Economics Bulletin

Volume 36, Issue 2

Reconsidering the interrelated dynamics of unemployment and low-wage employment in Great Britain

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Abstract

Stewart (2007, JAE) finds that being employed at low wages (compared to higher wages) increases the risk of future unemployment. The risk of future unemployment does not differ significantly between current low-wage employment and current unemployment. The author concludes that 'in terms of future employment prospects, low wages are closer to unemployment than to higher-paid jobs' [p. 529]. I show that this result depends strongly on the threshold used to distinguish between high and low wages: applying the widely used OECD (1997) definition of low-wages substantially changes the findings of Stewart (2007). With this threshold, I find that low wages are helpful for significantly reducing the risk of future unemployment compared to unemployment. Moreover, the categorization of the unemployed, the included variables with reference to the educational background, the age and the age restrictions imposed on the sample and switching from gross hourly wages in nominal terms to real terms have an impact on the findings.

I would like to thank Andreas Knabe, Mark Stewart and an anonymous referee for helpful comments. I acknowledge financial support from the project KN 984/1-1 (German Research Foundation, DFG). Otto von Guericke University Magdeburg, Chair of Public Economics, Universitätsplatz 2, 39106 Magdeburg, Germany. Tel.: +49 391 67 18692; fax: +49 391 67 11218. E-mail address: alexander.plum@ovgu.de
Citation: Alexander Plum, (2016) "Reconsidering the interrelated dynamics of unemployment and low-wage employment in Great Britain", *Economics Bulletin*, Volume 36, Issue 2, pages 1230-1241
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Submitted: September 20, 2015. **Published:** June 22, 2016.

1 Introduction

Since the 1970, between one fifth and one quarter of British employees are working in the low-wage sector (OECD 2014). Several empirical studies examined the effect of low wages on the employment prospects in the United Kingdom (for instance Stewart and Swaffield 1999, Stewart 2007, Cappellari and Jenkins 2008, Clark and Kanellopoulos 2013, Plum 2014). The study by Stewart (2007) is particularly noteworthy as the author applies a range of dynamic random and fixed-effects estimators to proof the robustness of the results. The aim of the author is to analyze the effect of low-wage employment and unemployment on individual labor market prospects. Stewart (2007) finds evidence that being low-paid employed in the previous period has about the same effect as unemployment on the risk of becoming (or staying) unemployed and no statistically significant difference is found between both labor market positions.

The aim of this study is to discuss the following aspects in the study of Stewart (2007): *i.)* the definition of the low-wage threshold which is used to differentiate between low-paid and high-paid employment, especially when applying the widely used OECD (1997) definition,[1] *ii.)* the identification of continuous and repeated unemployment, *iii.)* the variables used to capture the effect of school-based human capital and age, *iv.)* the age frame of the sample and v.) the effect of switching from gross hourly wages in nominal terms to real terms. In this replication and extension of Stewart's work, it is shown that all five aspects have a – partly substantial – impact on the estimation results, indicating that, compared to unemployment, low wages could be helpful for significantly lowering the risk of future unemployment. The remainder is structured as follows: in the second section, the data and the replicated estimation results are presented. In the third section, above enlisted four aspects are described and their influence on the estimation results is presented. The last section concludes.

2 Data Preparation and Replication

The analysis of Stewart (2007) is based on data from the British Household Panel Survey (BHPS) of the years 1991-96. The BHPS is a nationally representative survey on the individual level, in which the individuals are re-interviewed each year (Taylor 2006). The variables used by Stewart (2007) and a short description of the sample preparation can be found on the web page of the *Journal of Applied Econometrics Data Archive*. However, the actual data preparation procedure has not been provided. Except for two variables[2] all variables could be identified and applied for the estimation in this study.

Stewart (2007) categorizes individuals without employment as unemployed if they were looking for a job.[3] The conclusion is based on an estimation that only considers repeatedly but not continuously unemployed individuals. Someone was defined as continuously unemployed when being unemployed at two consecutive interview dates without any employment spell in between. Employed where classified as low-paid employed if the respective gross hourly wage was below £3.50 per hour in 1997 terms (adjusted to April 1997 using the Average

[1] Studies that apply the OECD (1997) definition: Uhlendorff (2006), Cappellari and Jenkins (2008), Perkins and Scutella (2008), Buddelmeyer et al. (2010), Clark and Kanellopoulos (2013), Mosthaf (2014) and Plum (2014).

[2] Both variables were needed to construct the variable *uvratio*. This variable refers to the unemployment-vacancy ratio in individual's TTWA, which, however, seems not to be part of the BHPS. In this study, as the geographic location the unemployment rate of the region/metropolitan area the household is settled is used as a substitute.

[3] The sample consists of both genders. Cappellari and Jenkins (2008) note that according to their view, 'the low pay transition processes for men and women differ more substantially than is captured by a simple shift in intercept' [p. 169]. However, the aim of this study is to analyze the effect of a change in the parameters on the results conditioned on the given sample.

Earnings Index)[4] and as high-paid employed otherwise. However, the most commonly applied wage differentiation is the OECD (1997) definition which is based on two-thirds of the annual median gross hourly wage. In this case, the threshold is in 1996 at £4.13 in 1997 terms. In the study of Stewart (2007), the data set without continuously unemployed and without the initial period consists of 13016 observations, the replication data set consists of 13017 observations.

A critical assumption in the study of Stewart (2007) is that the labor market position (high-paid employed, low-paid employed, unemployed) in the previous period $t-1$ has a genuine effect on the risk of becoming (or staying) unemployed in the subsequent period t. To take care of unobservable heterogeneity, random effects are included into the regression (Heckman 1981a). These unobservable characteristics might be correlated with the labor market position in the initial period (Heckman 1981b). There exist different strategies to take care of the 'initial conditions problem' (different approaches are presented in *e.g.* Arulampalam and Stewart 2009). Wooldridge (2005) suggests to condition the estimation of the dynamic sequence $(t \geq 2)$ on the initial period values $(t = 1)$. Stewart (2007) finds no difference in the results between the approach of Wooldridge (2005) and alternative strategies. In the replication, the approach of Wooldridge (2005) is applied as it is simple to implement.[5]

The aim of the study of Stewart (2007) is to compare the risk of becoming unemployed of someone who was unemployed at $t-1$ with someone who was working in the low-wage sector in the previous period. The variable y_{1it} (y_{2it}) takes the value 1 if the individual is unemployed (low-paid employed) and 0 otherwise. It has to be noted that the labor market positions are mutually exclusive; hence someone who is unemployed cannot be a low-paid worker at the same time. The model is specified as follows:

$$y_{1it} = \mathbf{1}\left(x_{it}'\beta + \gamma_1 y_{1it-1} + \gamma_2 y_{2it-1} + a_1 y_{1i1} + a_2 y_{2i1} + \overline{x}_i'\delta + \alpha_i + u_{it} > 0\right) \tag{1}$$

with individuals $i = 1,\ldots,N$ and time-periods $t = 2,\ldots,T$. The variable x_{it}' is a vector of explanatory variables. The effect of the previous labor market position is captured by the variable y_{1it-1} and y_{2it-1}, with being high-paid employed as the reference category. Following the suggestion of Wooldridge (2005), the estimation is conditioned on the labor market positions in the initial period, y_{1i1} and y_{2i1}. Furthermore, the individual time-means of the explanatory variable $\overline{x}_i'$ are included into the regression. The α_i indicates an individual-specific time-constant error term with $\alpha_i \sim N(0,\sigma_\alpha^2)$ and u_{it} reflects the idiosyncratic shock with $u_{it} \sim N(0,\sigma_u^2)$. For normalization $\sigma_u^2 = 1$ is chosen. The composite error term is $\nu_{it} = \alpha_i + u_{it}$ and the correlation between two different time points takes the following equi-correlation structure:

$$\lambda = corr(\nu_{it},\nu_{is}) = \frac{\sigma_\alpha^2}{(\sigma_\alpha^2 + \sigma_u^2)} \tag{2}$$

for $t \neq s$.

[4] Note that the minimum wage was re-introduced in 1999 and the adult rate of the minimum wage was at £3.27 in 1997 terms.

[5] I have also replicated the Heckman model, the heterogeneous slope model and the bivariate random-effects probit model and the findings did not change. The regression results (see Table S 1) and the description of the model can be found in the Supplemental Material.

Thus, the likelihood is:

$$L = \sum_{i=1}^{N} \int_{\alpha^*} \left\{ \sum_{t=2}^{T} \Phi \left[x_{it}' \beta + \gamma_1 y_{1it-1} + \gamma_2 y_{2it-1} + a_1 y_{1i1} + a_2 y_{2i1} + \overline{x}_i' \delta + \sigma_\alpha \alpha^* \right] \right\} dF(\alpha^*) \qquad (3)$$

where F is the distribution function of $\alpha^* = \alpha / \sigma_\alpha$ (Stewart 2007). It is assumed that the random effects are normally distributed and therefore the integral α^* can be evaluated using Gaussian-Hermite quadrature. Note that, following Stewart (2007), it is assumed that the three labor market positions high-paid employed, low-paid employed and unemployed are uncorrelated in the random effects and in the idiosyncratic shocks.

In column one and two of Table 1, the estimation results of Stewart (2007) and those of the replication can be found. As the focus of this replication is on the effect of the previous labor market position on the risk of becoming (or remaining) unemployed, just those two variables with respect to the previous labor market position are presented.[6] As can be seen, both coefficients in the replication are slightly higher than in the estimation of Stewart (2007), but so is the ratio of the time-constant error to the composite error term λ. However, the scaled coefficients are of comparable size.[7] To estimate the probability of becoming unemployed in dependence of the three different previous labor market positions, the approach of Stewart (2007) is applied. Comparing the predicted probabilities of the Stewart (2007) estimation and the replicated estimation, it has to be noted that the mean values of are of equal size and the differences are negligible. Finally, in the replication, the hypothesis that the effect of low wages and of unemployment are of comparable size is not rejected, which is also in line with the estimations of Stewart (2007). Not rejecting this hypothesis leads to the conclusion, that 'low-wage employment at $t-1$ has almost as large an adverse effect as unemployment at $t-1$ on the probability of employment at t' (Stewart 2007, p. 529).

3 Robustness

3.1 Low-Wage Threshold

As noted above, the conclusion that there is no significant difference between low wages and unemployment on the employment prospects is based on the fact that the hypothesis (the size of both lagged dependent variables are of equal size) is not rejected. In the following, the effect of a change in the threshold-level on this hypothesis is analyzed. The threshold is successively increased by 1.75 Pence until reaching £4.13, the low-wage threshold defined according to the OECD definition for the year 1996 (in 1997 GBP).[8] Figure 1 presents the *p*-value of the test. As can be seen, the *p*-value decreases, and for the majority of the estimations at £3.59 and above, there is a significant difference between low-pay employment and unemployed at the 10%-level, but not at the 5%-level. Table 2 presents the mean of the predicted probabilities of becoming (or remaining) unemployed for the different labor market positions over all different low-wage threshold-levels. As can be seen, the mean of the predicted probabilities (column one of Table 2) are close to the one of Table 1 and the low standard deviation (numbers in parenthesis in column one of Table 2) indicates that the threshold-level only has a small effect on the size of these probabilities.

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[6] The other explanatory variables are of a comparable sign and magnitude. A detailed regression output can be obtained from the author for review purposes only upon request.

[7] Note that $\sigma_v^2 \neq 1$ and the parameters must be corrected by the factor $\sqrt{1-\hat{\lambda}}$ to compare them (Arulampalam 1990).

[8] The number of low-wage workers more than doubles between the lower and the upper threshold level and converges against the numbers reported by the OECD (2014).

Table 1: Regression results

	Stewart (2007)	Replication	Specification I[a]	Specification II[b]	Specification III[c]
dependent variable			*unemployed in t*		
Unemployed at $t-1$	0.435 (0.152)	0.501 (0.156)	0.671 (0.147)	0.501 (0.156)	0.495 (0.157)
Low pay at $t-1$	0.211 (0.106)	0.260 (0.132)	0.260 (0.137)	0.234 (0.132)	0.177 (0.126)
λ	0.235 (0.069)	0.352 (0.079)	0.418 (0.072)	0.337 (0.080)	0.354 (0.080)
Pred. prob $\hat{p}_{\mathrm{hp}_{t-1}}$	0.035	0.036	0.037	0.064	0.036
Pred. prob $\hat{p}_{\mathrm{ue}_{t-1}}$	0.068	0.072	0.087	0.110	0.071
Pred. prob $\hat{p}_{\mathrm{lp}_{t-1}}$	0.049	0.052	0.053	0.083	0.047
χ^2-statistic of test: $\mathrm{ue}_{t-1}=\mathrm{lp}_{t-1}$	1.56[1]	1.58	4.82	2.01	2.94
$[p-\text{value}]$	0.21[1]	0.21	0.03	0.16	0.09
log likelihood	-1977.76[2]	-1350.13	-1414.41	-1326.67	-1352.05
observations	13,016	13,017	13,087	12,996	13,017

Source: BHPS, years 1991-96, own calculations and Stewart (2007). Estimations include additional covariates and year dummies as enlisted in Stewart (2007). hp=high pay, lp=low pay, ue=unemployed. [a] *Specification I* refers to the identification of continuously and repeatedly unemployed. [b] *Specification II* includes additional education and age variables. [c] *Specification III* uses gross hourly wages in real terms.

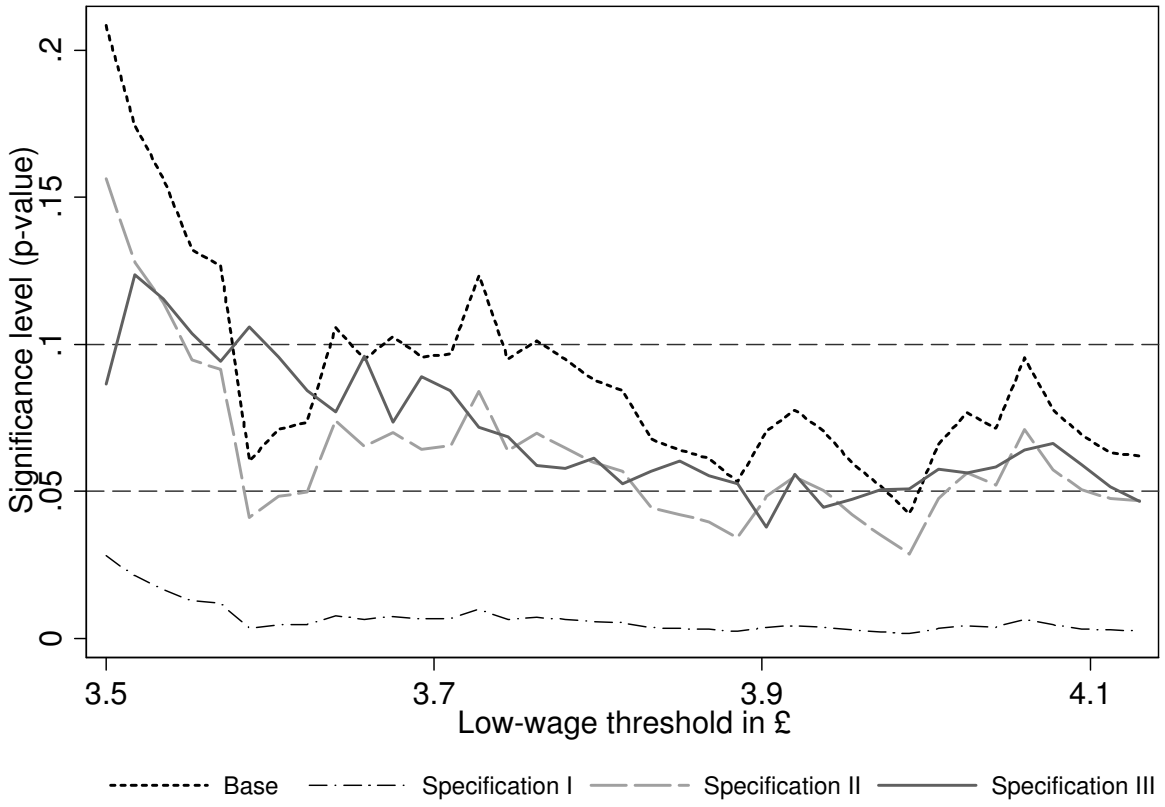
[1] χ^2-statistic and p-value refer to the Heckman Estimator. [2] Also contains the log-likelihood of the initial period.

Table 2: Mean predicted probabilities over all different low-wage threshold-levels

	Replication	Specification I[a]	Specification II[b]	Specification III[c]
Pred. prob $\hat{p}_{\mathrm{hp}_{t-1}}$	0.036 (<0.001)	0.037 (<0.001)	0.064 (<0.001)	0.036 (<0.001)
Pred. prob $\hat{p}_{\mathrm{ue}_{t-1}}$	0.072 (0.001)	0.088 (0.001)	0.111 (0.001)	0.073 (0.001)
Pred. prob $\hat{p}_{\mathrm{lp}_{t-1}}$	0.048 (0.002)	0.048 (0.002)	0.078 (0.002)	0.048 (0.001)

Source: BHPS, years 1991-96, own calculations. Number in parentheses refers to the standard deviation. hp=high pay, lp=low pay, ue=unemployed. [a] *Specification I* refers to the identification of continuously and repeatedly unemployed. [b] *Specification II* includes additional education and age variables. [c] *Specification III* uses gross hourly wages in real terms.

Figure 1: Unemployment risk and the low-wage threshold



Source: BHPS, years 1991-96, own calculations and Stewart (2007). Values refer to the p-value of the test whether the coefficients of low-wage employment and of unemployment in $t-1$ are of equal size $(ue_{t-1}=lp_{t-1})$. *Specification I* refers to the identification of continuously and repeatedly unemployed. *Specification II* includes additional education and age variables. *Specification III* uses gross hourly wages in real terms.

One explanation for detecting a significant difference between low-pay employment and unemployment at a higher low-wage threshold could be that the composition of the low-paid employed changes. For this reason, the low-paid employed are differentiated into the following two groups: those low-paid employed with a gross hourly wage of below £3.50 per hour (in 1997 terms) and those employed with a gross hourly wage of £3.50 - £4.13 per hour (in 1997 terms). Both groups are compared with respect to their mean age, the share of women, the share of low-educated worker (only primary or low-secondary education) and the share of employed working in a partly skilled or unskilled occupation (job with a low social status). No difference is found with respect to the age and the share of employed working in a partly skilled or unskilled occupation (Table 3). However, the share of women is 4.7 percentage points lower among the low-pay entrants (gross hourly wage of £3.50 - £4.13 per hour in 1997 terms) and moreover, the share of low educated is 2.9 percentage points lower among this group.

Table 3: Composition of low-paid employed

Gross hourly wage (in 1997 terms)	Observation	Age	Women	Low education[a]	Job with a low social status[b]
<£3.50	1011	40.78	0.8180	0.4639	0.4312
£3.50 - £4.13	1044	40.56	0.7711	0.4349	0.4204

Source: BHPS, years 1991-96, own calculations and Stewart (2007). [a] If individual has primary or low-secondary education. [b] If individual is working in a partly skilled or unskilled occupation according to the RGSC (Registrar General's Social Classes) classification

3.2 The Identification of the Repeated Unemployed

The identification of the employment status of a worker refers to the month before the interview of the household member.[9] Stewart (2007) argues that those individuals who remain unemployed between two interview dates differ substantially from those with an employment spell in between.

In the main estimations, those persons who are continuously unemployed are not included in the estimation. This has a substantial effect on the estimated lagged labor market parameters.[10]

When an individual was unemployed at each interview date at two consecutive years and the current unemployment spell began before the previous interview date, this person is identified as continuously unemployed. When looking at the variables listed on the web page of the *Journal of Applied Econometrics Data Archive*, it must be assumed that for the identification of the continuously and repeatedly unemployed, only the variables about the year in which the person was interviewed and the year when the current labor force status began are used. According to this, someone who was unemployed at the interview in the previous year is identified as a repeated unemployed if the current labor force status begins in the same year as the current interview.[11] However, referring to the interview date and the beginning of the current labor force status, there also is the information on the monthly level available. Thus, it is possible to derive whether the current labor force status began in the same year but some month after the last interview. In the first specification those individuals are included, for whom the current labor force status began in the previous year but in a month after the last interview. The size of the sample increases slightly and now contains 13087 observations.

To get an impression how this might influence the results, the transition matrix of the basic sample (Table S 2) and of the updated sample (Table S 3) are compared. First of all, it must be noted that the share of unemployed increases noticeably from 2.55% in the basic model to 3.05% (+19.6%) in the updated model. Moreover, taking a look at the share of unemployed at *t-1* who are still unemployed at *t*, substantial changes can be observed: in the basic sample, 20.69% stayed unemployed, while this share increases to 33.17% (+60.3%) in the updated sample.

[9] The gross hourly wage, which is needed for differentiating between high and low wages, is calculated on the basis of the number of hours worked per week and the gross monthly wage. This information is given only for the month before the interview.

[10] Excluding continuously unemployed "cuts the scaled estimate of the coefficient on lagged unemployment by over two-thirds and that on lagged low wage by over one-third (…)." (Stewart 2007, p. 522). The author also notes that Arulampalam et al. (2000) find in their study a smaller change in the coefficients.

[11] A change of the current labor force status within two consecutive interviews for someone who is employed is not considered.

The estimated coefficients can be found in column three of Table 1. It has to be noted that the coefficient of lagged unemployment increases, whereas the coefficient of lagged low wage remains unchanged. Referring to the predicted probabilities, it can be seen that the risk of remaining unemployed increases while the other probabilities are nearly unaffected. Furthermore, the test that the size of both labor market related coefficients is not different from each other is strongly rejected. However, referring to the unemployed the size of their coefficient and the predicted probability of staying unemployed are below the one when including continuously unemployed into the estimation (see Table III in Stewart (2007)). Figure 1 presents the *p*-value for different values of low-wage thresholds. It can be seen that for every threshold the hypothesis that both coefficients are of same size is strictly rejected and below the 5%-level at each point. Additionally, the predicted probabilities only vary negligibly over the different threshold-levels (column two of Table 2).

One explanation for the observed increase in unemployment state dependence compared to the basic model is that individuals with longer unemployment spells were included into the sample (the last employment spell occurred in the year of the last interview). There exists empirical evidence that the probability of staying unemployed increases with the duration of unemployment (see, *e.g.*, Kroft et *al*. 2013).

3.3 Educational Background and Age

To capture the effect of the educational background, Stewart (2007) includes the variable *ed* which refers to the age when full-time education was completed. It is questionable whether this variable might be an insufficient indicator for the level of school-based human capital for several reasons: *i.)* there is no plausible explanation given why graduating one year later should always have the same impact, independent of the duration of previous school attendance, *ii.)* repeating class has according to this a positive impact and *iii.)* leaving school at a higher age does not necessarily have to go along with graduating. In the second specification, this variable was replaced by a variable that indicates the ISCED-level[12] of the individual. Persons who experienced a change in their ISCED-level or had inadequate information about their ISCED-level were dropped from the sample. The size of the sample only changed slightly and consists of 12996 observations.

Furthermore, in the estimation of Stewart (2007), the age-effect is captured indirectly as the difference between the age and the age completing full-time education equals the years of potential labor market experience. When using the ISCED-level as an indicator for the level of human capital, this collinearity is not given anymore. Therefore, further variables that refer to the age were included. The lagged labor market coefficients and the predicted probabilities of becoming unemployed can be found in the fourth column of Table 1. Though the coefficients only change slightly, the predicted probabilities are on a higher level compared to the initial model (column two of Table 1) and the first specification (column three of Table 1).[13] When looking at the *p*-value of the hypothesis that both lagged labor market coefficients are of equal size, it must be noted that the hypothesis is still not rejected, but this time on a lower level. When increasing the low-wage threshold (Figure 1), it can be observed that for all estimations with a threshold of at least £3.60, the hypothesis is rejected at the 10%-level, for some even at the 5%-level. Furthermore, the size of the predicted probabilities are quiet stable over the different threshold-levels (column three of Table 2).

[12] International Standard Classification of Education.

[13] Independent of the previous labor market position, for those observations below (above) 40 years, the predicted probability becoming/staying unemployed increases (decreases) in Specification II compared to the initial model. As the increased risk of the younger ones is much stronger in absolute values compared to the improved chances of the older ones, the average effect results in an increase in the probability of becoming/staying unemployed.

3.4 Age frame

Arulampalam et al. (2000) show in their study that the effect of past unemployment on the risk of staying unemployed is substantially lower for men who are aged under 25 compared to more mature men. In the study by Stewart (2007), the original age frame of the sample is from 18 to 65 (60) for men (women). In a further robustness estimation the effect of a higher sample entrance age is analyzed (see Table 4).

Table 4: Age frame

	test: $ue_{t-1} = lp_{t-1}$ [a]			
Age frame [b]	χ^2-statistic	$[p-\text{value}]$	log likelihood	observations
18 – 65/60	1.582	0.208	-1350.127	13017
19 – 65/60	0.778	0.378	-1326.001	12890
20 – 65/60	1.533	0.216	-1281.481	12728
21 – 65/60	1.498	0.221	-1229.485	12519
22 – 65/60	2.045	0.153	-1184.213	12323
23 – 65/60	2.183	0.140	-1143.589	12082
24 – 65/60	4.835	0.028	-1079.575	11814
25 – 65/60	5.143	0.023	-1046.287	11515
25 – 55/55	4.853	0.028	-923.535	10489
25 – 55/· [c]	6.000	0.014	-626.841	5122
25 – ·/55 [d]	9.520	0.002	-407.927	5529

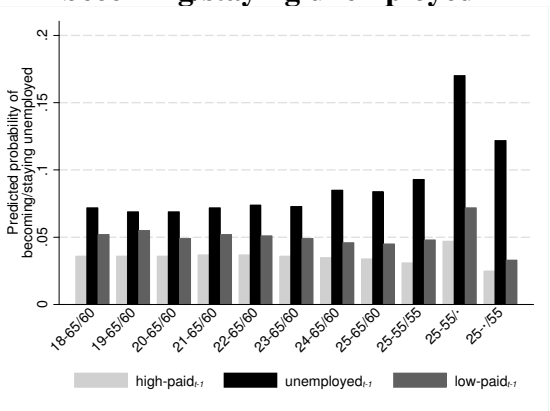
Source: BHPS, years 1991-96, own calculations. hp=high pay, lp=low pay, ue=unemployed. [a] test: $ue_{t-1}=lp_{t-1}$ refers to the test whether the coefficients referring to being unemployed, resp. low-paid, in the previous period are of the same size. [b] First number refers to the minimum age, the second (third) number to the maximum age of a male (female) person. The age frame 18 - 65/60 is the initial age restriction in Stewart (2007). [c] Sample is restricted to men (25-55), including continuously unemployed. [d] Sample is restricted to women (25-55), including continuously unemployed.

As can be seen for a sample that is restricted to the age frame 24 or 25 to 65 for men and 60 for women, a significant difference between past unemployment and low-pay employment on the risk of becoming or staying unemployed is detected. These findings are verified when the sample is restricted to prime age workers (last but two line of Table 4).

When looking at the predicted probability of staying unemployed (see Figure 2), it must be noted that the results are different to those of Arulampalam et al. (2000): in their study, the probability of staying unemployed ranges on average between 15.3% and 27.0% if the unemployed was already unemployed in the previous period.[14] However, the risk of becoming unemployed if the worker was employed at *t-1* ranges between on average 1.4% and 4.4% which is at a comparable level. However, when including continuously unemployed and applying gender specific estimations, the results correspond to the findings of Arulampalam et al. (2000) (last two bars of Figure 2): the risk of staying unemployed is on average at 17.0% for men, resp. 12.2% for women, if being unemployed at *t-1*.

[14] Arulampalam et al. (2000) calculate year-specific unemployment probabilities.

Figure 2: Predicted probability of becoming/staying unemployed

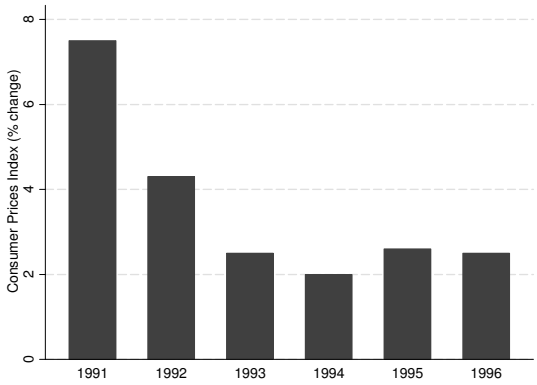


Source: BHPS, years 1991-96, own calculations. First number refers to the minimum age, the second (third) number to the maximum age of a male (female) person. The age frame 18 - 65/60 is the initial age restriction in Stewart (2007). Next to last: Sample is restricted to men (25-55), including continuously unemployed. Last: Sample is restricted to women (25-55), including continuously unemployed.

3.5 Low-wage threshold in real terms

In the study of Stewart (2007) workers are identified as low-paid employed if the gross hourly wage is below the threshold of £3.50 in 1997 terms. However, when looking at the change of the consumer price index (Figure 3), it must be noted that in the first two years of the studied time-frame the change was noticeably higher compared to the subsequent years.[15] In the following I use the consumer price index to deflate the gross hourly wages to £3.50 in 1997.

Figure 3: Consumer Price Index (% change)



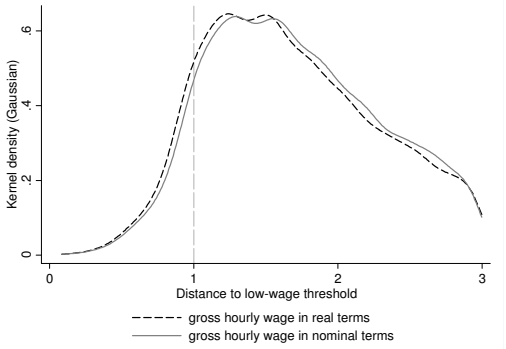
Source: ONS (2016).

To get an impression about how the distribution of the labor market positions is affected the ratio between the gross hourly wage (in nominal terms, resp. in real terms) and the low-wage threshold is calculated. The distribution of the ratio is presented in Figure 4. As can be seen, the number of observations below the low-wage threshold, which is marked as a dashed

[15] I want to thank an anonymous referee for pointing at this aspect.

vertical line, increases when applying the gross hourly wage in real terms and not in nominal terms. The share of low-paid employed increases from 7.77% (using the gross hourly wage in nominal terms) to 9.47% (using the gross hourly wage in real terms).

Figure 4: Distance to low-wage threshold



Source: BHPS, years 1991-96, own calculations and Stewart (2007). In the figure, the distribution of the ratio between gross hourly wage, differentiated according to nominal and real terms, and the low-wage threshold is presented. The dashed vertical line refers to the case when the gross hourly wage equals the low-wage threshold.

Afterwards, the labor market dynamics are estimated and the estimated coefficients with respect to the lagged labor market position can be found in Table 1, last column (*Specification III*). Compared to the basic model the coefficient of lagged unemployment is nearly unchanged. However, the coefficient of lagged low-pay employment decreases noticeably from 0.260 in the basic model to 0.177 in this specification. Moreover, the hypothesis that the effect of low wages and of unemployment are of equal size is rejected at the 10% level (*p*-value: 0.09). When increasing the low-pay threshold except for two cases the hypothesis is rejected at least at the 10% level (Figure 1).

Referring to the predicted probabilities of staying/becoming unemployed, it must be noted that the values are close to the one of the basic model (Table 1). Moreover, the mean of the predicted probabilities over all different low-wage thresholds-levels are close to the initial ones (Table 2).

4 Conclusion

Referring to the risk of becoming unemployed, the study of Stewart (2007) presents evidence that there is no difference between low wages and unemployment. In this replication I find evidence that when applying the more widely used OECD (1997) low-pay definition the risk of becoming unemployed is significantly reduced for low-wage worker compared to unemployment. Moreover, the identification of the unemployed, the included variables about the educational background, the age and the age restrictions imposed on the sample and switching from gross hourly wages in nominal terms to real terms has a – sometimes strong – impact on the estimation results. Thus, these results suggest that, compared to unemployment, low wages might be helpful in reducing the risk of future unemployment.

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