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### Disability, Employment and Earnings: An Examination of Heterogeneity

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Keywords:	Disability, heterogeneity, labour market



# Disability, Employment and Earnings: An Examination of Heterogeneity

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## Summary

This paper uses information from an ad-hoc module on disability in the 2002 UK Labour Force Survey to identify the heterogeneity that exists within the disabled group and examine its impact on labour market outcomes. After controlling for a range of personal characteristics, the type, severity, duration and cause of the disability are found to be important determinants of employment, but there is less evidence to support the influence of within group heterogeneity on earnings.

JEL Classification: I10, J20, J30.

Keywords: Disability, heterogeneity, labour market

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## 1. Introduction

Whilst international evidence that compares labour market outcomes between disabled and non-disabled individuals has grown rapidly (see Kidd *et al.*, 2000, Madden, 2004 and Jones *et al.*, 2006 for UK evidence), less attention has been paid to heterogeneity within the disabled group and its implications for labour market outcomes. However, the features of disability that differentiate it from empirical analysis of gender and ethnicity, such as it being a limitation rather than a characteristic and its fluid nature give rise to potential dramatic heterogeneity within the disabled group. Even the most obvious within group differences, such as in the type and severity of an impairment may be expected to impact work productivity, non-work income, the disutility of work and discrimination. Thus, it is likely that these features are fundamental in the analysis of labour market outcomes of the disabled. Indeed, there has been a longstanding recognition of the policy importance of this issue, with Baldwin and Johnson (1994), stating ‘the success of the Americans with Disabilities Act may depend on the extent to which the implementation of its policies recognises the differences among persons with disabilities and among types of impairments’ p14. Moreover, this issue has been more recently emphasized again in the UK by Berthoud (2003).

Despite this, studies consistently split the population into two or more sub groups and identify the disadvantage associated with disability as if it were homogeneous.<sup>1</sup> This is, in part, a result of restrictions imposed by data availability and the widespread application of standard decomposition techniques. Therefore, most studies have provided limited information with respect to questions such as which features of the disability give rise to the disadvantage? This is not only an important question in its own right, but may provide additional insights into the processes that determine the disadvantage of the entire group. Furthermore, as Silverstein *et al.* (2005) note, the failure to account for *within* group diversity may lead to misleading inferences in comparisons *between* groups.

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<sup>1</sup> There remains significant debate about the most appropriate definition of disability and average employment rates vary considerably by definition (Berthoud, 2003).

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3 A limited number of recent UK studies have begun to consider individual aspects of  
4 heterogeneity including the effect of the severity of the disability (Berthoud, 2003),  
5 the type of disability (Kidd *et al.*, 2000 and Jones *et al.*, 2006) and, using longitudinal  
6 data, the duration of the disability (Jenkins and Rigg, 2004 and Burchardt, 2003).  
7 However, restrictions on data availability have limited a more comprehensive analysis  
8 of heterogeneity.  
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16 This paper, by exploiting additional questions introduced in the UK Labour Force  
17 Survey (LFS) as part of an ad hoc module on the employment of disabled people, is  
18 able to consider several forms of heterogeneity of a disability simultaneously and  
19 examine their implications for both employment and labour market earnings.<sup>2</sup>  
20 Importantly, these data also contain information, including the cause of the disability,  
21 which has not been previously examined in the UK. Whether the disability stems from  
22 an accident or illness, if it is work-related or if an individual was born with their  
23 disability has potentially important labour market implications. For example, an  
24 individual may receive compensation from an injury at work which is likely to raise  
25 his/her reservation wage. Moreover, onset at birth or in childhood will affect pre-  
26 labour market experiences, entry to the labour market and an individual's entire  
27 labour market history (see Baldwin and Johnson, 2001).  
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39 The remainder of the paper is structured as follows. A concise review of previous  
40 evidence relating to different forms of heterogeneity is given in Section 2. Section 3  
41 then considers the advantages of using this data and outlines the econometric  
42 methodology. Section 4 presents the key results before the final section briefly  
43 concludes.  
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<sup>2</sup> The module was introduced in the European Labour Force Survey to provide comparable information on the labour market situation of people with disabilities in the EU in preparation for the 2003 European Year of People with Disabilities (see Dupre and Karjalainen, 2003).

## 2. Empirical Evidence

Studies which analyse the labour market impact of disability virtually always control for observable personal, household, regional and, sometimes, employment related characteristics. However, the differences within the disabled group that are generated by observable features of the impairment, referred to throughout as heterogeneity, are frequently neglected. There are some exceptions. For example, studies that use self-reported information confirm the negative effect of disability on labour market performance increases with severity (see Hale *et al.* 1998 for US evidence and Hum and Simpson, 1996 for evidence relating to Canada) and with the number of impairments (Hum and Simpson, 1996), consistent with the negative influence on productivity. Berthoud (2003) uses more ‘objective’ measures of severity from the Disability Survey, which formed an extension of the UK Family Resources Survey in 1996/7, and confirms the negative association between severity and employment. More ‘objective’ measures of health have also been included in several US studies on earnings, although the focus has been to control for productivity differences rather than examine the heterogeneity itself (Baldwin and Johnson, 1994, 1995, 2000 and Schumacher and Baldwin, 2000). The type of impairment can also affect labour market outcomes through a productivity and/or discrimination effect. The UK evidence suggests that those with mental health problems face the most severe labour market disadvantage (Blackaby *et al.*, 1999, Kidd *et al.*, 2000 and Jones *et al.*, 2006).

The fluid nature of disability gives rise to dynamic sources of heterogeneity and longitudinal data analysis in the UK has identified a negative employment effect associated with the duration of a disability (Jenkins and Rigg, 2004), although the process through which this operates is less clear. Whilst there are advantages of using longitudinal data in this context, this approach also has certain limitations. The duration measure is censored from both directions and is, therefore, constrained by the length of the panel. This is limited to a single year in the LFS used by Burchardt (2003) and, although this increases to six years in the Jenkins and Rigg (2004) analysis of the British Household Panel Survey (BHPS), the number of individuals who experienced disability onset was limited at 280. Importantly, these studies only consider disability onset among adults and, hence, ignore the potentially different role of disability onset prior to labour market entry.

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5 The ad hoc module on disability considered here also contains information relating to  
6 the cause of disability, which has received less consideration. However, the nature of  
7 onset may also have important labour market implications. Baldwin and Johnson  
8 (2001) highlight that individuals who are disabled at birth may be limited in terms of  
9 education, face pre labour market discrimination and their disability may affect their  
10 entire labour market experience. Individuals who experience age onset disability will  
11 face a different set of labour market issues, including retaining employment and  
12 promotion opportunities. In contrast, Loprest and Maag (2007) and Wilkins (2004), in  
13 the only known international studies to examine this issue, find, using cross sectional  
14 data from the US and Australia respectively, that early disability onset has a positive  
15 effect on employment relative to older disability onset. Both studies suggest that this  
16 is a result of adaptation. Wilkins (2004) argues that disabled youths will have more  
17 time and greater incentives to adapt to the disability and Loprest and Maag (2007) add  
18 that disabled children can choose careers in which their disability can be more easily  
19 accommodated.  
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33 It is not only the heterogeneity of the disability itself that has potentially important  
34 labour market implications; the impact of the disability will depend on the  
35 environment in which an individual is situated (Silverstein *et al.* 2005). Important  
36 influences may include the availability of medical care, the attitudes of others and  
37 government policies and legislation. Probably the most significant influence in this  
38 respect is the availability of an alternative source of income through the benefit  
39 system. Since one quarter of the UK population with a long-term health problem is in  
40 receipt of some type of disability or sickness benefit, this creates a crucial difference  
41 within the disabled group, with obvious implications for work incentives. Another  
42 significant change, that arises from the introduction of the Disability Discrimination  
43 Act (DDA) in 1995, is the obligation on employers to make reasonable adjustment to  
44 their premises and employment arrangements to facilitate and enhance the access to  
45 employment for the disabled. The effects on employment and earnings are not clear.  
46 While access to employment and productivity in work should increase, the additional  
47 cost induced by these accommodations may reduce the employment of disabled  
48 workers (Acemoglu and Angrist, 2001) and/or result in employers passing these costs  
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3 on to disabled workers in terms of a pay penalty (Baldwin and Johnson, 2001).<sup>3</sup> In the  
4 UK, however, the Access to Work scheme provides financial support for employers  
5 when making such modifications, which should limit the negative impact of this  
6 requirement of the legislation.  
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### 10 11 12 **3. Data and Methodology**

#### 13 14 15 **3.1 The Data**

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17 This study uses additional questions introduced in an ad hoc EU module on disability  
18 in the Spring 2002 Quarter of the UK LFS. Whilst the data are limited to a single  
19 cross section, they contain important retrospective information on the duration and  
20 cause of disability; this is in addition to questions relating to the severity and type of  
21 the disability that are included every quarter. Importantly, therefore, this additional  
22 information, combined with the scale of the LFS, means multiple aspects of  
23 heterogeneity can be examined simultaneously. The retrospective nature of the  
24 additional information means, however, that it may suffer from recall error. While the  
25 bounded nature of the responses to duration, particularly the upper bound group of ‘10  
26 years or more’, should reduce this effect it also limits the accuracy of this control.  
27 Fortunately, information about the cause of the disability includes a control for ‘at  
28 birth’; however, hereditary conditions which may only become limiting in later life  
29 are also included in this group.  
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#### 42 43 **3.2 Employment**

44 The econometric methodology modifies previous analysis of the impact of disability  
45 on employment and earnings (Kidd *et al.*, 2000, Madden, 2004 and Jones *et al.*, 2006)  
46 to focus on within rather than between group differences. This emphasis means the  
47 sample is restricted to individuals of working age who self-report a long-term health  
48 problem<sup>4</sup>. Full-time students are also excluded from the analysis. Employment  
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55 <sup>3</sup> Gunderson and Hyatt (1996) consider the impact on earnings using a specialized dataset from Ontario  
56 in the early 1980s. They find that the proportion of the cost of the accommodation passed on to workers  
57 is higher if they are injured at another firm.

58 <sup>4</sup> The additional questions relating to the duration, cause and severity of the disability were only asked  
59 to those with a long-term health problem. Those with a long-term health problem represent 28% of the  
60 male working age sample and 27% of the respective female sample. Whilst this definition does not  
coincide with more standard work limiting or DDA definitions, it maximises the number of  
observations for the analysis and considers the entire heterogeneity within the broadest definition of



equations are modelled empirically using probit models and are estimated separately by gender:

$$E_i^* = \gamma Y_i + \beta X_i + \mu_i \quad (1)$$

where the observed variable  $E_i$  is related to the latent variable  $E_i^*$  as follows:<sup>5</sup>

$$E_i = \begin{cases} 1 & \text{if } E_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

$Y_i$  contains personal and household related characteristics including age, qualifications, ethnicity, marital status, the presence of dependent children, region of residence and housing tenure (see Table 1 for variable definitions). However, these variables are supplemented with a range of controls relating to the nature of the disability,  $X_i$ . Conditional on there being correlation between the included and omitted variables, the significance of  $\hat{\beta}$  would indicate that estimates based on a model without controls for within group differences will suffer from omitted variable bias.

Variables that should be included in  $X_i$  are less well established, but can be separated into cross sectional and more dynamic influences. In this model, controls for cross sectional forms of heterogeneity include four classifications for the type of main health problem, namely, limbs, sight and hearing, chest and breathing and mental health (the base group is other), variables that capture self-reported measures of severity (restrictions on the kind and amount of work, and mobility restrictions) and a control for individuals with multiple health problems.<sup>6</sup> An additional specification is

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disability. It is reassuring to note that the main conclusions are robust to restricting the sample to alternative (work-limiting or DDA) definitions of disability.

<sup>5</sup> Employment is defined using ILO definitions in the LFS and therefore includes, employees, the self employed, those on government training schemes and unpaid family workers. The non-employed include both the unemployed and the inactive.

<sup>6</sup> These variables all relate to the current period and therefore no information is available on how the severity or type of disability has changed over time. The impact of the duration of disability may depend on the severity at onset and how severity changes over time, however, no information is available to control for this.

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3 also estimated with a control for the receipt of incapacity or any other sickness related  
4 benefit, since, otherwise, the controls for heterogeneity may partially capture this  
5 influence.  
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10 A series of dummy variables relating to the duration of the disability are included,  
11 ranging from durations of 'less than one year' to 'ten years or more'. A continuous  
12 measure of duration would capture the difference in the reward to experience in the  
13 presence of a disability. A lower return may be expected if the presence of a disability  
14 limits labour market experience and training, relative to a period without a disability.  
15 Hence, it is anticipated that those at long durations may face the most labour market  
16 disadvantage. However, controlling only for duration assumes that the impact of a  
17 disability is constant across the lifecycle. As discussed above, the impact of disability  
18 may also depend on the source and timing of onset. A series of dummy variables are  
19 included to capture the cause of the disability, which includes a control for 'at birth'.  
20 Whilst differences in observable characteristics that result from the cause of disability  
21 (for example, education) will be captured by the controls in  $Y_i$ , the variables relating  
22 to the cause will capture the direct influence on labour market outcomes. For example,  
23 differences in the ability to adapt on the basis of age of onset will be captured by the  
24 control for 'at birth'.  
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39 There are some limitations in introducing dynamic concepts in cross sectional  
40 analysis, which have been emphasised in evidence relating to the assimilation of  
41 immigrants.<sup>7</sup> Borjas (1985) argues that cross sectional estimates of the impact of the  
42 duration of residence in the home country on earnings will be affected by selection  
43 effects and will include the influence of changes in cohort quality. Similar arguments  
44 can be made in the context of disability. A selection problem occurs if labour market  
45 success increases the probability of exiting disability, resulting in those with inferior  
46 labour market outcomes being concentrated at long durations of disability. The  
47 justification hypothesis argues that there are incentives for non-employed individuals  
48 to over-report disability; however, there appears to be less incentive to relate exits  
49 from disability to labour market outcomes. The cohort effect will exist if there is a  
50 change in unobserved quality across time. For example, if unobserved quality has  
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<sup>7</sup> All the models are also estimated without the controls for the dynamic influences (duration and cause) but the results are not sensitive to this.

deteriorated across time, those at long durations will have higher unobserved quality which will lead to an underestimate of the impact of duration.<sup>8</sup>

### *Sample Selection Bias*

Since equation (1) can only be estimated on the disabled population, this creates a potential problem of sample selection bias. This arises if there are common unobservables which affect disability and employment, for example motivation or preferences for work. A bivariate probit model with selection into disability status is estimated to test the sensitivity of the results from the probit model. At the first stage a model of disability status is estimated where the propensity to self report disability ( $D_i^*$ ) is given by:

$$D_i^* = \psi T_i + v_i \quad (2)$$

However, only the binary indicator is observed:

$$D_i = \begin{cases} 1 & \text{if } D_i^* > 0, \\ 0 & \text{otherwise} \end{cases}$$

And, at the second stage, the employment equation (1) is estimated conditional on disability being observed ( $D_i = 1$ ). Given the nature of the information available in the LFS, the determinants of disability,  $T_i$ , are restricted to personal and household characteristics. As such, the characteristics included in  $T_i$  are largely the same as the characteristics in  $Y_i$ . While identification can be achieved in this model through functional form alone, following Madden (2004), identification is achieved by controlling for the presence of another disabled individual in the household in the disability, but not the employment equation.<sup>9</sup> It is assumed that  $\mu_i$  and  $v_i$  are

<sup>8</sup> Changes in the benefit regime, retirement and social norms may all give rise to cohort effects in this context. However, cohort effects cannot be identified without repeated cross sectional data.

<sup>9</sup> As expected, having another disabled individual in the household is a significant determinant of individual disability status, since it captures common lifestyle and environmental influences. It potentially could affect employment through the role of caring; however, the presence of another disabled member in the household is insignificant in a simple employment probit model. The sensitivity of the results is tested by using the presence of a previous long-term health problem for

distributed as bivariate normal with zero means, unit variances and that the correlation between the two errors is given by  $\rho$ . If unobservables affect both equations, the correlation will be non-zero ( $\rho_j \neq 0$ ) and, in this situation, the results from a simple probit model will be biased.

### *Endogeneity*

Bound (1991) argues that self-reported information on health is subject to two sources of bias. The individual subjective nature of reporting will mean that responses may not be comparable across individuals, giving rise to measurement error. Some individuals may also have more incentive to misreport disability to justify non-employment, which gives rise to justification bias.<sup>10</sup> The same concerns may extend to questions involving whether disability affects the kind or amount of work among the disabled population, which are included as controls for heterogeneity. That is, conditional on disability, the non-employed may also have an incentive to over-report that their disability affects the type or amount of work they can do. Theoretically, these two sources of bias will influence the estimates of severity on labour market outcomes in opposite directions; measurement error will give rise to a downward bias, whereas justification bias will result in an overestimation of the impact on disability. It is difficult to find suitable instruments for the severity measures of disability in the LFS and, as such, it is not possible to test the exogeneity of these variables or examine the issue further here.<sup>11</sup>

### **3.3 Earnings**

For a subset of employed disabled individuals, the log of hourly earnings ( $W_i$ ) is also modelled as follows:

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identification. However, this information is only available for a subset of respondents. The results were not sensitive to the change in identification strategy.

<sup>10</sup> The evidence, however, is mixed. Several studies find that the non-employed tend to over-report ill-health or disability (see, for example, Kerkhofs and Lindeboom, 1995 and Kreider and Pepper, 2007) whilst others find that self-reported information is an unbiased measure of true health or disability (see, for example, Dwyer and Mitchell 1999 and Benitez-Silva *et al.* 2004).

<sup>11</sup> The variables included in  $\gamma_i$  and  $z_i$  are typical in the literature and are assumed to be exogenous. However, when examining the labour market impact of epilepsy, Famulari (1992) considers the endogeneity of education in an earnings equation and finds that failing to account for this endogeneity underestimates the impact of severity on earnings.

$$W_i = \alpha Z_i + \delta X_i^W + \varepsilon_i \quad (3)$$

where  $Z_i$  includes productivity related characteristics and a set of controls for the type of employment, such as industry, occupation and sector. The controls for heterogeneity, outlined previously, are supplemented with controls for working in sheltered employment and the receipt of assistance to help work in order to form  $X_i^W$ ; however, the control for benefit income is excluded.

There are, potentially, two sources of sample selection bias in the above equation, since individuals are both in employment and disabled. Three specifications of the earnings equation are estimated. Firstly, equation (3) is estimated by OLS. Secondly, estimates from an employment probit model are used to construct a selectivity correction term which is included in the earnings equation, following Heckman (1976). For identification, controls for the presence of dependent children, another income earner in the household and unemployment status 12 months ago are included in the employment equation but not the earnings equation.<sup>12</sup> In the final specification, both sources of selection bias are modelled simultaneously. The estimates from the bivariate probit model outlined above are used to create two selection terms, as suggested by Tunali (1986), and these are included in the earnings equation. In this case, identification requires that there is at least one variable in each selection equation which is excluded from both the earnings equation and the other selection equation. As discussed above, the presence of a disabled household member is only included in the disability equation and, thus, fulfils this role. In the case of employment, the controls for dependent children and another earner in the household are significant determinants of disability and, therefore, it is the indicator of unemployment status 12 months ago that is included in the employment equation, not in the disability or earnings equations.<sup>13</sup>

<sup>12</sup> Information about earnings is only asked to employees in waves 1 and 5 of the LFS. The results from the selection equations are qualitatively similar to the employment equations above, but are not presented here. None of the identifying variables is significant in the simple earnings equation.

<sup>13</sup> For identification, these variables need to have a significant impact in their respective equation but no influence on earnings. All these variables are insignificant when included in a simple earnings equation. Unemployment 12 months ago is not significant at the 5% level in a simple probit model of disability status. Moreover, the key results are not sensitive to modifications of the exclusion restrictions, when the selection terms are created from two independent probit models or to estimation

## 4 Results

### 4.1 Descriptive statistics

Table 1 presents the mean values for the variables used in the analysis for males and females respectively. Amongst those who are disabled, as defined by the presence of a long-term health problem, about 55% report they are limited in the kind of work they can do, about 45% find it affects the amount of work they can do and a third report difficulties getting to work due to their disability. In accordance with the work-limiting definition of disability, 59% of men and 57% of women report a disability that affects either the type or amount of work they can do. Just less than half of those with a long-term health problem report more than one health problem. The most common type of main health problem for men is associated with back or neck (17%) or heart, blood pressure and circulation (17%), both slightly higher than chest or breathing (13%) or legs and feet (12%).

Disability also varies in its permanency; about 45% of the disabled population have a disability that has lasted more than 10 years and an additional 20% have a disability lasting between 5 and 10 years. In terms of the cause of disability, 49% of men and 63% of women have a disability caused by a non-work related disease or illness, but those whose disability occurred at birth comprise nearly 20% of the disabled population. About 3% of the disabled workers are employed in sheltered employment and, more surprisingly, even after several years of the DDA only 7% of those who need assistance in work actually receive it.

### 4.2 Employment

Tables 2 and 3 display the coefficients from the models of the determinants of employment for males and females respectively. In each case, the first set of estimates is from a simple probit model and the second set of estimates is from a bivariate probit model with sample selection. In both cases the initial specification, denoted (1), is then supplemented with disability benefit income in (2). The estimates from the probit and bivariate probit are qualitatively similar and  $\rho$  is not significantly different

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without the selection correction. Variables included in the wage but not the employment or disability equations (for example, industry) are defined only for the employed.

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3 from zero at the 5% level in any specification.<sup>14</sup> Therefore, the discussion largely  
4 focuses on the results from the probit models.  
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9 The results of standard productivity related variables are in accordance with  
10 expectations and, therefore, the focus of the discussion relates to the controls for  
11 heterogeneity within the disabled group. A likelihood ratio test indicates the controls  
12 for within group differences are significant at the 1% level for both males and  
13 females. Indeed, for males the pseudo R squared in the probit model increases from  
14 0.26 to 0.50 with the inclusion of the within group controls, confirming their  
15 importance. Moreover, these features of disability are significant after the inclusion of  
16 a control for receipt of disability benefit income, which, consistent with the rules  
17 governing incapacity benefit receipt, has a strong negative effect on employment.  
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26 Consistent with previous evidence in the UK (Berthoud, 2003) and elsewhere  
27 (Wilkins, 2004 and Loprest and Maag, 2007), information relating to the severity of  
28 the disability has a negative effect on the probability of employment. This influence  
29 remains important even after controlling for the type, duration and cause of the  
30 disability. The marginal effect of a disability which greatly affects mobility is  
31 particularly strong at 53% and 46% for males and females respectively, and is greater  
32 than the effect of limitations on either the kind or amount of work. In addition, for  
33 both genders, the number of recorded health problems has a significant negative effect  
34 on employment; one additional problem reduces the probability of employment by  
35 nearly 4.7% and 3.4% for males and females respectively, confirming the additional  
36 difficulty experienced by those with multiple health problems. The type of health  
37 problem is also important and, relative to the base group, individuals with mental  
38 health problems have a 22% lower probability of employment, which is consistent  
39 with previous UK evidence (Kidd *et al.*, 2000 and Jones *et al.* 2006). The reasons for  
40 this, however, are more difficult to distinguish.  
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58 <sup>14</sup> This is consistent with Madden (2004) who finds the controls for selection into disability are  
59 insignificant in participation equations. The positive sign on  $\rho$  indicates that unobservables that are  
60 positively correlated with disability are positively correlated with employment amongst the disabled,  
which appears counterintuitive. The correlation in a standard bivariate probit model with disability and  
employment (without selection) is, however, negative and strongly significant.



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Consistent with evidence based on longitudinal data in the UK (Jenkins and Rigg, 2004), shorter durations of the disability are associated with higher employment probabilities. The effect, which is measured relative to the base group of more than 10 years, is significant amongst males who have had their disability for less than one year and this extends to two years for females. This is consistent with individuals remaining in work until they are more aware of the permanency of their condition and, possibly, using sick leave in the period immediately after disability onset to remain employed. The cause of the disability also has a significant effect on the probability of employment. Of particular interest is the positive influence of onset at birth, particularly for men. After controlling for type, severity and duration, males who are born with their disability are 5% more likely to be employed than those with a non-work related disease or illness.<sup>15</sup> Thus, there is no evidence to suggest that onset prior to labour market entry increases employment disadvantage, consistent with the arguments of adaptation by Wilkins (2004) and Loprest and Maag (2007).<sup>16</sup> For men, having a disability which results from a traffic accident is also associated with significantly higher employment rates. Interestingly, for females, employment is positively associated with work related causes of disability either from an accident or progressive illness. These controls may, however, capture some prior commitment to work.

### 4.3 Earnings

Table 4 presents the results for the earnings equations for males and females respectively.<sup>17</sup> In each case the estimates are presented for the earnings equation (3), then with controls for selection into employment and, finally, with controls for selection into both employment and disability. Surprisingly, both selection correction terms are insignificant in the earnings equation; this is, however, consistent with evidence from Madden (2004).

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<sup>15</sup> It may be that the nature of birth onset disability differs from age onset disability; however, a range of controls for the type, severity and duration of the disability are already included in the model to capture these influences.

<sup>16</sup> Onset at birth also has a limited effect on observable characteristics such as education. Indeed, there is no descriptive evidence to suggest those who are disabled at birth are significantly less likely to hold educational qualifications. It should, however, be noted that hereditary conditions which are included in this group may not affect an individual prior to labour market entry.

<sup>17</sup> A more restricted specification was also estimated, which excluded the controls for type of employment, since the within group differences may affect earnings through occupational choice. The results are fairly robust to the inclusion of the additional controls and so they are not presented here, but are available from the author on request.



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5 Overall, within group heterogeneity appears to be a less important determinant of  
6 earnings than of employment, consistent with disability having a larger effect on  
7 employment than earnings (Blackaby *et al.* 1999 and Kidd *et al.* 2000). After  
8 controlling for the type of work, the measures of severity are not an important  
9 influence on male earnings, while for women restrictions on the amount of work and  
10 mobility are negatively associated with earnings. In a similar manner to employment,  
11 mental health problems have the most negative influence on earnings, particularly for  
12 women.  
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21 The duration of the disability has no consistent influence on earnings for men, whilst  
22 for women the results appear counterintuitive, with shorter durations of disability  
23 being associated with lower earnings.<sup>18</sup> These results may, however, be in part a result  
24 of an additional selection effect; that is, it may be those with the worst economic  
25 prospects that exit the labour market as the duration of the disability lengthens. As  
26 such, some individuals who remain employed at long durations of disability may be a  
27 self-selected group of higher earners.  
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35 For men, at least, the cause of the disability appears to be an important determinant of  
36 earnings. Consistent with the positive influence of disability at birth on employment,  
37 this group also earn significantly more than other disabled workers. Even after  
38 controlling for industry and occupation, men with disability onset relating to a work  
39 related accident have significantly lower earnings. This may, in part, reflect a  
40 concentration of accidents among particularly low paid workers.  
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48 The measures that control for being in sheltered employment or having assistance to  
49 help with work have no significant effect on earnings. Therefore, there is no evidence  
50 (after controlling for the type of employment) to suggest disabled workers pay for  
51 taking opportunities created to help their entry into employment.  
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<sup>18</sup>The negative influence of short durations would be consistent with the effect of adaptation through time outweighing the negative influence of time out of the labour market or reductions in human capital investment.

## 5. Conclusion

There is a well-established and internationally consistent literature that documents the labour market disadvantage faced by disabled individuals relative to their non-disabled counterparts. The evidence presented here for the UK confirms that within group differences, on the basis of the type, severity and duration of the disability, are important determinants of employment for both men and women, despite the range of controls for personal and household characteristics, including receipt of disability benefits. The significance of these variables suggests that analysis which fails to control for characteristics of the disability potentially suffers from omitted variable bias and, therefore, inferences may be misleading. This paper also presents evidence which establishes the influence of the cause of disability onset on labour market outcomes in the UK. For males, onset of disability at birth is positively associated with employment and earnings in later life, and there is no evidence to suggest this group are more disadvantaged in the labour market than the rest of the disabled.

Given the importance of the heterogeneity of the disability, it may be expected that general policies, which aim to increase employment amongst the disabled, will be more effective for certain sub-groups that are 'nearer to the labour market'. Indeed, interventions may be better targeted if they relate to the specific needs of sub-groups of the disabled and, thus, acknowledge the existing differences in labour market performance within the group. Future research should also consider the influence of within group heterogeneity on other outcomes, such as hours and the nature of employment, and in the evaluation of changes in legislation, such as the introduction of the DDA.

Whilst the information collected as part of this ad hoc module on disability provides additional insights into the processes involved, the data are not without their limitations and the features of heterogeneity are certainly not exhaustive. Indeed, this paper has highlighted the difficulties involved in using the currently available cross sectional or longitudinal evidence, given the multiple forms heterogeneity may take. If a disability survey is commissioned in the UK (see, Purdon 2005, for a feasibility study) it is essential that it contains retrospective questions relating to disability onset, a longitudinal element which traces changes in both the disability and labour market

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3 performance, and sufficient observations for the examination of within group  
4 differences. It is this type of evidence that will aid policymakers who seek to  
5 encourage the disabled into employment, in a country with one of the highest rates of  
6 working age disability.  
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**Table 1 Variable Means**

		Male	Female
Employment	Dummy variable, equals 1 if employed, 0 if unemployed or inactive.	0.609	0.554
Log (hourpay)	Log of hourly pay (gross weekly pay divided by usual hours).	2.194	1.932
<i>Equation (1) Employment</i>			
$X_i$			
Duration <1	Dummy variable equals 1 if health problem has lasted less than a year.	0.057	0.061
Duration <2	Dummy variable equals 1 if health problem has lasted between one and two years.	0.066	0.072
Duration <3	Dummy variable equals 1 if health problem has lasted between two and three years.	0.078	0.082
Duration <5	Dummy variable equals 1 if health problem has lasted between 3 and five years.	0.127	0.129
Duration <10	Dummy variable equals 1 if health problem has lasted between 5 and 10 years.	0.203	0.207
Duration >10	Dummy variable equals 1 if health problem has lasted more than 10 years (base).	0.470	0.449
Birth	Dummy variable equals 1 if the cause of health problem is born with it or birth related (including hereditary).	0.190	0.193
Work acc	Dummy variable equals 1 if the cause of health problem is work-related accident or injury.	0.092	0.038
Traffic acc	Dummy variable equals 1 if the cause of health problem is traffic accident or injury.	0.035	0.033
Household acc	Dummy variable equals 1 if the cause of health problem is household, leisure or sports accident or injury.	0.044	0.037
Work illness	Dummy variable equals 1 if the cause of health problem is work-related disease or illness.	0.148	0.068
Other illness	Dummy variable equals 1 if the cause of health problem is non-work related disease or illness (base)	0.491	0.631
Kind	Dummy variable equals 1 if health problem affects the kind of work.	0.571	0.544
Amount	Dummy variable equals 1 if health problem affects the amount of work.	0.458	0.461
Mobility1	Dummy variable equals 1 if health problem greatly affects getting to work.	0.191	0.174
Mobility2	Dummy variable equals 1 if health problem affects getting to work to some extent.	0.127	0.151
Mobility3	Dummy variable equals 1 if health problem does not affect getting to work. (base)	0.682	0.675
Number health	Number of separately recorded different types of health problem.	2.078	2.117
Limbs	Dummy variable equals 1 if the main health problem affects limbs (includes arms, hands, legs, feet, back and neck).	0.341	0.327
Sight/hearing	Dummy variable equals 1 if the main health problem affects sight, hearing or speech.	0.050	0.032
Chest/heart	Dummy variable equals 1 if the main health problem affects skin, chest breathing, blood, heart or stomach.	0.432	0.380
Mental health	Dummy variable equals 1 if the main health problem is	0.078	0.092



	mental illness (includes depression, bad nerves, learning difficulties, phobia, panics).		
Other health	Dummy variable equals 1 if the main health problem is other (includes progressive illness and epilepsy). (base)	0.098	0.169
	$Y_i$		
Aged 16-24	Dummy variable equals 1 if aged between 16 and 24.	0.060	0.070
Aged 25-34	Dummy variable equals 1 if aged between 25 and 34.	0.130	0.167
Aged 35-44	Dummy variable equals 1 if aged between 35 and 44.	0.207	0.249
Aged 45-54	Dummy variable equals 1 if aged between 45 and 54.	0.263	0.315
Aged 55-retirement	Dummy variable equals 1 if aged between 55 and retirement.	0.340	0.200
White	Dummy variable equals 1 if ethnic group is white.	0.948	0.937
Single	Dummy variable equals 1 if marital status is single.	0.245	0.223
Married	Dummy variable equals 1 if marital status is married.	0.618	0.563
Other	Dummy variables equals 1 if marital status is separated, widowed or divorced. (base)	0.131	0.196
Degree	Dummy variable equals 1 if highest qualification is university degree or higher degree.	0.112	0.098
Other higher education	Dummy variable equals 1 if highest qualification is other higher education.	0.066	0.092
A level	Dummy variable equals 1 if highest qualification is A level or equivalent. <sup>(a)</sup>	0.306	0.139
O level	Dummy variable equals 1 if highest qualification is O level or equivalent. <sup>(b)</sup>	0.142	0.244
Other	Dummy variable equals 1 if highest qualification is other qualification.	0.146	0.155
None	Dummy variable equals 1 if highest qualification is no qualifications. (base)	0.228	0.272
Other earner	Dummy variable equals 1 if someone else in the household works.	0.530	0.606
Child 19	Number of dependent children aged less than 19 in household if individual is head of household or spouse.	0.538	0.692
Child 2	Number of dependent children aged less than 2 in household if individual is head of household or spouse.	0.037	0.045
Social housing	Dummy variable equals 1 if house is rented from non-private sector.	0.223	0.261
Private renting	Dummy variable equals 1 if house is rented from the private sector or other. (base)	0.076	0.081
Owned	Dummy variable equals 1 if house is owned outright.	0.242	0.190
Mortgaged	Dummy variable equals 1 if house is mortgaged.	0.460	0.468
Unemploy12	Dummy variable equals 1 if unemployed 12 months ago.	0.042	0.023
Sickness Benefit	Dummy variable equals 1 if individual claims incapacity benefit or any other sickness related benefit. <sup>(c)</sup>	0.276	0.226
	<i>Equation (3) Earnings only</i>		
Sheltered	Dummy variable equals 1 if working in sheltered employment.	0.026	0.034
Assistance	Dummy variable equals 1 if individual needs and receives assistance to help work. <sup>(d)</sup>	0.025	0.032
Experience	Age minus school leaving age in years.	26.695	24.527
Tenure	Length of time in current job in months.	120.526	84.816
Part	Dummy variable equals 1 if employed part-time.	0.067	0.420
Small firm	Dummy variable equals 1 if employed in a workplace	0.298	0.366

	with fewer than 25 employees.		
Temporary	Dummy variable equals 1 if in temporary employment.	0.038	0.058
	<i>Equation (2) Disability only</i>		
Other disabled	Dummy variable equals 1 if another member of the household has a long-term health problem.	0.244	0.247

Notes: Means relate to estimation samples. Controls for region of current residence, industry and occupation are included but are not reported.

<sup>(a)</sup> A (advanced) level is an optional standardised qualification taken in two years after compulsory schooling in the UK.

<sup>(b)</sup> O (ordinary) level (replaced by GCSE) is a standardised qualification usually taken in the final year of compulsory schooling in the UK.

<sup>(c)</sup> This includes Severe Disablement Allowance, Mobility Allowance, Statutory Sick Pay, Invalid Care Allowance, Disability Working Allowance/Disabled Persons Tax Credit, Disability Living Allowance, Attendance Allowance, Industrial Injury Disablement Benefit.

<sup>(d)</sup> Examples include special adaptations or equipment, support in getting to and from work, understanding by superiors or colleagues, assistance in the kind of work, assistance in the amount of work and assistance in getting around at work. This question is only asked to those who state they have problems with the kind, amount or getting to work. It is assumed that the disabled who are not asked this question do not need any form of assistance and are therefore included in the zero category. Those who need, but do not get assistance are not separated from those who do not need assistance since the latter variable is a function of severity and therefore would be highly correlated with variables relating to difficulties with the kind and amount of work.

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Table 2. The influence of within group heterogeneity on the employment of the disabled males

	Probit		Bivariate Probit			
	(1)	(2)	(1)		(2)	
			Employ	Disability	Employ	Disability
Constant	0.019 (0.11)	0.089 (0.50)	-0.123 (0.64)	0.113* (1.75)	-0.107 (0.52)	0.111* (1.72)
Age 16-24	0.235** (2.45)	0.208** (2.10)	0.080 (0.58)	-1.017*** (26.17)	-0.004 (0.03)	-1.018*** (26.16)
Age 25-34	0.665*** (8.80)	0.654*** (8.36)	0.535*** (4.46)	-0.812*** (27.30)	0.469*** (3.45)	-0.812*** (27.31)
Age 35-44	0.623*** (9.82)	0.616*** (9.31)	0.520*** (5.39)	-0.612*** (23.26)	0.471*** (4.30)	-0.612*** (23.25)
Age 45-54	0.575*** (11.33)	0.598*** (11.21)	0.517*** (7.80)	-0.342*** (14.70)	0.514*** (6.80)	-0.343*** (14.72)
Duration <1	0.315*** (3.85)	0.258*** (3.07)	0.308*** (3.81)		0.249*** (3.02)	
Duration <2	0.132* (1.74)	0.093 (1.18)	0.130* (1.73)		0.090 (1.17)	
Duration <3	0.100 (1.41)	0.036 (0.50)	0.098 (1.40)		0.035 (0.50)	
Duration <5	-0.008 (0.15)	-0.066 (1.12)	-0.009 (0.16)		-0.065 (1.13)	
Duration <10	-0.055 (1.12)	-0.086* (1.68)	-0.053 (1.11)		-0.082* (1.65)	
Birth	0.158*** (2.95)	0.170*** (3.06)	0.158*** (3.00)		0.167*** (3.09)	
Work acc	0.028 (0.41)	0.116 (1.60)	0.026 (0.39)		0.111 (1.57)	
Traffic acc	0.229** (2.24)	0.225** (2.09)	0.220** (2.17)		0.213** (2.03)	
Household	0.102 (1.06)	0.129 (1.27)	0.098 (1.03)		0.121 (1.23)	
Work illness	0.035 (0.64)	0.040 (0.71)	0.033 (0.62)		0.038 (0.68)	
Kind	-0.357*** (6.78)	-0.306*** (5.63)	-0.352*** (6.71)		-0.297*** (5.50)	
Amount	-0.591*** (11.31)	-0.402*** (7.30)	-0.581*** (10.96)		-0.390*** (7.06)	
Mobility1	-1.434*** (23.30)	-1.033*** (15.36)	-1.415*** (21.05)		-1.005*** (13.78)	
Mobility2	-0.598*** (11.66)	-0.439*** (7.99)	-0.588*** (11.27)		-0.424*** (7.62)	
Number health	-0.127*** (8.92)	-0.074*** (4.89)	-0.124*** (8.67)		-0.070*** (4.69)	
Limbs	0.052 (0.76)	-0.007 (0.10)	0.053 (0.79)		-0.006 (0.08)	
Sight/hearing	0.060 (0.60)	0.051 (0.49)	0.047 (0.47)		0.033 (0.32)	
Chest/heart	0.019 (0.29)	-0.056 (0.80)	0.017 (0.27)		-0.058 (0.86)	
Mental	-0.568*** (6.53)	-0.398*** (4.34)	-0.558*** (6.43)		-0.385*** (4.26)	
White	0.298***	0.403***	0.299***	0.066*	0.399***	0.067**

	(3.69)	(4.92)	(3.75)	(1.94)	(4.94)	(1.98)
Single	-0.131*	-0.133*	-0.127*	0.012	-0.126*	0.012
	(1.89)	(1.84)	(1.84)	(0.41)	(1.77)	(0.40)
Married	-0.033	-0.018	-0.024	-0.005	-0.004	-0.005
	(0.56)	(0.29)	(0.41)	(0.19)	(0.06)	(0.18)
Degree	0.250***	0.175**	0.182**	-0.432***	0.079	-0.431***
	(3.52)	(2.39)	(2.09)	(15.26)	(0.85)	(15.24)
Other higher	0.191**	0.134	0.141	-0.296***	0.066	-0.295***
	(2.36)	(1.60)	(1.63)	(8.68)	(0.74)	(8.66)
A level	0.282***	0.264***	0.245***	-0.213***	0.210***	-0.213***
	(5.45)	(4.87)	(4.25)	(8.91)	(3.41)	(8.90)
O level	0.187***	0.149**	0.154**	-0.205***	0.105	-0.206***
	(2.98)	(2.27)	(2.33)	(7.47)	(1.51)	(7.50)
Other educ	0.300***	0.301***	0.272***	-0.175***	0.259***	-0.174***
	(5.01)	(4.84)	(4.29)	(6.30)	(3.86)	(6.27)
Other earner	0.449***	0.425***	0.413***	-0.234***	0.372***	-0.234***
	(11.31)	(10.29)	(8.44)	(13.46)	(6.84)	(13.43)
Child 19	0.001	-0.007	-0.003	-0.026***	-0.012	-0.026***
	(0.05)	(0.27)	(0.13)	(2.79)	(0.51)	(2.82)
Child 2	0.111	0.034	0.087	-0.093***	0.005	-0.092***
	(1.04)	(0.31)	(0.82)	(2.67)	(0.04)	(2.64)
Social	-0.264***	-0.248***	-0.207**	0.316***	-0.171*	0.316***
	(3.58)	(3.26)	(2.51)	(9.58)	(1.96)	(9.59)
Owned	0.078	0.053	0.067	-0.090***	0.037	-0.090***
	(1.05)	(0.69)	(0.91)	(2.77)	(0.50)	(2.76)
Mortgaged	0.508***	0.494***	0.480***	-0.127***	0.450***	-0.128***
	(7.15)	(6.76)	(6.52)	(4.38)	(5.81)	(4.41)
Unemploy12	-0.849***	-0.955***	-0.835***		-0.925***	
	(10.85)	(12.18)	(10.52)		(11.19)	
Sickness benefit		-1.178***			-1.148***	
		(22.28)			(18.30)	
Other disabled				0.348***		0.346***
				(19.99)		(19.80)
$\rho$			0.215		0.298*	
(p-value)			(0.15)		(0.09)	
Observations	9215	9205	35130		35120	
Uncensored			9196		9186	
Pseudo R <sup>2</sup>	0.50	0.54				
Likelihood ratio	6170.38	6678.98				
(p-value)	(0.00)	(0.00)				
Wald test			1788.42		1602.89	
(p-value)			(0.00)		(0.00)	

Notes to table: Specification includes a full set of regional dummies not reported here. Absolute T statistics reported in parenthesis. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level respectively. Significance of  $\rho$  tested using a likelihood ratio test for independent equations.

**Table 3. The influence of within group heterogeneity on the employment of the disabled females**

	Probit		Bivariate Probit			
	(1)	(2)	(1)		(2)	
			Employ	Disability	Employ	Disability
Constant	-0.103 (0.65)	-0.071 (0.44)	-0.237 (1.36)	0.066 (1.03)	-0.194 (1.09)	0.064 (0.99)
Age 16-24	0.175* (1.83)	0.135 (1.39)	0.064 (0.56)	-0.832*** (20.36)	0.035 (0.30)	-0.831*** (20.34)
Age 25-34	0.322*** (4.48)	0.333*** (4.54)	0.224** (2.45)	-0.634*** (19.42)	0.243*** (2.61)	-0.634*** (19.40)
Age 35-44	0.454*** (7.26)	0.489*** (7.63)	0.379*** (5.02)	-0.456*** (15.20)	0.420*** (5.44)	-0.457*** (15.22)
Age 45-54	0.306*** (6.08)	0.332*** (6.46)	0.273*** (5.06)	-0.233*** (8.90)	0.303*** (5.47)	-0.233*** (8.89)
Duration <1	0.335*** (4.46)	0.246*** (3.27)	0.335*** (4.50)		0.248*** (3.32)	
Duration <2	0.155** (2.27)	0.123* (1.78)	0.153** (2.27)		0.122* (1.78)	
Duration <3	0.083 (1.28)	0.060 (0.91)	0.080 (1.25)		0.058 (0.89)	
Duration <5	0.008 (0.14)	-0.016 (0.30)	0.005 (0.10)		-0.018 (0.34)	
Duration <10	0.001 (0.02)	0.001 (0.01)	0.001 (0.02)		0.000 (0.01)	
Birth	0.066 (1.41)	0.077 (1.62)	0.069 (1.50)		0.079* (1.69)	
Work acc	0.266*** (2.86)	0.357*** (3.69)	0.267*** (2.91)		0.356*** (3.72)	
Traffic acc	0.101 (1.01)	0.115 (1.12)	0.099 (1.00)		0.113 (1.11)	
Household	0.067 (0.70)	0.052 (0.53)	0.068 (0.72)		0.052 (0.54)	
Work illness	0.166** (2.39)	0.184*** (2.58)	0.165** (2.40)		0.183*** (2.59)	
Kind	-0.362*** (7.42)	-0.332*** (6.70)	-0.357*** (7.33)		-0.329*** (6.64)	
Amount	-0.502*** (10.09)	-0.387*** (7.59)	-0.494*** (9.95)		-0.383*** (7.54)	
Mobility1	-1.268*** (20.07)	-0.949*** (14.04)	-1.250*** (19.25)		-0.938*** (13.81)	
Mobility2	-0.566*** (11.68)	-0.467*** (9.34)	-0.562*** (11.59)		-0.465*** (9.34)	
Number health	-0.087*** (6.61)	-0.061*** (4.47)	-0.085*** (6.55)		-0.059*** (4.43)	
Limbs	0.036 (0.66)	0.003 (0.05)	0.036 (0.66)		0.005 (0.08)	
Sight/hearing	-0.149 (1.47)	-0.138 (1.33)	-0.147 (1.46)		-0.135 (1.31)	
Breathing/heart	-0.012 (0.23)	-0.062 (1.20)	-0.012 (0.23)		-0.061 (1.18)	
Mental health	-0.553*** (7.30)	-0.497*** (6.43)	-0.546*** (7.22)		-0.491*** (6.36)	
White	0.314***	0.349***	0.307***	0.004	0.341***	0.004

	(4.33)	(4.77)	(4.26)	(0.12)	(4.69)	(0.11)
Single	-0.099	-0.065	-0.106*	-0.088***	-0.073	-0.089***
	(1.62)	(1.04)	(1.74)	(3.20)	(1.17)	(3.25)
Married	-0.339***	-0.347***	-0.330***	-0.091***	-0.340***	-0.092***
	(6.77)	(6.81)	(6.62)	(3.87)	(6.68)	(3.88)
Degree	0.881***	0.854***	0.819***	-0.332***	0.798***	-0.331***
	(12.11)	(11.53)	(9.76)	(11.34)	(9.42)	(11.31)
Other higher	0.619***	0.600***	0.580***	-0.206***	0.566***	-0.205***
	(9.27)	(8.80)	(8.15)	(6.73)	(7.82)	(6.70)
A level	0.477***	0.462***	0.444***	-0.181***	0.432***	-0.180***
	(8.14)	(7.73)	(7.19)	(6.65)	(6.90)	(6.61)
O level	0.432***	0.437***	0.400***	-0.184***	0.408***	-0.183***
	(8.65)	(8.56)	(7.43)	(7.78)	(7.43)	(7.73)
Other educ	0.341***	0.335***	0.316***	-0.176***	0.314***	-0.175***
	(6.29)	(6.08)	(5.60)	(6.66)	(5.46)	(6.62)
Other earner	0.456***	0.440***	0.419***	-0.220***	0.407***	-0.220***
	(10.68)	(10.15)	(8.85)	(11.10)	(8.50)	(11.08)
Child 19	-0.246***	-0.260***	-0.253***	-0.072***	-0.266***	-0.071***
	(11.62)	(12.06)	(11.99)	(8.12)	(12.36)	(8.10)
Child 2	-0.540***	-0.525***	-0.554***	-0.088***	-0.538***	-0.088***
	(6.79)	(6.59)	(7.05)	(2.74)	(6.82)	(2.74)
Social housing	-0.199***	-0.198***	-0.156**	0.275***	-0.159**	0.274***
	(2.85)	(2.79)	(2.12)	(8.60)	(2.12)	(8.59)
Owned	-0.015	-0.014	-0.042	-0.192***	-0.039	-0.192***
	(0.20)	(0.19)	(0.56)	(5.72)	(0.52)	(5.73)
Mortgaged	0.373***	0.402***	0.348***	-0.132***	0.379***	-0.133***
	(5.55)	(5.91)	(5.09)	(4.56)	(5.46)	(4.58)
Unemploy12	-0.252**	-0.350***	-0.251**		-0.348***	
	(2.44)	(3.40)	(2.47)		(3.42)	
Sickness benefit		-0.889***			-0.876***	
		(16.04)			(15.55)	
Other disabled				0.405***		0.406***
				(23.20)		(23.21)
$\rho$ (p-value)			0.197*		0.180	
			(0.08)		(0.11)	
Observations	8552	8548	34550		34546	
Uncensored			8538		8534	
Pseudo R <sup>2</sup>	0.40	0.42				
Likelihood ratio (p-value)	4696.95 (0.00)	4968.80 (0.00)				
Wald test (p-value)			1856.07 (0.00)		1961.92 (0.00)	

Notes to table: See notes to Table 2.

**Table 4. The influence of within group heterogeneity on the earnings of disabled workers.**

	Males			Females		
	OLS	Employment selection	Double selection	OLS	Employment selection	Double selection
Constant	1.777*** (12.73)	1.741*** (11.80)	1.844*** (9.41)	1.908*** (14.96)	1.933*** (13.97)	1.888*** (10.91)
Sheltered	-0.068 (1.01)	-0.074 (1.10)	-0.075 (1.09)	-0.086 (1.56)	-0.083 (1.51)	-0.082 (1.47)
Assistance	-0.073 (1.05)	-0.098 (1.41)	-0.099 (1.39)	0.077 (1.29)	0.058 (0.97)	0.059 (0.96)
Experience	0.025*** (6.25)	0.026*** (6.24)	0.025*** (5.72)	0.018*** (4.82)	0.019*** (5.18)	0.020*** (5.06)
Experience Sq/100	-0.045*** (6.36)	-0.048*** (6.21)	-0.049*** (6.08)	-0.032*** (4.22)	-0.035*** (4.62)	-0.034*** (4.32)
Tenure	0.001*** (4.48)	0.001*** (4.69)	0.001*** (4.57)	0.001*** (3.14)	0.001*** (3.25)	0.001*** (3.18)
Tenure Sq/100	-0.000** (2.22)	-0.000** (2.36)	-0.000** (2.29)	-0.000 (0.84)	-0.000 (0.99)	-0.000 (0.99)
Birth	0.058** (2.08)	0.054* (1.93)	0.054* (1.88)	0.018 (0.73)	0.017 (0.69)	0.018 (0.69)
Work acc	-0.089** (2.06)	-0.081* (1.90)	-0.081* (1.85)	0.030 (0.56)	0.032 (0.59)	0.031 (0.55)
Traffic acc	-0.095 (1.63)	-0.098* (1.70)	-0.101* (1.72)	0.060 (1.11)	0.070 (1.30)	0.072 (1.29)
Household acc	-0.054 (1.17)	-0.063 (1.35)	-0.064 (1.35)	0.010 (0.20)	0.011 (0.21)	0.011 (0.20)
Work illness	-0.028 (0.86)	-0.022 (0.68)	-0.024 (0.70)	0.003 (0.08)	0.006 (0.15)	0.005 (0.13)
Duration <1	0.022 (0.50)	0.020 (0.46)	0.019 (0.44)	-0.074* (1.85)	-0.092** (2.27)	-0.093** (2.25)
Duration <2	0.076* (1.90)	0.074* (1.87)	0.073* (1.80)	-0.001 (0.03)	-0.007 (0.20)	-0.008 (0.22)
Duration <3	0.050 (1.31)	0.045 (1.16)	0.044 (1.13)	-0.068* (1.80)	-0.080** (2.13)	-0.082** (2.14)
Duration <5	0.061* (1.76)	0.052 (1.51)	0.052 (1.48)	-0.005 (0.16)	-0.013 (0.42)	-0.014 (0.43)
Duration <10	0.010 (0.33)	0.006 (0.21)	0.008 (0.27)	-0.010 (0.39)	-0.016 (0.60)	-0.017 (0.60)
Kind	-0.035 (1.32)	-0.041 (1.52)	-0.041 (1.46)	0.006 (0.22)	-0.002 (0.06)	-0.001 (0.03)
Amount	-0.014 (0.43)	-0.028 (0.74)	-0.023 (0.58)	-0.056* (1.89)	-0.064* (1.78)	-0.061* (1.67)
Mobility1	-0.089 (1.14)	-0.071 (0.72)	-0.055 (0.53)	-0.106* (1.66)	-0.144* (1.83)	-0.138* (1.71)
Mobility2	0.040 (1.00)	0.033 (0.73)	0.039 (0.84)	-0.126*** (3.58)	-0.146*** (3.71)	-0.144*** (3.57)
Number health	-0.018* (1.72)	-0.018* (1.68)	-0.018 (1.62)	0.006 (0.62)	0.007 (0.73)	0.007 (0.75)



Limbs	0.031 (0.76)	0.042 (1.04)	0.042 (1.03)	-0.019 (0.58)	-0.019 (0.59)	-0.018 (0.54)
Sight/hearing	-0.010 (0.18)	-0.001 (0.01)	-0.002 (0.04)	-0.107* (1.81)	-0.108* (1.87)	-0.108* (1.81)
Chest/heart	-0.010 (0.28)	0.000 (0.01)	0.001 (0.03)	-0.032 (1.12)	-0.035 (1.24)	-0.033 (1.16)
Mental health	-0.107* (1.67)	-0.092 (1.40)	-0.088 (1.32)	-0.132** (2.40)	-0.153*** (2.61)	-0.149** (2.48)
White	0.082 (1.48)	0.101* (1.77)	0.098* (1.68)	-0.029 (0.62)	-0.002 (0.05)	-0.005 (0.10)
Single	-0.025 (0.58)	-0.015 (0.34)	-0.019 (0.42)	-0.005 (0.13)	-0.010 (0.29)	-0.009 (0.25)
Married	0.036 (1.03)	0.040 (1.14)	0.039 (1.09)	-0.049* (1.79)	-0.049* (1.75)	-0.051* (1.75)
Degree	0.352*** (7.30)	0.354*** (7.17)	0.364*** (6.95)	0.318*** (6.75)	0.322*** (6.22)	0.313*** (5.78)
Other high ed	0.156*** (3.06)	0.147*** (2.82)	0.156*** (2.85)	0.245*** (5.36)	0.255*** (5.28)	0.249*** (5.00)
A level	0.073* (1.88)	0.066* (1.66)	0.074* (1.76)	0.098** (2.38)	0.093** (2.13)	0.086* (1.90)
O level	0.110*** (2.58)	0.105** (2.45)	0.113** (2.50)	0.058 (1.64)	0.058 (1.51)	0.054 (1.35)
Other educ	0.011 (0.27)	0.002 (0.04)	0.006 (0.14)	-0.010 (0.26)	-0.008 (0.20)	-0.013 (0.32)
Part-time	-0.043 (0.96)	-0.030 (0.68)	-0.029 (0.63)	-0.040* (1.75)	-0.055** (2.37)	-0.056** (2.34)
Small firm	-0.115*** (4.82)	-0.119*** (5.03)	-0.120*** (4.95)	-0.096*** (4.49)	-0.099*** (4.62)	-0.098*** (4.46)
Temporary	0.001 (0.02)	0.007 (0.12)	0.006 (0.11)	0.054 (1.26)	0.039 (0.91)	0.039 (0.89)
Social housing	-0.128** (2.50)	-0.160*** (2.98)	-0.174*** (3.00)	-0.079* (1.78)	-0.080* (1.76)	-0.072 (1.47)
Owned	-0.025 (0.52)	-0.054 (1.10)	-0.050 (0.99)	-0.064 (1.42)	-0.061 (1.36)	-0.067 (1.43)
Mortgage	0.001 (0.03)	-0.012 (0.28)	-0.010 (0.22)	-0.008 (0.21)	-0.002 (0.04)	-0.007 (0.16)
Lambda (employment)		0.042 (0.68)	0.014 (0.21)		0.035 (0.61)	0.032 (0.55)
Lambda (disability)			-0.054 (0.79)			0.032 (0.52)
Observations	1537	3043	13112	1521	3058	13219
Uncensored		1494	1494		1472	1470
R-squared	0.53	0.53	0.53	0.53	0.53	0.53
F test	25.87	24.81	24.44	25.30	24.39	23.97
(p-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Notes to table: See notes to Table 2. Specification also included controls for industry and occupation of employment, but these are not reported here.



\*\*\*\*\*NOT FOR INCLUSION IN MAIN TEXT\*\*\*\*\*

### Additional Sensitivity Analysis for Referee 1 only.

Since the selection effects are not significant all results relate to the basic probit or OLS specifications.

#### 1. Exclude duration and cause of disability.

##### Employment Probit

	Males	Females
Age 16-24	0.252*** (2.69)	0.168* (1.80)
Age 25-34	0.684*** (9.28)	0.304*** (4.32)
Age 35-44	0.646*** (10.41)	0.443*** (7.28)
Age 45-54	0.570*** (11.52)	0.312*** (6.36)
Kind	-0.359*** (6.96)	-0.360*** (7.54)
Amount	-0.598*** (11.69)	-0.496*** (10.23)
Mobility1	-1.429*** (23.98)	-1.259*** (20.67)
Mobility2	-0.607*** (12.08)	-0.550*** (11.71)
Number of health	-0.126*** (9.12)	-0.095*** (7.42)
Limbs	0.056 (0.87)	0.074 (1.45)
Sight/hearing	0.071 (0.73)	-0.143 (1.44)
Chest/heart	0.019 (0.29)	-0.025 (0.50)
Mental health	-0.593*** (7.01)	-0.545*** (7.44)
White	0.306*** (3.88)	0.316*** (4.50)
Single	-0.097 (1.43)	-0.098 (1.63)
Married	-0.029 (0.50)	-0.339*** (6.97)
Degree	0.272*** (3.92)	0.881*** (12.41)
Other higher	0.176** (2.23)	0.643*** (9.87)
A level	0.286*** (5.66)	0.499*** (8.70)
O level	0.171*** (2.79)	0.447*** (9.17)

Other educ	0.308***	0.342***
	(5.27)	(6.50)
Other earner	0.452***	0.449***
	(11.65)	(10.80)
Child 19	0.003	-0.240***
	(0.14)	(11.65)
Child 2	0.126	-0.535***
	(1.20)	(6.83)
Social	-0.261***	-0.202***
	(3.59)	(2.97)
Owned	0.077	0.007
	(1.06)	(0.10)
Mortgaged	0.510***	0.382***
	(7.30)	(5.83)
Unemploy12	-0.864***	-0.246**
	(11.17)	(2.47)
Constant	0.059	-0.056
	(0.36)	(0.37)
Observations	9598	8893

## OLS Earnings Equation

	Male	Female
Sheltered	-0.055	-0.113**
	(0.85)	(2.13)
Assistance	-0.073	0.067
	(1.05)	(1.17)
Experience	0.023***	0.017***
	(5.84)	(4.69)
Experience Sq	-0.000***	-0.000***
	(5.96)	(4.12)
Tenure	0.001***	0.001***
	(4.93)	(3.25)
Tenure Sq	-0.000**	-0.000
	(2.57)	(0.94)
Kind	-0.042	0.009
	(1.63)	(0.36)
Amount	-0.024	-0.064**
	(0.76)	(2.23)
Mobility1	-0.032	-0.125**
	(0.42)	(1.99)
Mobility2	0.043	-0.117***
	(1.08)	(3.43)
Number of health	-0.018*	0.008
	(1.72)	(0.88)
Limbs	0.013	-0.003
	(0.35)	(0.09)
Sight/hearing	-0.006	-0.097*
	(0.11)	(1.69)
Chest/heart	0.013	-0.024
	(0.35)	(0.90)
Mental health	-0.091	-0.115**
	(1.48)	(2.19)
White	0.067	-0.029
	(1.23)	(0.64)
Single	-0.026	0.005
	(0.62)	(0.15)
Married	0.035	-0.040
	(1.03)	(1.51)
Degree	0.347***	0.326***
	(7.34)	(7.06)
Other high educ	0.140***	0.242***
	(2.80)	(5.46)
A level	0.077**	0.094**
	(2.03)	(2.34)
O level	0.098**	0.058*
	(2.35)	(1.67)
Other educ	0.004	-0.011
	(0.09)	(0.30)
Professional occupations	-0.020	0.127***
	(0.50)	(2.60)
Associate professional and	-0.169***	-0.119***

technical		
	(4.46)	(2.78)
Administrative and secretarial	-0.416***	-0.297***
	(8.75)	(7.44)
Skilled trades occupations	-0.413***	-0.534***
	(10.75)	(6.89)
Personal service occupations	-0.542***	-0.494***
	(7.75)	(10.92)
Sales and customer service occupation	-0.420***	-0.418***
	(6.85)	(8.78)
Process, plant and machine operatives	-0.530***	-0.484***
	(13.49)	(7.17)
Elementary occupations	-0.597***	-0.531***
	(14.68)	(11.34)
Agriculture & fishing dummy	0.022	0.263**
	(0.21)	(2.19)
Energy & water dummy	0.349***	0.592***
	(3.90)	(3.72)
Manufacturing dummy	0.228***	0.076
	(4.18)	(1.34)
Construction dummy	0.252***	0.163*
	(4.02)	(1.76)
Distribution, hotels & restaurants dummy	0.101*	-0.072
	(1.80)	(1.45)
Transport & communication dummy	0.238***	0.096
	(3.98)	(1.52)
Banking, finance & insurance dummy	0.284***	0.124**
	(5.05)	(2.50)
Public admin, education & health dummy	0.134**	0.039
	(2.43)	(0.86)
Part-time	-0.032	-0.040*
	(0.74)	(1.82)
Small firm	-0.111***	-0.098***
	(4.75)	(4.72)
Temporary	0.018	0.046
	(0.32)	(1.09)
Social	-0.146***	-0.089**
	(2.95)	(2.05)
Owned	-0.032	-0.066
	(0.68)	(1.50)
Mortgaged	-0.000	-0.005
	(0.01)	(0.13)
Constant	1.818***	1.906***
	(13.41)	(15.43)
Observations	1592	1577
R-squared	0.53	0.53

## 2. Definition of disability

### Employment Probit

	Work-limited disabled		DDA disabled	
	Male	Female	Male	Female
Age 16-24	0.256**	0.324**	0.373***	0.363***
	(2.04)	(2.49)	(2.73)	(2.60)
Age 25-34	0.682***	0.387***	0.670***	0.341***
	(7.27)	(3.96)	(6.72)	(3.58)
Age 35-44	0.593***	0.423***	0.628***	0.438***
	(7.56)	(5.18)	(7.74)	(5.57)
Age 45-54	0.477***	0.266***	0.580***	0.247***
	(7.61)	(4.03)	(9.04)	(3.90)
Duration <1	0.541***	0.518***	0.510***	0.558***
	(5.05)	(5.09)	(4.71)	(5.29)
Duration <2	0.174*	0.216**	0.219**	0.180**
	(1.78)	(2.33)	(2.20)	(1.99)
Duration <3	0.183**	0.055	0.138	0.056
	(2.04)	(0.63)	(1.47)	(0.66)
Duration <5	-0.004	-0.014	0.017	0.002
	(0.05)	(0.20)	(0.24)	(0.02)
Duration <10	-0.044	0.038	-0.028	-0.010
	(0.73)	(0.62)	(0.44)	(0.16)
Birth	0.243***	0.116*	0.229***	0.071
	(3.48)	(1.79)	(3.25)	(1.13)
Work acc	0.031	0.179*	-0.028	0.221**
	(0.39)	(1.77)	(0.32)	(2.00)
Traffic acc	0.328***	0.074	0.183	0.112
	(2.83)	(0.62)	(1.42)	(0.90)
Household	0.131	0.008	0.072	-0.028
	(1.11)	(0.06)	(0.52)	(0.22)
Work illness	-0.002	0.187**	0.079	0.113
	(0.03)	(2.23)	(1.14)	(1.29)
Kind	-0.889***	-0.720***	-0.476***	-0.437***
	(6.09)	(6.98)	(6.20)	(6.46)
Amount	-0.638***	-0.592***	-0.571***	-0.508***
	(10.94)	(10.05)	(8.13)	(7.87)
Mobility1	-1.425***	-1.279***	-1.431***	-1.292***
	(21.91)	(18.91)	(21.08)	(18.69)
Mobility2	-0.651***	-0.673***	-0.646***	-0.596***
	(11.15)	(11.76)	(10.56)	(10.34)
Number health	-0.148***	-0.089***	-0.120***	-0.085***
	(9.27)	(5.90)	(7.40)	(5.68)
Limbs	0.084	0.010	0.107	-0.027
	(1.03)	(0.14)	(1.29)	(0.39)
Sight/hearing	0.051	-0.297**	0.098	-0.325**
	(0.39)	(2.17)	(0.67)	(1.96)
Breathing/heart	0.116	-0.086	0.095	-0.083
	(1.43)	(1.17)	(1.19)	(1.28)
Mental health	-0.559***	-0.600***	-0.562***	-0.686***
	(5.56)	(6.44)	(5.45)	(7.45)

White	0.225**	0.390***	0.370***	0.386***
	(2.27)	(3.95)	(3.54)	(4.07)
Single	-0.143*	-0.115	-0.050	-0.094
	(1.65)	(1.46)	(0.55)	(1.18)
Married	-0.059	-0.290***	-0.032	-0.325***
	(0.80)	(4.52)	(0.43)	(5.09)
Degree	0.423***	0.978***	0.288***	0.941***
	(4.51)	(10.02)	(2.99)	(9.79)
Other higher	0.251**	0.536***	0.242**	0.655***
	(2.35)	(6.04)	(2.31)	(7.54)
A level	0.352***	0.437***	0.333***	0.453***
	(5.58)	(5.64)	(5.04)	(5.99)
O level	0.239***	0.434***	0.266***	0.476***
	(3.08)	(6.56)	(3.28)	(7.44)
Other educ	0.329***	0.322***	0.309***	0.364***
	(4.54)	(4.54)	(4.07)	(5.25)
Other earner	0.417***	0.505***	0.408***	0.471***
	(8.33)	(8.98)	(7.87)	(8.52)
Child 19	0.010	-0.194***	0.007	-0.200***
	(0.34)	(6.67)	(0.23)	(7.12)
Child 2	0.030	-0.539***	0.125	-0.701***
	(0.23)	(4.60)	(0.86)	(5.94)
Social housing	-0.227**	-0.234**	-0.249**	-0.130
	(2.44)	(2.50)	(2.46)	(1.41)
Owned	0.229**	-0.039	0.225**	0.038
	(2.40)	(0.39)	(2.20)	(0.39)
Mortgaged	0.623***	0.278***	0.557***	0.447***
	(6.85)	(3.02)	(5.67)	(5.02)
Unemploy12	-0.797***	-0.232*	-0.646***	-0.204
	(8.17)	(1.80)	(5.82)	(1.45)
Constant	0.451*	0.245	-0.356	-0.221
	(1.77)	(1.06)	(1.60)	(1.10)
Observations	5420	4881	5403	5344

Notes: All specifications are the same as in the paper, however since the work-limited have a health problem which effects either the kind or amount of work interpretation of these variables is quite different.

## OLS Earnings

	Work-limited disabled		DDA disabled	
	Male	Female	Male	Female
Sheltered	-0.135 (1.49)	-0.119 (1.44)	-0.108 (1.26)	-0.033 (0.45)
Assistance	-0.105 (1.45)	0.044 (0.64)	-0.057 (0.70)	-0.013 (0.18)
Experience	0.019*** (2.87)	0.011 (1.54)	0.027*** (4.20)	0.010 (1.64)
Experience Sq	-0.000*** (3.06)	-0.000 (1.39)	-0.000*** (4.27)	-0.000 (1.35)
Tenure	0.001 (1.32)	0.001** (2.16)	0.002*** (3.64)	0.001*** (2.94)
Tenure Sq	0.000 (0.47)	-0.000 (0.59)	-0.000* (1.78)	-0.000 (1.40)
Birth	0.102** (2.07)	0.020 (0.40)	0.094** (2.09)	-0.010 (0.27)
Work acc	-0.099* (1.67)	0.055 (0.81)	-0.080 (1.23)	0.036 (0.51)
Traffic acc	-0.149* (1.94)	0.003 (0.04)	-0.078 (0.90)	-0.035 (0.43)
Household acc	-0.034 (0.51)	-0.046 (0.60)	-0.165* (1.71)	-0.092 (1.05)
Work illness	-0.080 (1.53)	-0.033 (0.57)	-0.047 (0.88)	0.040 (0.75)
Duration <1	0.043 (0.64)	-0.010 (0.13)	-0.029 (0.41)	-0.027 (0.42)
Duration <2	0.156** (2.20)	-0.113* (1.72)	0.108* (1.72)	0.045 (0.82)
Duration <3	0.083 (1.31)	0.012 (0.17)	0.047 (0.76)	0.022 (0.38)
Duration <5	0.060 (1.07)	-0.029 (0.53)	0.075 (1.39)	0.016 (0.34)
Duration <10	0.037 (0.79)	-0.035 (0.74)	0.030 (0.65)	-0.024 (0.60)
Kind	0.093 (1.19)	-0.060 (0.97)	-0.035 (0.86)	-0.025 (0.68)
Amount	0.015 (0.41)	-0.062* (1.66)	-0.029 (0.63)	-0.090** (2.33)
Mobility1	-0.143* (1.77)	-0.176** (2.27)	-0.107 (1.19)	-0.090 (1.28)
Mobility2	0.054 (1.08)	-0.128*** (2.62)	0.053 (0.99)	-0.099** (2.23)
Number health	-0.020 (1.46)	0.010 (0.78)	-0.011 (0.82)	0.012 (1.03)
Limbs	-0.008 (0.13)	0.021 (0.36)	-0.036 (0.62)	-0.001 (0.02)
Sight/hearing	0.059 (0.70)	-0.059 (0.60)	-0.018 (0.17)	-0.057 (0.46)
Chest/heart	-0.013 (0.23)	0.018 (0.32)	-0.054 (1.05)	-0.025 (0.66)
Mental health	-0.054	-0.110	-0.148	-0.153**

	(0.60)	(1.28)	(1.45)	(2.04)
White	0.030	-0.062	0.039	-0.114*
	(0.32)	(0.85)	(0.44)	(1.78)
Single	-0.041	0.044	0.015	0.052
	(0.58)	(0.73)	(0.21)	(1.01)
Married	0.053	-0.101**	0.045	-0.078**
	(0.95)	(2.29)	(0.81)	(2.02)
Degree	0.396***	0.179**	0.478***	0.250***
	(5.07)	(2.17)	(5.91)	(3.62)
Other high educ	0.284***	0.208**	0.267***	0.174***
	(3.42)	(2.55)	(3.26)	(2.67)
A level	0.145**	0.136*	0.153**	0.085
	(2.46)	(1.88)	(2.47)	(1.46)
O level	0.119*	-0.001	0.210***	0.058
	(1.79)	(0.02)	(3.18)	(1.18)
Other educ	0.074	-0.026	0.113*	0.028
	(1.14)	(0.42)	(1.69)	(0.53)
Professional occupations	-0.047	0.185*	-0.059	0.190**
	(0.65)	(1.90)	(0.92)	(2.51)
Associate professional and technical	-0.147**	-0.146*	-0.189***	-0.137**
	(2.20)	(1.74)	(2.96)	(2.04)
Administrative and secretarial	-0.365***	-0.284***	-0.399***	-0.298***
	(4.76)	(3.57)	(5.38)	(4.73)
Skilled trades occupations	-0.331***	-0.483***	-0.356***	-0.492***
	(5.14)	(3.51)	(5.58)	(4.50)
Personal service occupations	-0.494***	-0.477***	-0.405***	-0.419***
	(4.29)	(5.51)	(3.85)	(5.92)
Sales and customer service occupation	-0.424***	-0.390***	-0.428***	-0.397***
	(4.47)	(4.08)	(4.45)	(5.49)
Process, plant and machine operatives	-0.462***	-0.501***	-0.504***	-0.546***
	(7.00)	(4.25)	(7.86)	(5.64)
Elementary occupations	-0.588***	-0.544***	-0.570***	-0.535***
	(8.79)	(6.14)	(8.59)	(7.45)
Agriculture & fishing dummy	-0.053	0.265	-0.067	0.197
	(0.33)	(1.09)	(0.43)	(1.18)
Energy & water dummy	0.423***	0.401*	0.423***	0.722***
	(2.75)	(1.89)	(2.84)	(3.61)
Manufacturing dummy	0.251***	0.101	0.143	0.136
	(2.89)	(1.02)	(1.56)	(1.53)
Construction dummy	0.305***	0.398	0.290***	0.305*
	(2.98)	(1.38)	(2.78)	(1.83)
Distribution, hotels & restaurants dummy	0.124	-0.055	0.054	-0.046
	(1.39)	(0.66)	(0.58)	(0.59)
Transport & communication dummy	0.165*	0.002	0.176*	0.132
	(1.68)	(0.01)	(1.77)	(1.39)
Banking, finance & insurance dummy	0.274***	0.124	0.289***	0.166**
	(3.02)	(1.49)	(3.05)	(2.14)
Public admin, education & health dummy	0.188**	0.059	0.069	0.103
	(2.16)	(0.79)	(0.75)	(1.43)
Part-time	-0.066	-0.061	0.021	-0.055*
	(1.09)	(1.51)	(0.32)	(1.65)
Small firm	-0.098***	-0.106***	-0.153***	-0.131***
	(2.60)	(2.79)	(3.97)	(4.14)



Temporary	-0.110	-0.023	-0.015	0.003
	(1.34)	(0.31)	(0.18)	(0.05)
Social housing	-0.058	-0.011	-0.106	-0.128*
	(0.72)	(0.15)	(1.34)	(1.84)
Owned	-0.019	-0.021	-0.035	-0.083
	(0.24)	(0.26)	(0.47)	(1.18)
Mortgage	0.002	0.054	-0.003	-0.017
	(0.03)	(0.75)	(0.05)	(0.27)
Constant	1.513***	2.029***	1.457***	2.137***
	(6.69)	(9.57)	(6.31)	(11.31)
Observations	597	560	639	705
R-squared	0.57	0.54	0.57	0.56

For Peer Review

### 3. Exclusion of controls for the nature of employment.

#### OLS Earnings

	Male	Female
Sheltered	-0.156**	-0.106*
	(2.12)	(1.70)
Assistance	-0.031	0.115*
	(0.40)	(1.72)
Experience	0.029***	0.027***
	(6.67)	(6.43)
Experience Sq	-0.001***	-0.001***
	(7.17)	(6.00)
Tenure	0.002***	0.002***
	(5.27)	(4.47)
Tenure Sq	-0.000**	-0.000
	(2.13)	(1.23)
Birth	0.050	0.000
	(1.60)	(0.00)
Work acc	-0.100**	0.036
	(2.08)	(0.61)
Traffic acc	-0.075	0.062
	(1.13)	(1.01)
Household acc	-0.046	0.027
	(0.88)	(0.47)
Work illness	-0.016	-0.014
	(0.43)	(0.31)
Duration <1	0.052	-0.061
	(1.07)	(1.34)
Duration <2	0.093**	0.003
	(2.09)	(0.08)
Duration <3	0.038	-0.095**
	(0.89)	(2.21)
Duration <5	0.036	0.014
	(0.94)	(0.39)
Duration <10	0.004	0.000
	(0.11)	(0.01)
Kind	-0.058**	0.004
	(1.98)	(0.15)
Amount	-0.052	-0.089***
	(1.45)	(2.69)
Mobility1	-0.136	-0.116
	(1.55)	(1.60)
Mobility2	0.016	-0.115***
	(0.36)	(2.91)
Number health	-0.020*	0.004
	(1.66)	(0.42)
Limbs	-0.002	-0.034
	(0.05)	(0.91)
Sight/hearing	-0.054	-0.111*
	(0.92)	(1.68)
Chest/heart	-0.024	-0.027

	(0.58)	(0.83)
Mental health	-0.193***	-0.136**
	(2.72)	(2.19)
White	0.050	-0.002
	(0.81)	(0.04)
Single	-0.027	0.002
	(0.56)	(0.04)
Married	0.060	-0.074**
	(1.54)	(2.44)
Degree	0.702***	0.737***
	(14.94)	(16.14)
Other high educ	0.409***	0.479***
	(7.56)	(10.39)
A level	0.208***	0.246***
	(5.00)	(5.61)
O level	0.203***	0.157***
	(4.38)	(4.14)
Other educ	0.047	0.010
	(1.01)	(0.25)
Social housing	-0.231***	-0.109**
	(4.11)	(2.19)
Owned	-0.055	-0.041
	(1.04)	(0.81)
Mortgage	0.015	0.057
	(0.32)	(1.31)
Constant	1.385***	1.211***
	(9.93)	(9.58)
Observations	1553	1531
R-squared	0.41	0.39