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EXPLAINING SPATIAL PATTERNS OF INCAPACITY BENEFIT CLAIMANT ROLLS

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Biographical Note

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Abstract

The UK is one of the countries with high share of population claiming health-related out of work benefits. Its share of claimants is reaching 6% of the working age population (Beatty and Fothergill, 2015). Share of working population on incapacity benefits exhibits a distinct spatial pattern with significantly lower share in the South East and pockets of higher claims in former mining areas. The persistence and the spatial disparity of incapacity benefit claims has been linked to the pattern of structural changes in the UK economy, deindustrialization, decline in manufacturing. Regional and local job opportunities influence the decision to apply for incapacity benefits. While the unemployment rates and incapacity claimant rates are potentially endogenously determined, household income represents the employment opportunities and can therefore account for the variation in the disability claims rates across localities. The aim of the study is to explain the incapacity benefit claims at the level of UK local authorities using the following variables: average household income for the locality, industry sector employment shares, educational qualifications, age profile, share of self-employed. Spatial econometrics model is used because local authority claiming rates exhibit spatial dependence. The analysis uses income data produced by Horizon 2020 IMAJINE project. The findings of this study are important for understanding the impact of welfare reform on incapacity benefit uptake.

Keywords: regional inequality, incapacity benefits, spatial analysis
JEL Classification: R12, I38

1. Introduction

The literature on incapacity benefits in the UK has drawn attention to the spatial pattern of incapacity benefit uptake, officially termed incapacity benefit claimant rolls. It has been noted in a series of papers by Steve Fothergill and Christina Beatty (cited below) that there is a spatial pattern in incapacity benefits - South East around London with the lowest, central areas of England with low to moderate and areas further out, Scotland, Wales, some coastal areas with high levels (see Figure 1). This core-periphery pattern has persisted over-time from at least the 1990s to the present (McVicar 2013). In addition to the core-periphery pattern there are pockets of highest levels of incapacity benefits in former coalmining areas. While several studies, notably Beatty and Fothergill (2005), McVicar (2013), have addressed the determinants of incapacity benefit rolls, an analysis explicitly incorporating spatial dependence has not been carried out. The research question is what factors account for the pattern of the incapacity benefit rolls?

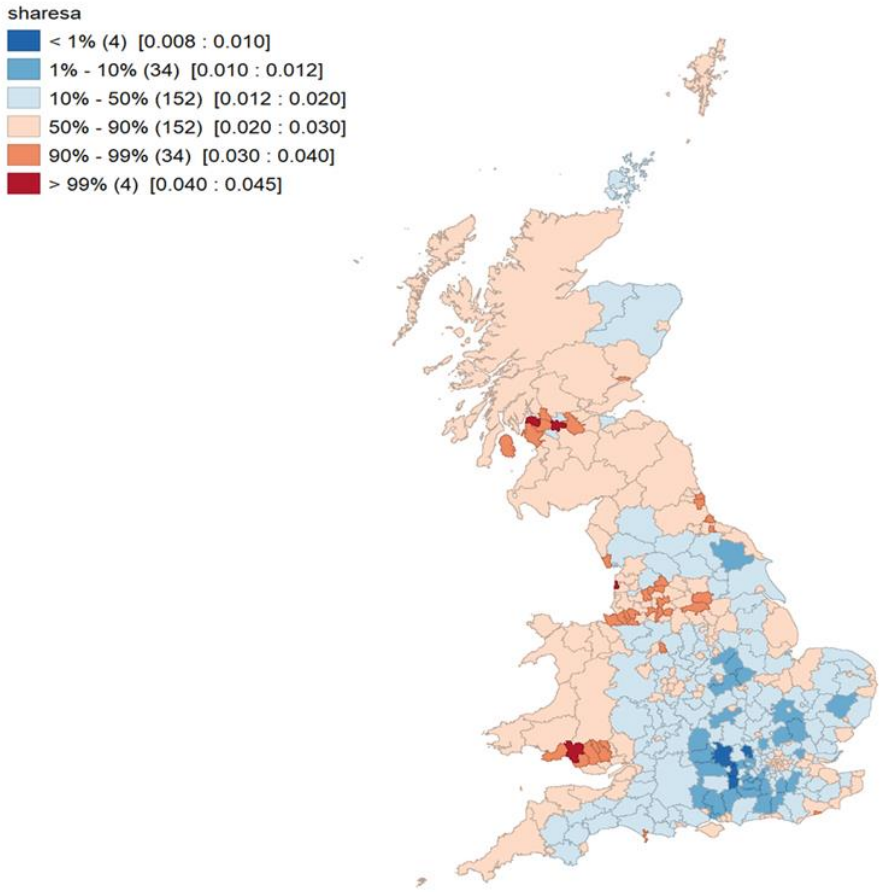
There have been two types of benefits related to disability and ill health, incapacity benefits and disability benefits. Incapacity benefits are benefits one is eligible to receive if one becomes sick or disabled while working and cannot carry on working. Disability benefits are paid to those living with disability and are meant to help offset additional costs incurred due to living with a disability such as extra transport costs. Incapacity benefits have recently been replaced with "Employment and Support Allowance" with recipients required to demonstrate effort to join the labour market. It is not possible to claim incapacity and unemployment benefits like Jobseekers Allowance at the same time.

The current pattern of incapacity benefit claim rolls has emerged over time: a sustained increase in the numbers of incapacity benefits recipients since the 1970s has been curtailed in recent years by austerity welfare policies. McVicar (2013) documents convergence across space in proportions of working age population claiming incapacity benefits due to improving labour market conditions (up to 2008) and tightening of eligibility requirements causing less benefit claims in poorer localities. The UK government attempted to curtail the increase by making the conditions for eligibility as well as staying on benefits, more stringent (Kemp and Davidson, 2010). While historically those in receipt of incapacity benefits were not expected to look for work, since 2008 the Welfare reform has aimed to move claimants back to work. From 2008 tougher conditions to start receiving Employment and Support Allowance have been introduced. It has also been made more difficult to keep on receiving this benefit with mandatory medical assessments.

The impact of the tightening of conditions for eligibility pushes some claimants with disability onto unemployment benefits and pushes some claimants out of benefits system altogether (McVicar, 2013). The impact of the Welfare Reform has been that areas with more claimants are more adversely

affected by the retrenchment of benefits (Beatty and Fothergill 2015). These areas also experience much less funding for anti-poverty third sector (NGO, charities) programs induced by post-financial-crisis austerity policy.

Figure 1. Percentile Map of Employment and Support Allowance recipients as share of working age population, 2011; number of localities falling into percentile ranges is shown brackets; value range is shown in square brackets;



Source: own processing in Geoda 1.7

2. Literature review

The explanations offered in the literature for the persistent spatial pattern in incapacity benefit claim rolls can be separated into the "health" explanation and the "labour market" explanation. Regional and local job opportunities influence the decision to apply for incapacity benefits. According to the

labour market explanation those eligible for incapacity benefits take up these benefits in greater proportion in areas with low demand for labour. A lower proportion of those eligible to apply for incapacity benefits does so in areas of high labour demand such as South East England preferring to remain on the labour market either in employment or receiving unemployment benefits. The dynamics and the spatial disparity of incapacity benefit claims have been linked to the pattern of structural changes in the UK economy, deindustrialization. The latter is well exemplified by what has been happening in the former coalmining areas. Beatty and Fothergill 1996, 2002 draw attention to contemporaneous decline in unemployment rates and increase in incapacity benefits rolls starting from the 1980s when the mines were being closed. There is a discouraged worker effect when people of working age drop out of workforce altogether, this effect being stronger in areas hit harder by deindustrialization. Fothergill (2001) warns of "hidden unemployment" from diversion into disability benefits highest in deindustrialized areas of the country noting that "claimant unemployment in the coalfields is lower than when the pits were working" (Fothergill, 2001, p. 242) In a report on the state of former coalfields Beatty et al (2019) provide evidence that former coalfields are not catching up with the rest of the country. While in England and Scotland the former coalfield sites are distributed over large area, in Wales the overall majority of the former coalfields and the residing population are concentrated in a compact area of the Valleys in South Wales. Based on Welsh Index of Multiple Deprivation[1], this area has the highest level of multidimensional deprivation in Wales. Figures 1 displays former coalfields areas having higher incapacity benefit claims. This literature suggests that spatial patterns of claimants point at "Labour market" explanation whereby those eligible for incapacity benefits take up these benefits in greater proportion in areas with low demand for labour. A lower proportion of those eligible to apply for incapacity benefits does so in areas of high labour demand such as South East of England preferring to remain in the labour market either in employment or receiving unemployment benefits for a shorter period of eligibility than those on incapacity benefits.

The health explanation centres on health issues as the reason for leaving employment and becoming disconnected from work. Kemp and Davidson (2010) in their longitudinal survey of incapacity benefit recipients report that those on incapacity benefits looking for work find it hard to hold on to jobs because of their health condition or because they could only find temporary jobs.

[1] https://gov.wales/welsh-index-multiple-deprivation-full-index-update-ranks-2019

Longer periods away from employment make incapacity claimants less attractive to employers so early intervention, including health improving intervention, to prevent separation from the labour market is required. Lindsay and Houston (2013) have argued that disability claims in the UK and other countries reflect the interaction of labour markets, ill health and employability. Their view is that lack of job opportunities in labour local markets, ill health and/or disability, and poor skills and qualifications combine to marginalise individuals from paid employment and that because of their ill health they claim disability rather than unemployment benefits. As Beatty et al (2013) put it: "So long as there remains a serious imbalance between labour demand and labour supply, employers can pick and choose who they recruit, or who they retain when they are shedding labour. Men and women with ill health or disability are unlikely to be their first choice." (Beatty et al, 2013, p. 16)

Table 1. Incapacity Benefits by medical condition, 2018

Medical Condition	% of conditions
Mental and Behavioural Disorders	39.18
Diseases of the Nervous System	8.96
Diseases of the Circulatory System	4.24
Diseases of the Musculoskeletal system and Connective Tissue	18.07
Symptoms, Signs and Abnormal Clinical and Laboratory findings, not elsewhere classified	13.60
Injury, Poisoning and certain other consequences of external causes	2.48

Source: UK Department of Work and Pensions data

3. Method

Spatial lag econometric model has been chosen because areal data is used as units of analysis and local authority claiming rates exhibit spatial dependence. OLS estimates would be biased and inconsistent in the presence of spatial dependence (Anselin, Syabri and Kho, 2006). As evident from Figure 1, incapacity benefit rolls exhibit a core-periphery spatial pattern with clusters of high claim levels in former coal mining areas. This pattern reflects a spatial dimension in the occurrence of incapacity benefits claims and presumably its causal and associated factors also exhibit similar spatial pattern. Spatial pattern may also reflect social norms of acceptability or stigma of claiming incapacity benefits. In areas of low uptake of incapacity benefits there may be a stigma attached to claiming them and conversely, areas of high uptake manifest social acceptance and network effects of taking up incapacity benefits. Accounting for spatial effects in an econometric model allows for a more

precise estimated effects of covariates. This is especially important in an exploratory study like this one where there are omitted variables and their effect is jointly captured by the spatial lag term. The spatial lag model assumes that the dependent variable in place i is affected by the explanatory variables in both places i and neighbouring places j. The spatial weights matrix representing the assumptions about neighbouring regions involved in the spatial effect, is a contiguity queen matrix.

To reiterate the broad conclusions of the literature, regional and local job opportunities influence the decision to apply for incapacity benefits; and the least able "…to keep a foothold in the labour market that have been marginalised in the places where there have never been enough jobs for everyone." (Beatty and Fothergill, 2013, p.29) The confluence of lack of economic opportunities and health-related characteristics has guided the model specification of the factors behind the geographic pattern of incapacity benefit claim rolls. The explained variable is percent of working age population receiving incapacity benefits in a local authority. The following explanatory variables are used:

Labour Demand

Having identified low demand for labour as a push factor towards incapacity benefits, a measure of local labour market conditions is needed to account for incapacity benefit claims. Unemployment rate is a proxy measure of labour demand however as McVicar (2013) notes, some people can choose between incapacity benefits and unemployment benefits, so unemployment rate is not exogenous, and these two variables are endogenously determined. In areas with low structural but high frictional unemployment such as London/South East, the out of work and eligible for incapacity benefits would choose to look for a job and take up unemployment benefits. Such areas would have low incapacity benefit rolls. In contrast, in localities with low job density, low labour demand, high structural unemployment such as the Valleys in South Wales those eligible for incapacity benefits take them up rather than looking for scarce jobs and claiming unemployment benefits. Job density would be another measure to proxy local labour market conditions but the fact that workers commute for jobs out of their local authority makes it problematic to relate (lack of) jobs to incapacity benefit claims. Local labour demand can be proxied by local household income-related measures. Estimates of average household income by local authority have been produced as part of Horizon 2020

IMAJINE[2] project for 2011. They are used in this study.[3] See Fernandez-Vazquez et al (2018) for how the estimates were obtained.

Another measure reflecting weak labour market as a factor behind the uptake of incapacity benefits makes use of the publicly available data on preference for working among those not in the labour force. The measure separates those who want a job as a fraction of working age population who are not in the labour force. Greater share of those who want a job while staying out of labour force reflects the perceived difficulty in finding and securing employment.

Employment share by Industry sector

Industry sector may be a relevant factor in accounting for differences in the uptake of incapacity benefits. Firstly, workers are more likely to get injured in sectors like construction and social and medical care. In sectors where sedentary office work predominates workers have smaller probability of getting injured on the job and therefore are less likely to claim incapacity benefits. However, as Table 1 shows, industrial injury accounts for a small share of all claims with the main being mental health and behavioural problems (Beatty and Fothergill, 2010). Controlling for industry sector may nevertheless capture several effects. Incidence of mental health problems and musculoskeletal illness, the second highest factor responsible for incapacity benefit claims, may be different across sectors. Moreover, some sectors may be deemed as hazardous or inappropriate for someone with pre-existing health conditions, which would result in lower proportion of workers with ill health in some industries. (While this argument would be stronger for disability benefits, it also applies for considerations of incapacity benefits). In addition, greater share of employment in sector, such as finance or administration may capture higher labour demand in urban agglomerations (which would pull those who could choose between incapacity benefits and the labour market, towards the

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[2]Integrative Mechanisms for Addressing Spatial Justice and Territorial Inequalities in Europe. http://imajine-project.eu/

[3] The estimates are an outcome of a spatial prediction process described in Elbers et al (2003) and Tarozzi and Deaton (2009). This involved first estimating household income using EU-SILC data and then using the estimates for predicting household income for the Census sample. In addition, the novel contribution of the project is applying the GME estimation procedure adapted from Bernadini-Papalia and Fernández-Vázquez (2018), where the estimates are adjusted for the predicted income totals to be consistent with the official NUTS2 regional aggregates making the (spatial) prediction more precise.

labour market). To avoid multicollinearity, only sectors that had low correlation coefficients with each other and with the average household income variable which proxies labour demand in this study, were included in the analysis.

Age Profile of the locality

The age profile of the locality is a relevant factor in explaining patterns of incapacity benefit claims. Areas with older workforce are expected to have a higher rate of incapacity benefit claimants as incidence of illness and injury increase with age. On the other hand, the link to older age profile may not hold because mental and behavioural disorder constitute the largest share of medical conditions behind incapacity benefits (Table 1) and these are not age-related. In addition, cohort effects may come into play with younger cohorts claim rates being higher than those of the older cohorts (McVicar, 2013). The variable used in the analysis is percent aged 50-64 in working age population.

Share of Self-employed

There may be differences between employees and the self-employed in the uptake of incapacity benefits. While the self-employed are eligible for incapacity benefits, they are not eligible for statutory sickness pay which is the first thing employees usually take up when they become unable to work due to illness. When statutory sick pay runs out, employees apply for incapacity benefit. Self-employed will therefore resort to incapacity benefit potentially more frequently because statutory sickness payment is not an option for incapacity spells of shorter duration (temporary injury or illness). Alternatively, as studies on employment and disability, such as Jones and Latreille (2011) suggest, self-employment may be a way of adapting to working given disability or illness and may therefore entail less incapacity benefit claims.

Education level

Studies point out lack of education and training preventing incapacity benefit recipients from competing on the labour market (Grant, 2011). Percentages of working population falling into categories of having “no educational qualification” and “other educational qualification” are used to account for differences in the uptake of incapacity benefits.

As explained earlier, the analysis uses estimates of average household income by local authorities produced as part of IMAJINE project. The data for the variables other than household income come from the UK 2011 Census and was obtained from the UK Office of National Statistics website. The unit of analysis is the local authority. All variables except the income variable, which is in pounds, are in percentages.

4. Results and Discussion

The model is estimated using GeoDa software program (Anselin, Syabri and Kho, 2006). The results are presented in Table 2. The significance of the spatial lag term and the diagnostic test indicate the presence of spatial dependence. Neighbouring localities' magnitudes of incapacity benefit claims account for the magnitude of incapacity benefit claims in the given locality. The results point at the importance of spatial interaction, neighbourhood effects in the take-up of incapacity benefits after accounting for postulated determinants.

Table 2. Results of the Spatial lag estimation model

Dependent variable: % of working age population receiving incapacity benefits

Independent variable	**Coefficient**	**Standard Error**	**z-statistic**	**p-value**
Constant	1.2009	0.4599	2.61	0.009
Spatial Lag	0.34	0.035	8.89	0.00
Average Household income, £s	-3.0e-005	6.1e-006	-4.9	0.00
% aged 50-64 in working age population	-0.0278	0.0057	-4.84	0.00
% Self-Employed	-0.01978	0.00819	-2.41	0.016
% employed in care sector	0.05113	0.00857	5.96	0.00
% employed in public service	0.01852	0.00456	4.1	0.00
% with no educational qualifications	0.05397	0.00682	7.19	0.00
% with other educational qualifications	0.02091	0.0087	2.41	0.016
% employed in sales	0.02309	0.00958	2.41	0.016
% not in Labour Force who want job	0.01304	0.00272	4.78	0.00

As expected, average household income in the local authority is negatively related to the magnitude of incapacity benefit claims supporting the "labour market" explanation behind its geographic pattern. Localities with lower average household income tend to have higher incapacity benefit claimant rolls, holding other variables constant. The results also indicate a positive effect of

preference for working while not in the labour force, meaning that a greater share of those not in labour force who want a job is associated with greater incapacity benefit claim rolls, and vice versa. This finding is also consistent with the "labour market" explanation that higher uptake of incapacity benefits is due to those with ill health finding it hard to access and keep jobs in areas with limited job opportunities.

Negative effect of older aged population likely reflects cohort effects where the 50-65-year age group in 2011 appears to have a lower uptake of incapacity benefit claims than younger people.

The results with respect to sectoral controls[4] indicate a positive effect of employment in the care sector on the uptake of incapacity benefits. Greater share of employment in public service sector and in sales sector are positively related to the uptake of incapacity benefits. While there may be sector-specific reasons for higher uptake of incapacity benefits in public service, positive effects of public service and sales can be interpreted as yet another indication of the "labour market" explanation. When local economy is weak and private sector employment is low, public sector and retail sales sector employ a greater share of workforce. The results indicate that such areas are characterised by greater uptake of incapacity benefits.

Self-employment is negatively associated with the uptake of incapacity benefits. This result is consistent with the supposition that self-employment is an adaptive labour market strategy of those with ill health. To verify this supposition however more research into individual self-employment decisions is needed. Individual level-data should be used to study how is self-selection into self-employment related to health status in order to understand why self-employment is associated with lower uptake of incapacity benefits.

Positive association between the uptake of incapacity benefits and lack of educational qualification is in line with the findings reported in the literature that lack of education and training prevents those on incapacity benefits from getting and holding on to jobs. The same result holds for non-standard educational qualifications, suggesting that absence of a standard qualification is linked to separation from the labour market.

[4]Only sectoral control variables with statistically significant effects have been retained in the regression model

5. Conclusion

The government policy approach to deal with a large number on incapacity benefits has been to treat is a "labour supply" problem targeting low skills, low motivation and disengagement from the labour market (Beatty and Fothergill, 2013). This approach assumes that looking for work, acquiring training and becoming work-ready results in becoming employed.

This analysis confirms the conclusions of other studies suggesting the labour market explanation for incapacity benefits uptake. In areas where labour demand is low, employers face no shortage of job applicants and are less likely to recruit and retain individuals with ill health.

The results suggest that government policy efforts should be channelled at creating jobs in localities with low labour demand and limited job opportunities. Education and training of people eligible for incapacity benefits should be facilitated. The results of the analysis indicate that those in receipt of the ESA tend to want to be in employment and that policy design should address how to bridge the gap separating ESA recipients from acquiring jobs. More broadly, the findings have implications for policies aimed at reducing spatial and interpersonal inequality and accentuate the focus on the vulnerable in society.

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