Labour market flexibility and unemployment duration: evidence from the UK

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Non-technical summary

After the financial crisis of 2008, the UK experienced strong employment growth but also a proliferation of insecure, low paid, poor quality employment. Policy makers and scholars have long debated the existence of a trade-off between unemployment and employment regulation. According to this argument, legislation constraining employers in the working conditions and contracts they can offer their employees is expected to reduce demand for workers, especially in the low-paid or low-skilled sectors. Conversely, allowing insecure/ unstable/ lower quality jobs to proliferate is expected to help the unemployed move more quickly into employment. This paper tests this hypothesis, by examining whether the share of unstable jobs in an unemployed person's local labour markets modifies her probability of moving into employment.

Monthly level unemployment histories for approximately 4500 men and 8700 women are reconstructed using the UK Household Longitudinal Study (also known as Understanding Society). These data are then augmented with Information about the prevalence of jobs with unstable hours and pay (unstable jobs) by region, occupation and year from the Labour Force Survey. Using the combined dataset, we estimate the impact of the share of unstable jobs on the probability of moving from unemployment into employment. If there truly is a trade-off between unemployment and unstable work, we should observe that unemployed individuals move faster into employment when their local labour markets have a higher share of unstable jobs. We find no such evidence. The share of unstable jobs had no effect on the probability of moving from unemployment into employment. This was true for both men and women, as well as for vulnerable groups such as the low educated or the long-term unemployed. Sensitivity checks have shown the results are robust to a variety of specifications, including controls for labour market trends and individual unobserved heterogeneity.

Jobs with unstable hours and pay are part of a long-term trend towards labour market deregulation. They allow employers to shift the downside risk of low demand onto their employees and reduce costs. However, they can also impose a substantial burden on workers by making budget management more difficult, increasing scheduling conflicts and generally reducing the bargaining power of employees. The argument against limiting their spread largely rests on the assumption that doing so would hurt employment, especially that of vulnerable categories such as the low-skilled, immigrants or the long-term unemployed. The empirical results in this paper however do not support such an assumption.

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Abstract

Using a combination of UKHLS and LFS data and a discrete time model, we test the hypothesis that unstable jobs with variable hours or pay enhance the job-finding chances of the unemployed in the UK. We find no evidence that the share of unstable jobs in the unemployed person's local labour market impacts on the probability to move into employment. This result holds both for men and women and for groups with low employability such as the low educated and the long-term unemployed. It is robust to alternative ways of defining unstable jobs and to the inclusion of unobserved heterogeneity. Overall, findings cast doubt on the importance of labour market flexibility for employment creation.

Keywords: labour market flexibility, economic insecurity, unemployment duration, discrete time models

JEL codes: I31, J64, J81, J88

1 Introduction

The UK is considered to have one of the most flexible labour markets among developed countries (OECD, 2013, 2020). In the decade following the Great Recession, it experienced record employment growth but also a proliferation of atypical forms of employment such as self-employment, zero-hours contracts and agency work. These jobs often have unpredictable hours and earnings, are very insecure and fail to guarantee a minimum level of earnings, even in the short term. Zero hours contracts that fail to guarantee any work or pay have received much scrutiny but they constitute only a subset of unstable jobs with unpredictable hours and pay. Many other do have a limited number of guaranteed hours but employees are regularly expected to work whenever they are called on.

Low and unstable pay interferes with the ability to plan, organize and generally be in control of one's life. The potential negative effects of unpredictable hours and earnings are significant. They include , poorer physical and mental health (Prause et al., 2009; Halliday, 2007; Wolf and Morrissey, 2017), financial insecurity and indebtedness (Diaz-Serrano, 2005; Schneider and Harknett, 2019), food insecurity (Dahl et al., 2014; Leete and Bania, 2010), work-life conflict and family strain (Henly and Lambert, 2014), and worse educational and developmental outcomes in adolescents and children (Gennetian et al., 2015; Hill et al., 2013).

Despite these serious problems, unstable jobs with unpredictable hours and pay are often justified as necessary to provide employers with numerical flexibility, support job creation and provide access to the labour market and potentially a stepping stone to better paid employment for groups with low employability. Yet,the empirical evidence in support of this view is limited. Previous work on atypical employment suggests that substitution effects may dominate new job creation (Kahn, 2007) and atypical jobs offer very limited opportunities for career progression (Booth et al., 2002; Giesecke and Groß, 2004; McGovern et al., 2004). Nevertheless, most of the evidence concerns

temporary employment rather than jobs with unpredictable hours and pay.

This paper provides evidence on the impact of variable [1] hours and pay employment, henceforth unstable jobs, on the job finding probabilities of the unemployed. It builds on and extends the large literatures on labour market flexibility and (un)employment. Its contribution is twofold. First, while the previous literature has focused on temporary employment and low wages, this paper looks at another form of labour market flexibility that has proliferated in the recent years: unstable jobs with variable hours and pay. Second, with a few exceptions (Gebel and Giesecke, 2011; Barbieri and Cutuli, 2016), the majority of existing studies have relied on country level time series to tease out the impact of institutions on labour market outcomes (Iversen and Wren, 1998; Howell, 2002; Kenworthy, 2003; Nickell et al., 2005; Avdagic and Salardi, 2013). While informative, studies relying on country level variation have a number of well-known limitations such as insufficient institutional variation, the confounding potential of national institutional, cultural or economic characteristics, and drawing conclusions about micro level processes from aggregate data. It is thus important to complement macro level findings with micro level evidence. This study uses variation across occupations, regions and time in one country - the UK- to examine how the prevalence of flexible/unstable employment impacts on unemployment duration and job finding probabilities. The rest of the paper proceeds as follows. The next section reviews the existing literature on labour market flexibility and unemployment and discusses the theoretical expectations. Section 3 describes the data and the methods. The main results are presented in Section 4. Section 5 discusses the results and Section 6 concludes.

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[1]The terms unpredictable and variable are used interchangeably. Strictly speaking, variable hours may be predictable. However, even when predictable, fluctuations in income and working times can be problematic.

2 Unemployment and labour market flexibility

2.1 The evidence so far

A large body of research investigated the potential trade-off between labour market flexibility and unemployment. At least two possible explanations have been proposed: skill biased technological change and the service sector trilemma.

The neo-classic economic literature has attributed the structural labour market changes experienced by developed countries starting with the 1980-s to shocks in the relative demand for different skills (Bertola et al., 2007; Goos and Manning, 2007; Acemoglu and Autor, 2011). Globalization and new technological developments are thought to have dramatically increased the demand for highly skilled labour and depressed the demand for low skilled workers resulting in the expansion of low paid employment in countries where labour markets were flexible such as the US and the UK and a substantial increase in unemployment in countries where labour market rigidities prevented a downward adjustment of low skilled wages such as Continental Europe in the 1990s. After countries in Continental and Southern Europe deregulated employment protections for peripheral workers, the trade-off changed to one between low wages and insecure/ temporary employment (Barbieri, 2009).

A second hypothesis has focused on productivity changes associated with a shift from manufacturing to services. In a 1989 article, Iversen and Wren Iversen and Wren (1998) argued that a slow down of productivity growth in non-tradable services presents governments with a choice between low employment growth, high wage inequality and high public spending. Countries that wish to boost private sector employment have to accept the proliferation of low wage, low quality jobs. The UK is given as a prime example of such a strategy. Countries that preserve strong employment protections have to

contend with low employment growth as in the case of several Continental European countries in the 1990s.

Yet, the empirical evidence on the trade-off between labour market flexibility, and associated low quality jobs, and employment creation is weak and contested. A few studies using country level time series do find a significant positive effect of labour market rigidities on unemployment, especially youth and long-term unemployment (Di Tella and MacCulloch, 2005; Nickell et al., 2005; Bertola et al., 2007; Bernal-Verdugo et al., 2012; Agnello et al., 2014). Yet, subsequent studies have shown that these results are not robust to variations in model specification, the inclusion of additional countries and/ or the use of slightly different institutional indicators (Kenworthy, 2003; Heyes, 2011; Vergeer and Kleinknecht, 2012; Avdagic and Salardi, 2013). In addition, alternative correlated institutional features such as monetary policy or product market regulation are often better able to explain observed aggregate employment patterns, casting doubt on the importance of labour market flexibility (Howell, 2002; Amable et al., 2011). There is also little evidence that countries with more flexible labour markets were better able to withstand the employment shock of the 2008 financial crisis (Heyes, 2011).

Mindful of the well known problems associated with using country level time series, a different strand of the literature has focused on deregulation reforms and associated changes in employment and unemployment. A number of studies focused on evaluating the impact of atypical employment deregulation on overall job creation (Barbieri and Cutuli, 2016; Barbieri and Scherer, 2009) and on the relative unemployment risk of the low skilled (Gebel and Giesecke, 2011). Results indicate no or even negative effects on employment creation overall and on the relative employment chances of low skilled workers. Rather than adding new jobs, employers appear to substitute well-paid, protected jobs for lower quality ones in a bid to drive down costs. From a social mobility perspective, atypical employment is associated with significant future unemployment risk and labour market marginalisation (Booth

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et al., 2002; Giesecke and Groß, 2004; Barbieri, 2009), although the strength of the relationship is country and period specific (Korpi and Levin, 2001; McGinnity et al., 2005; Gash, 2008).

2.2 The UK context

During the 1980s, the UK experienced a large increase in wage inequality as a result of deregulation, weakening of the trade unions and de-industrialization. While wage inequality has been more stable in the last two decades, low paid employment and working poverty remained a consistent problem. Since 1999, the UK has a minimum wage that has been gradually increased and now ranks as one of highest in relative terms. While the minimum wage legislation successfully solved the problem of very low wages and significantly reduced wage inequality at the bottom (Avram and Harkness, 2019), employment protection remains weak. New forms of employment such as 'fake' self-employment in the gig economy or zero-hours contracts have multiplied, possibly as a result of employers attempting to avoid payment of the relatively high minimum wage (Datta et al., 2018). Far from acting as a springboard, these low paid jobs can be a dead end. The evidence indicates that that holding a low paid job substantially increases the risk of low pay and unemployment in the future (Stewart, 2007; Cappellari and Jenkins, 2008) and that upward mobility, when it occurs, is often short-lived (D'Arcy and Finch, 2017).

In the decade we study, employment growth was relatively strong, especially in the second part of the period, whereas wage growth remained weak. After 2010, the Coalition Government and subsequently the Conservative Government implemented an austerity agenda that largely consisted in cuts to public services and working age benefits. This included the launch of Universal Credit which merged in-work and out-of work benefit provision but also significantly cut many in-work benefits (tax credits) used to top up the earnings of low paid workers and restricted access to out of work benefits, including disability benefits. Administrative methods such as sanctions

and new ways of establishing eligibility were used to push people of benefits and limit case-loads (Reeves and Loopstra, 2017; Dwyer, 2018). Many of these measures had the effect of encouraging employment by removing any alternative income options that low paid workers might have had.

2.3 Hypotheses

The aim of this paper is to test the claim that unstable jobs help the unemployed and in particular vulnerable groups, transition into employment. Two specific hypotheses are tested. First is the hypothesis that unemployed individuals facing a local labour market with a higher share of unstable jobs have on average a higher probability of finding a job and , as a result, shorter unemployment spells (H1).

Second, labour market flexibility is supposed to be especially beneficial for vulnerable groups or non-core workers that otherwise would find it hard to secure employment. The second hypothesis asserts that the impact of the share of unstable jobs in the labour market on the probability of finding employment is higher for women, the low educated and the long-term unemployed(H2). The next section details the data and empirical estimation.

3 Data and methods

The data we use combines information from two large scale British household surveys. Unemployment histories are obtained from the UK Household Longitudinal Study (UKHLS, a longitudinal study that follows approximately 40,000 households (in the first wave) and interviews them annually Details about the sampling strategy, data collected and uses can be found here: https://www.understandingsociety.ac.uk/. It collects detailed demographic, income,and labour market information among others. At the time of writing, UKHLS has available nine waves spanning the period 2009 - 2018. The Labour Force Survey (LFS) is geared towards collecting detailed information about employment and the labour market and is used to generate official government statistics relating to the labour market. LFS is conducted quarterly and interviews approximately 40,000 individuals every quarter.

3.1 Re-constructing unemployment histories

Information in the UKHLS, including detailed information about the current labour force status is gathered annually. The UKHLS also has an 'Annual Event History' module where it asks respondents about important events occurring in-between interviews. These include periods of employment and unemployment, as well as limited information about jobs. This information is used to construct monthly employment histories for each individual who has ever reported a spell of unemployment. Information about the annual event history is missing for proxy interviews.

A person is considered to be unemployed when they report unemployment or family care as their main economic activity, or when they report not doing any paid work and not having any paid job. A person is considered to be employed when they report being employed part-time or full-time, on maternity leave or self-employed. Periods in full-time education, retirement, long-term sickness, and periods spent in training or apprenticeships are excluded.

The monthly employment history is reconstructed using information about employment and unemployment spells in-between interviews. When inconsistent, priority is given to current over retrospective information. For individuals who are unemployed when first observed in the sample, their most recent unemployment spell is reconstructed using information on when their most recent job ended or the date they left full-time education. To ease interpretation of the results, the focus is kept on working age individuals defined as aged 22 to 64. Individuals who are never observed in unemployment at any of the actual interviews are dropped from the sample[2]. Finally, unemployment spells are censored at 240 months. This affects only a very small number of observations. The remaining sample contains of 4488 men observed for a total of 87641 months and 8647 women observed for a total of 263224 months. This is the sample used to carry out all the analyses.

3.2 Measuring hours and pay variability

Despite unstable jobs with unpredictable hours and pay becoming more prevalent, they are not necessarily straightforwardly identified in survey data. The LFS collects information about varying weekly hours but this includes salaried employees and overtime work. Information about pay variability is collected only for a very small subset of respondents. Finally, a question about 'flexible work arrangements' including zero-hours contracts is

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[2]Note that these individuals may be observed in unemployment in-between interviews; however, retrospective information is less reliable and there is little information about their characteristics at the time of unemployment

asked only in the Spring and Autumn quarters. To balance the need for accuracy and comprehensiveness, a job is identified as unstable if it has variable weekly hours or variable pay and is hourly paid [3]. An alternative specification using part-time status instead of hourly pay yielded a virtually identical measure (correlation=0.95).

The local labour market an unemployed person is facing is approximated by crossing region (13 categories), occupation (SOC 2 digits) and year, resulting in a total of 3000 cells. Within each cell, the share of employees reporting working in an unstable job was calculated and the merged back into the UKHLS, using the occupation of the last reported job.

Using a 3 digit measure of occupation yielded a very similar measure but resulted in a slightly lower sample size as some cells could not be matched. Using a finer occupational measure also has the disadvantage of decreasing cell sample size, and thereby lowering the reliability of the estimated shares.

3.3 Empirical estimation

We estimate a series of discrete time survival models where the probability of transitioning from unemployment to employment is modelled as a function of the prevalence of unstable jobs (i.e. jobs with variable hours or pay) the job seeker faces in her local labour market. The local labour market is defined by region, occupation and year. The estimates of interest are obtained comparing job finding probabilities for unemployment individuals in local labour markets with different shares of unstable jobs. If unstable jobs help boost employment, we expect, all things equal, individuals in labour markets a higher prevalence of unstable jobs to have an increased probability of finding employment and shorter unemployment spells.

We include controls for a large number of individual characteristics that might be relevant including time spent in unemployment (log transformed and entered as a quadratic), calendar year and region fixed effects, age(quadratic), education (4 categories), number of children (4 categories), having children under 5 (0/1), being a single parent (0/1), suffering form a long-term illness or disability (0/1), a measure of risk aversion (11 point scale) and the income of the partner (transformed using the inverse hyperbolic sine [4]). In addition, we also control for two local labour market characteristics: the mean level of wages and the growth rate relative to overall employment. We include the mean level of wage to

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[3] $VARYHR == 1|YLESS == 1|YMORE == 1|YVARY99 == 1) \& HOURLY == 1$

[4] $\log[x + \sqrt{1 + x^2}]$ This transformation has similar effects to taking the log but can be applied to variables that contain zero and negative values.

control for any spuriousness induced by a correlation between wage levels and hours and pay instability. The relative growth rate is included to account for structural changes in the labour market correlated with the level of pay and hours instability.

Table 1 shows descriptive information about the variables used in our models. Mean unemployment duration is skewed by very long spells present in the data. Median unemployment duration is 22 months for women and 14 months for men. Even so, it is clear that the sample of spells is not representative of the universe of unemployment spells. Instead, it is skewed towards longer spells. This is to be expected given the way the sample has been constructed. Since only individuals who report being unemployed at least once at the time of the interview, short unemployment spells are more likely to be missed.

4 Results

4.1 Hours and pay variability in the UK between 2009 and 2018

We start by reviewing the prevalence and characteristics of unstable jobs with variable hours and pay using the LFS dataset. Figure 1 shows the trend in the proportion of jobs with variable hours and pay. For reference, trends in the proportion of low paid jobs -defined as jobs with an hourly pay below 2/3 of median- is shown on the right hand axis. The proportion of jobs with variable hours and pay fell from 14% in 2009 to around 12.5 % in 2012. Subsequently, is starting rising again until 2016 and fell again in 2017 and 2018, in line with low paid jobs in general. The observed patterns suggest that jobs with variable hours and pay are very sensitive to the economic cycle. They are more easily destroyed during recessions and grow in the early phases of economic recovery.

Figure 2 shows that unstable jobs are less well paid. On average, workers in these jobs earn 20-30% less compared to workers in standard jobs. The difference is mainly due to an hourly pay penalty of about 20-25% and only to a very small extent due to differences in working hours. Notably, while unstable jobs are more often classified as part-time (38 % vs. 25%), workers report only around 2 fewer hours worked per week (34.5 vs 36.3). The wage differential between unstable jobs and standard jobs increased during the decade under study and always exceeded 20%. Workers in unstable jobs are more likely to be single, older, less educated, and have fewer dependent children. We could find no notable gender differences.

Figure 3 plots the average share of unstable jobs by observed unemployment durations using LFS data. Contrary to expectations, workers who have been unemployed for longer

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Table 1: Descriptive statistics

| | Women | | Men | |
Variable	Mean	Std. Dev.	Mean	Std. Dev.
Unemployment duration (months)	42.96	50.33	27.44	37.36
Share unstable jobs	19.49	8.61	20.39	8.86
Age	40.61	10.85	42.08	12.61
Number of children	1.32	1.14	0.60	1.00
Number of children¡5	0.45	0.67	0.19	0.50
Single parent	0.18	0.38	0.03	0.16
Education				
HE graduate	0.25	0.43	0.21	0.41
A-levels	0.16	0.37	0.19	0.39
GSCEs	0.28	0.45	0.27	0.44
Other/no qualification	0.31	0.46	0.33	0.47
Poor health (0/1)	0.33	0.47	0.40	0.49
Risk aversion	5.31	2.60	4.53	2.77
Income of partner	1213.42	731.04	1127.68	676.61
Average hourly pay in the local labour market	9.88	3.87	10.11	3.71
Local labour market growth	-0.0013	0.55	-0.0220	0.53
N (obs./ months)	153,676		47,463	

Note:N refers to the number of observations (months) with a valid value on all variables in the table.
Source:Author's calculations using UKHLS and LFS
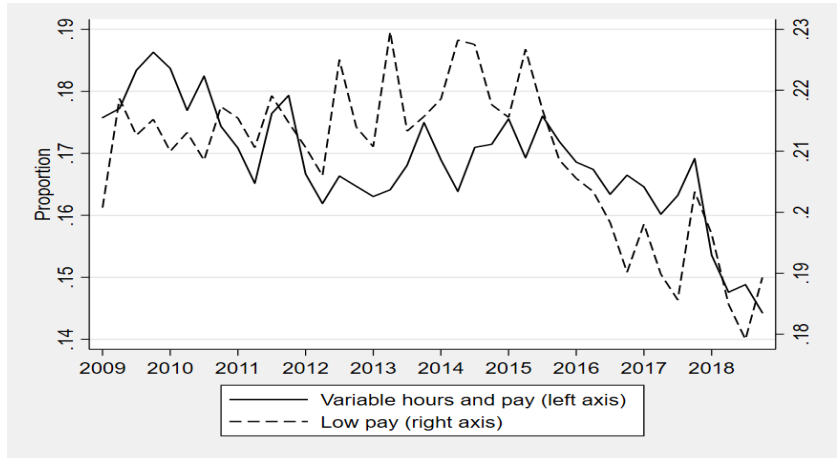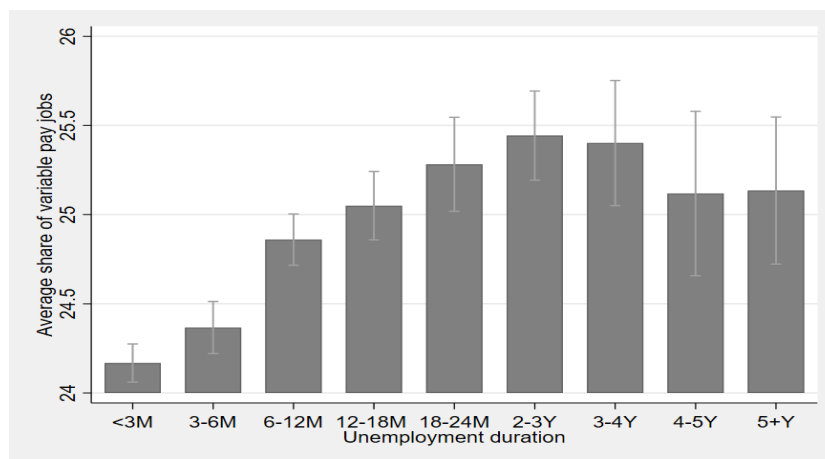
Source: Quarterly LFS, 2009-2018

Figure 1: Trends in jobs with variable hours and pay, 2009-2018
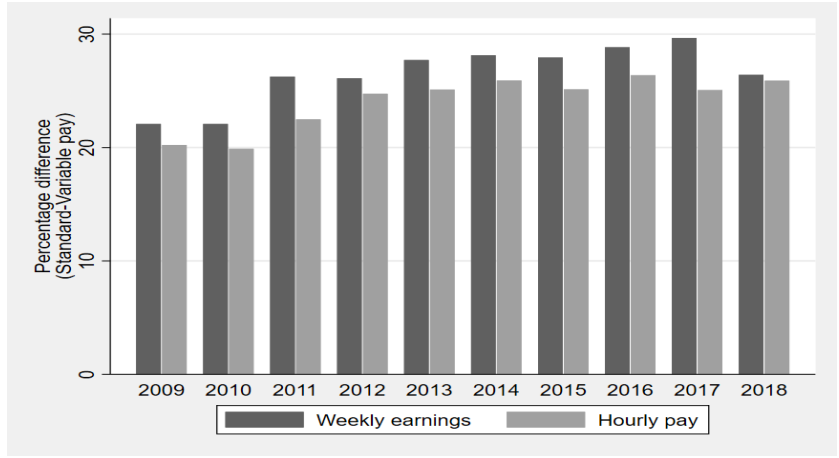
Source: Quarterly LFS, 2009-2018

Figure 2: Wage differentials between jobs with standard and variable pay

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face local labour markets (defined by region, occupation and year) that have higher shares of unstable jobs. This association is of course cross-sectional and could be driven by certain regions/ occupations having both fewer jobs (and thus longer unemployment durations) and a higher prevalence of unstable jobs. To obtain credible estimates of the causal effect of unstable jobs on unemployment duration, we turn to longitudinal UKHLS data where we can follow the unemployed for long periods of time.


Source: Quarterly LFS, 2009-2018

Figure 3: Average group level earnings instability by unemployment duration

4.2 Flexible jobs and unemployment duration: some descriptive results

Survivor functions plotting the probability to remain unemployed against time in unemployment are graphed in Figure 4, separately for men and women. In the case of women , the cumulative probability to remain unemployed declines significantly in the first two years of unemployment, after which it stabilizes. The survivor functions for women in labour markets with the lowest and highest incidence of unstable jobs cross. At shorter unemployment durations, women facing a labour market with a higher share of unstable jobs are *more* likely to remain unemployed. This is in contrast with the expectation that unstable jobs enable women to find employment more quickly. At very long unemployment durations, the pattern is reversed: women are more likely to transition out of unemployment when their local labour market has a higher share of unstable jobs.
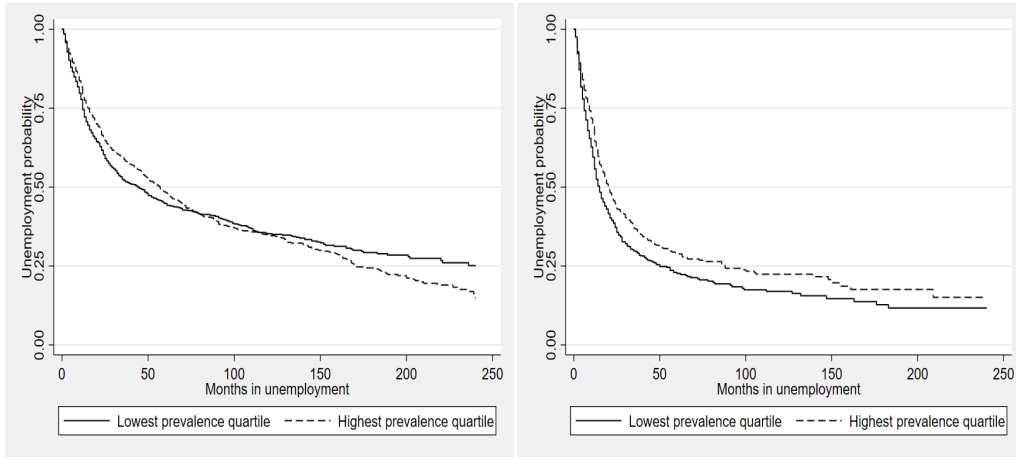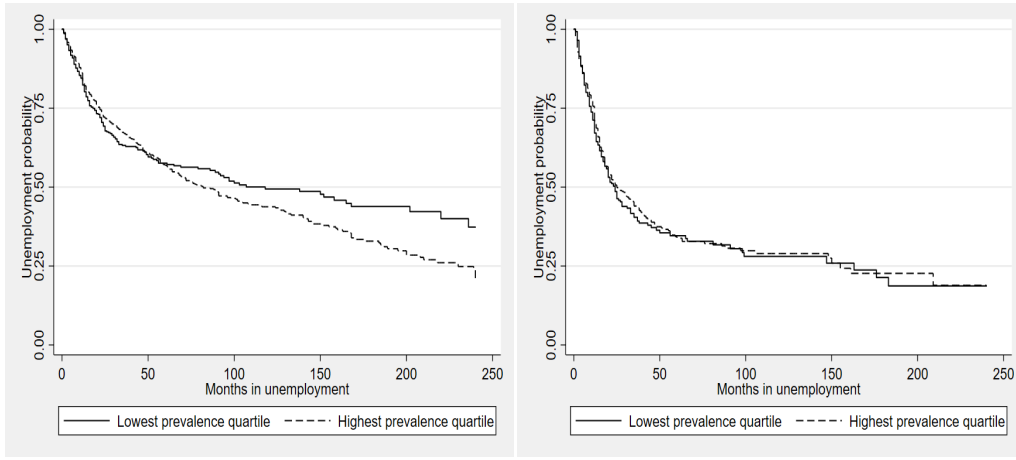
(a) Women   (b) Men

Source: UKHLS, Waves 1-9

Figure 4: Probability to remain unemployed by prevalence of jobs with variable hours/pay in the local labour market: All

The survivor functions for men, shown in right hand panel, fall more steeply initially but then become flatter compared to those of women. Men have a higher probability of finding employment early on but long-term unemployed men have very low chances of exiting unemployment. For all unemployment durations, men in labour markets with fewer unstable jobs have shorter unemployment spells, contrary to Hypothesis 1.

Hypothesis 2 suggests that flexible jobs should be especially helpful in supporting the employment of low skilled workers. A first assessment of this hypothesis is provided by the survivor functions graphed in Figure 5. They plot the cumulative probability to remain unemployed by time in unemployment and share of unstable jobs in the local labour market for individuals whose highest educational qualification is GCSE or lower. The expectation that low skilled women are more likely to find a job in more flexible labour markets with a higher share of unstable jobs is confirmed only at very long unemployment durations. At shorter durations, the difference is negligible or even reversed. There is no difference in the probability of remaining unemployed according to labour market flexibility among low-skilled men.

(a) Women   (b) Men

Source: UKHLS, Waves 1-9

Figure 5: Probability to remain unemployed by prevalence of jobs with variable hours/pay in the local labour market: Low educated

4.3   Evidence from discrete time models

Descriptive results generally do not support Hypothesis 1 and provide only very limited support for Hypothesis 2. However, it is possible that compositional differences between regions and occupations with high an low incidence of unstable jobs obscure the relationship with unemployment duration. To account for this possibility, we estimate a discrete time duration model where the probability to transition from unemployment to employment is modelled as a function of the share of unstable jobs in the unemployed person's local labour market. We estimate 3 sets of models separately for men and women. Model A contains controls for unemployment duration (entered as a quadratic), demographic characteristics: age in years measured since turning 15(quadratic), education (4 categories), number of children under 14, having children under 5 in care (0/1), single parenthood status (0/1) and poor health (0/1), an individual measure of risk aversion and partner's income (transformed using the inverse hyperbolic sine). Model A fully exploits the variability in the local labour market flexibility measure. However, it is possible that regions and occupation differ in unobserved ways and these differences are driving the observed relationship between unemployment duration and labour market flexibility. To address this issue, Model B expands the set of controls by including region and year fixed effects, the average wage level by region, year and occupation as well as a variable measuring whether the occupation x region x year cell is expanding or contracting. The latter two

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variables are included to account for local labour market trends that might be impacting on unemployment duration. For example, a negative shock to the local economy might be simultaneously increasing unemployment duration and the share of unstable jobs, thereby leading to a spurious negative relationship. Finally, Model C includes interactions between the main variable of interest and unemployment duration and education. With Model C, we wish to test whether vulnerable categories such as the long-term unemployed or the low-skilled benefit disproportionately from unstable jobs being available. Tables 2 and 3 below show the coefficients of interest . A full set of results is available in Tables A and B the Appendix.

Table 2: Estimated coefficients from a discrete time model of unemployment duration:Women

	Model A	Model B	Model C
Share of unstable jobs	0.0004 (0.0042)	-0.0010 (0.0068)	-0.0249* (0.0123)
Share of unstable jobs X unempl. duration	-	-	0.0061* (0.0029)
Share of unstable jobs X education (ref.cat tertiary)			
X A-levels	-	-	0.0061 (0.0121)
X GSCE	-	-	0.0039 (0.0109)
X Other/ no qualifications	-	-	0.0155 (0.0135)
Individual characteristics	Yes	Yes	Yes
Region and year fixed effects	No	Yes	Yes
Local labour market wages and employment	No	Yes	Yes
N spells	2604	2528	2528
N individuals	1973	1934	1934

Note: Coefficients are on a logit scale; SE in parenthesis, * p-value ¡0.05
Source: Author's calculations based on UKHLS, Waves 1-9

The share of unstable jobs has no effect on women's unemployment duration in the first two models. The estimated coefficients are both statistically insignificant and very close to zero in substantive terms. Model C introduces, in addition to the main effect, interactions with unemployment duration and education. The main effect- corresponding to graduates

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who have been unemployed for 1 month- becomes negative whereas the interaction term with unemployment duration is positive and significant. None of the interaction terms with education are statistically significant.

To gain a better understanding of the patterns of variation, Figure 6 plots average marginal effects (AME) by education level and duration of unemployment. To make the interpretation easier, the plotted AME correspond to a change of one standard deviation in the share of unstable jobs in the unemployed person's local labour market. The graphs shows that for women with a graduate degree the share of unstable jobs actually has a negative effects on the probability of transitioning from unemployment to employment at short unemployment durations. The effect is small, a 0.5-0.6 percentage points change corresponding to a change of one standard deviation, but statistically significant. As unemployment duration increases, this effect disappears. In the case of women with no qualifications, the share of unstable jobs has little impact on their probability to move into a job, irrespective of how long they have been unemployed.
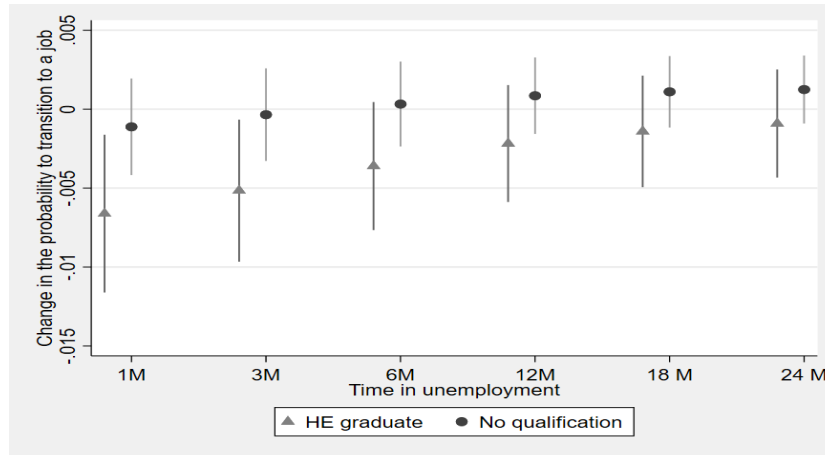
Source: Quarterly LFS, 2009-2018

Figure 6: Average marginal effects of the prevalence of variable hours and pay jobs on the probability to transition from unemployment to employment:Women

Table 3 displays estimated coefficients from regressions for men. The share of unstable jobs has no effect on the probability of leaving unemployment for a job in any of the three models. The coefficients are very close to zero and statistically insignificant in Models A and B. In Model C, the main effect is slightly larger and positive bust still very far from achieving statistical significance. The interaction terms with unemployment duration and

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Table 3: Estimated coefficients from a logistic discrete time model of unemployment duration:Men

	Model A	Model B	Model C
Share of unstable jobs	-0.0052 (0.0042)	0.0048 (0.0065)	0.0142 (0.0.0132)
Share of unstable jobs X unempl. duration	-	-	-0.0051 (0.0038)
Share of unstable jobs X education (ref.cat tertiary)			
X A-levels	-	-	0.0172 (0.0116
X GSCE	-	-	-0.0054 (0.0112)
X Other/ no qualifications	-	-	0.0047 (0.0132)
Individual characteristics	Yes	Yes	Yes
Region and year fixed effects	No	Yes	Yes
Local labour market wages and employment	No	Yes	Yes
N spells	1873	1782	1782
N individuals	1336	1286	1286

Note: SE adjusted for clustering in parenthesis; * p-value ¡0.05

Source: Author's calculations based on UKHLS, Waves 1-9

education levels are insignificant as well.
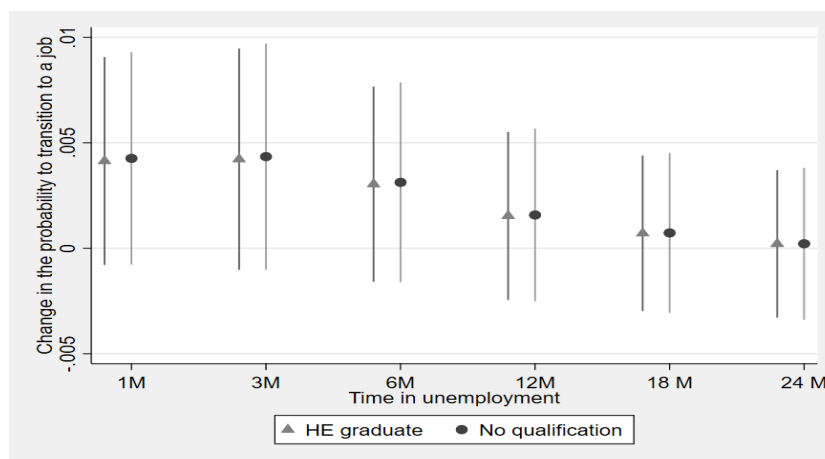
Figure 7: Average marginal effects of the prevalence of variable hours and pay jobs on the probability to transition from unemployment to employment:Women

Figure 7 plots average marginal effects corresponding to a change of a one standard deviation by unemployment duration and education level. Results confirm that there is virtually no difference in the impact of the share of unstable jobs by education. At shorter unemployment durations, the effect is positive but insignificant. A one standard deviation increase in the share of unstable jobs increases the probability to move from unemployment to employment by around 0.4 percentage points for men who have been unemployed for 3 months or less. As unemployment duration increases, the effect declines and reaches actual zero at 24 months. None of the estimated AME are however different from zero. It is not clear what explains the negative relationship between AME and unemployment duration, but unobserved heterogeneity cannot be excluded. Men are less likely to experience unemployment than women and when they do experience it, it is usually for shorter periods of time. As a result, long-term unemployed men are likely to be negatively selected. In any case, the observed effects statistically indistinguishable from zero.

Other covariates have the expected effects (see results in the Appendix). Unemployment duration is negatively related to the probability of finding a job and this effect increases over time. Poor health, a lower education, having more children, having children under five in care and being more risk averse are associated with a lower the probability

of finding employment both in the case of men and women.

Interestingly enough, the average local labour market wage has a strong positive effect on the job finding probabilities of men but no effect of the job finding probabilities of women. In contrast, the partner's income is unimportant when it comes to men's job finding probabilities but women with a high income partner have a lower probability of moving into a job. These results indicate that women's labour supply is less sensitive to their own wages and more sensitive to family income, consistent with a secondary earner status. An expanding labour market increases job finding probabilities for both men and women.

4.4   Robustness checks

Discrete time models are vulnerable to bias if unobserved heterogeneity is present. Estimated coefficients can be biased downwards even if unobserved heterogeneity is not correlated with the predictor of interest at the start of the spell. In this case, the effect of the share of unstable jobs could be underestimated. To investigate this possibility, we have estimated models incorporating a discrete mixture distribution with two points of support, first proposed by Heckman and Singer (1984). Results with and without unobserved heterogeneity are shown in Table 4 below. In the case of women, we find that unobserved heterogeneity is important in explaining the probability to move into employment but does not affect the estimate of interest. The estimated coefficients for the share of unstable jobs remain statistically insignificant and very close to zero. In the case of men, the models with unobserved heterogeneity did not converge.

Table 4: Estimates of the impact of the share of unstable jobs on the probability of finding employment with and without unobserved heterogeneity: Women

	Without unobs. het.			With unobs. het		
	Model A	Model B	Model C	Model A	Model B	Model C
Share unstable jobs	0.0003 (0.0004)	-0.001 (0.006)	-0.024* (0.011)	0.004 (0.005)	0.010 (0.008)	-0.012 (0.015)

Note: Unobserved heterogeneity is included as two discrete mass points (i.e. constants) in a cloglog model

Source: Author's calculations using UKHLS and LFS

5 Discussion

Unstable jobs that have variable hours and pay and do not guarantee workers an income stream they can live on are often justified on the grounds they support employment creation, reduce unemployment and enable non-core workers to find a job. The empirical results in this paper cast doubt on this view. The share of unstable jobs in an unemployed person's local labour market had no effect or in some specification even a negative effect on the probability of transitioning from unemployment to employment. This result holds for both men and women and is robust to a variety of specifications, including controls of local labour market trends and unobserved heterogeneity. At the aggregate level, the correlation between the share of unstable jobs in the local labour market and employment growth using LFS data is negligible at 0.02, again casting doubt that unstable jobs boost employment creation.

There is no evidence that less employable groups such as the low educated and/or the long-term unemployed benefit either. In one specification, higher educated women who had been unemployed for short periods of time were *less* likely to find a job when the share of unstable jobs in their local labour market increased. While this result was not statistically significant when unobserved heterogeneity was introduced in the model, it suggests that unstable jobs may be avoided by the unemployed who can afford to wait.

Experimental research has shown that workers seek to avoid variability in hours and earnings they have no control over (Mas and Pallais, 2017; Avram, 2020). Qualitative interviews with workers in unstable jobs suggest that the unpredictability in hours and income imposes a significant burden creating family strain and hindering the management of household finances (Schneider and Harknett, 2019). Nonetheless, unstable jobs appear to be accepted as workers feel they have few alternatives (Henly et al., 2006; Pennycook et al., 2013). Perversely, low wages and wage insecurity may incentivize low paid workers to work more in an attempt to improve their income and insure against future negative income shocks (Kuhn and Lozano, 2008). Most low paid workers do not have the savings or alternative income streams to support long job searches.Recent welfare policy clearly emphasizes job search and moving into employment as soon as possible. Job-seekers are penalized if they refuse any kind of employment. In addition, the increased use of sanctions, restricted eligibility and cuts in the real value of benefits make welfare an non-viable or unpalatable alternative. As a result, many low skilled workers may feel they have no choice but to take up low paid, unstable jobs for a living. In this respect, the UK appears to have followed the US model.

Unstable jobs have been strongly promoted by employers and their organizations. They allow employers to shift the downside risk of low demand onto their employees

and thus reduce short-term costs. In this respect, unstable jobs are part of a longer term trend where risks that were formerly borne by employers or by the state are shifted onto individuals and families (Hacker, 2019). They also appear to serve another purpose. Qualitative studies with HR managers and precarious workers suggest that the uncertainty embedded in unstable jobs is used to discipline workers and ensure they are compliant (Lambert, 2008; Pennycook et al., 2013; Halpin, 2015). Unstable jobs not only expose workers to more income risk but they also reduce their bargaining power, further weakening their economic position.

6   Conclusions

Low paid, low quality employment has been a significant problem in the UK starting with the 1980s. More recently, unstable jobs that guarantee no or only a small number of hours have become more common. Despite them being recognized as low quality, employers and many policy makers have justified the existence of unstable jobs as a way to facilitate employment creation and enable less employable groups to participate in the labour market.

This paper finds no evidence that unstable jobs are associated with a higher probability of finding employment, either in the general population or among the low educated and the long term unemployed. The results are consistent with much of the literature on labour market flexibility and unemployment but contradict the conventional wisdom based on the neo-classic economic models of labour demand and supply. Such models have long dominated the economic thinking among UK and European policy makers and have helped push labour market deregulation despite the lack of empirical evidence it supports employment growth. The development of alternative theoretical models that incorporate aspects such as worker bargaining power (Dosi et al., 2018) should be a priority for future research.

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7 Appendix

Table A: Estimated coefficients from discrete time models: Women

	Model A	Model B	Model C
Share of unstable jobs	0.0004 (0.0042)	-0.0010 (0.0068)	-0.0249* (0.0123)
Share of unstable jobs X unempl. duration	-	-	0.0061* (0.0029)
Share of unstable jobs X education (ref.cat tertiary)			
X A-levels	-	-	0.0061 (0.0121)
X GSCE	-	-	0.0039 (0.0109)
X Other/ no qualifications	-	-	0.0155 (0.0135)
Unemployment duration	0.125 (0.091)	0.094 (0.093)	-0.009 (0.102)
Unemployment duration 2	-0.056** (0.016)	-0.047** (0.017)	-0.052** (0.017)
Age	-0.017 (0.016)	-0.019 (0.016)	-0.018 (0.016)
Age 2	-0.0000 (0.0003)	-0.0000 (0.0003)	0.0000 (0.0003)
A-levels	-0.222* (0.102)	-0.215* (0.106)	0.006 (0.012)
GSCE	-0.494*** (0.091)	-0.503*** (0.097)	0.004 (0.011)
Other/ no qual.	-0.850*** (0.108)	-0.810*** (0.118)	0.015 (0.013)
Number of children	-0.148** (0.053)	-0.162** (0.054)	-0.158** (0.054)
Child under 5	-1.021*** (0.101)	-1.004*** (0.104)	-1.003*** (0.104)
Single parent	-0.020 (0.104)	0.008 (0.107)	0.011 (0.106)
Poor health	-0.642*** (0.075	-0.648*** (0.078)	-0.647*** (0.077)
Risk aversion	-0.047** (0.014)	-0.046** (0.014)	-0.045** (0.014)
Partner income	-0.024 (0.014)	-0.024 (0.014)	-0.023 (0.014)
Year (ref. 2010)			
2011	-	0.030 (0.118)	0.022 (0.118)
2012	-	0.154 (0.114)	0.152 (0.114)

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	Model A	Model B	Model C
2013	-	0.182 (0.118)	0.179 (0.118)
2014	-	0.155 (0.124)	0.145 (0.124)
2015	-	0.469*** (0.125)	0.467*** (0.125)
2016	-	0.332* (0.140)	0.322* (0.140)
2017	-	0.348 (0.219)	0.316 (0.220)
2018	-	1.767* (0.802)	1.742* (0.798)
Region (Ref. North-East)			
North-West	-	0.334 (0.217)	0.336 (0.216)
Yorkshire	-	0.184 (0.226)	0.186 (0.225)
East Midlands	-	0.351 (0.231)	0.349 (0.230)
West Midlands	-	0.192 (0.224)	0.189 (0.223)
East of England	-	0.454* (0.225)	0.455* (0.224)
London	-	0.167 (0.210)	0.178 (0.209)
South East	-	0.392 (0.212)	0.398 (0.211)
South West	-	0.438 (0.231)	0.439 (0.230)
Wales	-	0.360 (0.236)	0.368 (0.236)
Scotland	-	0.171 (0.242)	0.189 (0.241)
N Ireland	-	0.141 (0.268)	0.140 (0.266)
Mean local wage	-	0.012 (0.014)	0.006 (0.015)
Local empl. growth	-	0.138* (0.060)	0.134* (0.060)
Constant	-2.001*** (0.220)	-2.485*** (0.398)	-2.019*** (0.451)
N spells	2604	2528	2528
N individuals	1973	1934	1934

Note: SE in parenthesis; mean local wages are hourly; employment growth is year on year percent change; both are measured at the occupation by region by year level; risk aversion is an 11 point scale; partner income is transformed using the inverse hyperbolic sine

Source:Author's calculations based on UKHLS and LFS.

Table B: Estimated coefficients from discrete time models: Men

	Model A	Model B	Model C
Share of unstable jobs	-0.0052 (0.0042)	0.0048 (0.0065)	0.0142 (0.0.0132)
Share of unstable jobs X unempl. duration	-	-	-0.0051 (0.0038)
Share of unstable jobs X education (ref.cat tertiary)			
X A-levels	-	-	0.0172 (0.0116
X GSCE	-	-	-0.0054 (0.0112)
X Other/ no qualifications	-	-	0.0047 (0.0132)
Unemployment duration	0.614*** (0.110)	0.588** (0.110)	0.681*** (0.129)
Unemployment duration 2	-0.168*** (0.021)	-0.161*** (0.022)	-0.158*** (0.022)
Age	0.012 (0.014)	0.012 (0.015)	0.013 (0.015)
Age 2	-0.0004 (0.0002)	-0.0005 (0.0003)	-0.0005 (0.0003)
A-levels	-0.155 (0.106)	-0.125 (0.108)	-0.471* (0.234)
GSCE	-0.342*** (0.093)	-0.305** (0.100)	-0.158 (0.242)
Other/ no qual.	-0.720*** (0.105)	-0.656*** (0.110)	-0.737* (0.301)
Number of children	-0.064 (0.057)	-0.077 (0.058)	-0.086 (0.058)
Child under 5	0.046 (0.128)	0.145 (0.131)	0.166 (0.131)
Single parent	-0.313 (0.213)	-0.285 (0.220)	-0.304 (0.223)

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	Model A	Model B	Model C
Table B – *Continued from previous page*			
	-0.541***	-0.573***	-0.574***
Poor health	(0.079)	(0.081)	(0.081)
	-0.047**	-0.046**	-0.045**
Risk aversion	(0.014)	(0.014)	(0.014)
	0.017	0.018	0.019
Partner income	(0.013)	(0.014)	(0.014)
Year (ref. 2010)			
		-0.083	-0.081
2011	-	(0.110)	(0.110)
		-0.082	-0.078
2012	-	(0.114)	(0.114)
		0.020	0.025
2013	-	(0.121)	(0.121)
		0.149	0.165
2014	-	(0.123)	(0.123)
		0.039	(0.052
2015	-	(0.120)	(0.120)
		0.173	0.183
2016	-	(0.140)	(0.140)
		0.180	0.191
2017	-	(0.254)	(0.256)
		2.424	2.450**
2018	-	(0.768)	(0.784)
Region (ref. North East)			
		-0.102	-0.075
North-West	-	(0.208)	(0.208)
		-0.206	-0.186
Yorkshire	-	(0.222)	(0.219)
		-0.070	-0.051
East Midlands	-	(0.208)	(0.207)
		0.086	0.108
West Midlands	-	(0.204)	(0.204)
		-0.127	-0.112
East of England	-	(0.225)	(0.224)
		-0.201	-0.176
London	-	(0.194)	(0.193)
		0.037	0.054
South East	-	(0.205)	(0.204)
		0.040	0.064
South West	-	(0.217)	(0.215)
		0.181	0.188
Wales	-	(0.236)	(0.234)
		-0.454	-0.448
Scotland	-	(0.246)	(0.245)
		-0.005	-0.025
N Ireland	-	(0.273)	(0.270)

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	Model A	Model B	Model C
Table B – *Continued from previous page*			
		0.042**	0.043**
Mean local wage	-	(0.013)	(0.014)
		0.144*	0.144*
Local empl. growth		(0.067)	(0.068)
	-2.763***	-3.328***	-3.567***
Constant	(0.208)	(0.365)	(0.442)
N spells	1873	1782	1782
N individuals	1336	1286	1286

Note: SE in parenthesis; mean local wages are hourly; employment growth is year on year percent change; both are measured at the occupation by region by year level; risk aversion is an 11 point scale; partner income is transformed using the inverse hyperbolic sine

Source:Author's calculations based on UKHLS and LFS.