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Does sanctioning disabled claimants of unemployment insurance increase labour market inactivity? An analysis of 346 British local authorities between 2009 and 2014

Aaron Reeves*

London School of Economics

a.reeves@lse.ac.uk

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Abstract:
Imposing financial penalties on claimants of unemployment insurance may incentivise labour market re-entry. However, sanctions may have differential effects depending on the work-readiness of the claimants. Here, I explore whether sanctioning disabled claimants is associated with greater labour market activity or inactivity among disabled people using data on 346 British local authorities between 2009 and 2014. When the number of sanctioned disabled claimants rises (as a proportion of all claimants) the proportion of economically inactive people who are also disabled becomes larger. There is not a clear relationship between sanctioning disabled claimants the proportion of employed people who are disabled.

Introduction

It has become increasingly common across many European countries to link access to certain forms of social security, such as unemployment insurance, to behavioural conditions. These new behavioural expectations extend the long-standing eligibility criteria that determine access to these entitlements (Venn 2012). For example, claimants of Jobseekers Allowance (JSA) – the name of unemployment insurance in the UK – were required to be unemployed and

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ready to work, a criteria that has been in place since its inception (Hills 2015). More recently, eligible recipients of JSA are now also required to perform certain tasks to demonstrate their entitlement, such as attending appointments or providing evidence of job searches. The Conservative-led coalition changed the conditions of entitlement, making them more demanding and specific whilst strengthening the financial consequences for failing to meet these conditions (Watts et al. 2014). During this period, the number of people being sanctioned – those who have their unemployment insurance payments temporarily stopped – doubled. In 2009/10, approximately 2.3 claimants were sanctioned per 100 claimants while in 2014/15 this had risen to 4.5 sanctions per 100 claimants.

Yet, there is still debate about the effectiveness of sanctions. A growing body of evidence indicates that sanctions increase financial hardship and may also lead to welfare exit (Oakley 2014, Work and Pensions Committee 2015). If a single claimant aged 25 or over is sanctioned for four weeks – the basic level – then this individual loses around £300 (NAO 2016). For some households this will not be a substantial sum but for many of those claiming JSA this will have a non-trivial impact on their short-term economic security. In total, the value of benefit payments not made in 2015 alone (less the amount received in hardship payments) is just under £100 million (NAO 2016). Given this reduction in financial support for low-income households, rising sanction rates across local authorities are associated with a greater likelihood of a foodbank opening in that local authority and is linked with more people using foodbanks in the same area (Loopstra et al. 2015a). A recent report from the National Audit Office argued that sanctions can lead to 'hardship, hunger and depression' (NAO 2016). Moreover, there is evidence from frontline agencies that sanctions may disproportionately affect individuals already at risk of social exclusion (Work and Pensions Committee 2015).

Advocates of sanctions claim that the financial penalty itself coupled with the threat of an income reduction will encourage more individuals to comply with the conditions, and that compliance will lead more people to re-enter employment. The rational-action models motivating this expectation are plausibly grounded in theories of incentives and agentic choice and there is some evidence suggesting sanctions increase the probability of re-employment. Neil Couling (2013), a previous Director for Working Age Benefits at the Department for Work and Pensions, has argued that "many benefit recipients welcome the jolt that a sanction can give them" and that being sanctioned is a "wake-up call" that helps people "get back into work". Abbring and colleagues (2005) use administrative data from a social security program in the Netherlands and find that sanctioned claimants of unemployment insurance are more likely to re-enter employment. Exploiting local variation in the strictness of the sanction regime across Germany, Boockmann and colleagues (2014) find that re-employment rates are higher in areas where sanctions are applied more rigorously. Similar results are also observed in other European countries (Lalive, Zweimuller and van Ours 2005).

However, not all studies suggest sanctions improve labour market outcomes, i.e., improving employment (being in work) rather than unemployment (out of work but actively seeking employment) or economic inactivity (out of work but not actively seeking employment). For example, the introduction of sanctions in the US – as part of Clinton's welfare reforms – did not have strong effects on employment (Wu, Cancian and Wallace 2014). Moreover, sanctions also

seem to produce lower wages, more unemployment days post-sanction, and shorter periods in work (Arni, Lalive and Van Ours 2013, Fording, Schram and Soss 2013, Hofmann 2012). Importantly, arguments in favour of sanctions assume that suitable work is available for jobseekers in their area, but this is not always the case. One of the missing components of the debate around sanctions has been appropriate interventions in the demand-side of the labour market (Grover and Piggott 2016). This is clearly seen in the UK, where the rapid expansion of sanctioning coincided with a period of high unemployment. Existing evidence exploring this period indicates rising sanction rates within local authorities increased the off-flow rate (the number of people leaving JSA) without increasing employment rates (Loopstra et al. 2015b). Moreover, their results indicate that the vast majority of people leaving JSA end up in unknown destinations, suggesting that sanctions may have had a minimal impact of labour market outcomes but may – as seen in other contexts – have increased welfare exit (Arni, Lalive and Van Ours 2013).

Sanctions are sometimes assumed to have relatively stable effects across different groups but this overlooks the different capabilities of particular jobseekers. For example, much less is known about how sanctions affect people living with an impairment or a long-term limiting health condition, a large proportion of whom also experience unemployment (Baumberg, Jones and Wass 2015, Reeves et al. 2014). Of course, disabled job seekers are not completely different from other job seekers. Like other unemployed people, job seekers living with work-limiting condition may not take up work when it is available; and so conditionality may incentivise re-employment for those living with a disability just as it does for others who are not currently in work (Martin 2015). One Norwegian study observed that compulsory dialogue meetings for workers who are long-term sick reduced absence from work and reduced the risk of labour market exit (Markussen, Roed and Schreiner 2015), suggesting that introducing conditionality at certain junctures may help keep people in work who are at risk of transitioning out of the labour market due to ill health.

However, in other ways, unemployed persons who are living with a disability are unlike other job seekers (Baumberg-Geiger 2017). They face reduced work capability and are a far more heterogeneous group in terms of their work-readiness for some occupations and in terms of the supports that may enable them to become work-ready. Consequently, unemployed persons living with a disability may respond to sanctions quite differently than persons who are not living with a disability. For example, JSA claimants who report living with a longstanding limiting condition may respond to a sanction by trying to move off JSA and onto Employment Support Allowance (ESA); social security for those who are unable to work due to longstanding, work-limiting condition, according to a work capability assessment. Other jobseekers may be less able to make this transition, suggesting sanctions may have heterogeneous effects across these groups

Further, disabled people may find it more difficult than other jobseekers to adhere to conditions established with the caseworker (Baumberg 2015), which may lead to more sanctions in areas where there are more disabled people claiming JSA (Reeves and Loopstra 2017). This disconnect between expectations and capabilities may undermine the relationship between caseworker and claimant, potentially severely reducing the effectiveness of other efforts to increase

work-readiness (Hasluck and Green 2007). One evaluation of a mandatory work-related activities scheme found that such conditionality reduced the period spent in employment over the next year (Rehwald, Rosholm and Rouland 2015). In short, applying sanctions fairly to disabled claimants is difficult and costly and, when done incorrectly, sanctions may actually negatively impact activation (Pickles et al. 2016).

Re-employment rates among people living with a disability may also be particularly sensitive to local labour market conditions (Benitez-Silva, Disney and Jimenez-Martin 2010). For example, part of the rise in unemployment among disabled people is due to changes in the structure of work over the last 30 years. During this period, there has been a marked decline in job control (i.e., the ability to take autonomous decisions in the work place) in the UK labour market and this has had the impact of disabling a larger share of the population from participating in the labour market (Baumberg 2014). People living with a disability may still be functionally able to perform a wide variety of jobs (Broersen et al. 2012) but in an open job market disabled individuals compete with others who may be perceived to be more productive; and so capacity in the context of competition does not necessarily lead to employment in appropriate jobs. If the local labour market does not contain appropriate work for disabled people then sanctions may put pressure on people to accept work that is ill-suited to their capabilities, potentially leading to a negative cycle of low-pay/no-pay (Shildrick et al. 2012). Thus, applying sanctions to JSA claimants living with a disability may push people into economic inactivity, especially if there is high background unemployment thereby making it more difficult to find work.

Some disabled people – faced with the prospective of being sanctioned or accepting low-pay or otherwise inappropriate work – may exit the labour market entirely (e.g., by seeking to claim ESA) but they may also exit social security entirely. Under-claiming is already common among those who feel stigmatised because they are receiving social security, something keenly felt by disabled claimants (Garthwaite 2014). Sanctions add financial penalties to stigma, potentially deepening the stigmatisation and exacerbating under-claiming (Patrick 2016).

Of course, sanctions are not unique to Jobseekers Allowance claimants; they are also applied to people receiving Universal Credit and Employment Support Allowance. Like JSA, Universal Credit expects claimants to sign a 'Claimant Commitment' which stipulates certain behavioural conditions that entitle people to financial support. Failure to adhere to the commitment may result in a sanction. Unfortunately, sanction reports for Universal Credit are not published systematically, restricting the types of analysis that can be conducted using these data. Some but not all of those on ESA can be sanctioned; only those in Work-Related Activity Group (WRAG). The NAO's (2016) recent report finds that when sanctions were applied to ESA claimants that they were less likely to find work and were more likely to become disconnected from the labour market. Although ESA sanctions are a crucial component of the story linking sanctions and labour market outcomes they are still relatively rare compared to JSA sanctions – creating substantial missing data at the local authority level – and so do not form a core part of this analysis.

In this paper, I therefore focus on sanctions applied to a specific group: those who are claiming Jobseekers Allowance who describe themselves as possessing 'a physical or mental impairment which has a substantial and long-term effect on their ability to carry out normal day to

day activities'. This group are particularly interesting because they may be more likely to find complying with the claimant commitment difficult (and therefore may be more likely to be sanctioned) (Reeves and Loopstra 2017) but also because they may struggle to find work in a labour market where unemployment is high. Applying sanctions to this group may have quite different implications from sanctions applied to those on Universal Credit or sanctions applied to those on Employment Support Allowance. In fact, lumping all sanctions together may actually obscure important heterogeneity in how sanctions affect these quite different groups. In terms of those receiving Jobseekers Allowance, sanctioning people looking for work who nevertheless have some work-limitations may motivate re-employment; but it may also lead to economic inactivity and welfare exit. On this question, the current evidence is simply unclear. To move this debate forward, I test whether local authorities with higher sanction rates have larger proportions of economically inactive disabled people or whether higher sanction rates are associated with more disabled people in employment.

Methods

Data sources

To answer these questions, I combined longitudinal data across local authorities and over time, covering the years 2009/10 to 2013/14 (the latest available data for our key dependent variable). Measures of the monthly JSA claimant count and the size of the working-age and total population for local authority districts and unitary authorities come from Nomis (the labour market information database). Data cover England, Scotland, and Wales. Data on the monthly number of young (ages 18-24) and older (over age 60, excluding pensioners) people were also incorporated in the data set. These data were used to calculate the monthly claimant rates per working age adult and the proportion of young and older people. Monthly rates were averaged over fiscal years to make them comparable for other data sources. Census data – which does not vary over time – were also used to calculate the demographic composition of local authorities, such as the proportion of people who (1) report living with a disability (Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?), (2) are lone parents, and (3) are white British. In addition, I also create a measure of the proportion of JSA claimants that report living with a disability, which is defined as 'any physical or mental health conditions or illnesses lasting or expected to last 12 months or more'. This measure has been used elsewhere and is calculated using the Annual Population Survey (APS), available from the UK Data Archive (Reeves and Loopstra 2017). (These data are not available from the DWP).

The models also include measures of the composition of the employed, unemployed, economically inactive populations in each local authority. Specifically, data on the proportion of economically inactive people that are disabled is taken from Nomis. This same measure is also used for unemployed and economically active. I use these measures to understand whether sanctions alter the economic activity of inactivity of disabled people in these local authorities over time.

The key predictor in our models is the number of adversely sanctioned claimants living with a disability. One way of constructing this variable is to calculate the proportion of all disabled claimants that are sanctioned, but this approach has a number of problems. The first is data availability. The only measure of the number of disabled JSA claimants is from the Annual Population Survey whereas the data on sanctions is published directly by the DWP. Combining these two data sources – one from a sample survey, the other from actual administrative data – may introduce substantial measurement error. Instead, I calculate the number of adversely sanctioned claimants living with a disability as a proportion of all JSA claimants. This approach reduces the influence of outliers that may be created by small sample sizes in each local-authority within the APS data. The second problem is scale. One local authority may sanction 50% of their disabled claimants but if disabled claimants only comprise 1% of all claimants (rather than 5% of all claimants) then this is less likely to have major impacts on the composition of the labour market than the regions where disabled claimants comprise a larger share of all claimants. By calculating the number of adversely sanctioned claimants living with a disability as a proportion of all JSA claimants, this measure gives more weight to data points where sanctions are disproportionately affecting claimants living with longstanding limiting conditions.

Data on the number of sanctions applied to claimants living with a disability in each local authority are taken from Stat-Xplore (DWP 2016). The data on the number of adverse sanctions incorporates the total after any successful reviews, reconsiderations, or appeals. In short, this measure only reflects those decisions where claimants experienced a financial loss that was not successfully appealed – i.e., potentially reimbursed – at a later time. How is disability defined in these data? According to Freedom of Information request 2013-2901, the disability measures for JSA reflects that "a person can self-declare in the Job Centre whether or not they consider themselves to 'have a physical or mental impairment which has a substantial and long-term effect on their ability to carry out normal day to day activities'" (FoI 2013). Yet, these are people who are not – for reasons that are not entirely clear in these data – seeking Employment Support Allowance (ESA). There could be two reasons they are in this situation: 1) these may be people who have been incorrectly categorized as 'fit-for-work' due an ill-administered work capability assessment or 2) these may be people who regard themselves as possessing an impairment but who define themselves as 'fit-for-work'.

Two local authorities were removed from the analysis due to small sample populations (Isle of Scilly and the City of London) and some are excluded because of missing observations on some of the variables. These missing values occur when cell values from Nomis or Stat-Xplore are very small and risk identifying individuals. After these exclusions we have an analytic sample of 2067 local authority-years covering 346 local authorities.

Statistical analysis

The analysis has two parts. First I estimate the association between the disability economic inactivity rate and the number of disabled people who are sanctioned (as a proportion of the total number of claimants). This model adjusts for the disability employment rate. In short, this model asks: if we compare two local authorities (A and B) with the same disability em-

ployment rate, what happens to the proportion of economically inactive disabled people if the sanction rate for disabled people is higher in local authority A than local authority B. In short, this models tests whether sanctions increase the number of disabled people who are economically inactive compared to unemployed. If individual-level data were available this would be similar to estimating a multinomial logistic regression model, where the question of interest is the likelihood of an unemployed person becoming economically inactive after being sanctioned.

The second part of the analysis considers the opposite question. Here I explore the association between the disability employment rate and the number of disabled people who are sanctioned (as a proportion of the total number of claimants). This model adjusts for the disability economic inactivity rate. In short, this model asks: if we compare two local authorities (A and B) with the same disability economic inactivity rate, what happens to the proportion of employed disabled people if the sanction rate for disabled people is higher in local authority A than local authority B. This models tests whether sanctions increase the number of disabled people who are employed compared to unemployed. Again, this similar to examining the likelihood of an unemployed person becoming economically active after being sanctioned.

As an additional step, I re-estimate these models using so-called 'fixed-effect' regression models. These models account for differences between local authorities that are constant over the time period of the study and that may be unobserved, such as the composition of the regional distribution of work-limitations or attitudes toward welfare recipients. One of the advantages of this approach is that it enables me to examine what happens within local authorities over time, estimating whether, for example, the disability economic inactivity rate increases as more disabled people are sanctioned in a particular local authority. Of course, despite its strengths, this approach cannot rule out the possibility that unobserved trends that more in parallel with both sanctions and the composition of the economically active and so these results should be interpreted with some caution. The final model to test the association between sanctions and the proportion of economically inactive people who are disabled can be formally written as equation 1:

$$\begin{aligned} EconInactDisab_{ij} =& \alpha + \beta_1 DisabSanction_{ij} + \beta_2 EmpDisab_{ij} + \beta_3 JSAClaimants_{ij} \\ &+ \beta_4 JSAOlder_{ij} + \beta_5 JSAYoung_{ij} + \beta_6 JSADisab_{ij} + \\ &\beta_7 LAPop_{ij} + \upsilon_i + \epsilon_{ij} \end{aligned} \tag{1}$$

Here i is local authority and j is fiscal year. $EconInactDisab$ is the proportion of economically inactive people living with a disability, $DisabSanction$ is the number of disabled JSA claimants sanctioned as a proportion of all JSA claimants, $EmpDisab$ is the proportion of employed people who are disabled, $JSAClaimants$ is the number of JSA claimants as a proportion of the working-age population, $JSAOlder$ is the proportion of JSA claimants over the age of 60, $JSAYoung$ is the proportion of JSA claimants aged between 18 and 24, $JSADisab$ is the proportion of JSA claimants living with a disability, $LAPop$ is the size of population in the

local authority (transformed onto a log-scale), α is the constant, υ is the local-authority fixed-effects, and ϵ is the error term. Standard errors are clustered to reflect the non-independence of the sampling procedure.

Note that the measures of the proportion of the local authority population that are Disabled, Lone Parents, and White are not included in the fixed-effects models because they are constant over time. They are, however, included in the all the repeated, cross-sectional models.

Equation 1 can also be altered to consider a separate hypothesis. Here, EconInactDisab becomes an independent variable while EmpDisab becomes the dependent variable. In this model, I am testing whether an increase in the rate of disabled people being sanctioned is associated with more disabled people in the labour market.

To ensure these results are not due to modelling choices, I also conduct some robustness checks. For example, I re-estimate the main models using an algorithm that sequentially estimates every possible combination of our independent variables (Young and Holsteen 2017). This provides an estimate of how much the observed associations reported in this paper are due to modelling decisions. I also conduct falsification tests. First I examine whether the association between sanctions and economic activity is associated with the sanction rate for all claimants (rather than the more specific measure of the sanction rate among people living with disabilities). Second, I examine whether the economic activity among disabled people is associated with the rate at which ethnic minorities are sanctioned. Here I would not expect a clear association.

Descriptive statistics are reported in table 1.

Table 1: Raw data on HIV prevalence and their data sources

Variable	N	Mean	Std. Dev.	Min	Max	Source
Number of sanctioned disabled claimants (% of claimants)	2,067	0.94	0.44	0.20	3.66	Stat-Xplore
Proportion of economically inactive that are disabled	2,067	28.84	8.45	6.70	63.60	Nomis
Proportion of employed that are disabled	2,067	65.57	9.47	28.20	90.60	Nomis
JSA claimants (% of working-age population)	2,067	3.07	1.41	0.62	8.81	Stat-Xplore
JSA claimants aged 55-64 (% of claimants)	2,067	2.16	0.94	0.31	7.03	Stat-Xplore
JSA claimants aged 18-24 (% of claimants)	2,067	27.36	4.30	10.56	38.55	Stat-Xplore
JSA claimants who report a disability (% of claimants)	2,067	28.10	25.21	0.00	100.00	APS[1]
Population (log-scale)	2,067	11.85	0.53	10.44	13.91	Nomis
Households with a disability (%)	2,067	25.81	3.31	17.20	34.90	2011 Census
Lone parent households (%)	2,067	10.06	2.19	6.50	19.00	2011 Census
White British ethnicity (%)	2,067	89.78	12.62	29.00	98.90	2011 Census

1 - Annual Population Survey

Results

Disability, sanctioning, and labour market status

First, I examine whether local authorities that sanction more disabled people (as a proportion of all claimants) have a larger share of economically inactive people that also report health conditions or illnesses lasting more than 12 months. Table 2 shows that – holding constant the proportion of employed people that are disabled in a local authority – a positive association between the number of disabled people as a proportion of all claimants and the proportion of economically inactive people who are disabled. This suggests that as more disabled people are sanctioned there is also a greater number of disabled people who are neither employed nor looking for work, in short they disengage from the labour market altogether. Of course, cross-sectional regression models assume but do not test the direction of causality. Here, I assume that sanctions cause economic inactivity but it is theoretically possible that the relationship flows in the other direction; that higher disability inactivity rates cause more disabled JSA claimants to be sanctioned. While theoretically possible, this seems unlikely; especially because the most plausible mechanisms linking sanctions and economic inactivity flow from sanctions to economic outcomes.

Table 2: Local authorities that sanction more disabled claimants have higher rates of disabled people who are economically inactive

	Proportion of disabled people who are economically inactive (%)			
Covariates	(1)	(2)	(3)	(4)
Number of disabled people sanctioned (% of claimants)	0.85**	0.54**	0.48**	0.31*
	(0.14)	(0.15)	(0.14)	(0.14)
Proportion of disabled people who employed (%)	-0.85**	-0.89**	-0.90**	-0.88**
	(0.0073)	(0.0094)	(0.0093)	(0.011)
Number of JSA claimants (% of population)		-0.40**	-0.48**	-0.60**
		(0.065)	(0.073)	(0.080)
Proportion of JSA claimants aged 55-64			0.17	0.012
			(0.089)	(0.099)
Proportion of JSA claimants aged 18-24			0.084**	0.024
			(0.018)	(0.027)
Proportion of claimants who are disabled			-0.025**	-0.025**
			(0.0028)	(0.0028)
Total population (logged)				0.023
				(0.14)
Percentage of households with a disability				0.15**
				(0.035)
Percentage of lone parent households				-0.025
				(0.064)
Percentage of White households				-0.0059
				(0.0078)
Constant	83.9**	87.9**	86.9**	85.1**
	(0.48)	(0.82)	(1.01)	(2.36)
Local-authority years	2067	2067	2067	2067
R^2	0.90	0.91	0.91	0.91

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. * $p < 0.05$, ** $p < 0.01$

Next, I add covariates, including the proportion of JSA claimants in the local authority, the age composition of claimants, the proportion of claimants that are living with a disability, the population in the local authority, the proportion of households with a person living with a disability, the proportion of lone parent households, and the ethnic composition of local authority. As expected, the proportion of economically inactive people that are disabled is associated with the proportion of employed people who are disabled and the proportion of households that have a disabled person within them. Further the proportion of economically inactive people that are disabled is lower in local authorities where there is more JSA claimants and the proportion of JSA claimants that are also disabled is higher. Importantly, the relationship between disabled people being sanctioned and the proportion of economically inactive disabled people is not explained by these possible confounding factors. Adding these variables does attenuate the association between sanctioning disabled people and economic inactivity but they do not entirely remove the association across local authorities.

Second, I re-estimate the same models except now the dependent variable is the proportion of employed people who are disabled and the models control for the proportion of economically inactive people who are disabled (Table 3). Here, I want to test whether local authorities that sanction a larger number of disabled people (as a proportion of all claimants) also have more disabled people in work (as a proportion of all employed people). Initially, I observe that local authorities that sanction more disabled people also have more disabled people in employment; however, this relationship is very sensitive to confounders. For example, the size of the coefficient declines substantially after adjusting for variables that are correlated with both sanctions and employment. Moreover, the null hypothesis can no longer be rejected at the □ = 0.05 level after adjusting for the proportion of JSA claimants in the local authority, suggesting that local authorities with large proportions of people on JSA are also areas of the country where fewer employed people report a disability and where fewer disabled people are sanctioned. It is precisely in labour markets where there is high unemployment and where a large share of the unemployed do not report a limiting physical or mental condition that it might be harder for people with disabilities to find work and where disabled people are not being sanctioned.

If we standardize the covariates – using the Gelman (2008) method - the association between sanctions and economic inactivity is twice as large as the association between sanctions and employment among disabled people (0.016 vs 0.008).

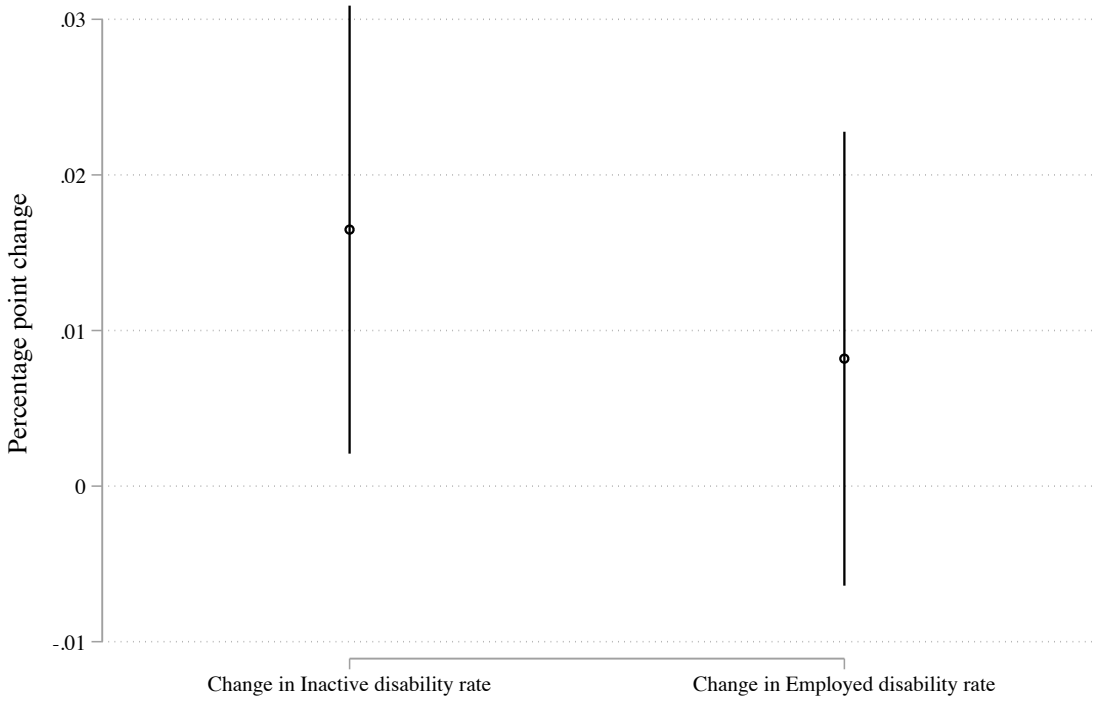
Figure 1 compares the two coefficients from the fully adjusted models for both outcomes. Here we see that there is a strong positive association between more disabled people being sanctioned and more disabled people who are economically inactive. Whereas there is a weaker albeit positive association between more disabled people being sanctioned and more disabled people who are employed. These results suggest that sanctions may increase employment rates among the disabled but the evidence is weak. In contrast, we do have fairly strong evidence that sanctions increase economic inactivity among people living with a disability. Of course, the confidence intervals for both coefficients overlap and so there is some uncertainty about whether sanctions affect the labour market outcomes of disabled people in different ways.

Table 3: Local authorities that sanction more disabled claimants have do not have clear association with the proportion of disabled people who are employed

	Proportion of disabled people who are employed (%)			
Covariates	(1)	(2)	(3)	(4)
Number of disabled people sanctioned (% of claimants)	1.13**	0.18	0.13	0.17
	(0.17)	(0.17)	(0.15)	(0.16)
Proportion of disabled people who inactive (%)	-1.06**	-0.96**	-0.96**	-0.94**
	(0.010)	(0.0095)	(0.0090)	(0.010)
Number of JSA claimants (% of population)		-1.07**	-1.10**	-0.85**
		(0.052)	(0.059)	(0.081)
Proportion of JSA claimants aged 55-64			0.21*	0.13
			(0.092)	(0.11)
Proportion of JSA claimants aged 18-24			0.096**	0.057*
			(0.017)	(0.026)
Proportion of claimants who are disabled			-0.027**	-0.026**
			(0.0029)	(0.0029)
Total population (logged)				-0.068
				(0.15)
Percentage of households with a disability				-0.068
				(0.038)
Percentage of lone parent households				-0.11
				(0.060)
Percentage of White households				0.026**
				(0.0084)
Constant	95.1**	96.4**	94.2**	95.5**
	(0.36)	(0.33)	(0.67)	(1.98)
Local-authority years	2067	2067	2067	2067
R^2	0.90	0.92	0.93	0.93

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. * $p < 0.05$, ** $p < 0.01$

Figure 1: Comparing the association between higher sanctions rates among disabled people and economic activity



Notes: Vertical bars are 95% confidence intervals. Point estimate for 'Disabled who are Inactive' is taken from table 1, model 4. Point estimate for 'Disabled who are Employed' is taken from table 2, model 4.

Testing the relationship within local authorities over time

The results so far only suggest that local authorities that sanction more disabled JSA claimants also have a larger share of economically inactive people that are also disabled. Next, I test whether these relationships hold within local authorities over time, adjusting for local authority differences that are constant across the study period. This is important because the observed association between sanctions and labour market activity among disabled people may be explained by unobserved confounding factors that constant over time. In table 4, I report the results for both models. Model 1 suggests that when a local authority increases the rate at which it sanctions disabled people that the disability economic inactivity rate rises. However, Model 2 indicates, again, that the association with the disability employment rate is positive but weaker and more uncertain. As mentioned above, the results from this fixed-effects model cannot rule out the possibility that an unobserved confounder may be correlated with changes in our main variables.

Table 3: Local authorities that sanction more disabled claimants have do not have clear association with the proportion of disabled people who are employed

	Proportion of disabled people who are	
	Economically inactive (%)	**Employed (%)**
Covariates	(1)	(2)
Number of disabled people sanctioned (% of claimants)	0.44*	0.32
	(0.22)	(0.21)
Proportion of disabled people who employed (%)	-0.86**	
	(0.012)	
Proportion of disabled people who inactive (%)		-0.91**
		(0.012)
Number of JSA claimants (% of population)	-0.48*	-0.36
	(0.24)	(0.23)
Proportion of JSA claimants aged 55-64	0.072	-0.050
	(0.19)	(0.20)
Proportion of JSA claimants aged 18-24	0.051	0.065
	(0.047)	(0.046)
Proportion of claimants who are disabled	-0.023**	-0.025**
	(0.0031)	(0.0033)
Total population (logged)	-0.52	2.96
	(5.06)	(4.83)
Local-authority fixed-effects	Y	Y
Local-authority years	2241	2241
R^2	0.79	0.79

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. Constant estimated but not reported. Both models adjust for time dummies and local-authority differences that are constant across this period. * $p < 0.05$, ** $p < 0.01$

Despite this limitation, these fixed-effects models reinforce the primary conclusion from the cross-local authority regression models, namely that when more disabled people are sanctioned that there are more disabled people who are economically inactive. Moreover, this relationship holds even after adjusting for the economic situation in the labour market and the demographic composition of JSA claimants. Further, the fixed-effects models also provide a

stronger test of these relationships suggesting that sanctioning disabled people is more closely associated with more disabled people moving into economic inactivity.

Testing robustness

These findings may, of course, be due to various modelling decisions. Here, I test the robustness of these estimates to such modelling decisions by sequentially estimating every possible combination of the control variables (although the proportion of disabled people who are employed or economically inactive and the sanction rate for disabled people are included in every model).

Here I find that for those models predicting the disability economic inactivity rate the sign is positive in 100% of the models and the p-value of the coefficient between sanctions and economic inactive is significantly different from zero in 89% of these models (Table 5). Finally, the robustness ratio is 2.4, which is far higher than the significance threshold of 2 (similar to a t-statistic). This suggests a high level of robustness for these models (Young and Holsteen 2017).

Table 3: Local authorities that sanction more disabled claimants have do not have clear association with the proportion of disabled people who are employed

Economic inactivity	**Estimate**
Robustness ratio	2.39
Sign stability	100%
Significance rate	89%
Employment	**Estimate**
Robustness ratio	1.14
Sign stability	100%
Significance rate	49%

A measure of the employment rate among disabled people was always included in every model for the economic inactivity robustness tests. Likewise, a measure of the economic inactivity rate among disabled people was always included in every model for the employment robustness tests. Robustness ratio is similar to a t-statistic for robustness. It is calculated by dividing the preferred point estimate by the total standard error of models (combining both sampling standard errors and modelling standard errors). Robustness ratios greater than 2 are considered to be results that are robust.

In contrast, for those models predicting the disability employment rate the sign is positive in 100% of the models but the p-value of the coefficient between sanctions and employment is significantly different from zero in 49% of these models (Table 5). Finally, the robustness ratio is 1.1, which is far lower than the significance threshold of 2. This suggests a very low level of robustness for these models, indicating that the relationship is highly uncertain and probably positive, but close to zero (Young and Holsteen 2017).

Sensitivity and falsification tests

I also conduct a series of falsification tests: first, I test whether the results are sensitive to the inclusion of time dummies, finding they are not (Web Appendix 1). Second, I test whether the total sanction rate is associated with the proportion of disabled people who are economically inactive or employed, finding that it is not (Web Appendix 2). These models suggest that sanctions increase economic inactivity among disabled people only when disabled people are sanctioned. Third, I test whether the sanction rate among non-White people is associated with the disability economic inactivity rate, finding, again, it is not (Web Appendix 3). These falsification tests give these findings a higher degree of specificity because the rise in economic inactivity associated with sanctioning disabled people is not explained by sanctions among unrelated groups. One important modelling choice was the decision to include a measure of an alternative labour market outcome in each regression model. Now, I re-estimate the main model predicting the disability economic inactivity rate without controlling for the disability employment rate (and vice versa), finding no change in our findings (Web Appendix 4).

Discussion

Sanctions are increasingly used to encourage labour market activity among both those who are directly sanctioned and those who may be sanctioned if they do not comply with the conditions associated with receipt of social security (Venn 2012). There is also some evidence that sanctions increase the rates of re-employment (Abbring, van den Berg and van Ours 2005, Boockmann, Thomsen and Walter 2014), even if they also appear to be associated with lower wages upon re-entry, shorter spells in work, and greater welfare exit (Arni, Lalive and Van Ours 2013, Fording, Schram and Soss 2013, Hofmann 2012). However, few studies have considered how sanctions affect the labour market outcomes of specific groups exposed to sanctions and conditionality (Markussen, Roed and Schreiner 2015). In short, there is particular concern that some groups – particularly those living with disabilities – may be disproportionately affected by sanctions and that they may be more likely to exit welfare as a result of being sanctioned (NAO 2016, Reeves and Loopstra 2017). To move this debate forward, I have examined variation in sanctions rates among the disabled across local authorities and over time in connection with labour market activity among disabled people in the same area.

Two important conclusions emerge from these results. First, when the number of disabled people who are being sanctioned in a local authority rises there is also a rise in the disability economic inactivity rate, suggesting that sanctioning disabled people may be pushing people away from the labour market. If, indeed, sanctions are pushing people off of JSA then they are also serving to increase financial hardship among an already economically vulnerable group of people (Loopstra et al. 2015a). What is much less clear from these results is what happens to these individuals in terms of their connection to different forms of social security. It is possible that disabled JSA claimants who have been sanctioned my try to claim Employment Support Allowance. Alternatively, they may – if their circumstances allow or necessity dictates - disconnect from social security entirely.

Second, I do not find a clear relationship between high employment rates among the disabled

and greater sanctioning of disabled JSA claimants, suggesting the impact of sanctioning on re-employment among disabled people is at best modest and at worst zero. These estimated associations are not explained by a range of confounders nor by unobserved differences between local authorities over time. Importantly, I find that the association between sanctioning and economic inactivity is not sensitive to model specification while the association between sanctioning and employment rates among disabled people is highly sensitive to modelling decisions. More work is needed; but these results cautiously suggest that sanctions are not helping disabled people into work.

There are, however, important limitations to this study. First, the data used in this analysis relies on aggregate data at the local authority level. One consequence of using aggregated data is that it is impossible to know whether the people sanctioned are also the same individuals who are moving into economic inactivity or into employment. Sanctions, of course, affect both those directly penalised and also those who could potentially be penalised if they fail to comply with conditionalities. Despite this, these results have a high degree of specificity and are informed by previous evidence which is grounded in individual-level analyses. Second, as with all models, there is the possibility unobserved factors that influence both the independent and dependent variables may explain the statistical relationships documented here. While this cannot be ruled out, it is clear that the relationships documented here are fairly stable regardless of the control variables included in the model, suggesting that the confounder would need to explain a substantial proportion of the variation between the independent and dependent variable if it were to remove the relationship between sanctions and the disability economic inactivity rate completely.

Third, the measures of economic inactivity and employment among disabled people are imperfect. Even when using aggregate data, it would be preferable to utilise measures of the proportion of disabled people who are employed and inactive rather than the proportion of employed (or economically inactive) people who are disabled. Fourth, this analysis has focussed on sanctions that have been applied and not rescinded, but even sanctions that have been successfully appealed may alter incentives and increase hardship, suggesting that future analyses should examine how different outcomes from the original sanction decision may influence employment trajectories. Fifth, due to data limitations, this paper does not look at sanctions applied to ESA recipients. This will be an incredibly important area of future work. Sixth, the measure of disability which informs this study is based on a binary indicator that denotes someone as either possessing a work-limiting condition or not. This measure ignores the different types of work-limiting conditions and the regional distribution of these conditions. Some local authorities may have more people with more challenging work-limitations than others and this may affect the relationship between sanctions and economic activity. However, assuming that the regional distribution of work-limitations is fairly stable over time, these differences would be accounted for by the fixed-effects model.

There is a clear need for more research able to address the important limitations of this and other studies. In particular, the effect of sanctions will likely vary across different groups and any assessment of the effectiveness of sanctions will need to consider whether sanctions may disproportionately harm already vulnerable groups (Work and Pensions Committee 2015).

This may require the Department for Work and Pensions to conduct detailed in-house analyses using existing data sources and may even require new evaluations to assess the cost-effectiveness of these changes to social security (NAO 2016).

Taken together, these results suggest that sanctioning disabled people may lead to greater economic inactivity and, to a lesser extent, greater employment among disabled people. However, the association between sanctioning and greater employment is highly sensitive to model specification and is much closer to zero. In contrast, the association between sanctions and greater economic inactivity has a high degree of robustness and the association is approximately twice as large as the association between sanctions and employment. Similar to other work using aggregate-level data (Loopstra et al. 2015b), these findings cannot rule out the possibility that sanctioning disabled people does encourage some people to enter work faster than they would have done in the absence of a sanction. However, this association appears to be relatively modest, especially compared to the influence that sanctions may be having on JSA off-flow among disabled claimants.

Sanctions are intended to activate labour market participants, motivating them to seek work in ways that are consistent with government expectations pertaining to what makes a good job search (Oakley 2014, Venn 2012). Yet, sanctions accomplish this by placing additional burdens on the jobseeker, thereby increasing the work-demands of claiming unemployment insurance. There is some evidence suggesting that the new conditions attached to claiming JSA may systematically disadvantage disabled claimants, making it more difficult for them to remain in the job seeker category (Reeves and Loopstra 2017). Increasing work-demands have led to greater economic inactivity among those with disabilities (Baumberg 2014). Similarly, increasing claimant-demands may have led to even greater economic inactivity. Sanctions, then, may have the opposite of their intended effect among people living with a disability, pushing them further away from the labour market and deeper into poverty (Patrick 2011).

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Web Appendix

Web Appendix 1: Association between number of disabled people sanctioned and economic activity with local-authorities over time, including time dummies.

Web Appendix 2: Association between total number of people sanctioned and economic activity with local-authorities over time.

Web Appendix 3: Association between total number of non-white people sanctioned and economic activity with local-authorities over time.

Web Appendix 4: Association between number of disabled people sanctioned and economic activity across local-authorities over time, without adjusting for the alternative labour market outcome.

Web Appendix 1: Association between number of disabled people sanctioned and economic activity with local-authorities over time, including time dummies.

	Proportion of disabled people who are	
	Economically inactive (%)	**Employed (%)**
Covariates	(1)	(2)
Number of disabled people sanctioned (% of claimants)	0.39*	0.32
	(0.16)	(0.18)
Proportion of disabled people who employed (%)	-0.88**	
	(0.011)	
Proportion of disabled people who inactive (%)		-0.94**
		(0.011)
Number of JSA claimants (% of population)	-0.56*	-0.87**
	(0.089)	(0.087)
Proportion of JSA claimants aged 55-64	-0.015	0.38*
	(0.15)	(0.15)
Proportion of JSA claimants aged 18-24	0.028	0.049
	(0.028)	(0.028)
Proportion of claimants who are disabled	-0.025**	-0.026**
	(0.0031)	(0.0030)
Total population (logged)	0.021	-0.0055
	(0.14)	(0.14)
Percentage of households with a disability	0.14**	-0.059
	(0.036)	(0.038)
Percentage of lone parent households	-0.038	-0.069
	(0.071)	(0.060)
Percentage of White households	-0.0062	0.026**
	(0.0078)	(0.0083)
Time-dummies	Y	Y
Local-authority years	2067	2067
R^2	0.91	0.93

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. Constant estimated but not reported. * $p < 0.05$, ** $p < 0.01$

Web Appendix 2: Association between total number of people sanctioned and economic activity across local-authorities over time.

	Proportion of disabled people who are	
	Economically inactive (%)	**Employed (%)**
Covariates	(1)	(2)
Number of people sanctioned (% of claimants)	0.54	0.0024
	(0.042)	(0.046)
Proportion of disabled people who employed (%)	-0.88**	
	(0.011)	
Proportion of disabled people who inactive (%)		-0.94**
		(0.011)
Number of JSA claimants (% of population)	-0.62*	-0.87**
	(0.079)	(0.079)
Proportion of JSA claimants aged 55-64	0.035	0.15
	(0.079)	(0.079)
Proportion of JSA claimants aged 18-24	0.023	0.055*
	(0.027)	(0.025)
Proportion of claimants who are disabled	-0.025**	-0.026**
	(0.0028)	(0.0029)
Total population (logged)	-0.014	-0.086
	(0.14)	(0.14)
Percentage of households with a disability	0.14**	-0.061
	(0.035)	(0.037)
Percentage of lone parent households	-0.026	-0.11
	(0.064)	(0.059)
Percentage of White households	-0.0058	0.026**
	(0.0078)	(0.0084)
Local-authority years	2067	2067
R^2	0.91	0.93

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. Constant estimated but not reported. * $p < 0.05$, ** $p < 0.01$

Web Appendix 3: Association between total number of non-white people sanctioned and economic activity across local-authorities over time.

	Proportion of disabled people who are	
	Economically inactive (%)	**Employed (%)**
Covariates	(1)	(2)
Number of non-white people sanctioned (% of claimants)	0.56 (0.16)	0.0029 (0.17)
Proportion of disabled people who employed (%)	-0.89** (0.011)	
Proportion of disabled people who inactive (%)		-0.94** (0.011)
Number of JSA claimants (% of population)	-0.63* (0.078)	-0.87** (0.079)
Proportion of JSA claimants aged 55-64	0.044 (0.10)	0.15 (0.11)
Proportion of JSA claimants aged 18-24	0.023 (0.027)	0.056* (0.026)
Proportion of claimants who are disabled	-0.025** (0.0028)	-0.026** (0.0029)
Total population (logged)	-0.012 (0.14)	-0.087 (0.14)
Percentage of households with a disability	0.16** (0.035)	-0.061 (0.036)
Percentage of lone parent households	-0.019 (0.064)	-0.11 (0.060)
Percentage of White households	-0.0033 (0.011)	0.027* (0.012)
Local-authority years	2067	2067
R^2	0.91	0.93

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. Constant estimated but not reported. * $p < 0.05$, ** $p < 0.01$

Web Appendix 4: Association between number of disabled people sanctioned and economic activity across local-authorities over time, without adjusting for the alternative labour market outcome.

	Proportion of disabled people who are	
	Economically inactive (%)	**Employed (%)**
Covariates	(1)	(2)
Number of disabled people sanctioned (% of claimants)	0.94*	-0.71
	(0.44)	(0.49)
Number of JSA claimants (% of population)	0.94*	-1.74**
	(0.29)	(0.29)
Proportion of JSA claimants aged 55-64	-0.65*	0.74*
	(0.31)	(0.32)
Proportion of JSA claimants aged 18-24	-0.15	0.20*
	(0.092)	(0.091)
Proportion of claimants who are disabled	-0.012*	-0.015*
	(0.0058)	(0.0061)
Total population (logged)	0.50	-0.54
	(0.40)	(0.41)
Percentage of households with a disability	1.25**	-1.25**
	(0.11)	(0.11)
Percentage of lone parent households	0.44*	-0.53*
	(0.22)	(022)
Percentage of White households	-0.17**	0.19**
	(0.035)	(0.036)
Local-authority years	2067	2067
R^2	0.48	0.56

Notes: Standard errors in parentheses and are clustered to reflect non-independence of sampling. Data on household composition comes from 2011 census. Proportion of claimants who are disabled is calculated from Annual Population Survey. Constant estimated but not reported. * $p < 0.05$, ** $p < 0.01$