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Incapacity Benefit: A Health or Labour Market Phenomenon?

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Abstract

The number of people claiming Incapacity Benefit has remained fairly constant in recent years at around 2.7 million (7% of the working age population), although the numbers have trebled since the 1970s when an earlier version of this benefit was available. In January 2006 the UK Government set the ambitious target of reducing the number of claimants by one million, or around 40% of the total, within the next decade. New initiatives will focus on increasing the number of people who remain in work and increasing the number leaving benefits and finding employment. This paper explores these two critical transitions using data from waves 5 to 13 of the British Household Panel Survey. We consider whether the moves onto and off benefit are driven by health status or whether labour market factors are also important. Our results show that while health, and in particular psychological health, is an important determinant of these transitions, other factors such as age, occupation and geographical location are also key explanatory factors. This suggests that a very broad range of policy measures will be required if the government is to meet its target.

Introduction

Around £13 billion is spent on sickness related benefits in the UK each year and the cost to industry is approximately £11 billion (Department of Health, 2004). In addition those individuals who claim sickness benefits are more likely to experience economic deprivation and the probability increases with the length of time on benefit (DWP, 2006). In January 2006 the UK government set the ambitious target of reducing the number of Incapacity Benefit (IB) claimants by one million within the next decade; this is around 40% of the current total number of claimants. New initiatives will focus on ‘increasing the number of people who remain in work when they fall sick or become disabled’ and ‘increasing the number leaving benefits and finding employment’ (DWP, 2006: 24). It is timely therefore to explore these two critical transitions, to investigate the determinants of moves onto and off benefit and to consider whether these moves are driven largely by labour market or health factors. We explore these transitions using nationally representative data from the British Household Panel Survey.

Firstly, drawing on Department for Work and Pensions (DWP) administrative data we will give some background to IB claims in the UK, and consider trends in these claims, the characteristics of claimants and the length of their claims. We then discuss the data and methodology used in exploring the two critical transition points. We find a range of individual characteristics to be related to both the move onto IB from work and the move off IB and into work. When health is carefully controlled for, there remains a clear role for labour market factors in both of these transitions, suggesting that a very broad range of policy measures will be required if the government is to have any hope of meeting its target.

I. Background to IB claims and claimants

Incapacity Benefit (IB) was introduced in 1995 to replace Invalidity Benefit as the main state benefit for people who are assessed as being incapable of work. People gain entitlement to incapacity benefit if they have National Insurance contributions on their earnings and they satisfy the relevant medical criteria of incapacity¹. For those employed, Statutory Sick Pay (SSP) paid by the employer, should cover the first 28 weeks of any incapacity. If the incapacity remains IB will take the place of SSP. IB is paid to people above pension age for up to one year, providing the incapacity began before pension age.

IB caseloads have hovered around two and a half million since 2000. In November 2005 the total IB caseload was composed of 1,306 thousand long term claimants (over 52 weeks of incapacity), 973 thousand IB credits only cases², 93 thousand short term lower rate cases (for the first 28 weeks of a claim) and 94 thousand short term higher rate cases (29 to 52 weeks of incapacity).

DWP data for November 2005 reveal IB claimants to be predominantly male (60%, although this has fallen from 68% in 1995), and relatively old (47% of claimants are aged 50 or more). The most common health complaint is mental and behavioural disorders (39%), followed by diseases of the musculoskeletal system and connective tissue (20%)³, and diseases of the circulatory or respiratory system (9%). Duration of claims is generally long term; in November 2005, 49% of the caseload had been claiming for over 5 years and a further 24% had been claiming for over 2 years⁴.

Berthoud (2004) calculated exit rates using the DWP 5% sample administrative data, for December 1999 to November 2002 and found that long term claimants have low prospects of

¹ This is assessed through the Personal Capability Assessment which measures the claimant's ability to perform a range of every-day activities.

² Claimants who are assessed as being incapable of work but who do not meet the contribution conditions therefore do not receive any IB payment but their National Insurance account is credited for the duration of the claim.

³ Stress has recently overtaken lower back pain as the major cause of long-term absence from work (Jones et al 2003).

⁴ These figures include credit only cases.

ever leaving IB. His estimates of exit rates⁵ were 12% at the end of month one, falling to 9% at the end of month two, and down to 2% at the end of month twelve and only 1% at the end of month 30. Berthoud (2004) also found that the probability of leaving IB declined with age and duration of claim and significantly varied by region and rate and type of benefit.

A 2003 destinations survey (Bowling *et al.*, 2004) found that 49% of those who left IB moved into work of 16 hours or more, of which 31% was self-employed. Of those who left IB to work full time, 84% were still working 4-5 months later at the time of the study interview. The duration of claim was negatively related to the move back to full time work, with just over half of claimants leaving within 3 months moving into work, but only a third of those whose claim lasted more than 12 months. An earlier survey (Dorsett *et al.*, 1997) found a slightly lower percentage of IB leavers returning to work (38% after 5 to 10 months). This survey revealed those returning to work to be younger, have more qualifications, improved self-assessed health, had less time out of paid employment, and a shorter time on IB than IB leavers who did not return to work.

Regional imbalances in IB claims and the influence of labour market factors in the probability of leaving IB have led some to consider IB as disguised unemployment. Despite illness many claimants may be able to work if suitable work was available and ‘in a fully-employed economy they could reasonably be expected to have been in work’ (Beatty and Fothergill, 2002: 814). However, regional and sector imbalances in IB do not necessarily point to labour market influences if health levels vary geographically and between occupation types. Since it is reasonable to expect that manufacturing and industrial jobs may be associated with poorer health, health must be adequately controlled for in order to isolate the effect of labour market factors on the move onto and off IB.

⁵ A claimant was classified as leaving IB if they left and did not re-enter within 52 weeks.

II. Data and analysis samples

This study uses data from waves 5 to 13 of the British Household Panel Survey (BHPS) collected over the period 1995-2003⁶. Since 1991 the BHPS has annually interviewed a representative sample of the UK population. A ‘following on’ rule, in which all original sample members (all adults and children interviewed in the first wave) are followed into new households, is used to maintain representativeness of the non-immigrant population.

The sample here is limited to full respondents (not proxy) of working age, defined as women aged 18 to 59 and men aged 18 to 64. This gives a sample of $i = 25,795$ individuals ($n = 89,097$ observations).

During the 9 years of data there are 4,524 cases where IB is mentioned as a source of income, which is about 5% of the total observations in the sample⁷. The 4,524 claims are from 1,808 individuals, with about 9% of the total number of individuals saying they have ever claimed IB during the study period. We limit analysis here to those who received IB income for at least six consecutive months (4,029 cases), which we identify as long term claimants⁸. We deal only with long-term IB claims and our model does not deal with the duration dependence of IB claims (found by Berthoud 2004) since our data is inadequate for this type of analysis. The long-term claimant group is critical from a policy perspective, and this restriction means we will not be picking up those who make short IB claims due to lack of eligibility for SSP.

Taking advantage of the panel nature of the dataset we model two transitions. Firstly, we take all individuals ($i = 12,456$, $n = 50,262$) who were working (employed, self-employed or on maternity

⁶ See Taylor (2003). Further details on the BHPS can be found at <http://www.iser.essex.ac.uk/bhps/doc>

⁷ The specific BHPS question is code F125: have you yourself or jointly with others since (last interview date) received income from incapacity benefit.

⁸ While DWP administrative data classifies those claiming for over twelve months as long term, DWP surveys such as Bowling et al (2004) consider durations of 4-5 months as being substantively different to a short-term claim, hence our choice of a six month cut-off. Length of time of claim was identified within the BHPS data through monthly income receipts.

leave⁹) in year t and for whom we know the IB status the following year. We consider the characteristics of those individuals who make a long term IB claim the following year ($t+1$) ($i=142$, $n=143$)¹⁰ compared with those who make no claim (or a short term claim) ($i=12,415$, $n=50,119$)¹¹. In order to pick up those who leave work but claim contractual sickness benefit we also treat those who make a long term IB claim in period $t+2$, following a period of sick leave in period $t+1$ ($n=76$, $i=76$) as future long term IB claimers. Those leaving work to become long term IB claimers are 0.44% of the sample of workers.

Secondly, we consider 3,653 observations ($i=1,352$) of long term IB claimers¹² of which 60 ($i=59$) were working and had brought their claim to an end by the time of the interview. We explore the differences between those who remain on IB at the end of the year and those who have left IB and returned to work (only 1.64% of cases).

IV. Econometric Method

Formally the propensity to leave work and become a long term IB claimant (IB^*) can be modelled as:

$$IB_{it}^* = \alpha + \beta X'_{it} + u_{it}$$

IB^* is the latent variable and we observe

$$IB_{it} = 1 \text{ if } IB_{it}^* > 0 \quad \text{and} \quad IB_{it} = 0 \quad \text{otherwise.}$$

⁹ Excluding those in the armed forces and those who are still taking educational qualifications.

¹⁰ One respondent left work and became an IB claimant twice.

¹¹ While the number of cases sum to the total the number of individuals do not as individuals can appear in both groups.

¹² Excluding those still taking educational qualifications.

The parameters are estimated by maximising the likelihood of

$$P(IB_{it} = 1 | \alpha\beta X'_{it}) = G(\alpha + \beta X'_{it}) = \frac{\exp(\beta X'_{it})}{1 + \exp(\beta X'_{it})}$$

Where $G(\cdot)$ is the logit function and models the probability of IB being 1 for given a individual in a given time period. The second transition is modelled in the same manner, where the dependent variable is the propensity to leave long term IB and return to work. The fact that our dependent variable represents the transition between states also helps to reduce the problem of reverse causation from IB status to various components of X .

The set of explanatory variables considered (X) are health (see below), age, number of children in the household, region of residence, personal and household income (for the transition from work to IB), housing tenure (as a proxy for socio-economic status for the transition from IB to work), highest education qualification, occupation of a respondent's most recent employment, and subjective job assessment. A time dummy is also included.

Health status is carefully controlled for in these models, through relatively objective, health care utilization measures (GP visits during the last year and whether the respondent has spent time in hospital during the last year), and various subjective measures including a physical limitations measure (whether the respondent has problems walking), the presence of physical or mental conditions (10 specific physical health conditions and 2 mental health conditions), a self-rated health question on a scale of 1 to 4 (poor or very poor, fair, good, excellent), a clinically recognized measure of the respondents risk of having a psychiatric disorder (GHQ12), and whether the individual has had an accident within the last year which affected their health. Furthermore, to control for the possibility that some individuals may be more at risk of accidents in the future, whether they had an accident in year $t+1$ was also included in the move from work to IB.

Full details of the variables used can be found in the Appendix. Estimations are carried out in STATA v8 using pooled logistic regression, separately for males and females¹³. The cluster option is used to adjust standard errors for repeated observations on individuals.

V. Findings

The extent of IB claims and the characteristics of IB claimants in the BHPS data fairly closely mirror the DWP data. As Table 1 illustrates, claimers are disproportionately old, male, and lacking in qualifications. Fewer claimers live in the south, they generally have poor health, and they are considerably less satisfied with their lives.

TABLE 1 HERE

The health gap between IB claimers and non-claimers is substantial, with nearly half of all current claimers reporting poor or very poor health compared with only 6% of non-claimers. Psychological health, as measured by the GHQ12 score (Goldberg, 1997), is also particularly low within IB claimers. The GHQ12 score sums the number of responses to 12 questions in which a psychological problem is expressed, and therefore ranges from 0 to 12. 47% of IB claimers have a GHQ score of 4 or more, which is a cut off point used clinically as an indication for the presence of psychiatric disorder.

In wave 9 data is available for a detailed generic health measure the SF-36 (Ware et al, 1993). This can provide a summary score for physical functioning and for mental health, in both cases IB claimants have a significantly lower score than non-claimants. A population sample for the UK

¹³ Allowing for individual heterogeneity by using random effects models makes little difference to the results and a Lagrange multiplier test for random effects suggest that these are not significant.

found a mean mental health score of 71.92 and a physical score of 87.99 (Jenkinson *et al.*, 1999) suggesting that BHPS data is representative of the UK population in this respect.

The results from the logistic regression exploring the transition from employment into IB are shown in Table 2; there are 219 transitions in total, 101 for men and 118 for women. The odds ratios represent the chance of moving into long term IB for an individual with the characteristic compared with an individual from the reference category.

TABLE 2 HERE

As expected health is strongly influential in the move onto long-term IB and the results are similar for men and women. Men rating their own health as less than good and women who rate their health as poor or very poor are more likely to move from work onto IB. For both women and men the number of GP visits is also positively associated with the move to IB¹⁴. For women the presence of specific mental and/or physical health problems is also important and for men poor psychological health, indicated by a GHQ score of 4 or more, is significant.

Figure 1 shows that health deterioration, as measured by GHQ Caseness score and self-rated health (mean of the 1 to 4 scale), has already begun three years prior to the claim, and shows only slight improvement in the second and third year of the claim.

FIGURE 1 HERE

Non health factors are also significant in the transition onto IB suggesting that this is not purely a health phenomenon. The odds of becoming a long term IB claimant increase for men and women over the age of 30, and particularly if they are over 50 (especially for men). Having more children (under 12 years old) in the household reduces the chances of entering IB for women but not men. This seems somewhat surprising, given the pressures which young children are likely to

¹⁴ While all respondents are still working at this point, the significance of GP visits may be picking up the beginnings of the process of making an IB claim.

place on parents, particularly mothers. However, it may reflect the increased financial needs of mothers with large families.

Low wages in the previous year and low household income (excluding own labour income) both increase the chances of entering IB for men but not women. Men from unskilled or skilled manual jobs and skilled non-manual jobs are more likely to enter IB than those with professional managerial or technical jobs but these occupational categories do not appear to be significant for women. High job satisfaction (with the work itself) significantly reduces the chances of entering IB for women, and living in the north increases chances of entering IB for women.

The time dummy suggests that for men, controlling for individual characteristics and health status, the odds of making an IB claim are lower post 2000 than pre 2000.

Table 3 shows the results from the logistic regression exploring the reverse transition from IB into work; there are 60 such transitions in total, 26 for men and 34 for women. Fewer variables are significant in this model.

TABLE 3 HERE

For both men and women having problems walking and having a psychological health problem (GHQ>4) both substantially decrease the chances of leaving IB.

Living in the north, having no qualifications and having more children at home all reduce the chances of leaving IB for women, while being over 50 and being a council house tenant reduces the chances of leaving for men.

VI. Discussion

Our results show that health status is important in determining transitions both onto IB and off IB into work. However, other factors such as age, occupation and geographical location are also key determinants. In order to make the claim that these labour market factors are influencing IB transitions, we need to be confident that health is fully controlled for. Our results would be difficult to interpret if unobserved differences in health were systematically related to the other characteristics. For example, if the use of self-reported health scales was related to age, with reported 'fair' health for a 50 year old representing a lower absolute health level than reported fair health for a 25 year old, this may lead to a significant coefficient on age in the model of transition onto IB which arises from different use of the health scale rather than an absolute age effect.

It is hard to conceive that all the health variables could be subject to this problem, and while it may be true of self-assessed health it is unlikely to be an issue for the more objective measures. Hence our results do suggest that, even when health is controlled for, older men and women are at greater risk of moving onto IB from work and remaining on IB. This is suggestive of barriers to work for older age groups, which may come either from employers or from individuals whose incentives to return to employment or remain in employment weaken as they perceive themselves closer to retirement. The significance of occupation and geographical location, even after health is controlled for, lends support to the argument that IB represents hidden unemployment, as a lack of job opportunities in particular industries or regions increases the incentive to make an IB claim and this is likely to be exacerbated by the age effect as older workers are less likely to seek, or be offered, retraining or any opportunity for career change.

Conventional economics models would predict that the propensity of claiming IB is related to the net cost of being an IB claimant. A higher opportunity cost, in terms of forgone wages, should reduce the chances of making and continuing an IB claim. The higher chances of males in the lowest income quintile making an IB claim would support this. Similarly, women who are dissatisfied with their job, have greater psychic cost of continuing employment. However, this is not simply about satisfaction with pay, since that was found not to be significant.

One problem with modelling the move onto IB is ensuring that our results are not biased by those who have access to contractual sickness benefits and thus have no need to make an IB claim for the period of their sick pay entitlement¹⁵. In certain professional and managerial jobs this entitlement period can be up to 6 months or potentially longer. By only looking at claims which are at least six months, and also considering those who leave employment and make an IB claim after a period of sick leave we hope to address this concern. However, we cannot be certain that we are not picking up contractual differences, with those who have poorer contractual benefits being more likely to move onto IB. Contractual differences should not be related to age, the number of children in the household, living in the north or health status. However, being in the lowest income quintile and job satisfaction may be related to contractual benefits.

Clear differences between males and females shows the importance of analysing labour market decisions separately. In both transitions the number of children enters significantly for women but not men. Once on IB having more children reduces the likelihood of leaving IB and returning to work, however, more children also reduces the likelihood of initially moving onto IB. Women who have more children may have less continuous participation in the labour market and thus may not have made the NI contributions necessary to claim IB. Hence the impact of children on the propensity to start and end IB claims appears complex, with increased responsibility and increased demands upon time both playing a role.

For both transitions the numbers moving into long term IB from employment and off long term IB into employment are very small. Of those entering long term IB in the full sample only 21% were currently working (self-employed, employed or on maternity leave), 10% were retired, 45% classed themselves as long term sick, and 12% were unemployed. Similarly, those moving from long term IB into employment are a very small percentage of total IB claimers. The small numbers of positive cases are not ideal; however they do reflect the reality of transition numbers and both models still produce some significant and interesting findings.

¹⁵ Information on contractual sickness benefit is not available in the BHPS.

VII. Conclusion

Getting people off IB and back into work, or keeping them in work in the first place, has benefits over and above fiscal advantages and improvement in the individual's financial position. Studies show that employment contributes to well-being beyond its affect on the income level of the individual concerned (see Frey and Stutzer Ch 5 for a review).

Our results suggest that IB is both a health and a labour market phenomenon therefore reducing the numbers of claimants by helping people to remain in work and helping those on benefit get back into work will require a very broad range of policy initiatives. The New Deal for Welfare (DWP 2006) seems to recognise this fact suggesting a number of areas for reform including: improvements to workplace health, reform of the gateway to benefits, increased support for claimants and the removal of perverse incentives whereby claimants receive more money the longer they remain on IB. Given the extremely low proportion of individuals who return to work from long-term IB claims, the government's greatest chance of success must be through preventing the transition onto IB in the first place.

Our results suggest that while the 'new deal' reforms may be useful, they are not sufficient on their own. Much broader reform, such as changes to childcare availability and a shift in attitudes to older workers will also be necessary in order to significantly reduce the number of people who make the transition from work to IB. It is also important to understand how health interacts with other labour market factors and personal characteristics. In particular the age effect should be recognised and it is disappointing that the 'New Deal' fails to make the link between older workers and those with health problems. Of course, given that almost half of current IB claimants are aged 50 years and older, in 10 years time many will have reached statutory

retirement age and therefore will no longer be eligible for IB. This suggests that the governments target for reducing the number of claimants may not be as ambitious as it first appears.

The psychological health levels of IB claimers are of particular concern; almost half have GHQ scores of 4 or more suggesting the presence of a psychiatric disorder. In addition, this study has demonstrated the role of poor levels of mental health in moving onto IB and remaining on benefit. Henderson et al (2005) argue that the psychological health problems of those who are absent from work in the long-term are largely common disorders such as depression and anxiety. These are managed almost entirely in the primary care sector and, while effective treatments do exist, access to them is limited and waiting times tend to be long. This is a problem because, apart from the individual suffering, the longer an individual is absent from work the less likely they are to return. In addition, there is little or no communication between the primary care provider and the employer (or potential employer) so an integrated approach to the return to work is virtually impossible to manage within the current system. This is exacerbated by the fact that the UK has very poor provision of occupational health professionals - about 12 for every 43000 employees (CBI, 2004).

The Pathways to Work initiatives (DWP, 2002) announced in 2002 (and currently being piloted) would seem to tackle some of the shortcomings in the current system but without a significant change in employer attitudes to psychiatric health problems it seems unlikely that any substantial change will occur. Employers cannot cope with the uncertainty in attendance and productivity that may arise from workers with mental health problems, and in order for them to bear these costs the right incentives must exist. The benefits of keeping people with mental health problems in work will accrue to society and to the individuals involved but they will be less obvious to employers and hence employers must be persuaded that the long-term benefits (perhaps via an increased pool of labour) outweigh the costs or they must be compensated to encourage a change in behaviours. There is nothing in the 'new deal' that suggests these policy options are being considered.

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References

- Beatty, C. and Fothergill, S. (2002) Hidden Unemployment Among Men: A Case Study. *Regional Studies*, 36 (8), 811–823
- Berthoud, R. (2004) The profile of exits from incapacity-related benefits over time, Department for Work and Pensions Working Paper No. 14.
- Bowling J., Coleman N., Wapshott J., Carpenter H. (2004) Destinations of Benefit Leavers, Department of Work and Pensions, Research Report No. 132
- Confederation of British Industry Room for improvement: absence and labour turnover. In association with AXA. London: CBI, 2004.
- Department of Health (2004). Choosing health: making healthier choices easier. London: DH.
- Department of Work and Pensions (2002) Pathways to work: Helping people into employment, Cm 5690, November
- Department of Work and Pensions (2006) A New Deal for Welfare: Empowering People to Work, Cm 6730, January
- Dorsett, R., Finlayson, L., Rord, R., Marsh, A., White, M. and Zarb, G. (1998) Leaving Incapacity Benefit, Department of Work and Pensions, Research Report No. 86
- Frey, B.S. & Stutzer, A. (2001) *Happiness and Economics*, University Presses of California, Columbia and Princeton
- Goldberg, D.P., Gater, R., Sartorius, N., Ustun, T.B., Piccinelli, M., Gureje, O., *et al.*, (1997) The validity of two versions of the GHQ in the WHO study of mental illness in general health care, *Psychological Medicine*, 27, 191-197
- Jenkinson, C., Stewart-Brown, S., Petersen, S., Paice, C. (1999) Assessment of the SF-36 version 2 in the United Kingdom, *Journal of Epidemiology and Community Health*, 53, 46–50
- Jones, J., Huxtable, C., Hodgson, J., Price, M. Self-reported work-related illness in 2001/2. London: HSE 2003.

McClements, L. D. (1977) Equivalence scales for children, *Journal of Public Economics* 8(2), 191-210

Taylor, M. F. (ed) with Brice, J., Buck, N. and Prentice-Lane, E. (2003) *British Household Panel Survey User Manual Volumes A and B*. Colchester: University of Essex

Ware, J. E., Snow, K. K., Kosinski, M., Gandek, B. (1993) *SF-36 Health Survey manual and interpretation guide*. Boston: The Health Institute, New England Medical Centre, Boston, MA.

TABLE 1: Characteristics of current IB claimers

Characteristic	Claiming IB (any duration) at time of interview (n=4067)	Not currently claiming IB at time of interview (n=85,018)
Mean age [s.d.]	49.12 [10.47]	38.24 [12.07]
% male	57.34	47.66
% with no qualifications	42.55	15.36
% live in the south	17.48(n=4,045)	38.01 (n=84,377)
% Self rated health poor or very poor	47.75 (n=4,063)	6.32 (n=84,993)
% mentioning a problem with depression	37.10 (n=4,062)	6.75 (n=84,990)
Mean GHQ Caseness	4.31 (4.12) (n=3,945)	1.85 [2.93] (n=83,186)
% with GHQ Caseness ≥ 4	47.20 (n=3,945)	19.70 (83,186)
Mean life satisfaction (1-7 scale) [s.d.]	3.88 [2.65] (n=3,166)	4.91 [2.27] (n=65,671)
Mean SF-36 Mental health score [s.d.]	61.33 [23.89] (n=559)	79.15 [17.47] (n=10766)
Mean SF-36 Physical health score [s.d.]	53.03 [30.59] (n=559)	93.06 [15.86] (n=10766)

TABLE 2: Logistic regression on the transition from work to IB

Covariate	Males			Females		
	N	Odds ratio	P> z	N	Odds ratio	P> z
<i>Age</i>						
Under 30 *	6,163			5,929		
30 to 50	13,951	2.594	0.018	13,914	2.719	0.007
Over 50	5,135	5.912	0.000	3,795	3.065	0.006
<i>Children: number 0-11 in the household</i>	25,946	0.958	0.805	24,352	0.358	0.001
<i>Occupation</i>						
Missing, manual, unskilled or part skilled	4,384	4.157	0.007	4,825	1.829	0.136
Skilled manual	7,871	2.614	0.052	2,071	2.323	0.067
Skilled non-manual	3,180	3.295	0.027	8,631	1.015	0.970
Professional, managerial or technical *	10,511			8,825		
<i>Location: living in the north</i>	15,091	1.450	0.143	14,468	1.948	0.004
<i>Qualifications</i>						
None	3,203	1.047	0.936	2,936	1.434	0.474
Commercial	1,990	1.367	0.602	2,029	1.569	0.366
O level	4,707	0.889	0.840	5,525	1.105	0.828
A level	3,610	1.067	0.910	3,158	0.792	0.667
Higher education	7,393	0.944	0.914	5,204	0.687	0.426
Degree *	4,718			5,250		
<i>Health</i>						
Problems walking	299	2.005	0.079	416	2.721	0.002
Accident this year	3,552	1.238	0.488	2,020	1.264	0.408
Accident next year	3,355	1.084	0.813	1,975	0.848	0.627
Inpatient stay	1,295	1.124	0.721	1,566	1.489	0.155
GP visits	25,935	1.824	0.000	24,333	1.569	0.000
Physical health problem	11,470	1.241	0.474	12,626	1.863	0.035
Mental health problem	768	1.553	0.252	1,682	1.830	0.018
Self-rated health poor or very poor	841	3.607	0.026	1,142	5.013	0.020
Self-rated health fair	3,900	2.811	0.033	4,043	2.766	0.105
Self-rated health good	13,637	1.930	0.159	13,132	2.103	0.185
Self-rated health excellent *	7,567			6,031		
GHQ12 score of 4 or more	3,576	2.1741	0.002	5,151	1.445	0.108
<i>Personal labour income quintile</i>						
First (Lowest)	2,326	2.597	0.081	7,263	0.879	0.819
Second	3,529	2.448	0.047	6,186	1.050	0.925
Third	5,330	1.223	0.652	4,449	0.701	0.513
Fourth	6,544	0.690	0.387	3,361	0.781	0.607
Fifth (Highest) *	7,610			2,478		
<i>Remaining household income, equivalised</i>						
First (Lowest)	7,876	4.782	0.044	3,537	1.252	0.499
Second	5,511	4.184	0.067	3,340	1.208	0.578
Third	4,555	3.349	0.130	4,614	1.206	0.560
Fourth	4,109	2.654	0.245	5,831	1.098	0.769
Fifth (Highest) *	3,288			6,415		

TABLE 2 (continued): Logistic regression on the transition from work to IB

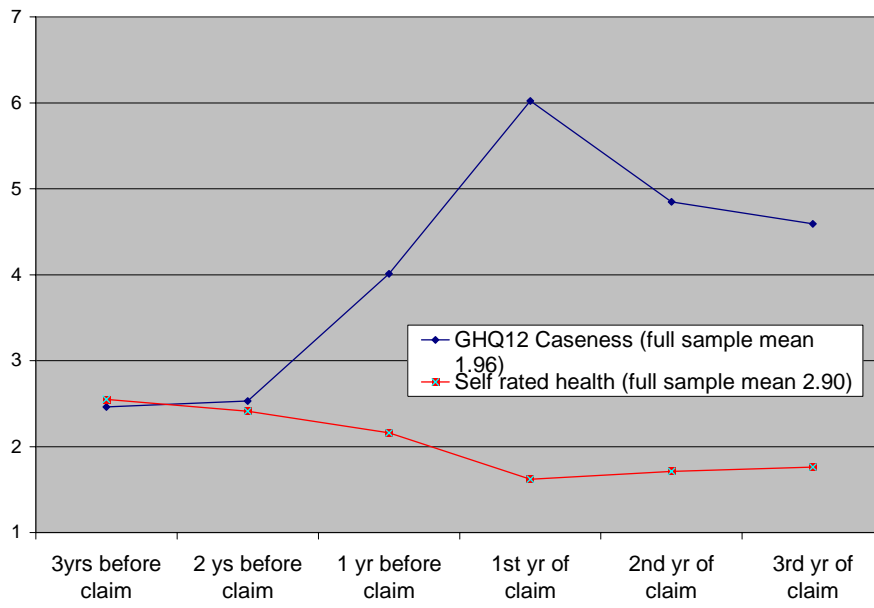
Covariate	Males			Females		
	N	Odds ratio	P> z	N	Odds ratio	P> z
<i>Time: Year 2000 or later</i>	11,877	0.457	0.003	11,189	0.796	0.281
<i>Job satisfaction</i>						
With pay	21,621	0.984	0.821	22,504	0.972	0.676
With security	21,541	0.988	0.879	22,386	0.938	0.388
With the work itself	21,628	1.140	0.164	22,519	0.828	0.003
With the hours	21,634	1.003	0.968	22,512	1.009	0.903
Number of observations	20219			21054		
Wald Chi2(36)	435.51			383.34		
Prob > chi2	0.0000			0.0000		
Log pseudo-likelihood	-385.02053			-507.17036		
Pseudo R2	0.2303			0.2206		
Standard errors adjusted for clustering at the individual level						

TABLE 3: Logistic regression on the transition off IB and into work

Covariate	Males			Females		
	N	Odds ratio	P> z	N	Odds ratio	P> z
<i>Age</i>						
Under 30 *	714			80		
30 to 50	1,247	1.108	0.877	721	2.100	0.547
Over 50	88	0.080	0.003	756	0.408	0.500
Children: number 0-11 in the household	2070	1.326	0.250	1,577	0.242	0.012
<i>Occupation</i>						
Missing, manual, unskilled or part skilled	942	0.974	0.972	751	0.566	0.399
Skilled manual	698	0.956	0.948	219	0.594	0.565
Skilled non-manual	130	0.541	0.560	391	1.270	0.703
Professional, managerial or technical *	300			216		
Location: living in the north	1,663	0.558	0.202	1,353	0.174	0.006
<i>Qualifications</i>						
None	881	0.787	0.845	675	0.069	0.031
Commercial	232	1.507	0.751	180	0.776	0.771
O level	325	0.965	0.973	268	0.266	0.082
A level	231	1.186	0.891	107	0.763	0.787
Higher education (not degree)	300	2.919	0.354	169	1.160	0.839
Degree *	91			174		
<i>Health</i>						
Problems walking	987	0.148	0.010	708	0.093	0.019
Accident this year	254	1.193	0.707	198	0.879	0.868
Inpatient hospital stay	505	2.291	0.062	335	0.839	0.768
GP visits	2,069	1.230	0.244	1,577	0.950	0.804
Physical health problem	1,929	0.819	0.714	1,445	2.077	0.515
Mental health problem	669	0.254	0.033	746	0.576	0.326
Self-rated health poor or very poor	968	0.329	0.218	755	2.648	0.373
Self-rated health fair	783	0.407	0.281	558	3.305	0.200
Self-rated health good	278	1.312	0.748	230	1.153	0.890
Self-rated health excellent *	40			33		
GHQ12 score of 4 or more	868	0.420	0.071	748	0.260	0.021
<i>socioeconomic status</i>						
Tenure, own house outright	516	0.500	0.277	337	0.322	0.116
Tenure, rent from council	838	0.369	0.035	582	0.834	0.802
Time: Year 2000 or later	1,203	1.152	0.718	1,050	1.118	0.813
Number of obs						
			1983	1511		
Wald chi2(25)						
			103.40	90.40		
Prob > chi2						
			0.0000	0.0000		
Log pseudo-likelihood						
			-116.26837	-82.597024		
Pseudo R2						
			0.3238	0.3064		
Standard errors adjusted for clustering at the individual level (pid)						

FIGURE 1

Health status (self-reported and GHQ) 3 years before, during and 2 years after an IB claim.



Appendix

Description of variables used

<i>Variable</i>	<i>Description</i>
<i>Dependent variables</i>	
Stopped IB and currently working	1 if during the last year the respondent has made an IB claim which lasted at least 6 months, but they are no longer claiming and at the time of the interview and they classify themselves as employed, self-employed or on maternity leave. 0 if respondent is has made a long term IB claim during the last year and is continuing to claim.
Will make an IB claim	1 if respondent is currently working (employed, self-employed or maternity benefit) and not making an IB claim but will make an IB claim, of at least 6 months, in the following period or if the respondent is currently working and not making an IB claim but will report themselves as long term sick the following period and make a long term IB claim in the subsequent period. 0 if respondent is currently working and not making an IB claim, and will either not make an long term IB claim the following period or a long term claim the subsequent period after a period of sick leave.
<i>Demographics</i>	
Age30-50 (reference)	1 if age (at September of year of interview) is ≥ 30 and ≤ 50 , 0 otherwise
Over50	1 if age (at September of year of interview) > 50 , 0 otherwise
Number 0-11 yr olds	Number of children, aged 0 to 11, in household
<i>Labour market/SES</i>	
Occupation missing, never had a job, unskilled or part skilled	1 if social class of most recent job is unskilled, part-skilled or occupation missing or never had a job
Skilled manual	1 if most recent job classed as skilled manual
Skilled non-manual	1 if most recent job classed as skilled non-manual
Professional, Managerial/technical	1 if most recent job classed as professional managerial or technical
North	1 if does not live in London, the rest of the South and East Midlands and Anglia
No qualifications	1 if highest education qualifications is none
Commercial	1 if commercial qualifications, CSE (2-5), apprentice or other
O level	1 if O level or equivalent
A level	1 if A level or equivalent
Degree	1 if highest education qualification first degree, higher degree, teaching or nursing qualification
Tenure status owned	1 if owns house outright
Tenure status council	1 if rents house from council or housing association
<i>Health variables</i>	
Inpatient stay	1 if stayed in hospital last year, other than for child birth
GP visits	Self reported number of visits to the GP in the last year (1=no visits, 2=1 or 2 visits, 3=3 to 5 visits, 4=6 to 10 visits, 5 = >10 visits)
Physical health problem	1 if identifies a physical health problem (from a given list of problems). Mentions at least one from the list of 1. Problems or disability connected with: arms, legs, hands, feet, back, or neck (including arthritis and rheumatism)

	<p>2. Problems or disability connected with: arms, legs, hands, feet, back, or neck (including arthritis and rheumatism)</p> <p>3. Difficulty in hearing</p> <p>4. Skin conditions/allergies</p> <p>5. Chest/breathing problems, asthma, bronchitis</p> <p>6. Heart/blood pressure or blood circulation problems</p> <p>7. Stomach/liver/kidneys</p> <p>8. Diabetes</p> <p>9. Epilepsy</p> <p>10. Migraine or frequent headaches</p> <p>11. Other health problems</p>
Mental health problem	<p>1 if mentions having a problem with anxiety or depression, or abuse of drugs or alcohol.</p> <p>1. Anxiety, depression or bad nerves</p> <p>2. Alcohol or drug related problems</p>
Problems walking	<p>1 if reports not being able to walk 10 minutes or ½ mile. All waves except 9: “which of these activities, if any, you would normally find difficult to manage on your own? Walking for at least 10 minutes. Wave 9: “Does your health limit you in these activities? If so, how much? Walking half a mile (Yes limited a lot or Yes limited a lot)</p>
Accident	<p>Had an accident in the last year which affected health</p>
Self-rated health dummies	<p>In wave 9 respondents were asked : “In general would you say your health is...excellent, very good, good, fair, poor.” In all other waves they were asked: “Compared to people of your own age, would you say that your health has on the whole been...excellent, good, fair, poor, very poor.” To make the subjective health variable compatible between the waves it was recoded into a 1-4 variable (excellent, very good/good, fair and poor/very poor), as done by Hernandex-Quevedo et al., (2004).</p>
Health very good or good	<p>1 if self rated health status very good or good</p>
Health fair	<p>1 if self-rated health status fair</p>
Health poor or very poor	<p>1 if self-rated health status poor or very poor</p>
GHQ 4 or more	<p>1 if GHQ12 Caseness four or more</p>

Income

Personal labour income quintile	<p>Dummies for own labour income quintile (last year) only including those in work (employed, self employed at maternity leave), ranked for each wave separately</p>
Remaining household income, equivalised	<p>Dummies for household income quintile, other than own labour income, equivalised (using McClements, 1977)</p>

Job satisfaction

Job pay satisfaction	<p>Satisfaction with pay (1-7 scale, treated cardinally)</p> <p>“which best describes how satisfied or dissatisfied you are with that particular aspect of your own present job. The total pay, including any overtime or bonuses”</p>
Job security satisfaction	<p>Satisfaction with security (1-7 scale, treated cardinally)</p> <p>“which number best describes how satisfied or dissatisfied you are with that particular aspect of your own present job. Your job security”</p>

Job itself satisfaction	Satisfaction with the job itself (1-7 scale, treated cardinally) “which number best describes how satisfied or dissatisfied you are with that particular aspect of your own present job. The actual work itself”
Hours worked satisfaction	Satisfaction with hours worked (1-7 scale, treated cardinally) “which number best describes how satisfied or dissatisfied you are with that particular aspect of your own present job. The hours you work
2000 plus	Year is 2000 or after
