containing either an original sample member, or an individual born to an original sample member whether or not they were members of the original sample. The sample therefore remains broadly representative of the population of Britain as it changes over time.⁸

⁸ Of the individuals interviewed in 1991, 88 percent were re-interviewed in wave 2 (1992). The wave-on-wave response rates from the third wave onwards have been consistently above 95 percent. Detailed information on the BHPS can be obtained at (<http://www.iser.essex.ac.uk/ulsc/bhps/doc/>). The households from the European Community Household Panel subsample (followed since the seventh wave in 1997), those from the Scotland and Wales booster subsamples (added to the BHPS in the ninth wave) and those from the Northern Ireland booster subsample (which started in wave 11) are included in our analysis.

Our estimation sample includes women who are at least 16 years old and were born after 1941 (thus aged at most 60 in 2002). We exclude any female who was long-term ill or disabled, and in school full time or self-employed in a given year. The sample includes 10,134 women who have been observed at least two consecutive times over the sample period, of whom 2,197 are single and childless, 1,634 are lone mothers, 3,265 live with a partner and have no child, and 3,308 are married with children. Although only 10 percent of the women are observed in the same marital state for all the 12 years of the panel, about 40 percent of them are observed for at least 7 years in the same state. The resulting sample size, after pooling all available years for all groups of women, is 48,293 observations (8,920 and 17,081 on single and married women without children respectively, and 6,137 and 16,155 on lone and married mothers).

Table A1 presents summary statistics of key socio-demographic characteristics of the four groups of women. There are some noticeable differences among them. Lone mothers are younger (aged about 30) than all the other women, and a larger fraction of them tend to have non-white ethnic origins. They are also less educated, more likely to be in social housing and have less work experience. Married women without children are instead older (aged around 44), better educated (although the greatest proportion of women with university or higher degrees is observed for single childless women), more likely to be house owners and have greater work experience.

Table 1 shows year-on-year labour market transition probabilities averaged over the whole period each woman has been observed. We distinguish five labour market states: ‘out of the labour force’ (labelled OLF, which includes unemployment) or nonwork, ‘mini-jobs’ (i.e., working 1-15 hours per week), ‘short-part-time’ employment (SPT, i.e., working 16-23 hours per week), ‘long-part-time’ employment (LPT, i.e., working 24-29 hours per week), and

‘full-time’ employment (FT, i.e., working 30 or more hours per week).⁹ The table reports transition probabilities for all women regardless of their marital status, as well as for women in the four marital states described before. There is high persistence in both nonwork and full-time work for all women, especially those without children (either single or married).¹⁰ For example, single women without children who do not work in any given year t have an 84 percent probability of not working in year $t+1$. For the same group of women, full-time workers in year t have a 91 percent probability of staying in the same labour market state. In comparison, lone and married mothers show a slightly greater degree of mobility. Persistence rates are much lower in mini-jobs and part-time employment, suggesting that these are more transitional labour market states. For instance, women in LPT jobs have only a 42 percent probability of remaining in long-part-time employment. They are much more likely to change labour market status, with a 19 percent probability they will move into SPT employment and a 26 percent probability they will move into full-time jobs. Clearly, women in mini-jobs and part-time work are more likely to change their labour market commitments in the next year than are women who work full-time or are out of the labour market entirely. Irrespective of marital status, more-educated women are generally more mobility at all levels of labour market involvement except in the case of full-time employment (Tables A3 and A4).¹¹

Table 1 also reports the average change in hours of work from one year to the next for all women in each labour market state. To isolate the hours effect of different types of

⁹ These labour force states are based on a measure of weekly hours of work that includes usual worked hours as well as usual overtime hours. Table A2 reports average worked hours for all workers in each labour market states and for women in each marital status. Mean weekly hours for all women in employment are 31, they are 10 for women in mini-jobs, 19 for women in SPT, 26 for women in LPT, and 40 for women in FT (with almost 20 percent of the whole sample or 35 percent of the full-timers reporting more than 40 hours per week). There are some clear differences in hours worked by women in different marital states. On average, single and married women without children work longer (about 34-35 hours per week in all employment states) while lone and married mothers work 7-9 fewer hours pre week. Interestingly, this difference is led by a greater proportion of childless women working full-time and not by large hours differentials within each labour market state.

¹⁰ High persistence rates in nonwork and full-time employment have also been found by Booth, Garcia Serrano and Jenkins (1999). Our figures are also comparable to the annual transition rates reported in Gregg and Wadsworth (1995 and 1996). Similar transitions have been observed among American women by Blank (1989) and Francesconi (2002).

¹¹ Women are ‘more educated’ if they achieved A-level (or equivalent) qualification or higher qualifications. Conversely, ‘less educated’ women are those who achieved less than A-level qualifications.

transitions, we distinguish between changes that include zero hours (that is, staying or moving into nonwork) and changes that exclude them (that is, job-to-job transitions or moves from OLF to work). For transitions that originated from a job, we also report absolute changes in hours (again including and excluding transitions into nonwork), which allow us to gauge the extent of ‘hours churning’, that is the simultaneous existence of hours increases and hours reductions. For all women who were out of work, getting a job is associated with an average of 21 hours of work per week. For women who were already working, there is a great deal of heterogeneity along the labour supply. At one extreme, those who were in mini-jobs show the greatest positive hours increases (between 3 and 6 hours per week). At the other extreme, full-timers show the greatest decreases (between 2 and 3 hours). In all employment states, we observe a great deal of hours churning from around 5-6 hours in the case of full-time employment to about 7 hours in the case of mini-jobs. Single childless women and lone mothers report the largest hours changes in all labour states except full-time employment, where the greatest changes are observed among single and married mothers.

4. Results

A. Job Changes and Hours Changes

Table 2 documents a high turnover rate over the sample period.¹² Just over 20 percent of the women in the sample change jobs between two consecutive years, with a turnover rate of almost 23-24 percent for single women (with and without children) and 19-20 percent for married women.¹³ In general, the largest changes in hours occur among women who change

¹² Our measure of job change does not include internal promotions or job changes within the same firm, but includes moves to other firms (either quits or layoffs).

¹³ These figures are slightly greater than those reported in Booth, Francesconi and Garcia-Serrano (1999) and in Booth and Francesconi (2000), which however refer respectively to pre-1990 years and the first half of the 1990s. Combined with the transition rates in Table 1, they imply average job durations that are shorter than those found by Burgess and Rees (1996) but are consistent with those discussed in Gregg and Wadsworth (2002). Turnover rates for the United States that are comparable to ours are found, among others, by McCue (1996) and Royalty (1998).

jobs.¹⁴ Looking at all women in all employment states, the net hours change is about 0.3 per week among ‘stayers’ and 1 among ‘movers’, while the absolute weekly hours changes are almost 5 and 10 hours for the two groups respectively. This indicates substantial changes in hours (both up and down). Single women, and especially single mothers, show not only greater turnover rates but also greater hours variability.

Although the average proportion of all women who change job is relatively stable along the labour supply, a lot of heterogeneity emerges across different groups of women. For example, while only 17 percent of lone mothers in mini-jobs change employer, about 29 and 27 percent of those in LPT and FT do so from one year to the next. There is also a great deal of heterogeneity in hours changes both across labour market states and along the labour supply for all women regardless of marital status. For instance, women who stay in mini-jobs increase their weekly hours by about 4, while those who stay in full-time jobs decrease their labour supply by 1 hour per week. Similarly, women in mini-jobs who change employer put in extra 11 hours of work per week, and full-timers who change job reduce their supply of labour by 5 hours on average. This last finding provides some evidence of “regression toward the mean” in worked hours, with the largest increases at the bottom of the labour supply being observed among singles without children and the most substantial declines at the top occurring amongst married women with children.

We repeat the same analysis in Tables A5 and A6 where we stratify the sample by education levels (low versus high education). Job changing patterns are relatively similar across more- and less-educated women, with roughly 20 percent of individuals changing job every year in both educational categories. Despite this similarity, hours changes are slightly greater for low-education women than for women with higher educational levels.¹⁵

¹⁴ This confirms the results shown in Altonji and Paxson (1992) for the United States and Bryan (2000) for Britain.

¹⁵ Although the extent of hours churning is comparable across the two educational groups, more churning is generally observed at low levels of labour supply among less educated women and in full-time employment among the better educated.

Table 3 summarises these results in the linear regression framework of equation (1), where we include a broad set of potential determinants of labour supply changes, such as changes in marital status and health, number and changes in the number of children, and controls for race, education, experience and year dummies (e.g., Altonji and Paxson, 1992). The table presents the estimates of γ , which refer to a dummy variable that takes value one if a woman changes job between interviews and zero otherwise, and are for the entire sample of women as well as for women distinguished by marital state.¹⁶ We show results from two types of regressions, one in which the dependent variable is the year-on-year change in weekly hours of work, the other in which the dependent variable is the absolute value of the same change. As compared to stayers, women who change job experience an average increase of almost 1 hour of work per week, although the overall hours churning is about five times as large (panel 1). If we restrict our attention to workers only (panel 2), these figures go down only slightly. These estimates, however, conceal a great deal of heterogeneity across labour market states. At low levels of worked hours such as mini-jobs (panel 3), changing job is associated with almost 9 additional hours of work, while at high levels of labour market involvement such as full-time employment (panel 6), changing job leads to a reduction of labour supply of about 3 hours. This confirms the regression-toward-the-mean results found earlier. The relationship between job changes and hours changes is heterogeneous also across different groups of women. In general, lone mothers show greater hours sensitivity in response to changing jobs, although among full-timers the greatest and smallest declines are observed among married women without children and with children respectively.

Both changing hours and changing jobs may be correlated with life-cycle considerations which have not been accounted for in the regressions of Table 3. For example, expectations about future wages or future constraints (e.g., changes in family responsibilities)

¹⁶ In the definition of job change here, we include both quits and layoffs (as in Table2). If we restrict the analysis to quits only, we find similar results.

could have substantial consequences on current labour market involvement. These intertemporal considerations may thus crucially interact with labour supply preferences, to which we now turn our attention.

B. The Role of Labour Supply Preferences

At each interview, the BHPS asks respondents whether they would like to work fewer hours, or more hours, or continue to work the same number of hours “assuming that they would be paid the same amount per hour”. We use this information to construct three labour supply preference variables for any given year of the sample period, labelled OVER (=1 if a worker would like to work fewer hours, and zero otherwise), UNDER (=1 if a worker would like to work more hours, and zero otherwise) and SAME (=1 if a worker would like to continue to work the same number of hours, and zero otherwise). For the whole sample of working women, more than 28 percent report being overemployed, almost 10 percent underemployed, and the remaining 61 percent report being satisfied with their hours of work.¹⁷

In Table A2, the average hours worked by all women who report being overemployed are about 39 per week as opposed to 20 for those who report being underemployed and 29 for those who are unconstrained. At different hours levels, the hours variation among the three groups of workers is negligible (except for the case of full-time employment). But as we move up the intensive margin, the proportion of women who would like to work more hours declines from 27 percent among those in mini-jobs to 4 percent among full-timers and, at the same time, the proportion of workers who would like to work fewer hours increases from

¹⁷ The differences across women in different marital states are not surprising. Women with children (especially lone mothers) are more likely to be underemployed, and women without children (especially those who are married) are more likely to be overemployed. Our figures compare well with those reported in the study by Bryan (2000), which uses data from two waves (1996-1997) of the BHPS. These are in contrast with the patterns for North American workers. For a sample of American men drawn from the Panel Study of Income Dynamics (PSID), Altonji and Paxson (1988) report that 27 percent of the men in the sample are underemployed and 5.5 percent are overemployed. Using data from the 1985 Canadian Labour Force Survey, Kahn and Lang (1991) report that 32 percent of female workers would like to work more and 17 percent would like to work fewer hours at their present wage. The figures for Canadian men are very similar. See also Lang and Kahn (2001).

nearly 7 percent among mini-job holders to 40 percent among full-timers. To see the extent of persistence in hours preferences over time and how this may differ within and between jobs, Table A7 shows year-on-year transitions in the labour supply preference variables for stayers and quitters, both for all women and for women distinguished by marital state.¹⁸ The table indicates a high degree of persistence in hours preferences for all workers, especially among the overemployed (OVER=1) and those who would like to continue to work the same number of hours (SAME=1). Perhaps, the most notable difference between stayers and quitters is that among stayers a relatively larger proportion of women remain overemployed and relatively smaller proportions of them remain underemployed or willing to continue to work the same number of hours.

In Table 4 the three labour supply preference variables observed in any given year $t-1$ of the panel are tabulated against the actual change in weekly hours worked between year $t-1$ and t . This is done for all women as well as for women stratified on marital status measured in year $t-1$. The same exercise is repeated on the subsamples of women who stay in the same job ('stayers') and on those who change job from one year to the next ('movers'). We draw attention to four results. First, all women, regardless of whether they are overemployed, underemployed or unconstrained, show a good deal of actual hours changes both up and down. For example, of the over-employed in $t-1$, 40 percent reduce their hours of work by 2 or more hours per week the following year, and almost 25 percent *increase* their labour supply by the same number of weekly hours.¹⁹ Similarly, among the underemployed, 44 percent increase their weekly hours by 2 or more (for 21 percent of this subsample the increase is of 10 or more hours), while 29 percent further reduce their supply by 2 or more

¹⁸ The table refers to quitters only, and excludes workers who have been laid off. The differences between stayers and movers when layoffs and quits are lumped together are smaller than those reported in Table A7, but are qualitatively similar. For the breakdown of workers who changed job into those who quit and those who have been laid off, see Table A8 (comments below).

¹⁹ Changes by one hour (up or down the labour supply) can capture measurement error, and so we consider them as if they were associated with no change. Table 4 shows that the proportions of workers reporting one less or one more weekly hour of work as compared to the previous year vary between 3 and 6 percent, and are fairly comparable across women in different marital states, types of job changing status, and labour supply preferences.

hours. Among unconstrained workers, about 29 percent increase and another 32 percent decrease their labour supply by 2 or more hours per week.

Second, over- and under-employed movers respectively decrease and increase hours of work substantially more than their stayers counterparts. For instance, in the case of the overemployed in year $t-1$, 56 percent of those who change job reduce their labour supply between $t-1$ and t by 2 or more hours as opposed to only 36 percent of those who do not change job. This suggests that hours may not vary freely within jobs. Third, although smaller fractions of stayers change their labour supply between any two successive years, about 60 percent of workers who do not change job (whether over-employed, under-employed or unconstrained) are observed to increase or decrease their labour supply by 2 or more hours, and for 20-25 percent this change involves 10 or more hours per week either up or down. This indicates that, even within jobs, there is some degree of choice over hours worked. Fourth, these findings seem to hold for all women irrespective of their marital status, although women with children tend to expand hours of work more than other women if they are underemployed (especially if they change job) and reduce their hours more if they are overemployed.

In Table 5 we repeat the analysis of Table 2 after distinguishing workers on the basis of their labour supply preferences. On average, women who change job experience the greatest hours changes, especially if they are over- or under-employed. For example, movers in all employment states who are over-employed reduce their labour supply by about 5 hours per week on average, with a total hours churning of almost 10 hours per week. In the case of under-employed movers we observe an increase in average hours by more than 6 and a churning of 11 hours per week. Again, this provides evidence that the extent of hours variability within a job may be difficult. In addition, when we look at women in all employment states, the unconstrained movers (those for whom $SAME=1$) seem to face smaller changes as compared to stayers. But this hides a substantial heterogeneity at different

hours levels: unconstrained movers from mini-job experience large hours increases (about 9.5 hours per week), while unconstrained movers from full-time employment experience large hours reductions (about 4 per week). Finally, the average hours changes among workers who stay in the same job are smaller than those among movers regardless of hours preferences, and vary relatively little (by at most 2 hours per week) across labour market states.

To provide a better understanding of how hours constraints are distributed across all women in the sample, Table 6 reports descriptive probit models relating the overemployment and underemployment indicators OVER and UNDER to a set of demographic variables as well as to experience, job tenure and hours of work. The table shows that UNDER is negatively related to weekly hours (with one extra hour of work reducing the probability of being underemployed by 0.5 percent) and that OVER is positively related to hours (with one additional hour increasing the probability of being overemployed by 1.3 percent).²⁰ Blacks are 9 percent more likely than whites to report overemployment, whereas Chinese women and women from other ethnic minorities are 8 percent more likely to report underemployment. As compared to single women without children, all other women are 2-3 percent less likely to be underemployed and 4-7 percent more likely to be overemployed. One additional child aged 0-4 increases the chances of overemployment by 6 percent and reduces those of underemployment by almost 2 percent. Children in other age groups do not seem to affect the likelihood of underemployment but reduce the probability of being overemployed by 2-3 percent. Family responsibilities (through marriage, or children or both) may thus give rise to hours constraints. While education does not have any systematic relationship with the probability of underemployment, higher educational qualifications are generally associated with a greater probability of overemployment. More experienced workers are less likely to be underemployed and more likely to be overemployed. This effect operates over and above the

²⁰ These results are in line with those reported in Altonji and Paxson (1988, Table 1). Additional results on UNDER for a sample of prime-aged males from the PSID are in Ham (1982).

age effect which works in the same direction, with older women being less likely to be underemployed and more likely to be overemployed. The effect of a greater local unemployment rate is to increase the probability of underemployment and reduce that of overemployment, while the effect of longer job tenure goes in the opposite direction.²¹

Finally, to see whether job mobility is necessary if past hours preferences are to affect actual hours of work, we estimate equation (2) where Q_{it} (the dummy variables that records whether or not a quit occurred between $t-1$ and t) is interacted with $OVER_{t-1}$, $UNDER_{t-1}$, and $SAME_{t-1}$ (with $SAME_{t-1}$ for stayers being the base). The results of these regressions are reported in Table 7. Before discussing them, we look at Table A8 which divides job mobility rates into quit and layoff rates by labour force state and marital status. This is important because equation (2) refers to quitters (and not to workers who have been laid off), and similarly the wage analysis presented below is performed on quitters. Table A8 confirms that, on average, job mobility involves about 20 percent of workers every year, with higher rates among lone mothers (especially if employed in long-part-time and full-time jobs) and lower rates among married women with children. Typically, 60 percent of the moves are quits, and the remaining 40 percent are layoffs.

Turning to Table 7, we find evidence that both μ and ϕ are nonzero (except in three cases only, where the large standard errors may be a result of small sample sizes). All jobs therefore have some degree of flexibility regardless of whether individuals move across them. However, $\mu + \phi$ is always significantly larger (in absolute value) than μ . This indicates that previous-period hours preferences affects actual worked hours more strongly when the job changes than when it does not. This in turn suggests that hours constraints within jobs are important.

²¹ Interestingly, our effects of tenure and local unemployment rate differ markedly from those in Kahn and Lang (1991), who found no effect from either variable.

C. Is There a Trend in Hours Movements and Job Changes over Time?

Our analysis so far has not allowed for different time trends in hours changes among stayers and movers.²² But the pattern of association of job changes with hours movement may not be constant over time, as it may interact with business cycle conditions that affect the opportunities to work a given level of hours through, for example, shifts of the demand for labour. The temporal relationship between hours and job changes may also vary as a result of special labour market policies that alter the whole budget set for specific groups of workers, such as low-income families with children after the changes in Family Credit in 1992 and 1995 and the introduction of the Working Families' Tax Credit in 1999.

To see how hours and job changes evolved over time, we repeated the regression analysis used for Table 3 and included a new set of interaction terms between the job change dummy and the time dummies in each regression of interest. The coefficients of such interaction terms are reported in Figure 1.²³ Panel (a), which distinguishes women by labour market state at time t , shows a fairly stable relationship between job changes and hours movements over time. The largest variation is observed among workers in long-part-time jobs (with a standard deviation of 1.59), and the lowest is observed among workers in short-part-time employment (s.d.=0.50). For women in mini-jobs and LPT, hours changes tend to decline slightly, while among full-timers we observe a weak upward trend (that is, smaller reductions by 1-2 hours per week) after 1998, at the time of the introduction of the WFTC. Panel (b) shows the trends by labour supply preference. The time patterns for unconstrained and underemployed workers are fairly stable, although the positive relationship between hours and job changes for the latter group of workers increased more at the beginning and end of the 1990s. The trend for overemployed workers is instead slightly increasing, with spikes in 1995 (when an additional benefit for working 30 hours or more was introduced within Family

²² For instance, the regressions of Tables 3 and 7 — besides a set of demographic and socio-economic variables — only control for year dummies, which pick up a time trend common to both groups of workers.

²³ Except for only few cases, most of such interaction terms are statistically significant at conventional levels.

Credit) and in 1999 (when the National Minimum Wage and the WFTC were introduced). This suggests that overemployed women may have found it increasingly more difficult to move towards their desired labour supply even after changing job.

Figure 2 breaks down the trends shown in panel (a) of Figure 1 by marital status. The relationships between hours and job changes in mini-jobs and short-part-time employment (panels (a) and (b)) have become more similar over time across women in all marital states. For both types of labour market involvement, the largest fluctuations are observed among lone mothers, although they seem to be correlated to neither macroeconomic conditions nor public policies that aimed at changing the incentive of working a given level of hours. Panels (c) and (d) show contrasting trends in long-part-time employment and full-time work. For all women in LPT (with the exception of single women without children), the variation in hours after changing job has declined over time, while for all full-timers it has increased. Again, lone mothers exhibit the largest fluctuations, but this time in the case of full-time work we observe spikes in 1995 and 1999.

D. Wages

As mentioned in Section 2, in a labour market with fixed hours-wage combinations, constrained workers may be willing to sacrifice wage gains for better hours when changing jobs. Similarly, workers may accept jobs offering undesirable hours only if the associated wage gains are sufficiently large. So far we have examined the presence of hours constraints by looking at labour supply, hours preferences and job mobility. To see whether there are tied hours-wage packages and the extent to which the labour market is flexible, we now turn to wages.

Table 8 shows hourly pay averaged over the whole sample period for women stratified by labour force status and marital status. The table distinguishes workers who do not change job from workers who change job, and these are further distinguished into those who quit and

those who are laid off. Considering women in all employment states who do not change job, we see that their average hourly pay is £7.45. The corresponding wage for movers is £7.14, which is in between the figures of £7.54 and £6.46 for quitters and workers who have been laid off respectively. Quitting a full-time job is associated with a small wage gain (of 2.5 percent) as compared to not moving, while moving from other jobs is associated with almost no gain or, as in the case of mini-jobs, a small penalty (of 4 percent). The hourly pay associated with a job after a layoff is instead substantially lower than the wage received by stayers or quitters. In addition, stayers enjoy greater wage growth as compared to both types of movers. With only few exceptions, this same picture emerges for women in different marital states. Therefore, immobile workers in our sample receive wages that are similar to those received by quitters (especially if they were in full-time and part-time jobs) and greater than those received by workers who had been laid off, and face greater wage gains overall.²⁴

Tables 9 and 10 show the OLS estimates of equation (3) for stayers and quitters, respectively. In both tables, we report the results from five different specifications (columns [1]-[5]), which increasingly add hours and constraints variables, and White *t*-statistics that account for heteroscedasticity and serial correlation across observations on the same individual. We begin with the results for quitters (Table 10). The main findings can be summarised as follows.

1. Wage gains for quitters. Across all five specifications, job mobility is never associated with wage gains. For example, from column [5], having changed job leads to a wage penalty of 1.4 percent. However, none of the estimates is statistically significant at conventional levels.²⁵

²⁴ These results are similar to those found by Light and McGarry (1998) for young white men drawn the National Longitudinal Survey of Youth.

²⁵ Altonji and Paxson (1988) find instead a small positive effect of changing job on wage growth. But in their case too this effect is not statistically significant.

2. *Compensating wage differentials for hours levels.* We find evidence of a strong relationship between hours and wages when no constraints are taken into account (columns [1]-[3]): for example, in column [3], the coefficient of $|\Delta H \cdot UP|$ is 0.008, and the coefficient of $|\Delta H \cdot DOWN|$ is -0.020. Both coefficients are statistically significant at the 1 percent level. If we interpret these estimates as indicative of the hours-wage locus in a hedonic price model, they suggest that there is a positive trade-off between weekly hours and wages. If we take 30 hours per week as our base, the point estimates in column [3] indicate that the hourly wage for a 40-hour per week job would exceed the wage for a 20-hour per week job by about 28 percent. This finding supports the notion of equalising differences (Rosen, 1986), and is in stark contrast with the results for men reported in Altonji and Paxson (1988). On the contrary, Table 9 reveals that there is a strong negative relationship between the wage change and the hours change for women who do not change jobs.²⁶

3. *Effects of overemployment and underemployment on hours-wage tradeoffs.* Columns [4] and [5] report the effects of the interactions between hours changes and hours constraints. For quitters, we expect to find *greater* wage gains as a result of hours changes that tighten hours constraints on the previous job. Likewise, hours changes that relax a previous constraint are expected to be associated with *smaller* wage gains. In a similar fashion, hours changes that tighten (loosen) constraints on the new job should lead to greater (smaller) wage gains. The results in Table 10 are mixed. Only two of the eight interaction parameters have the right sign and are statistically significant (α_{13} and α_{14}), three parameters have the right sign but are imprecisely estimated (α_{01} , α_{11} , and α_{12}), while the remaining three have the wrong sign, and one of them is statistically significant (α_{04}).²⁷ This evidence therefore supports neither the notion that overemployed or underemployed workers who

²⁶ Clearly, these coefficients do not identify a wage-hours locus if there are packages of fixed hours-wage combinations which are not embedded in the labour supply model that guides our interpretation.

²⁷ The joint significance of the α_{01} - α_{04} parameters (especially with specification [5]) is primarily driven by α_{04} , which has the wrong sign.

change job receive compensating wage differentials if the new job does not accommodate their hours preferences, nor the notion that quitters get a wage premium when they end up moving to jobs that constraint their desired hours.

The estimates in Table 10 suggest that the effects of increases in hours are not the same as the effects of reductions in hours, whether workers were constrained in the old job or in the new. But because only 12 percent of the observations are on quitters we may run into small sample size problems by including four separate interaction terms in each case. For this reason, we estimated specification [4] of equation (1) imposing the restriction that the coefficients on $|\Delta H \cdot UP| \times UNDER_{t-1}$, $|\Delta H \cdot UP| \times OVER_{t-1}$, $|\Delta H \cdot DOWN| \times UNDER_{t-1}$, and $|\Delta H \cdot DOWN| \times OVER_{t-1}$ are the equal in absolute value. That is, $\alpha_{01} = -\alpha_{02} = -\alpha_{03} = \alpha_{04} = \alpha_0$. We also estimated specification [5] imposing the restriction that all hours-constraint interactions on the new job have the same effect of wage changes ($\alpha_{11} = -\alpha_{12} = -\alpha_{13} = \alpha_{14} = \alpha_1$), as well as imposing the restriction of a common α_0 . The results of these constrained regressions are in Table 11, which shows only the coefficients on α_0 and α_1 for quitters. From specification [5] the estimate α_0 for the interaction of hours changes and constraints on the old job is 0.006, while the estimate α_1 for constraints on the new job is 0.013. Both estimates are statistically significant, jointly different from zero and different from each other. These results, therefore, provide support for the hypothesis that workers receive compensating wage differentials when they change their work hours in some undesirable way.

4. Effects on stayers. Table 9 shows the estimates on hours and constraint variables for workers who do not change job. Although it is generally assumed that hours and wages within a given job are fixed, preferences of employers and workers may vary over time. Firms may respond to changes in required hours or changes in required hours relative to changes in desired hours by workers with adequate wage adjustments. For instance, if workers wanted to

work less at a given point in time but were not allowed by their employer, they might receive greater wage gains if they were required to work more in subsequent periods. So, even within jobs, we would expect to observe hours constraints that affect the pattern of hours-wage trade-offs. The evidence is again mixed. Four of the eight coefficients have the wrong sign, and only two are statistically significant. Therefore, not only is the extent of hours mobility much lower within jobs than between jobs, but also the way in which hours movements are rewarded within jobs does not seem to conform to the notion that workers will trade off changes in the attractiveness of worked hours with wage gains.

5. *Effects by marital status.* Tables 12 and 13 respectively report the estimates of equation (1) for stayers and quitters stratified by marital status. Two versions of equations (1) are shown, namely specifications [1] and [5]. Most of the results discussed above are found across all groups of women. Quitting does not lead to wage gains (except for lone mothers under specification [1]), although this variable is never precisely estimated (Table 13). For all women who change job, there is a positive trade-off between the wage and hours per week, while the trade-off is negative among stayers. So there is evidence of some compensating differentials for hours levels. But the evidence of compensating differentials for overemployment and underemployment on wage-hours trade-offs is again mixed for all groups of women (and for both quitters and stayers). Finally, Table 14 shows the estimates obtained after imposing the restriction that the effects of increases in hours are the same as the effects of reductions in hours for workers who are constrained in the old job or in the new job. They reveal that women in all marital states trade off changes in the desirability of work hours against wage changes when changing jobs. This is especially true for mothers (whether married or not) when the hours constraint is on the new job, and for women without children (whether married or not) when the constraint is on the old job.

5. Conclusion

This study investigates the extent of constraints on desired hours of work within jobs and the degree of flexibility of the labour market, in the sense that workers may be able to trade off changes in the desirability of worked hours against wage gains when they move across jobs. In the empirical analysis we use longitudinal data from the first twelve waves of the British Household Panel Survey. Our main findings are as follows:

- The largest movements in hours worked are observed for workers who *change* their jobs. These range between 9 extra hours of work among women in mini-jobs and 3 fewer hours among full-timers. Despite some differences, these relationships hold true for all women regardless of their marital status.
- About 40 percent of the women in our sample are not putting in the hours they would like. Most of them (mainly full-timers) would like to work *fewer* hours at the prevailing hourly wage. Again, women who change job experience the greatest hours changes, especially if they are over- or under-employed.
- If hours of work can flexibly vary within jobs, we would expect the effect on hours of past labour supply preferences to be the same for stayers as for quitters. But if employers restrict hours, we expect stronger responses among quitters. We find evidence of *hours constraints*. The hours movements among quitters are up to 5 hours greater than the movements among stayers.
- We do *not* detect systematic time trends in the relationship between hours changes and job changes. This suggests that, on average, the variation in hours due to job changes has varied little in response to exogenous changes in the incentives to work a given level of hours (e.g., the changes in hours for eligibility to Family Credit in 1992 and 1995 and the greater attractiveness of work through the Working Families' Tax Credit in 1999). There is some evidence however that overemployed women find it

increasingly *more difficult* to move towards their desired hours even after changing job.

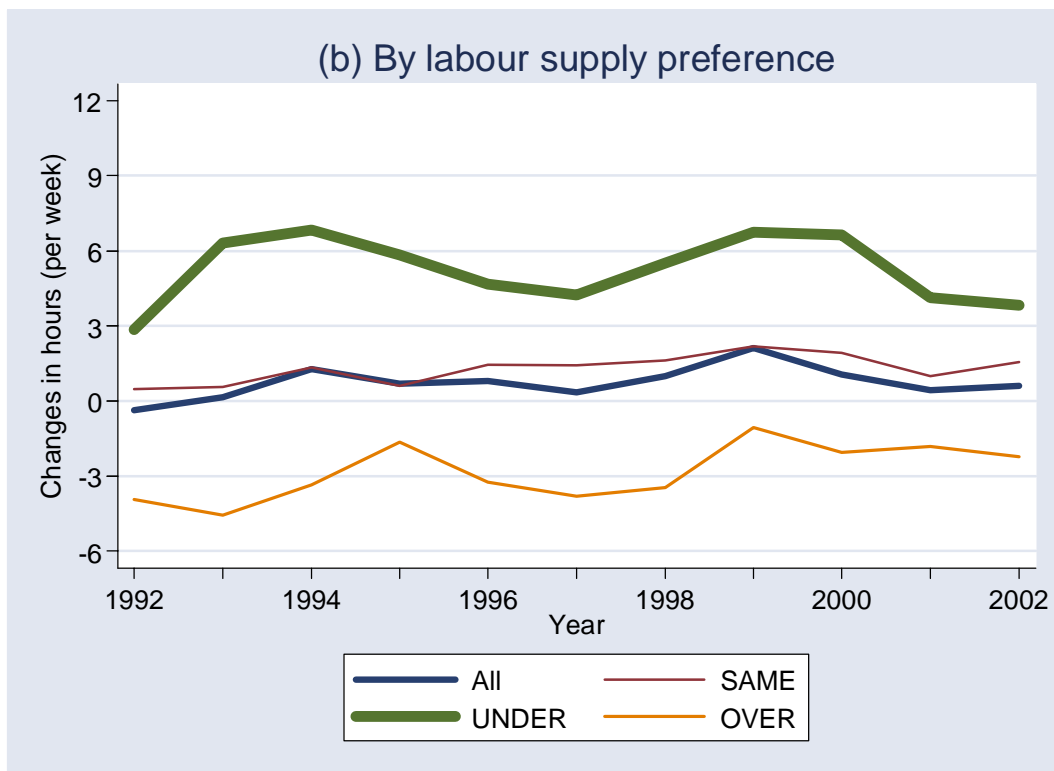
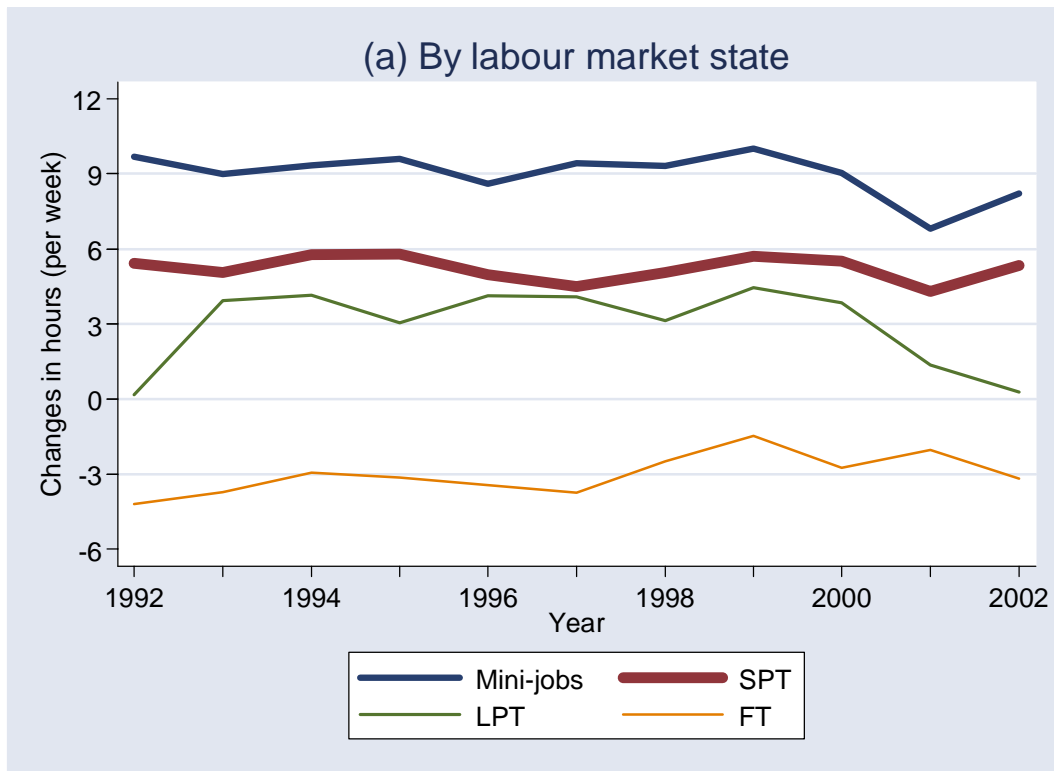
- From the wage analysis, the evidence on a flexible labour market is *mixed*. Models imposing the restriction that the wage effects of hours increases are the same as the wage effects of hours reductions (regardless of whether workers were constrained in the old job or in the new) provide support for the hypothesis that workers receive compensating wage differentials when they change their work hours in some undesirable way. But from unrestricted models this is not true. From such models, in fact, we support neither the hypothesis that overemployed or underemployed workers who change job receive compensating wage differentials if the new job does not satisfy their hours preferences, nor the notion that quitters get a wage premium when they end up moving to jobs that constraint their desired hours. The different results may be due to small sample sizes and the lack of information on the size of hours constraint, and warrant some further research.

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Figure 1
 The relationship between changes in hours worked and job changes over time – All employment states



Note: Figures are coefficients (OLS estimates) on the interactions between time dummies and having changed job from one year to the next. The other variables included in each regression are listed in the note to Table 3.

Figure 2
Time trends in hours and job changes by marital state and labour market state of origin

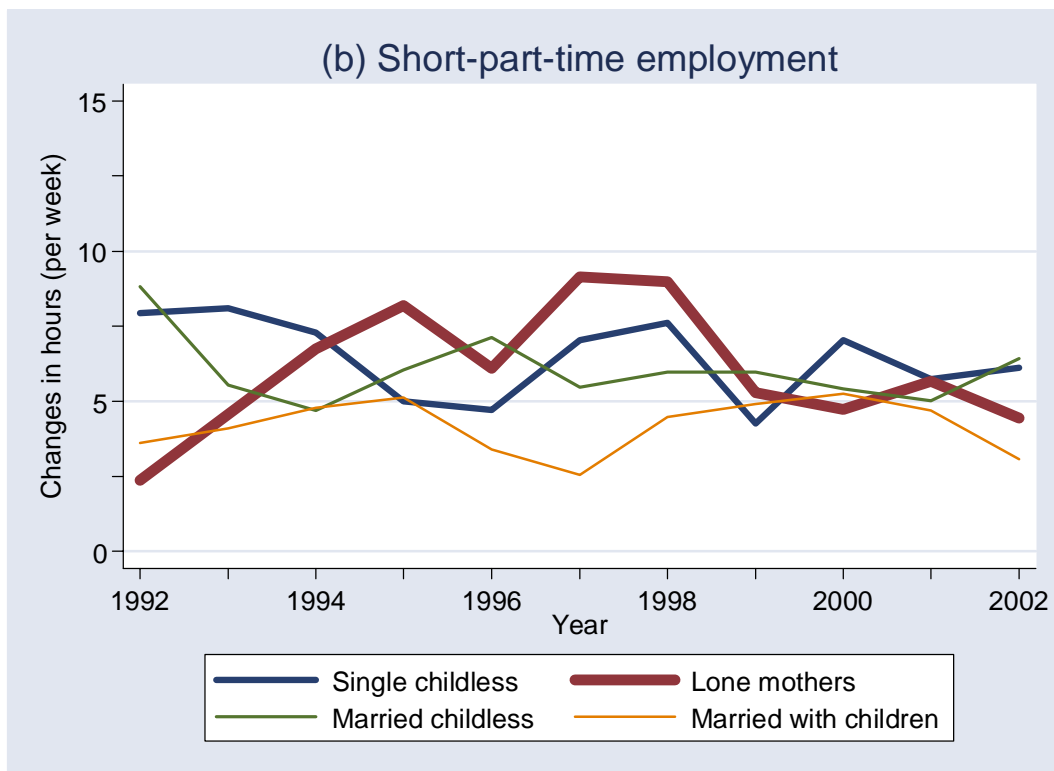
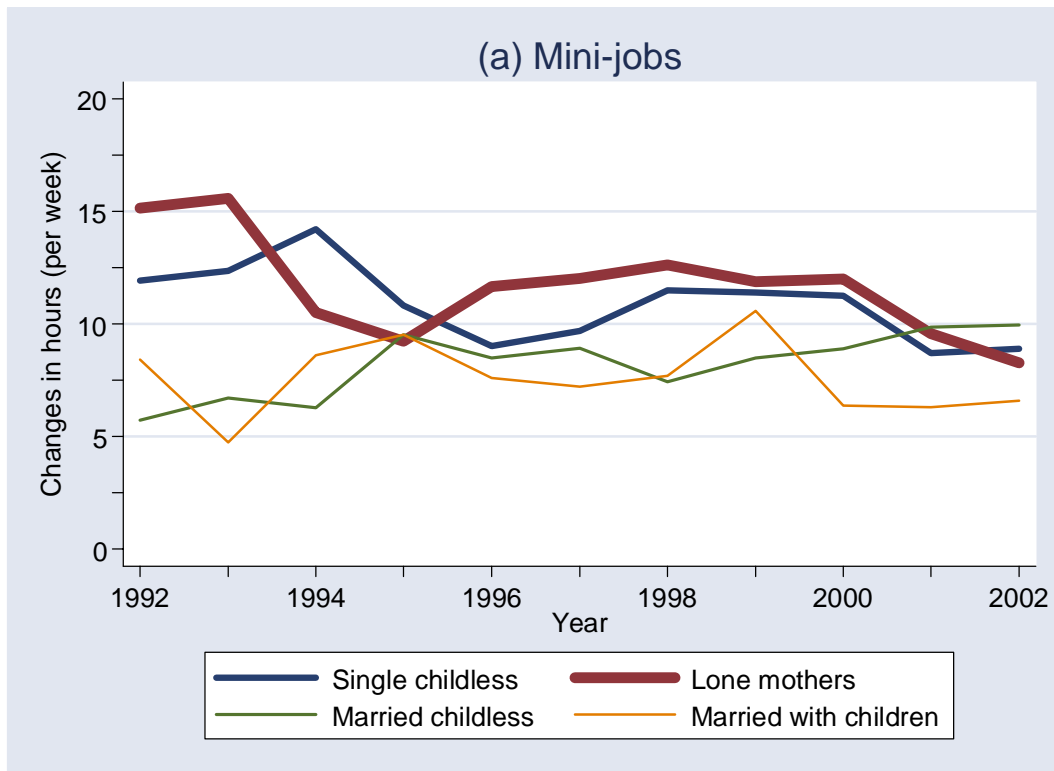
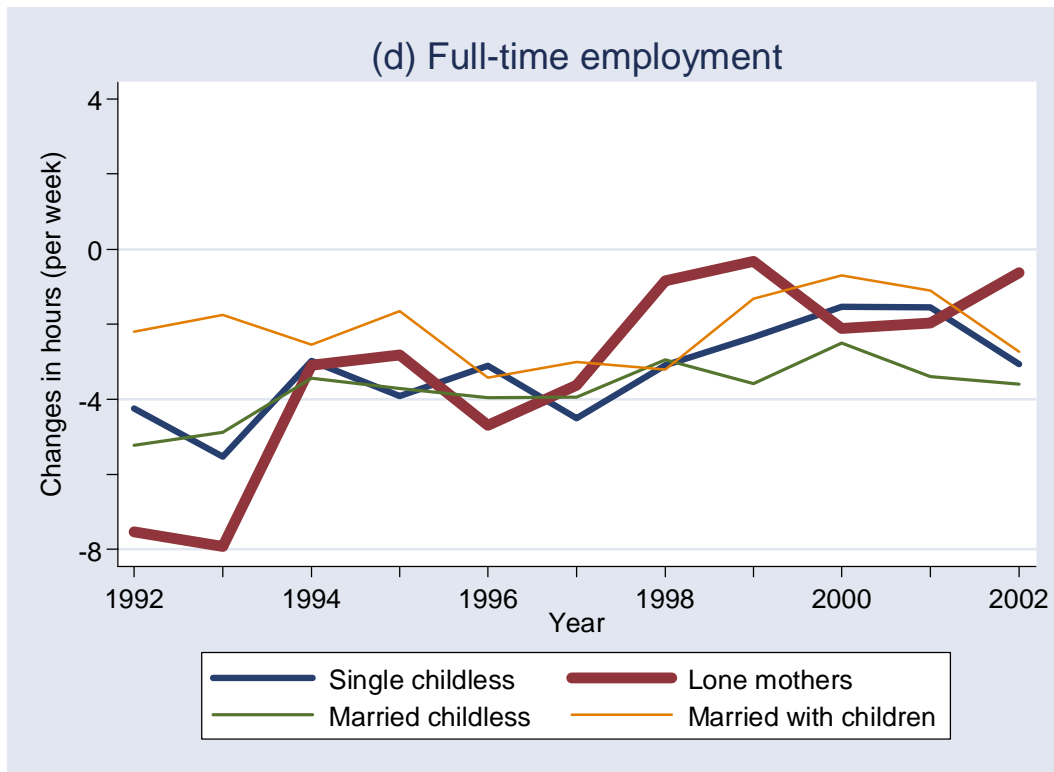
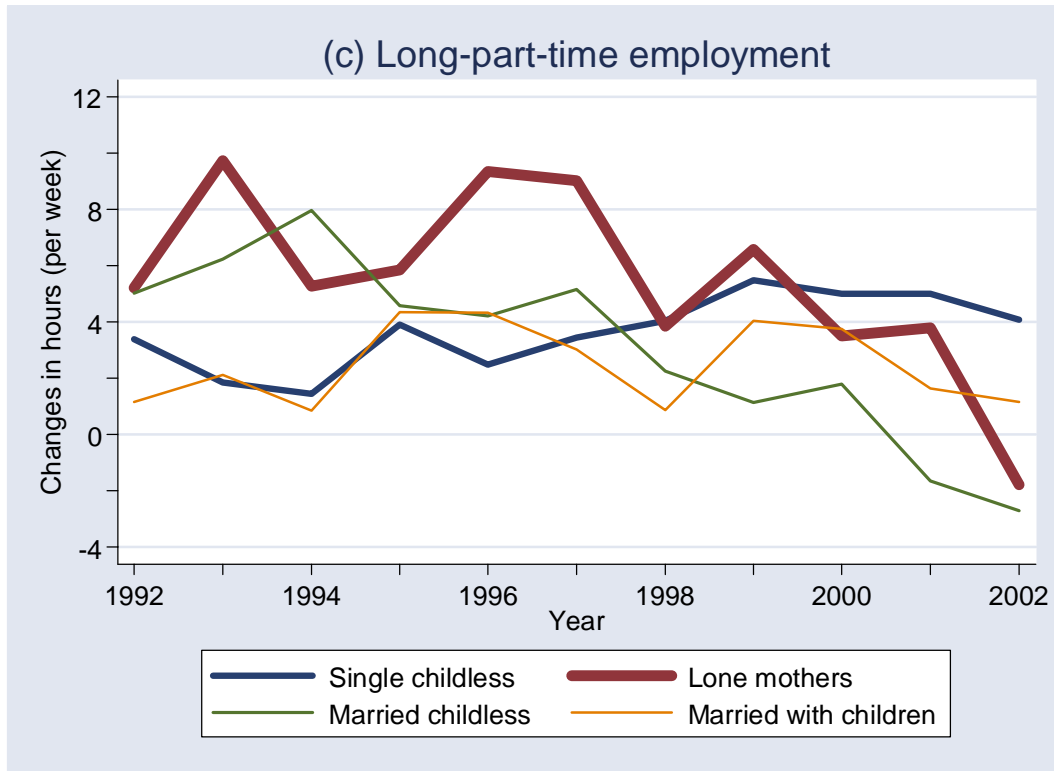


Figure 2 (continued)



Note: See note to Figure 1.

Table 1. Year-on-year labour market transitions and average changes in hours worked

Labour market state and hours change	All women	Singles without children	Lone mothers	Married without children	Married with children
OLF					
Stay in OLF (%)	83.9	84.0	71.7	93.3	81.7
Into mini-jobs (%)	6.6	4.4	12.1	2.9	8.3
Into LPT (%)	4.0	2.9	7.4	1.4	5.2
Into HPT (%)	1.0	0.8	1.3	0.6	1.3
Into FT (%)	4.5	7.9	7.6	1.9	3.5
Hours change (incl. zeros)	3.4	4.3	5.7	1.4	3.5
Hours change (excl. zeros)	21.1	26.9	20.2	21.3	19.1
Number of transitions	13,075	2,314	2,285	3,992	4,484
Mini-jobs (1-15 hours)					
Into OLF (%)	13.1	20.6	19.2	11.6	9.2
Stay in mini-jobs (%)	55.2	42.7	47.9	62.9	57.5
Into SPT (%)	18.1	15.6	13.7	16.9	21.4
Into LPT (%)	4.1	4.3	3.6	2.8	5.1
Into FT (%)	9.5	16.7	15.7	5.9	6.8
Hours change (incl. zeros)	3.4	4.8	4.9	2.0	3.3
Abs. hours change (incl. zeros)	7.1	9.8	9.1	5.7	6.2
Hours change (excl. zeros)	5.5	8.7	8.1	3.7	4.7
Abs. hours change (excl. zeros)	6.6	9.7	9.2	5.0	5.7
Number of transitions	5,443	700	1,003	1,383	2,357
SPT (16-23 hours)					
Into OLF (%)	12.3	15.9	16.0	12.9	10.2
Into mini-jobs (%)	11.8	12.6	10.3	11.3	12.4
Stay in SPT (%)	52.2	41.8	48.0	54.4	54.2
Into LPT (%)	10.5	9.4	7.7	10.2	11.7
Into FT (%)	13.3	20.3	18.0	11.3	11.6
Hours change (incl. zeros)	-0.2	0.4	0.2	-0.7	-0.2
Abs. hours change (incl. zeros)	6.7	8.9	8.4	6.3	5.9
Hours change (excl. zeros)	2.4	4.0	3.8	2.0	1.9
Abs. hours change (excl. zeros)	5.0	7.0	6.4	4.4	4.5
Number of transitions	6,029	605	815	1,759	2,850
LPT (24-29 hours)					
Into OLF (%)	7.5	9.5	12.2	6.5	6.8
Into mini-jobs (%)	5.4	7.8	4.2	4.4	5.8
Into in SPT (%)	19.4	13.6	22.7	18.6	20.6
Stay in LPT (%)	42.3	33.5	31.1	48.0	42.7
Into FT (%)	25.5	35.6	29.7	22.6	24.1
Hours change (incl. zeros)	-1.1	-0.1	-1.9	-1.0	-1.2
Abs. hours change (incl. zeros)	6.6	8.7	8.2	5.8	6.4
Hours change (excl. zeros)	0.9	2.6	1.4	0.7	0.5
Abs. hours change (excl. zeros)	5.1	6.9	5.8	4.4	5.0
Number of transitions	3,024	346	286	975	1,417
FT (30+ hours)					
Into OLF (%)	2.6	2.4	3.1	2.2	3.3
Into mini-jobs (%)	1.9	1.4	1.9	1.5	3.0
Into in SPT (%)	4.3	2.7	6.5	3.8	6.1

Into LPT	(%)	3.8	2.1	<i>4.1</i>	3.5	5.9
Stay in FT	(%)	87.4	91.4	84.4	89.0	81.7
Hours change (incl. zeros)		-2.7	-2.2	-2.9	-2.5	-3.6
Abs. hours change (incl. zeros)		6.1	5.7	6.6	5.6	7.1
Hours change (excl. zeros)		-1.8	-1.3	-1.9	-1.7	-2.4
Abs. hours change (excl. zeros)		5.3	5.0	5.7	4.9	6.0
Number of transitions		20,624	4,936	1,739	8,930	5,019
N		9,863	1,910	1,853	3,153	2,947

Note: OLF = out of the labour force; SPT = short-hour part-time job; LPT = long-hour part-time job; FT = full-time job; N = number of women; “Hours change (incl. zeros)” is the average change in weekly hours of work including cases with zero hours (OLF) in the destination state; “Hours change (excl. zeros)” is the average change in weekly hours of work for women who are in the labour market (and report positive hours) in the destination period. Definitions are based on total weekly hours of work (usual hours plus overtime hours). Figures in bold denote the largest proportion of transitions for each labour market state; figures in bold and italics denote the second largest proportion of transitions. All figures (except for hours) are percentages and come from year-on-year transition matrices computed over the period 1991-2002 (so each woman contributes with 11 transition matrices at most) and averaged over time. They indicate row percentages. Numbers may not add to 100 due to rounding. Women’s marital status is measured at the origin period.

Source: British Household Panel Survey, 1991-2002.

Table 2. Average year-on-year job and hours-of-work changes by labour force state (measured in year $t-1$)

Origin labour market state and job and hours changes	All women	Singles without children	Lone mothers	Married without children	Married with children
All employment states					
Stayers (%)	79.5	77.5	76.4	81.3	79.7
Hours change ^a	0.3	0.5	1.9	-0.2	0.2
Abs. hours change ^a	4.8	5.7	7.8	4.0	5.0
Movers (%)	20.5	22.5	23.6	18.7	20.3
Hours change (incl. zeros)	0.9	0.7	4.2	-1.4	2.0
Abs. hours change (incl. zeros)	9.9	10.4	11.7	9.0	9.6
Hours change (excl. zeros)	1.1	0.4	4.4	-1.2	2.2
Abs. hours change (excl. zeros)	9.8	10.4	11.8	8.9	9.5
Mini-jobs					
Stayers (%)	79.5	77.6	83.1	82.5	76.7
Hours change ^a	3.9	6.6	6.3	2.5	3.1
Abs. hours change	5.1	7.6	7.7	3.9	4.3
Movers (%)	20.5	22.4	16.9	17.5	23.3
Hours change (incl. zeros)	10.6	13.9	14.9	8.6	9.1
Abs. hours change (incl. zeros)	11.4	14.8	15.9	9.4	10.0
Hours change (excl. zeros)	10.7	14.2	15.1	8.7	9.2
Abs. hours change (excl. zeros)	11.4	14.9	16.0	9.4	10.0
SPT					
Stayers (%)	80.0	73.1	77.5	82.8	79.1
Hours change ^a	1.8	2.7	3.3	1.4	1.6
Abs. hours change	4.1	5.6	8.5	3.5	3.7
Movers (%)	20.0	26.9	22.5	17.2	20.9
Hours change (incl. zeros)	4.2	6.3	5.0	4.5	3.1
Abs. hours change (incl. zeros)	7.8	10.3	8.0	8.0	7.0
Hours change (excl. zeros)	4.3	6.8	5.1	4.7	3.2
Abs. hours change (excl. zeros)	7.7	10.1	7.8	8.0	6.9
LPT					
Stayers (%)	77.7	75.9	70.6	80.8	77.9
Hours change ^a	0.7	2.5	1.0	0.5	0.4
Abs. hours change	4.1	6.0	8.2	3.3	4.2
Movers (%)	22.1	24.1	29.4	19.2	22.1
Hours change (incl. zeros)	1.1	2.6	1.9	1.1	0.6
Abs. hours change (incl. zeros)	8.4	9.7	8.3	8.7	8.0
Hours change (excl. zeros)	1.4	3.0	2.2	1.2	0.8
Abs. hours change (excl. zeros)	8.7	9.5	8.1	8.6	7.8
FT					
Stayers (%)	79.7	77.8	73.0	80.9	82.0
Hours change ^a	-1.0	-0.4	-0.8	-0.9	-1.6
Abs. hours change	4.3	4.0	5.6	4.0	5.2
Movers (%)	20.3	22.2	27.0	19.1	18.0
Hours change (incl. zeros)	-5.1	-4.5	-4.9	-5.1	-6.0
Abs. hours change (incl. zeros)	8.8	8.4	9.3	8.5	9.7
Hours change (excl. zeros)	-5.0	-4.4	-4.7	-4.9	-5.7
Abs. hours change (excl. zeros)	8.9	8.3	9.1	8.4	9.5

Note: For ‘Movers’ job changes are changes to another firm (and do not include promotions or job changes within the same firm, but include both quits and layoffs). ‘Stayers’ include workers who have been promoted. Figures in bold and italics are percentages. For other definitions and sample sizes, see Table 1.

^a Excludes cases of zero hours by definition.

Table 3. The relationship between hours-of-work changes and job changes by labour force status and marital status (both measured in year $t-1$)

Labour market state and dependent variable	All women	Singles without children	Lone mothers	Married without children	Married with children
1. All labour market states (including OLF)					
Δ hours	0.889 (5.23)	-0.054 (0.13)	2.360 (4.61)	-0.840 (3.05)	2.251 (7.89)
Abs(Δ hours)	4.796 (32.36)	4.874 (14.36)	5.397 (11.54)	4.943 (20.22)	4.396 (19.24)
N	41,290	7,594	5,061	14,837	13,798
2. All employment states (excluding OLF)					
Δ hours	0.758 (4.57)	-0.463 (1.18)	1.686 (3.31)	-0.764 (2.81)	2.475 (8.55)
Abs(Δ hours)	3.118 (21.45)	3.365 (10.89)	3.123 (6.54)	3.759 (15.35)	2.570 (11.20)
N	30,347	5,738	3,167	11,486	9,956
3. Mini-jobs					
Δ hours	8.848 (22.29)	11.114 (8.64)	11.597 (8.62)	8.322 (11.72)	7.587 (15.42)
Abs(Δ hours)	5.421 (14.99)	5.934 (5.07)	7.837 (6.33)	4.638 (6.98)	4.773 (10.61)
N	4,833	605	872	1,226	2,130
4. SPT					
Δ hours	5.225 (14.56)	6.162 (4.87)	6.150 (6.02)	6.016 (8.34)	4.200 (9.16)
Abs(Δ hours)	0.887 (3.03)	0.774 (0.80)	0.063 (1.36)	1.658 (2.76)	0.935 (2.49)
N	5,165	511	633	1,532	2,489
5. LPT					
Δ hours	2.676 (5.15)	2.760 (1.74)	4.878 (2.97)	2.400 (2.61)	2.359 (3.10)
Abs(Δ hours)	1.803 (5.00)	0.127 (0.14)	0.084 (0.08)	3.308 (4.94)	1.928 (3.73)
N	2,567	306	238	847	1,176
6. FT					
Δ hours	-3.012 (13.69)	-3.140 (7.71)	-2.822 (3.86)	-3.717 (11.05)	-2.182 (4.15)
Abs(Δ hours)	3.418 (17.40)	3.458 (10.01)	3.458 (5.50)	3.988 (13.30)	2.506 (5.74)
N	17,782	4,316	1,424	7,881	4,161

Note: OLS estimates, dependent variable = Δ hours or abs(Δ hours) (see equation (1)). Absolute t -statistics (obtained from White-corrected standard errors) are in parentheses. N = number of person-wave observations over which each regression is performed. Other variables included in each regression are: intercept, controls for education, work experience, race, changes in marital and health status, changes in union coverage status and local unemployment rate, number and changes in the number of children, year dummies.

Table 4. Actual changes in worked hours between years $t-1$ and t given labour supply preference in year $t-1$ – Percentages

	Hours change between $t-1$ and t								
	Down			Same			Up		
	10 or fewer	5-9	2-4	1	0	1	2-4	5-9	10 or more
All									
OVER_{$t-1$} (=1 if overemployed in $t-1$)									
All women [N=10,090]	17.2	10.9	11.9	5.0	25.5	5.0	10.0	7.9	6.6
Singles without children [N=1,851]	17.0	12.4	12.8	4.1	22.3	4.7	10.7	9.1	7.0
Lone mothers [N=704]	16.9	10.8	9.4	5.7	22.0	5.8	10.4	10.5	8.5
Married without children [N=4,399]	15.8	11.3	12.1	5.2	27.2	5.5	10.0	7.4	5.6
Married with children [N=3,136]	19.5	9.6	11.7	5.0	25.9	4.4	9.5	7.2	7.3
UNDER_{$t-1$} (=1 if underemployed in $t-1$)									
All women [N=3,425]	12.3	8.5	8.0	3.8	19.0	4.3	10.8	12.7	20.6
Singles without children [N=727]	11.7	10.3	7.3	4.1	18.7	4.8	10.3	12.6	20.1
Lone mothers [N=643]	11.4	9.3	8.4	4.2	15.7	3.8	10.3	11.5	25.7
Married without children [N=800]	11.8	7.5	9.6	3.6	21.9	4.3	10.6	12.7	18.0
Married with children [N=1,255]	13.4	7.6	7.2	3.5	19.1	4.5	11.5	13.3	19.9
SAME_{$t-1$} (=1 if continue working same hours in $t-1$)									
All women [N=21,183]	12.8	8.8	10.7	5.3	28.1	5.2	11.2	9.2	8.8
Singles without children [N=4,009]	12.8	9.4	10.9	5.4	25.4	5.3	12.5	9.1	9.1
Lone mothers [N=2,274]	15.7	10.1	10.8	4.6	22.0	4.8	10.0	9.0	13.1
Married without children [N=7,848]	12.2	8.6	11.1	5.9	31.1	5.3	10.9	8.5	6.4
Married with children [N=7,252]	12.6	8.3	10.1	4.9	28.1	5.2	11.1	10.0	9.9
Stayers									
OVER_{$t-1$}									
All women [N=8,110]	14.3	10.1	11.7	5.1	29.3	5.3	10.3	7.7	6.2
Singles without children [N=1,444]	14.1	11.2	12.6	3.9	26.7	4.6	11.1	9.1	6.4

Lone mothers [N=542]	14.2	10.2	9.4	6.5	25.1	6.8	10.9	8.9	8.1
Married without children [N=3,588]	12.5	10.3	11.7	5.5	31.0	5.7	10.4	7.5	5.4
Married with children [N=2,536]	17.0	9.1	11.6	5.0	29.3	4.8	9.6	6.9	6.7
UNDER _{t-1}									
All women [N=2,494]	13.4	8.5	7.9	4.0	23.9	4.6	11.4	11.4	14.9
Singles without children [N=498]	12.5	10.4	5.8	3.6	25.3	5.2	10.2	10.8	16.1
Lone mothers [N=485]	12.0	9.9	9.3	4.3	19.4	3.7	10.7	11.1	19.6
Married without children [N=578]	11.9	7.8	9.2	4.1	27.0	4.5	11.9	12.1	11.4
Married with children [N=933]	15.5	7.3	7.4	3.9	23.7	4.9	11.9	11.5	13.9
SAME _{t-1}									
All women [N=17,093]	12.1	8.0	10.6	5.5	32.1	5.4	11.1	8.4	6.7
Singles without children [N=3,146]	10.8	8.5	11.1	5.8	29.2	5.7	12.8	8.8	7.2
Lone mothers [N=1,697]	15.6	9.3	10.3	4.5	26.0	5.0	9.8	8.8	10.7
Married without children [N=6,438]	11.3	7.7	11.0	5.9	35.3	5.4	10.7	7.7	5.1
Married with children [N=5,812]	12.8	7.8	9.9	5.2	32.0	5.5	11.0	8.7	7.2
Movers									
OVER _{t-1}									
All women [N=1,980]	29.2	14.2	12.8	4.3	10.2	3.9	8.7	8.5	8.2
Singles without children [N=407]	27.0	15.5	13.5	4.9	6.6	4.7	9.3	9.3	9.1
Lone mothers [N=162]	25.9	13.0	9.3	3.1	11.7	2.5	8.6	16.1	9.9
Married without children [N=811]	30.2	15.8	13.8	3.8	10.4	4.8	8.6	6.7	6.3
Married with children [N=600]	30.2	11.7	12.0	4.8	11.8	2.5	9.0	8.3	9.7
UNDER _{t-1}									
All women [N=931]	9.2	8.3	8.5	3.3	5.9	3.4	9.3	16.1	35.9
Singles without children [N=229]	10.0	10.0	10.5	5.2	4.4	3.9	10.5	16.6	28.8
Lone mothers [N=158]	9.5	7.6	5.7	3.8	4.4	3.2	8.9	12.7	44.3
Married without children [N=222]	11.3	6.8	10.8	2.3	8.6	3.6	7.2	14.4	35.1
Married with children [N=322]	7.1	8.4	6.8	2.5	5.9	3.1	10.3	18.6	37.3
SAME _{t-1}									
All women [N=4,290]	15.6	11.9	11.1	4.5	11.8	4.1	11.6	12.4	16.9
Singles without children [N=863]	20.1	12.9	9.7	3.9	11.8	4.1	11.5	10.1	16.0

Lone mothers [N=577]	15.8	12.5	12.1	4.7	10.2	4.3	10.6	9.7	20.1
Married without children [N=1,410]	16.7	12.4	12.0	6.0	11.9	4.6	12.1	12.2	12.2
Married with children [N=1,440]	11.9	10.5	10.6	3.4	12.4	3.6	11.7	15.1	20.8

Note: Each row shows the distribution of women changing weekly hours of work between year $t-1$ and year t over the nine hours categories (figures are percentages). Rows may not add up to 100 due to rounding. $OVER_{t-1} = 1$ if the respondent indicated that she would like to work fewer hours “assuming that [she] would be paid the same amount per hour” in year $t-1$, and equals 0 otherwise; $UNDER_{t-1} = 1$ if the respondent indicated that she would like to work more hours “assuming that [she] would be paid the same amount per hour” in year $t-1$, and equals 0 otherwise; $SAME_{t-1} = 1$ if the respondent indicated that she would like to continue to work the same number of hours “assuming that [she] would be paid the same amount per hour” in year $t-1$, and equals 0 otherwise.

Table 5. Hours-of-work changes by job changing status, labour supply preference and labour force state (measured in year $t-1$)

	All women	Singles without children	Lone mothers	Married without children	Married with children
All employment states					
Stayers					
OVER (%)	29.3	27.8	20.7	33.1	27.9
Hours change ^a	-2.1	-1.8	-1.7	-1.7	-3.2
Absolute hours change ^a	6.0	6.2	6.3	5.2	6.9
UNDER (%)	9.0	10.4	18.0	5.7	9.8
Hours change ^a	0.7	1.1	1.4	0.6	0.2
Absolute hours change ^a	7.0	7.3	8.0	5.8	7.2
SAME (%)	61.7	61.7	61.3	61.3	62.3
Hours change ^a	-1.3	-0.9	-1.1	-1.2	-1.6
Absolute hours change ^a	5.4	5.7	6.7	4.7	5.7
Movers					
OVER (%)	27.5	26.6	18.2	31.9	26.7
Hours change (incl. zeros)	-5.0	-3.4	-5.9	-5.2	-5.6
Abs. hours change (incl. zeros)	9.7	9.7	10.9	9.1	10.2
Hours change (excl. zeros)	-4.9	-3.4	-5.3	-5.1	-5.4
Abs. hours change (excl. zeros)	9.6	9.7	10.4	9.1	10.0
UNDER (%)	12.9	15.6	18.5	9.1	13.3
Hours change (incl. zeros)	6.1	5.7	7.7	6.3	5.6
Abs. hours change (incl. zeros)	11.0	10.6	12.6	10.7	10.6
Hours change (excl. zeros)	6.4	5.9	7.7	6.6	6.0
Abs. hours change (excl. zeros)	10.8	10.5	12.6	10.6	10.4
SAME (%)	59.6	57.8	63.3	59.0	60.0
Hours change (incl. zeros)	0.1	-0.7	0.4	-0.1	0.7
Abs. hours change (incl. zeros)	8.3	8.9	8.9	7.4	8.5
Hours change (excl. zeros)	0.3	-0.4	0.6	0.0	0.8
Abs. hours change (excl. zeros)	8.2	8.8	8.8	7.3	8.5
Mini-jobs					
Stayers					
OVER (%)	6.8	6.0	6.6	6.2	7.7
Hours change ^a	2.3	6.1	1.4	2.1	1.7
Absolute hours change ^a	8.3	14.0	7.4	8.5	6.9
UNDER (%)	25.7	30.6	32.8	19.7	25.0
Hours change ^a	1.6	1.5	3.1	-0.1	1.8
Absolute hours change ^a	7.1	8.2	8.0	5.6	6.9
SAME (%)	67.5	63.4	60.6	74.1	67.4
Hours change ^a	1.5	2.5	2.3	0.8	1.4
Absolute hours change ^a	5.2	8.0	6.8	4.4	4.3
Movers					
OVER (%)	6.3	9.2	5.4	2.3	7.5
Hours change (incl. zeros)	10.9	14.5	17.9	6.7	8.7
Abs. hours change (incl. zeros)	11.8	16.0	17.9	7.3	9.5
Hours change (excl. zeros)	11.2	16.0	17.9	6.7	8.7
Abs. hours change (excl. zeros)	11.8	16.5	17.9	7.3	9.5
UNDER (%)	31.6	40.8	42.2	24.9	28.9
Hours change (incl. zeros)	12.6	14.8	16.4	10.6	11.0
Abs. hours change (incl. zeros)	13.6	15.8	17.2	11.5	12.0
Hours change (excl. zeros)	12.8	15.1	16.4	10.9	11.2
Abs. hours change (excl. zeros)	13.6	15.9	17.2	11.5	11.9
SAME (%)	62.2	50.0	52.4	72.8	63.6
Hours change (incl. zeros)	9.5	12.7	11.0	8.9	8.6
Abs. hours change (incl. zeros)	10.3	14.2	12.0	9.5	9.4
Hours change (excl. zeros)	9.5	13.2	11.3	8.9	8.6

Abs. hours change (excl. zeros)	10.3	14.3	12.1	9.5	9.4
SPT					
Stayers					
OVER (%)	12.2	12.7	11.2	10.7	13.4
Hours change ^a	-1.7	-3.7	-1.5	-1.9	-1.3
Absolute hours change ^a	7.1	9.8	8.1	6.7	6.6
UNDER (%)	11.5	16.9	19.8	7.9	11.0
Hours change ^a	1.3	3.2	2.2	1.9	-0.1
Absolute hours change ^a	7.8	8.9	8.8	8.0	7.0
SAME (%)	76.3	70.5	69.1	81.3	75.6
Hours change ^a	-1.7	-2.0	-2.7	-1.6	-1.4
Absolute hours change ^a	6.0	8.5	8.0	5.5	5.5
Movers					
OVER (%)	14.2	16.5	10.9	13.6	14.7
Hours change (incl. zeros)	2.7	6.1	0.6	3.8	1.6
Abs. hours change (incl. zeros)	6.9	10.1	5.1	7.5	6.0
Hours change (excl. zeros)	2.9	6.1	0.6	4.4	1.6
Abs. hours change (excl. zeros)	6.8	10.1	5.1	7.1	6.0
UNDER (%)	18.0	24.4	21.8	16.8	15.8
Hours change (incl. zeros)	6.6	7.0	6.1	10.1	4.6
Abs. hours change (incl. zeros)	9.6	9.8	8.4	12.8	8.2
Hours change (excl. zeros)	6.6	7.0	6.1	10.1	4.6
Abs. hours change (excl. zeros)	9.6	9.8	8.4	12.8	8.2
SAME (%)	67.9	59.1	67.3	69.6	69.5
Hours change (incl. zeros)	3.9	6.6	4.2	4.2	3.0
Abs. hours change (incl. zeros)	7.5	10.9	7.0	7.6	6.8
Hours change (excl. zeros)	4.1	7.5	4.6	4.3	3.0
Abs. hours change (excl. zeros)	7.4	10.6	6.7	7.6	6.8
LPT					
Stayers					
OVER (%)	16.1	11.1	11.3	18.8	16.1
Hours change ^a	-1.7	0.1	-4.3	-1.9	-1.6
Absolute hours change ^a	6.4	10.8	8.6	5.0	6.7
UNDER (%)	10.6	21.4	20.4	6.5	9.3
Hours change ^a	-0.2	2.2	-1.8	1.3	-1.9
Absolute hours change ^a	7.0	7.2	8.5	5.3	7.1
SAME (%)	73.3	67.5	68.3	74.7	74.7
Hours change ^a	-2.0	-1.7	-4.1	-1.9	-1.7
Absolute hours change ^a	5.9	7.5	7.7	5.5	5.7
Movers					
OVER (%)	19.6	14.4	10.6	21.3	22.6
Hours change (incl. zeros)	-0.8	0.5	-1.8	-0.3	-1.2
Abs. hours change (incl. zeros)	7.7	11.2	6.2	6.9	7.7
Hours change (excl. zeros)	-0.6	0.5	-1.8	-0.3	-0.8
Abs. hours change (excl. zeros)	7.5	11.2	6.2	6.9	7.4
UNDER (%)	16.9	35.6	24.7	16.5	9.5
Hours change (incl. zeros)	3.3	4.1	2.1	7.8	-1.4
Abs. hours change (incl. zeros)	9.5	9.6	8.2	10.3	9.5
Hours change (excl. zeros)	3.6	4.1	2.1	7.8	-0.6
Abs. hours change (excl. zeros)	9.3	9.6	8.2	10.3	8.9
SAME (%)	63.5	50.0	64.7	62.2	67.9
Hours change (incl. zeros)	1.2	3.0	2.4	1.1	0.5
Abs. hours change (incl. zeros)	8.4	10.2	9.1	8.3	7.9
Hours change (excl. zeros)	1.4	3.6	2.9	1.1	0.7
Abs. hours change (excl. zeros)	8.3	9.8	8.9	8.3	7.7
FT					
Stayers					
OVER (%)	42.0	34.8	36.2	43.8	46.8
Hours change ^a	-2.4	-2.0	-2.0	-1.8	-3.9

Absolute hours change ^a	5.8	5.7	5.8	5.1	7.0
UNDER (%)	3.7	5.3	6.7	2.8	3.0
Hours change ^a	-1.1	-0.4	-3.7	0.4	-3.4
Absolute hours change ^a	6.1	5.8	6.4	4.8	8.6
SAME (%)	54.3	59.9	57.1	53.4	50.3
Hours change ^a	-1.9	-1.2	-2.1	-1.5	-3.3
Absolute hours change ^a	5.0	4.7	5.6	4.3	6.6
Movers					
OVER (%)	38.4	32.2	27.1	41.1	44.7
Hours change (incl. zeros)	-6.9	-5.1	-8.9	-6.1	-8.9
Abs. hours change (incl. zeros)	10.1	9.4	11.7	9.4	11.4
Hours change (excl. zeros)	-6.8	-5.1	-8.3	-6.1	-8.7
Abs. hours change (excl. zeros)	10.0	9.4	11.0	9.3	11.2
UNDER (%)	5.8	8.3	7.5	4.4	4.9
Hours change (incl. zeros)	-2.4	-1.7	-4.0	-0.8	-5.1
Abs. hours change (incl. zeros)	9.1	7.1	11.3	8.8	11.5
Hours change (excl. zeros)	-1.9	-1.3	-4.0	-0.4	-3.9
Abs. hours change (excl. zeros)	8.7	6.8	11.3	8.5	10.6
SAME (%)	55.8	59.6	65.4	54.5	50.4
Hours change (incl. zeros)	-4.2	-3.9	-4.6	-3.1	-6.1
Abs. hours change (incl. zeros)	7.9	7.8	8.8	6.8	9.6
Hours change (excl. zeros)	-4.0	-3.7	-4.5	-3.0	-6.0
Abs. hours change (excl. zeros)	7.8	7.7	8.7	6.7	9.5

Note: OVER = 1 if the respondent indicated that she would like to work fewer hours “assuming that [she] would be paid the same amount per hour”, and equals 0 otherwise; UNDER = 1 if the respondent indicated that she would like to work more hours “assuming that [she] would be paid the same amount per hour”, and equals 0 otherwise; SAME = 1 if the respondent indicated that she would like to continue to work the same number of hours “assuming that [she] would be paid the same amount per hour”, and equals 0 otherwise. Figures in bold and italics are percentages. For other definitions, see Table 1.

^a Excludes cases of zero hours by definition.

Table 6. Determinants of hours constraints – Probit estimates

Independent variable	UNDER (=1 if underemployed)		OVER (=1 if overemployed)		Sample means
	Estimate	Marginal effect	Estimate	Marginal effect	
Intercept	0.163 (2.41)		-2.513 (35.15)		
Age group:					
25-34	-0.185 (3.85)	-0.023	0.208 (5.40)	0.069	0.263
35-44	-0.131 (2.20)	-0.016	0.282 (5.67)	0.094	0.253
45-55	-0.179 (2.62)	-0.022	0.275 (4.86)	0.092	0.217
55 or more	-0.429 (4.88)	-0.043	0.244 (3.41)	0.083	0.093
Ethnicity:					
Black	0.052 (0.42)	0.007	0.252 (2.67)	0.087	0.013
Indian	0.182 (1.17)	0.027	0.075 (0.62)	0.024	0.011
Pakistani/Bangladeshi	0.072 (0.31)	0.010	-0.136 (0.60)	-0.041	0.003
Chinese and other	0.462 (3.67)	0.083	-0.167 (1.43)	-0.050	0.009
Marital status:					
Lone mothers	-0.122 (2.06)	-0.015	0.124 (2.30)	0.041	0.103
Married without children	-0.271 (6.27)	-0.034	0.140 (4.18)	0.045	0.376
Married with children	-0.250 (4.17)	-0.031	0.210 (4.14)	0.069	0.319
Number of dependent children aged:					
0-4	-0.122 (2.96)	-0.016	0.191 (5.63)	0.061	0.140 [0.397]
5-11	-0.008 (0.31)	-0.001	-0.068 (2.84)	-0.022	0.299 [0.633]
12-18	0.043 (1.45)	0.006	-0.083 (2.96)	-0.027	0.252 [0.552]
Disabled	0.133 (1.18)	0.019	0.157 (1.63)	0.053	0.010
Education:					
Less than O-level/ GCSE (or equivalent)	0.082 (1.33)	0.011	0.059 (1.08)	0.019	0.096
O level/GCSE (or equivalent)	-0.043 (0.85)	-0.006	0.115 (2.59)	0.037	0.253
A level (or equivalent)	-0.108 (1.86)	-0.013	0.098 (1.94)	0.032	0.129
Higher vocational qualification	-0.056 (1.10)	-0.007	0.123 (2.83)	0.040	0.244
University or higher degree	-0.054 (0.86)	-0.007	0.170 (3.36)	0.056	0.124
Experience	-0.012 (2.11)	-0.002	0.022 (4.45)	0.007	14.90 [10.29]
Experience squared	0.0002 (1.65)	0.00003	-0.0004 (3.59)	-0.0001	328.11 [412.34]

Job tenure	-0.015 (4.66)	-0.002	0.012 (5.02)	0.004	4.34 [5.79]
Hours/week	-0.038 (32.85)	-0.005	0.041 (37.76)	0.013	31.05 [13.88]
Local unemployment rate	0.016 (4.09)	0.002	-0.014 (3.97)	-0.004	5.99 [2.32]
χ^2	1,780.6		1,869.2		
df	25		25		
$P > F$	0.0000		0.0000		

Note: N = 36,317; with 9.9 percent of the sample reporting UNDER = 1, and 28.6 percent of the sample reporting OVER = 1. Base is: aged 16-24, white, single without children, not disabled, with no educational qualification, and average experience and hours of work per week. Absolute *t*-statistics (obtained from standard errors adjusted for repeated observations on the same individual) are in parentheses. Figures in square brackets in the last column are standard deviations.

Table 7. The relationship between hours changes, job changes and labour supply preferences

Labour supply preference variables at $t-1$	Stayers (μ)	Quitters (ϕ)	Test of equality
All women			
OVER	-1.058 (7.42)	-2.746 (8.34)	0.000
UNDER	1.802 (7.55)	5.406 (10.82)	0.000
SAME		1.305 (6.30)	
Single without children			
OVER	-1.351 (4.09)	-2.782 (3.85)	0.108
UNDER	1.898 (3.49)	3.551 (3.64)	0.207
SAME		-0.512 (1.00)	
Lone mothers			
OVER	0.101 (0.16)	-3.141 (2.14)	0.062
UNDER	3.080 (4.87)	5.564 (4.18)	0.135
SAME		1.731 (2.83)	
Married without children			
OVER	-0.749 (3.66)	-3.917 (7.83)	0.000
UNDER	1.725 (4.02)	4.386 (4.15)	0.041
SAME		0.241 (0.69)	
Married with children			
OVER	-1.742 (6.27)	-1.327 (2.14)	0.588
UNDER	1.441 (3.80)	6.785 (8.39)	0.000
SAME		3.001 (8.78)	

Note: OLS estimates, dependent variable = Δ hours (see equation (2)). Absolute t -statistics (obtained from White-corrected standard errors) are in parentheses. Under ‘Test of equality’ we report the p -value of the t -test that the coefficient for quitters is significantly different from the coefficient for stayers. The other variables included in each regression are listed in the note to Table 3, For all these variables except the intercept, coefficients are the same for stayers and quitters. Marital status is measured at $t-1$.

Table 8. Level and percentage change in hourly pay by labour force state (measured in year $t-1$) and job changing status ^a

Labour market state and marital status of origin	Stayers		All		Movers			
	Pay at t	% change	Pay at t	% change	Quitters		Laid off	
					Pay at t	% change	Pay at t	% change
All women								
OLF ^b			£ 5.75					
Mini-jobs	£ 6.20	-2.1	£ 5.74	-11.7	£ 5.95	-10.9	£ 5.56	-12.8
SPT	£ 6.67	13.8	£ 6.23	8.0	£ 6.40	9.3	£ 5.92	5.5
LPT	£ 6.75	10.5	£ 6.42	8.5	£ 6.78	10.1	£ 6.18	5.1
FT	£ 8.03	6.5	£ 7.81	5.8	£ 8.21	7.2	£ 7.30	2.6
All empl. states	£ 7.45	7.1	£ 7.14	5.7	£ 7.54	6.4	£ 6.46	3.9
Singles without children								
OLF ^b			£ 5.70					
Mini-jobs	£ 4.99	-3.0	£ 4.85	-7.3	£ 4.79	-5.7	£ 4.92	-11.4
SPT	£ 5.78	14.2	£ 5.24	9.4	£ 5.34	10.3	£ 5.11	8.8
LPT	£ 7.10	18.5	£ 6.46	13.5	£ 7.22	14.8	£ 6.15	9.7
FT	£ 8.01	5.7	£ 7.76	5.3	£ 8.13	6.1	£ 7.27	4.0
All empl. states	£ 7.54	7.4	£ 7.22	5.9	£ 7.78	6.7	£ 6.69	4.3
Lone mothers								
OLF ^b			£ 4.96					
Mini-jobs	£ 5.11	2.5	£ 4.90	2.9	£ 5.05	3.5	£ 4.78	0.6
SPT	£ 7.22	13.0	£ 6.44	7.7	£ 6.75	8.0	£ 5.98	7.3
LPT	£ 6.23	17.5	£ 5.90	16.4	£ 6.11	18.1	£ 5.84	12.7
FT	£ 7.25	6.5	£ 6.88	6.1	£ 7.04	7.0	£ 6.53	4.9
All empl. states	£ 6.63	11.6	£ 6.25	7.4	£ 6.58	8.4	£ 5.92	5.0
Married without children								
OLF ^b			£ 6.62					
Mini-jobs	£ 6.48	-5.2	£ 6.01	-12.4	£ 6.12	-11.5	£ 5.90	-13.6
SPT	£ 5.96	12.6	£ 5.64	7.1	£ 5.48	7.4	£ 5.79	6.8
LPT	£ 6.28	6.7	£ 6.02	3.8	£ 6.47	4.0	£ 5.88	3.2
FT	£ 8.03	5.1	£ 7.89	4.3	£ 8.09	4.5	£ 7.56	4.0
All empl. states	£ 7.49	5.6	£ 7.29	3.6	£ 7.63	3.8	£ 6.87	3.3
Married with children								
OLF ^b			£ 6.13					
Mini-jobs	£ 6.77	-7.7	£ 6.14	-15.0	£ 6.35	-14.3	£ 5.68	-17.1
SPT	£ 7.13	11.1	£ 6.73	8.2	£ 7.20	8.5	£ 5.89	7.8
LPT	£ 7.10	9.8	£ 6.79	9.0	£ 7.16	9.9	£ 6.31	6.9
FT	£ 8.30	9.6	£ 8.06	8.8	£ 8.28	9.6	£ 7.51	4.2
All empl. states	£ 7.60	7.0	£ 7.23	5.6	£ 7.55	6.3	£ 6.46	5.1

Note: Pay figures are real hourly wages (deflated using the Retail Price Index, base=2002).

^a Figures are based only on changes to another job (and exclude promotions and moves out of the labour market).

^b Includes entries in all jobs (without distinguishing between type of labour force involvement).

Table 9. OLS estimates of change in wage equation parameters – Stayers

	Specification				
	[1]	[2]	[3]	[4]	[5]
β_2	-0.016 (8.40)	-0.016 (8.25)	-0.017 (8.41)	-0.015 (7.54)	-0.013 (6.57)
β_3	0.023 (12.60)	0.024 (12.73)	0.024 (12.60)	0.028 (13.66)	0.028 (12.90)
β_4		-0.006 (0.37)	0.003 (0.14)	-0.038 (1.80)	-0.038 (1.81)
β_5		-0.027 (3.17)	-0.028 (2.51)	0.014 (0.76)	0.004 (0.24)
β_6			-0.018 (0.95)	-0.017 (0.90)	-0.015 (0.73)
β_7			0.002 (0.20)	-0.002 (0.13)	0.018 (1.22)
α_{01}				0.005 (1.61)	0.005 (1.49)
α_{02}				-0.007 (1.26)	-0.004 (0.64)
α_{03}				0.014 (1.34)	0.014 (1.32)
α_{04}				-0.011 (2.81)	-0.010 (3.37)
α_{11}					-0.001 (0.12)
α_{12}					-0.007 (1.95)
α_{13}					-0.001 (0.14)
α_{14}					-0.001 (0.21)
R^2	0.056	0.057	0.058	0.060	0.065
N	28,418	28,292	28,269	28,269	28,269
Joint significance levels (<i>p</i> -values) of:					
β_4 - β_5		0.007	0.042	0.131	0.172
β_6 - β_7			0.606	0.668	0.313
α_{01} - α_{04}				0.005	0.001
α_{11} - α_{14}					0.401

Note: OLS, dependent variable = $\Delta \ln(\text{wage})$. Absolute *t*-statistics (obtained from White-corrected standard errors) are in parentheses. Other variables included in all regressions: intercept, controls for education, work experience, race, changes in marital and health status, changes in union coverage status and local unemployment rate, number and changes in the number of children, year dummies. Also included were interactions of all variables reported in the table with a dummy variable indicating that a quit occurred (reported in Table 10).

Table 10. OLS estimates of change in wage equation parameters – Quitters

	Specification				
	[1]	[2]	[3]	[4]	[5]
Quit	-0.004 (0.74)	-0.011 (1.19)	-0.008 (1.13)	-0.013 (1.22)	-0.014 (1.17)
Quit interacted with variables on:					
β_2	0.007 (2.82)	0.007 (2.69)	0.008 (2.90)	0.007 (2.30)	0.006 (1.65)
β_3	-0.019 (7.16)	-0.019 (7.35)	-0.020 (7.42)	-0.027 (7.88)	-0.027 (7.51)
β_4		0.035 (0.85)	0.026 (0.64)	0.010 (0.19)	0.071 (1.42)
β_5		0.070 (2.76)	0.093 (3.39)	0.054 (1.45)	0.017 (0.47)
β_6			0.010 (0.24)	0.007 (0.15)	-0.081 (1.52)
β_7			-0.048 (1.69)	-0.045 (1.58)	0.069 (1.93)
α_{01}				-0.004 (0.85)	-0.004 (0.85)
α_{02}				0.001 (0.16)	-0.002 (0.25)
α_{03}				0.005 (0.32)	-0.005 (0.32)
α_{04}				0.014 (2.63)	0.022 (4.70)
α_{11}					-0.006 (0.66)
α_{12}					0.003 (0.60)
α_{13}					0.015 (2.15)
α_{14}					-0.026 (4.33)
Joint significance levels (p -values) of:					
β_4 - β_5		0.022	0.003	0.348	0.357
β_6 - β_7			0.219	0.275	0.031
α_{01} - α_{04}				0.082	0.000
α_{11} - α_{14}					0.000

Note: OLS, dependent variable = $\Delta \ln(\text{wage})$. See note to Table 9.

Table 11. OLS estimates for the restricted hours-constraint interactions – Quitters

Restricted parameter	Specification	
	[4]	[5]
α_0	0.005 (2.87)	0.006 (3.55)
α_1		0.013 (7.69)
Significance levels (<i>p</i> -values) of:		
$\alpha_0 = 0$ and $\alpha_1 = 0$		0.000
$\alpha_0 = \alpha_1$		0.000

Note: See equation (1) and text for explanation.

Table 12. OLS estimates of change in wage equation parameters by marital status in year $t-1$ – Stayers

	Singles without children	Lone mothers	Married without children	Married with children
Specification [1]				
β_2	-0.008 (3.47)	-0.004 (1.65)	-0.019 (9.04)	-0.025 (5.38)
β_3	0.022 (7.18)	0.032 (2.39)	0.018 (6.76)	0.026 (10.69)
R ²	0.048	0.053	0.053	0.079
N	5,412	2,817	10,928	9,274
Specification [5]				
β_2	-0.007 (2.74)	-0.003 (0.90)	-0.022 (7.57)	-0.017 (3.75)
β_3	0.024 (4.54)	0.014 (1.92)	0.026 (8.18)	0.034 (8.71)
β_4	-0.051 (1.06)	-0.104 (2.46)	-0.035 (0.79)	-0.002 (0.04)
β_5	0.030 (1.27)	-0.045 (1.20)	0.001 (0.06)	0.003 (0.08)
β_6	0.026 (0.68)	-0.019 (0.42)	-0.032 (0.92)	-0.027 (0.66)
β_7	-0.019 (0.66)	-0.097 (2.30)	0.011 (0.55)	0.053 (1.94)
α_{01}	0.001 (0.16)	0.002 (0.32)	0.005 (0.61)	0.003 (0.52)
α_{02}	0.004 (0.65)	-0.010 (1.18)	0.003 (0.54)	-0.009 (0.69)
α_{03}	0.013 (0.96)	0.054 (2.19)	0.034 (0.67)	-0.003 (0.29)
α_{04}	-0.012 (1.84)	-0.002 (0.15)	-0.010 (2.15)	-0.015 (3.20)
α_{11}	-0.017 (2.06)	-0.001 (0.16)	0.011 (0.88)	0.007 (0.75)
α_{12}	-0.003 (0.59)	-0.002 (0.34)	0.003 (0.48)	-0.015 (1.83)
α_{13}	0.002 (0.23)	-0.005 (0.33)	-0.013 (1.22)	0.005 (0.79)
α_{14}	0.005 (0.87)	0.067 (3.30)	-0.010 (1.57)	-0.003 (0.58)
R ²	0.067	0.089	0.062	0.097
N	5,411	2,672	10,928	9,271
Joint significance levels (p -values) of:				
β_4 - β_5	0.200	0.036	0.702	0.996
β_6 - β_7	0.590	0.072	0.513	0.109
α_{01} - α_{04}	0.096	0.169	0.150	0.025
α_{11} - α_{14}	0.243	0.007	0.313	0.298

Note: OLS, dependent variable = $\Delta \ln(\text{wage})$. Absolute t -statistics (obtained from White-corrected standard errors) are in parentheses. Other variables included in each regression are listed in the note to Table 9 (see specifications [1] and [5] in that table). For each group of women, also included were interactions of all variables reported in the table with a dummy variable indicating that a quit occurred (reported in Table 13).

Table 13. OLS estimates of change in wage equation parameters by marital status in year $t-1$ – Quitters

	Singles without children	Lone mothers	Married without children	Married with children
Specification [1]				
Quit	-0.017 (0.98)	0.021 (0.60)	-0.040 (1.86)	-0.039 (1.57)
Quit interacted with variables on:				
β_2	0.010 (2.35)	0.003 (0.93)	0.009 (2.35)	0.009 (1.51)
β_3	-0.023 (4.70)	-0.038 (2.59)	-0.012 (3.12)	-0.017 (3.90)
Specification [5]				
Quit	-0.016 (0.50)	-0.005 (0.72)	-0.036 (1.69)	-0.027 (1.57)
Quit interacted with variables on:				
β_2	0.009 (2.25)	-0.006 (0.27)	0.016 (2.52)	0.002 (0.22)
β_3	-0.035 (4.40)	-0.028 (2.33)	-0.023 (4.34)	-0.022 (3.18)
β_4	0.101 (0.97)	0.029 (0.27)	0.089 (0.76)	0.033 (0.38)
β_5	-0.072 (1.03)	0.016 (0.18)	0.023 (0.41)	0.064 (0.89)
β_6	-0.093 (1.97)	0.158 (1.33)	-0.048 (0.43)	-0.118 (1.22)
β_7	-0.016 (0.25)	0.162 (3.16)	0.110 (1.95)	0.045 (0.57)
α_{01}	-0.010 (1.12)	0.008 (0.98)	-0.005 (0.41)	-0.001 (0.12)
α_{02}	-0.006 (0.56)	0.005 (0.36)	-0.002 (0.28)	-0.007 (0.41)
α_{03}	-0.036 (1.81)	-0.038 (1.32)	-0.023 (0.41)	0.058 (1.81)
α_{04}	0.038 (4.40)	0.011 (0.82)	0.022 (3.03)	0.016 (1.91)
α_{11}	0.036 (2.62)	-0.017 (0.99)	-0.017 (0.75)	-0.027 (1.70)
α_{12}	-0.005 (0.59)	-0.006 (0.79)	-0.012 (1.38)	0.020 (1.88)
α_{13}	0.017 (1.38)	0.018 (0.97)	0.018 (1.16)	0.017 (1.53)
α_{14}	-0.031 (3.15)	-0.072 (3.36)	-0.017 (1.83)	-0.031 (3.45)
Joint significance levels (p -values) of:				
β_4 - β_5	0.392	0.959	0.713	0.662
β_6 - β_7	0.135	0.007	0.122	0.338
α_{01} - α_{04}	0.000	0.290	0.028	0.099
α_{11} - α_{14}	0.000	0.006	0.080	0.000

Note: OLS, dependent variable = $\Delta \ln(\text{wage})$. See note to Table 12.

Table 14. OLS estimates for the restricted hours-constraint interactions by marital status in year $t-1$ – Quitters

	Singles without children	Lone mothers	Married without children	Married with children
α_0	0.016 (5.05)	0.002 (0.42)	0.009 (3.32)	0.001 (0.20)
α_1	0.005 (1.62)	0.019 (3.82)	0.007 (2.34)	0.024 (7.56)
Significance levels (p -values) of:				
$\alpha_0 = 0$ and $\alpha_1 = 0$	0.000	0.001	0.002	0.000
$\alpha_0 = \alpha_1$	0.000	0.008	0.001	0.000

Note: See equation (1) and text for explanation.

Table A1. Summary statistics

Variable	Singles without children	Lone mothers	Married without children	Married with children
Age (years)	37.2 (13.5)	30.1 (10.7)	44.1 (11.7)	37.9 (7.5)
Ethnic origin:				
White	0.964	0.925	0.978	0.957
Black	0.019	0.033	0.006	0.006
Indian	0.005	0.017	0.007	0.018
Pakistani/Bangladeshi	0.002	0.014	0.002	0.013
Chinese or other	0.010	0.011	0.007	0.006
Education:				
No qualification	0.192	0.157	0.274	0.176
Less than O level/GCSE	0.075	0.110	0.092	0.118
O level/GCSE (or equivalent)	0.195	0.300	0.198	0.263
A level (or equivalent)	0.165	0.177	0.095	0.107
Higher vocational qualification	0.216	0.194	0.232	0.234
University degree or more	0.158	0.062	0.109	0.102
Number of children by age group: ^a				
0-4		0.201 (0.479)		0.408 (0.631)
5-11		0.547 (0.759)		0.778 (0.863)
12-18		0.621 (0.739)		0.515 (0.712)
Housing tenure:				
Owner	0.614	0.535	0.832	0.767
In social housing	0.224	0.366	0.106	0.181
In privately rented accommodation	0.162	0.099	0.061	0.052
Work experience (years) ^b	14.1 (11.5)	8.68 (7.76)	18.4 (10.6)	13.8 (7.4)
Number of person-wave observations	8,920	6,137	17,081	16,155
Number of women	2,197	1,634	3,265	3,308

Note: For convenience, the table does not report summary statistics on region (16 dummy variables). Standard deviations are in parentheses.

^a Averages are computed over the subsamples of lone mothers and married women with children. If computed over the three age-specific subsamples of mothers in each child group, the averages (standard deviations) are: 1.173 (0.450), 1.347 (0.584), and 1.286 (0.526) for lone mothers, and 1.277 (0.440), 1.461 (0.632), and 1.296 (0.513) for married women.

^b Computed over all women.

Table A2. Average weekly hours by labour force state, marital status, and labour supply preference

Labour market state and labour supply preference	All women	Singles without children	Lone mothers	Married without children	Married with children
All employment states					
All	31.0 (13.7) 44,391	34.9 (13.1) 8,891	26.2 (14.1) 5,076	33.6 (13.1) 16,185	27.4 (13.3) 14,239
OVER=1	39.0 (12.4) 12,613	41.4 (11.6) 2,390	36.2 (13.5) 921	40.5 (11.5) 5,395	36.1 (13.0) 3,907
UNDER=1	20.3 (11.8) 4,247	24.3 (12.8) 974	17.5 (11.6) 818	22.9 (12.0) 987	17.5 (9.7) 1,468
SAME=1	29.1 (12.7) 27,214	34.0 (12.2) 5,527	26.0 (13.6) 3,020	30.9 (12.3) 9,803	25.1 (11.7) 8,864
Mini-jobs					
All	10.2 (3.7) 6,732	10.2 (3.7) 1,115	9.0 (3.8) 1,266	10.7 (3.6) 1,690	10.5 (3.7) 2,783
OVER=1	11.5 (3.1) 450	11.8 (3.6) 70	10.7 (3.1) 82	11.7 (2.8) 101	11.7 (3.0) 197
UNDER=1	9.7 (4.0) 1,809	10.0 (3.9) 327	8.2 (3.8) 418	10.3 (3.8) 339	10.1 (3.9) 725
SAME=1	10.3 (3.7) 4,473	10.2 (3.5) 602	9.2 (3.7) 760	10.8 (3.6) 1,250	10.6 (3.7) 1,861
SPT					
All	19.2 (2.2) 7,624	19.3 (2.2) 863	18.6 (2.2) 1,132	19.4 (2.1) 2,187	19.3 (2.1) 3,462
OVER=1	19.7 (2.1) 932	19.8 (2.2) 111	19.5 (2.1) 92	19.9 (2.1) 241	19.6 (2.2) 488
UNDER=1	19.1 (2.2) 939	19.3 (2.2) 161	18.9 (2.1) 170	19.2 (2.2) 213	19.0 (2.2) 395
SAME=1	19.3 (2.2) 5,562	19.2 (2.2) 591	18.9 (2.2) 659	19.4 (2.1) 1,733	19.3 (2.1) 2,579
LPT					
All	25.8 (1.6) 3,819	25.8 (1.6) 455	25.9 (1.7) 361	25.8 (1.6) 1,251	25.8 (1.6) 1,754
OVER=1	26.0 (1.6) 651	26.0 (1.5) 65	26.2 (1.7) 38	26.1 (1.6) 236	25.9 (1.6) 312
UNDER=1	25.8 (1.5) 439	25.8 (1.6) 100	26.0 (1.7) 80	25.9 (1.5) 107	25.6 (1.4) 152
SAME=1	25.8 (1.6) 2,729	25.8 (1.6) 290	25.8 (1.6) 241	25.8 (1.5) 908	25.8 (1.6) 1,290

FT					
All	40.6 (8.2)	41.4 (7.6)	39.2 (7.9)	40.8 (8.4)	39.8 (8.7)
	<i>26,216</i>	<i>6,574</i>	<i>2,360</i>	<i>11,057</i>	<i>6,240</i>
OVER=1	42.7 (9.6)	44.0 (9.1)	41.8 (9.3)	42.9 (9.7)	41.7 (9.8)
	<i>10,580</i>	<i>2,144</i>	<i>709</i>	<i>4,817</i>	<i>2,910</i>
UNDER=1	37.3 (5.5)	38.0 (5.3)	37.0 (5.3)	37.5 (5.2)	35.8 (6.0)
	<i>1,060</i>	<i>386</i>	<i>150</i>	<i>328</i>	<i>196</i>
SAME=1	39.3 (6.8)	40.3 (6.4)	38.9 (6.8)	39.3 (6.8)	38.3 (7.1)
	<i>14,450</i>	<i>4,044</i>	<i>1,360</i>	<i>5,912</i>	<i>3,134</i>

Note: Figures are mean hours of work per week. Standard deviations are in parentheses. The figures in italics are the number of person-wave observations.

Table A3. Year-on-year labour market transitions and average changes in hours worked – Low education

Labour market states and hours changes	All women	Singles without children	Lone mothers	Married without children	Married with children
OLF					
Stay in OLF (%)	87.2	91.5	75.2	95.0	83.9
Into mini-jobs (%)	6.0	3.0	11.9	2.7	7.4
Into LPT (%)	3.4	2.2	6.2	1.1	4.7
Into HPT (%)	0.7	0.2	1.2	0.3	1.1
Into FT (%)	2.7	3.1	5.5	0.9	2.9
Hours change (incl. zeros)	2.5	2.0	4.7	0.9	3.0
Hours change (excl. zeros)	19.3	23.1	18.8	18.2	19.1
Number of transitions	9,112	1,418	1,614	2,981	3,099
Mini-jobs (1-15 hours)					
Into OLF (%)	13.7	20.1	21.0	13.0	10.0
Stay in mini-jobs (%)	58.8	52.8	50.7	65.4	58.5
Into SPT (%)	17.7	13.9	14.8	15.9	20.7
Into LPT (%)	3.8	2.8	3.0	2.3	5.3
Into FT (%)	6.1	10.4	10.6	3.4	5.4
Hours change (incl. zeros)	2.2	2.3	3.3	1.0	2.7
Abs. hours change (incl. zeros)	6.0	7.6	7.7	4.9	5.8
Hours change (excl. zeros)	4.2	5.6	6.3	2.9	4.2
Abs. hours change (excl. zeros)	5.3	6.8	7.6	4.0	5.3
Number of transitions	3,065	288	501	930	1,346
SPT (16-23 hours)					
Into OLF (%)	13.5	17.2	18.3	13.9	11.0
Into mini-jobs (%)	11.9	11.7	9.1	11.4	13.2
Stay in SPT (%)	54.7	48.4	53.6	57.0	54.3
Into LPT (%)	9.8	8.4	6.6	9.6	11.3
Into FT (%)	10.1	14.3	12.4	8.1	10.2
Hours change (incl. zeros)	-1.0	-1.1	-1.3	-1.5	-0.5
Abs. hours change (incl. zeros)	6.2	7.8	7.8	5.8	5.9
Hours change (excl. zeros)	1.8	2.6	2.6	1.3	1.7
Abs. hours change (excl. zeros)	4.3	5.5	5.3	3.7	4.3
Number of transitions	3,583	308	453	1,257	1,565
LPT (24-29 hours)					
Into OLF (%)	8.3	9.4	15.3	6.3	8.2
Into mini-jobs (%)	4.3	6.8	4.9	3.7	4.1
Into in SPT (%)	19.5	14.1	21.5	19.5	20.5
Stay in LPT (%)	46.0	41.7	28.5	52.8	44.7
Into FT (%)	22.0	28.1	29.9	17.8	22.5
Hours change (incl. zeros)	-1.6	-1.1	-2.4	-1.6	-1.6
Abs. hours change (incl. zeros)	6.2	7.3	9.1	5.1	6.3
Hours change (excl. zeros)	0.6	1.4	1.8	-0.0	0.6
Abs. hours change (incl. zeros)	4.5	5.4	6.1	3.7	4.6
Number of transitions	1,708	192	144	631	741
FT (30+ hours)					
Into OLF (%)	2.9	2.5	3.9	2.5	3.6
Into mini-jobs (%)	2.0	1.9	1.8	1.6	2.7
Into in SPT (%)	5.0	3.3	6.4	4.8	6.3

Into LPT	(%)	4.7	2.7	4.8	4.5	6.7
Stay in FT	(%)	85.4	89.7	83.0	86.7	80.6
Hours change (incl. zeros)		-3.1	-2.5	-3.6	-2.8	-3.9
Abs. hours change (incl. zeros)		6.0	5.7	6.7	5.4	7.2
Hours change (excl. zeros)		-2.1	-1.6	-2.3	-1.9	-2.6
Abs. hours change (excl. zeros)		5.1	4.9	5.5	4.6	6.0
Number of transitions		8,701	1,896	765	3,813	2,227
N		5,932	963	1,284	1,861	1,824

Note: 'Low education' refers to having achieved less than A-level (or equivalent) qualifications.

Table A4. Year-on-year labour market transitions and average changes in hours worked – High education

Labour market states and hours changes		All women	Singles without children	Lone mothers	Married without children	Married with children
OLF						
Stay in OLF (%)		76.4	72.2	63.3	88.2	76.9
Into mini-jobs (%)		8.1	6.6	12.5	3.6	10.3
Into LPT (%)		5.4	4.1	10.3	2.3	6.1
Into HPT (%)		1.5	1.7	1.3	1.3	1.7
Into FT (%)		8.5	15.4	12.5	4.7	5.0
Hours change (incl. zeros)		5.5	8.0	8.2	3.0	4.4
Hours change (excl. zeros)		23.3	28.7	22.4	25.2	19.2
Number of transitions		3,963	896	671	1,011	1,385
Mini-jobs (1-15 hours)						
Into OLF (%)		12.4	20.9	17.5	8.8	8.1
Stay in mini-jobs (%)		50.6	35.7	45.0	57.8	56.1
Into SPT (%)		18.6	16.8	12.6	18.8	22.4
Into LPT (%)		4.6	5.3	4.2	3.8	5.0
Into FT (%)		13.8	21.4	20.7	10.8	8.5
Hours change (incl. zeros)		5.0	6.6	6.5	3.9	4.0
Abs. hours change (incl. zeros)		8.4	11.3	10.5	7.3	6.7
Hours change (excl. zeros)		7.1	10.9	9.8	5.3	5.3
Abs. hours change (excl. zeros)		8.2	11.7	10.8	6.9	6.3
Number of transitions		2,378	412	502	453	1,011
SPT (16-23 hours)						
Into OLF (%)		10.6	14.5	13.0	10.2	9.1
Into mini-jobs (%)		11.6	13.5	11.9	11.0	11.4
Stay in SPT (%)		48.5	35.0	40.9	47.6	54.1
Into LPT (%)		11.5	10.4	9.1	12.0	12.2
Into FT (%)		17.9	26.6	25.1	19.3	13.2
Hours change (incl. zeros)		1.0	2.0	2.0	1.4	0.3
Abs. hours change (incl. zeros)		7.3	10.0	9.2	7.5	6.0
Hours change (excl. zeros)		3.3	5.5	5.1	3.7	2.2
Abs. hours change (excl. zeros)		5.9	8.6	7.8	6.1	4.7
Number of transitions		2,446	297	362	502	1,285
LPT (24-29 hours)						
Into OLF (%)		6.8	9.7	9.2	6.7	5.2
Into mini-jobs (%)		6.9	9.1	3.5	5.8	7.7
Into in SPT (%)		19.2	13.0	23.9	16.9	20.7
Stay in LPT (%)		37.5	23.4	33.8	39.2	40.5
Into FT (%)		29.9	44.8	29.6	31.4	25.9
Hours change (incl. zeros)		-0.5	1.2	-1.4	0.0	-0.9
Abs. hours change (incl. zeros)		7.2	10.5	7.3	7.1	6.5
Hours change (excl. zeros)		1.3	4.1	1.1	1.4	0.4
Abs. hours change (excl. zeros)		5.9	8.9	5.4	5.8	5.5
Number of transitions		1,316	154	142	344	676
FT (30+ hours)						
Into OLF (%)		2.3	2.3	2.5	2.0	3.0
Into mini-jobs (%)		1.8	1.1	2.0	1.5	3.2
Into in SPT (%)		3.8	2.4	6.6	3.0	6.0

Into LPT	(%)	3.1	1.7	3.5	2.8	5.3
Stay in FT	(%)	88.9	92.5	85.5	90.8	82.7
Hours change (incl. zeros)		-2.5	-2.0	-2.3	-2.3	-3.3
Abs. hours change (incl. zeros)		6.1	5.8	6.6	5.8	7.0
Hours change (excl. zeros)		-1.6	-1.1	-1.5	-1.5	-2.3
Abs. hours change (excl. zeros)		5.4	5.0	5.9	5.1	6.0
Number of transitions		11,923	3,040	974	5,117	2,792
N		3,941	947	569	1,292	1,123

Note: ‘High education’ refers to having achieved A-level (or equivalent) qualifications or higher qualifications.

Table A5. Average year-on-year job and hours-of-work changes by labour force state (measured in year $t-1$) – Low education

Origin labour market state and job and hours changes	All women	Singles without children	Lone mothers	Married without children	Married with children
All employment states					
Stayers (%)	80.0	77.7	76.3	83.7	80.4
Hours change ^a	0.2	0.1	1.5	-0.1	0.4
Abs. hours change ^a	3.8	3.9	4.9	3.3	4.2
Movers (%)	20.0	20.3	23.7	16.3	19.6
Hours change (incl. zeros)	-1.0	-2.2	0.1	-2.4	0.4
Abs. hours change (incl. zeros)	9.0	9.6	9.3	8.7	8.9
Hours change (excl. zeros)	-0.8	-2.0	0.4	-2.3	0.7
Abs. hours change (excl. zeros)	8.9	9.4	9.1	8.6	8.8
Mini-jobs					
Stayers (%)	82.2	80.4	86.8	84.0	81.0
Hours change ^a	2.7	3.4	4.9	1.7	2.6
Abs. hours change ^a	3.9	4.7	6.1	2.9	3.8
Movers (%)	17.8	19.6	13.2	16.0	19.0
Hours change (incl. zeros)	9.4	12.0	13.0	7.9	8.8
Abs. hours change (incl. zeros)	10.3	13.1	14.3	8.4	9.7
Hours change (excl. zeros)	9.5	12.4	13.0	7.9	8.9
Abs. hours change (excl. zeros)	10.3	13.2	14.3	8.4	9.7
SPT					
Stayers (%)	79.8	75.5	78.7	82.9	81.1
Hours change ^a	1.4	1.5	2.3	1.0	1.5
Abs. hours change ^a	3.6	4.4	4.9	3.0	3.6
Movers (%)	20.2	24.5	21.3	17.1	18.9
Hours change (incl. zeros)	2.8	5.1	3.4	2.8	2.2
Abs. hours change (incl. zeros)	6.8	8.5	6.7	6.8	6.5
Hours change (excl. zeros)	3.0	5.5	3.6	3.0	2.4
Abs. hours change (excl. zeros)	6.7	8.3	6.6	6.7	6.4
LPT					
Stayers (%)	79.7	81.7	72.1	81.9	79.4
Hours change ^a	0.5	1.4	1.7	0.2	0.4
Abs. hours change ^a	3.5	4.3	5.1	2.9	3.7
Movers (%)	20.3	18.3	27.9	18.1	20.6
Hours change (incl. zeros)	0.6	1.7	1.3	-0.6	1.0
Abs. hours change (incl. zeros)	7.8	8.9	8.4	7.4	7.6
Hours change (excl. zeros)	0.8	1.7	1.8	-0.6	1.2
Abs. hours change (excl. zeros)	7.7	8.9	8.0	7.4	7.5
FT					
Stayers (%)	80.4	80.3	71.1	84.4	81.0
Hours change ^a	-1.0	-0.5	-1.1	-0.9	-1.5
Abs. hours change ^a	3.9	3.7	4.1	3.5	4.9
Movers (%)	19.6	19.7	28.9	15.6	19.0
Hours change (incl. zeros)	-6.3	-5.9	-5.4	-6.5	-7.0
Abs. hours change (incl. zeros)	9.7	9.3	9.0	9.5	10.7
Hours change (excl. zeros)	-6.1	-5.7	-5.0	-6.4	-6.6
Abs. hours change (excl. zeros)	9.5	9.1	8.7	9.4	10.4

^a Excludes cases of zero hours by definition.

Table A6. Average year-on-year job and hours-of-work changes by labour force state (measured in year $t-1$)– High education

Origin labour market state and job and hours changes	All women	Singles without children	Lone mothers	Married without children	Married with children
All employment states					
Stayers (%)	78.2	76.9	76.8	79.6	79.7
Hours change ^a	0.3	0.8	2.3	-0.2	0.1
Abs. hours change ^a	4.9	5.0	6.0	4.6	5.0
Movers (%)	21.8	23.1	23.2	20.4	20.3
Hours change (incl. zeros)	-0.1	-0.3	2.7	-1.7	1.0
Abs. hours change (incl. zeros)	9.0	9.2	11.0	8.4	8.7
Hours change (excl. zeros)	0.1	-0.1	2.7	-1.6	1.1
Abs. hours change (excl. zeros)	9.0	9.1	11.0	8.3	8.7
Mini-jobs					
Stayers (%)	77.1	75.5	79.8	80.9	74.2
Hours change ^a	5.4	9.1	7.8	4.1	3.8
Abs. hours change ^a	6.7	9.9	8.8	5.8	5.0
Movers (%)	22.9	24.5	20.2	19.1	25.8
Hours change (incl. zeros)	11.9	15.0	16.2	9.9	9.6
Abs. hours change (incl. zeros)	12.8	15.9	17.1	11.1	10.3
Hours change (excl. zeros)	12.1	15.3	16.7	10.1	9.6
Abs. hours change (excl. zeros)	12.8	16.0	17.3	11.2	10.3
SPT					
Stayers (%)	80.4	72.2	75.7	82.6	78.6
Hours change ^a	2.4	4.2	4.5	2.4	1.6
Abs. hours change ^a	4.9	7.0	7.2	4.8	3.9
Movers (%)	19.6	27.8	24.3	17.4	21.4
Hours change (incl. zeros)	5.8	7.3	6.8	7.8	4.2
Abs. hours change (incl. zeros)	9.0	11.6	9.3	10.3	7.5
Hours change (excl. zeros)	5.9	7.8	6.8	7.8	4.2
Abs. hours change (excl. zeros)	9.0	11.5	9.3	10.3	7.5
LPT					
Stayers (%)	73.0	63.5	69.0	79.7	76.9
Hours change ^a	1.0	4.1	0.5	1.2	0.4
Abs. hours change ^a	4.9	8.3	4.3	4.3	4.7
Movers (%)	24.0	26.5	31.0	20.3	23.1
Hours change (incl. zeros)	1.7	3.5	2.6	3.2	0.0
Abs. hours change (incl. zeros)	9.2	10.5	8.2	10.3	8.5
Hours change (excl. zeros)	2.1	4.1	2.6	3.6	0.4
Abs. hours change (excl. zeros)	9.0	10.2	8.2	10.1	8.2
FT					
Stayers (%)	79.2	76.8	75.8	79.7	82.9
Hours change ^a	-0.9	-0.4	-0.6	-0.9	-1.7
Abs. hours change ^a	4.7	4.2	4.7	4.5	5.5
Movers (%)	20.8	23.2	24.2	20.3	17.1
Hours change (incl. zeros)	-4.2	-3.7	-4.4	-4.1	-5.0
Abs. hours change (incl. zeros)	8.2	7.9	9.5	7.9	8.7
Hours change (excl. zeros)	-4.1	-3.6	-4.4	-4.0	-5.0
Abs. hours change (excl. zeros)	8.1	7.8	9.5	7.7	8.7

^a Excludes cases of zero hours by definition.

Table A7. Year-on-year transitions in hours preferences

Type of transition	All women	Singles without children	Lone mothers	Married without children	Married with children
Stayers					
From OVER to:					
OVER	0.680	0.675	0.615	0.715	0.647
UNDER	0.018	0.019	0.046	0.010	0.023
SAME	0.302	0.306	0.339	0.276	0.330
From UNDER to:					
OVER	0.092	0.112	0.079	0.115	0.072
UNDER	0.408	0.403	0.430	0.392	0.411
SAME	0.500	0.485	0.491	0.493	0.517
From SAME to:					
OVER	0.182	0.194	0.147	0.196	0.169
UNDER	0.059	0.061	0.119	0.037	0.066
SAME	0.759	0.745	0.733	0.767	0.765
Quitters					
From OVER to:					
OVER	0.587	0.573	0.573	0.614	0.562
UNDER	0.049	0.064	0.064	0.032	0.059
SAME	0.364	0.364	0.363	0.354	0.379
From UNDER to:					
OVER	0.090	0.057	0.114	0.118	0.082
UNDER	0.464	0.507	0.456	0.432	0.460
SAME	0.446	0.436	0.430	0.450	0.458
From SAME to:					
OVER	0.135	0.132	0.113	0.145	0.135
UNDER	0.072	0.081	0.084	0.051	0.082
SAME	0.793	0.787	0.803	0.803	0.784

Table A8. Quit and layoff rates by labour force state and marital status (measured in year $t-1$)

Labour market state (year $t-1$)	All women	Singles without children	Lone mothers	Married without children	Married with children
All states (including OLF)					
Quit	0.101	0.101	0.102	0.089	0.096
Layoff	0.064	0.073	0.069	0.058	0.061
Total	0.165	0.174	0.171	0.147	0.157
All employment states					
Quit	0.120	0.124	0.134	0.112	0.122
Layoff	0.085	0.103	0.102	0.075	0.081
Total	0.205	0.225	0.236	0.187	0.203
OLF					
Quit	0.029	0.035	0.048	0.013	0.030
Layoff	0.009	0.009	0.014	0.004	0.010
Total	0.038	0.044	0.062	0.017	0.040
Mini-jobs					
Quit	0.140	0.144	0.107	0.137	0.155
Layoff	0.065	0.080	0.062	0.038	0.078
Total	0.205	0.224	0.169	0.175	0.233
SPT					
Quit	0.129	0.178	0.145	0.111	0.125
Layoff	0.071	0.091	0.080	0.061	0.084
Total	0.200	0.269	0.225	0.172	0.209
LPT					
Quit	0.131	0.138	0.154	0.130	0.126
Layoff	0.090	0.103	0.140	0.062	0.095
Total	0.221	0.241	0.294	0.192	0.221
FT					
Quit	0.111	0.114	0.141	0.106	0.104
Layoff	0.092	0.108	0.129	0.085	0.076
Total	0.203	0.222	0.270	0.191	0.180

Note: The sum of quit rate and layoff rate provides the total turnover rate. Both labour force state and marital status are measured in year $t-1$.