National Audit Office

Report
by the National Audit Office

Department for Work & Pensions

Benefit sanctions: detailed methodology

NOVEMBER 2016

Our vision is to help the nation spend wisely.

Our public audit perspective helps Parliament hold government to account and improve public services.

The National Audit Office scrutinises public spending for Parliament and is independent of government. The Comptroller and Auditor General (C&AG), Sir Amyas Morse KCB, is an Officer of the House of Commons and leads the NAO, which employs some 785 people. The C&AG certifies the accounts of all government departments and many other public sector bodies. He has statutory authority to examine and report to Parliament on whether departments and the bodies they fund have used their resources efficiently, effectively, and with economy. Our studies evaluate the value for money of public spending, nationally and locally. Our recommendations and reports on good practice help government improve public services, and our work led to audited savings of £1.21 billion in 2015.

Contents

The National Audit Office study team consisted of:
Dimitris Pipinis, Colin Ross, Sarah Taylor and Andrew Tuffin, with assistance from Alice Broughton and Kishan Khetani, under the direction of Max Tse.

This report can be found on the National Audit Office website at www.nao.org.uk

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157–197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Enquiries: www.nao.org.uk/contact-us

Website: www.nao.org.uk

Twitter: @NAOorguk

Introduction

1 This appendix accompanies our value-for-money report, *Benefit sanctions*.[1] In our report we concluded that the Department for Work & Pensions (the Department) should use its data to assess outcomes and support better understanding of the impacts of benefit sanctions.

2 To demonstrate the opportunities for better use of the Department's data, we assessed the impact of sanctions on employment outcomes. We took advantage of a natural experiment in the design of the Work Programme – a large welfare-to-work programme.[2] We found statistically significant effects after a sanction is imposed, including on a claimant's probability of employment, number of days employed and number of days neither employed nor claiming benefits.

3 As with any research of this kind, there are limitations in our analysis. Care should be taken in drawing conclusions from it. In particular, our work measures direct effects on people who are sanctioned and does not measure indirect effects such as deterrence. In this appendix we set out our methods and findings, and discuss the interpretation and limitations of our approach.

4 In developing this analysis we benefited from informal advice and comments from several academic experts and the Department's own analysts. However, our work has not been fully peer reviewed. This appendix should be treated as a working paper or other preliminary statement of findings.

Note

5 The Department has expressed caution about the results of our analysis on the grounds that they are preliminary and not extensively peer reviewed. Its officials have reviewed our calculations, and their comments on methods are reflected in the discussion about limitations of the analysis. Although the Department has not identified significant flaws in the approach or calculations, any complex analysis of this kind is subject to technical and methodological judgements. In particular, the impact of sanctions on Employment and Support claimants is previously unexamined in the literature. We agree that more work is required in this area and explain our approach to help inform further analysis.

1 Comptroller and Auditor General, *Benefit sanctions*, Session 2016-17, HC 628, National Audit Office, November 2016. This note sets out more detail on the methods underlying the findings in paragraphs 3.9 to 3.11 of our report.
2 The Department introduced the Programme in 2011. It aims to help people at risk of becoming long-term unemployed. The Department will stop referrals to the Programme in April 2017.

Objectives

6 We aimed to estimate how receiving a sanction affects claimants' employment outcomes. In theory there are several different effects that could arise, including the direct result of receiving sanctions, and deterrence effects on those who change their behaviour to avoid sanctions (**Figure 1**).

7 These theoretical effects are uncertain so it is important to assess the empirical evidence for the effect of sanctions on each outcome. Academic research papers from the UK and other countries confirm that sanctions have mixed effects. While they lead to higher employment, those jobs can be shorter and provide lower earnings than claimants would have received otherwise. Sanctions can also cause higher inactivity, where people neither work nor claim.[3]

8 Our analysis, like most of the international literature on the topic, considers the direct impact of a sanction on the employment outcomes and benefit take-up of people who receive sanctions. We are interested in the marginal impact of higher or lower sanction use, not the absolute effect of removing sanctions altogether. We do not measure deterrence effects.

The Work Programme

9 We analysed Jobseeker's Allowance claimants and Employment and Support Allowance claimants participating in the Work Programme, the Department's externally-run welfare-to-work programme. The Department introduced the Work Programme in 2011 to raise employment rates among long-term benefit recipients.[4] People take part in the Programme for up to two years, and participation is compulsory for some.

Figure 1
Possible effects of sanctions[1]

Type of effect	Duration of unemployment	Post-unemployment earnings	Job stability
Direct (ex post)	Decrease	Uncertain	Uncertain
Indirect/deterrence (ex ante)	Decrease	Uncertain	Uncertain

Note

1 Theoretical predictions draw from Patrick Arni, Rafael Lalive and Jan van Ours, 'How effective are unemployment benefit sanctions? Looking beyond unemployment exit', *Journal of Applied Econometrics*, vol. 28, 2013, pp. 1153-78. Arni et al (2013) also hypothesise that for some groups benefit sanctions may discourage searching for jobs.

Source: National Audit Office

3 The impact of benefit sanctions has been studied in a number of countries, including the Netherlands, Germany, Switzerland, Sweden, Denmark, Great Britain and the United States. See Figure 21 in our report *Benefit sanctions*.
4 The Department will stop referrals to the Programme in April 2017.

10 The Work Programme accounts for a large number of sanctions (**Figure 2**). There are substantial differences between providers in how they use sanctions. They place different amounts of emphasis on sanctions as a tool to improve claimants' employment outcomes, and give different amounts of discretion to individual advisers.[5] This variation allows us to analyse whether people with similar skills and opportunities achieve different employment outcomes, simply because they have different likelihoods of receiving sanctions.

11 To run the Programme the Department divided Great Britain into 18 areas, called 'contract package areas'. Within each area two or three providers are responsible for helping Work Programme participants to move into lasting employment. The types of support provided vary, including help with CVs, interview training and skills development. Providers can operate in more than one 'contract package area' so some providers have multiple contracts.

12 The Department pays providers based on how many claimants gain lasting employment within a given period, typically 24 months. Within areas, the Department allocates claimants randomly to providers. It does this to ensure providers have similar claimants. Prime providers subcontract their services to around 400 subcontractors.

Figure 2

Work Programme sanctions and outcomes, June 2011 to March 2016

	Jobseeker's Allowance claimants	Employment and Support Allowance claimants	Total
Mandatory participants[1]	1,473,000	261,000	1,734,000
Sanctions[1]	673,000	73,000	746,000
Per participant	0.5	0.3	–
% of all sanctions	23	80	–
Sanction referrals[1]	2,268,000	296,000	2,564,000
Per participant	1.5	1.1	–
% of all referrals	36	91	–
Job outcomes[1]	485,000	30,000	515,000
Contract package areas	18	18	–
Contracts	40	40	–

Note

1 Rounded to the nearest thousand.

Source: National Audit Office analysis of Department for Work & Pensions official statistics

5 See, Department for Work & Pensions, *Work Programme evaluation: operation of the commissioning model, finance and programme delivery'*, December 2014.

13 Providers have some freedom to decide what support to offer and which activities to make compulsory. Providers make sanction referrals to the Department if claimants do not complete compulsory activities. The Department then decides whether to impose sanctions.

Data

14 In our analysis we examine individual-level administrative data on outcomes for people who receive a sanction. These micro-data allow us to construct individuals' histories of claiming, employment, sanctions and participation in the Work Programme. Our data come from the Department's Work and Pensions Longitudinal Study which draws on several sources of data (**Figure 3**).

15 Other research on sanctions in Great Britain uses aggregate data to study the relationship between sanctions and employment outcomes.[6] Using aggregate-level data to examine individual-level behaviour is difficult. In contrast, using micro-data on individual benefit claimants allows us to compare similar claimants. By comparing similar claimants we are in a stronger position to analyse the causal effect of sanctions on employment outcomes.

Figure 3
Data: sources

Data type	Source	Further details
Claimant sanction history	Decision Making and Appeals System	DWP system
	Decision Making and Appeals Case Recorder	DWP system
Benefit claim histories	National Benefits Database	DWP system
Employment and earnings	Real Time Information	Extract from HMRC held by DWP
Work Programme participation	Work Programme Analytical Dataset	DWP system

Note
1 DWP: Department for Work & Pensions; HMRC: HM Revenue & Customs.

Source: National Audit Office

6 Rachel Loopstra et al, 'Do punitive approaches to unemployment benefit recipients increase welfare exit and employment? A cross-area analysis of UK sanctioning reforms', Sociology working paper 2015-01, Department of Sociology, University of Oxford, 2015.

Sample selection

16 In selecting our sample we followed the method used in Boockmann et al (2014).[7] Specifically, our treatment group is made up of people who, during our period of observation, received one and only one sanction (**Figure 4**). We wanted to analyse the impact of a claimant's first sanction, so we excluded people who had received sanctions between joining the Programme and the start of our period of analysis.

17 Our control group is made up of people who meet the same conditions as the treatment group, except that they did not receive a sanction during the period of observation. Following Boockmann et al (2014), we compared the control group with the treatment group by creating outcome variables. To do this we drew randomly from a uniform distribution of sanction dates between February and May 2014. As with the treatment group, we only included people with an active Jobseeker's Allowance or Employment and Support Allowance claim on the day of the hypothetical sanction.

Figure 4
Data: selection

	Conditions for selecting data
Population	Work Programme participants continuously enrolled between 1 February 2014 and 31 May 2014.
Benefits claimed	Jobseeker's Allowance or Employment and Support Allowance.
Sanction history	No sanctions between joining the Work Programme and 1 February 2014. No more than one sanction between 1 February 2014 and 31 May 2014. No limit on number of sanctions after 1 June 2014.
Employment history	No earned income between 1 April 2013 and 1 February 2014. No pension income. No employment spells paid irregularly or less often than monthly. Not employed on the day the sanction was imposed.
Exclusions	Exclude if no National Insurance number recorded, to ensure matching to real-time information data on earnings. Exclude if claim not active on the day of the sanction.
Assumptions	End dates estimated where missing.

Source: National Audit Office

7 Bernhard Boockmann, Stephan L Thomsen, and Thomas Walter, 'Intensifying the use of benefit sanctions – an effective tool to shorten welfare receipt and speed up transitions to employment?', *IZA Journal of Labor Policy*, 3:21, 2014.

18 We use the period from 1 February 2014 to 31 May 2014 for two reasons. First, employment data is of much higher quality after October 2013 when the roll-out of the Real-Time Information system was completed. Second, people are less likely to be referred for sanctions over the Christmas period, and we did not want to look at a time period with unusual sanction patterns.

19 We analyse Jobseeker's Allowance and Employment and Support Allowance claimants separately. The Jobseeker's Allowance sample has 95,374 individuals. The Employment and Support Allowance sample has 130,582 individuals.

Approach and model specification

Specifying the model

20 A simple comparison of the outcomes of people who did and did not receive sanctions would not tell us how claimants are affected by receiving a sanction. This is because people who receive sanctions may have different unobserved characteristics that make them both more likely to receive sanctions and less likely to find work. We needed a way to distinguish the effect of receiving a sanction from other factors affecting outcomes.

Using an instrumental variables approach

21 To address the problem of unobserved characteristics we take what is known as an instrumental variables approach. Instrumental variables are commonly used by social scientists as a way of controlling for unobserved characteristics. This approach allows us to identify the causal impact of sanctions on employment and benefit uptake. We followed the method used by Boockmann et al (2014) to analyse the impact of sanctions on claimants in Germany.

22 Our instrumental variable is the average sanction referral rate for each contract between February and May 2014. The instrument allows us to exploit variation in provider sanction referral rates within the same contract package area. Because providers have different sanction referral rates, we can treat random assignment to providers as a natural experiment and compare outcomes for otherwise similar participants who are assigned to different providers.

23 We estimate a two-stage least squares regression model. This model estimates a relationship between the fitted probability that someone receives a sanction, with each of our outcomes of interest: employment status, days claiming, days working and earnings (**Figure 5**). Within our model we control for a number of other variables (**Figure 6** on page 12).

Figure 5
Specification: model

First stage model

$S_i = \delta Z_i + \alpha X_i + \varepsilon_i$

X_i is a vector of covariates, Z_i a continuous instrument, S_i is a dummy variable showing whether individual i has received a sanction ($S_i = 1$) or not ($S_i = 0$) and $\boldsymbol{\varepsilon}_i$ is an error term with a conditional mean of zero.

Second stage model

$Y_i = \beta X_i + \theta S_i + u_i$

Y_i is the outcome variable of interest (for example, $Y_i = 1$ denotes employment of individual i and $Y_i = 0$ denotes non-employment), S_i is the fitted probability that individual i receives a sanction and X_i is a vector of covariates similar to the term in the first stage model, at individual and area level. We allow this error term and the error term $\boldsymbol{\varepsilon}_i$ of equation in the first stage to be correlated across observations from the same provider within an area.

Outcomes of interest

Employment status	Whether a claimant was employed for at least one day in the 3, 6 or 12 months after a sanction.
Days employed/claiming	Number of days in employment in the 3, 6 or 12 months after a sanction.
	Number of days claiming.
	Number of days neither claiming nor in employment.
	Number of days both claiming and in employment.
Earnings	Total earnings in the 3, 6 or 12 months after a sanction.

Note

1 This approach follows Bernhard Boockmann, Stephan L Thomsen and Thomas Walter. 'Intensifying the use of benefit sanctions – an effective tool to shorten welfare receipt and speed up transitions to employment?', *IZA Journal of Labor Policy,* 3:21, 2014.

Source: National Audit Office

Figure 6
Specification: control variables

Independent variables	Description
Individual characteristics	Age (in years). Sex (male or female). Ethnic group (White, or Black or Minority Ethnic). Disability status (disabled or not disabled).
Opportunity type	Indicator, assigned to claimants by the Department, of job-readiness.
Duration on the Work Programme	Number of days between attachment to the Work Programme and 1 February 2014.
Fixed effects	Provider fixed effects. Contract package area fixed effects.
Provider performance	Average provider performance in the area (number of job outcome payments divided by estimated caseload) between February and May 2014.[1]
Further notes	Included a small number of people with high earnings, rather than excluding as outliers. Included all Work Programme providers. Included sanctions imposed for all reasons, not just sanctions for not taking part in the Work Programme. Included only people with an active claim on the day of the sanction (a hypothetical sanction date for the control group). Reset to zero the earnings of a small number of people with negative earnings.

Note

1 No data are available on participants per month. Instead, the number of 'attachments' (the number of people who start the Work Programme) has been adjusted to calculate caseload by subtracting people who left the Programme after finding work.

Source: National Audit Office

Discussion of model specification

24 To meaningfully interpret the results of our analysis we consider whether the model satisfies assumptions for local average treatment effects. **Figure 7** sets out these conditions.

The exclusion principle

25 Our approach assumes that variation in providers' sanction referral rates reflects differences in how they use sanctions. We need to exclude the possibility that differences in referrals reflect other factors such as the quality of employment support, or claimant characteristics or behaviour. To take account of other possible relationships between sanctions and performance, we control for factors including:

- average provider performance at the contract level;
- provider fixed effects, which control for any differences across providers that may affect both the likelihood of a sanction and employment outcomes;
- contract package area fixed effects, to control for differences between claimants in different areas; and
- claimant characteristics, such as age.

26 Although we include fewer claimant-level control variables than Boockmann et al (2014), we take advantage of the fact that claimants are allocated randomly to providers within areas.

Figure 7

Specification: technical conditions for local average treatment effects

Assumption	Requirement	Rationale for making assumption in this case
Exclusion	The instrument is uncorrelated with the error term in the model. The instrument affects outcomes through a single known channel (ie the probability of a sanction).	Participants are randomly assigned to Work Programme providers. We included controls for provider performance and contract package area fixed effects. We control for differences in provider performance within area.
Strength of instrument	The instrument is sufficiently strong as an explanatory variable.	F-statistic comparable to other studies in the literature, and significantly higher than the rule-of-thumb threshold.
Monotonicity	A claimant who would be sanctioned if placed with a provider with few sanctions would also be sanctioned by a provider with more sanctions.	Not generally testable; the assumption appears reasonable.
Stable unit treatment value	The outcomes of one person, whether sanctioned or not, are not affected by whether someone else is sanctioned.	Not testable. This assumption is generally assumed to hold in previous academic research on benefit sanctions.

Note

1 Technical conditions based on Guido Imbens and Joshua Angrist, 'Identification and estimation of local average treatment effects', *Econometrica*, vol. 62, no.2, pp. 467-75, 1994. We have also added the stable unit treatment value assumption as a condition.

Source: National Audit Office analysis

27 To test whether claimant characteristics differed across providers, within the same area, we examined the characteristics of claimants in our sample. We looked at five claimant characteristics (age, ethnicity, days in the work programme, sex and disability) and found that, consistent with random allocation, claimants differed very little, across providers within the same area, in terms of those characteristics (**Figure 8**).

Figure 8

Claimant characteristics: Differences across providers within areas in our sample

	Jobseeker's Allowance		Employment and Support Allowance	
	Average (all areas)[1]	Average (difference within areas)[2]	Average (all areas)[1]	Average (difference within areas)[2]
Age in years	38	0.5	43	0.98
Percentage of male	58	1.2	51.1	1.3
Percentage of White	72.7	1.1	80.4	1.1
Percentage of Disability	19.5	1.3	52.9	3.7
Number of days spent on the Work Programme at the start of the treatment period[3]	288	10.2	297	22.5

Notes

1 The average value of the characteristic across the fourty contracts. Unit of observation is the contract.

2 The average value of the difference in the characteristic across providers within the same area. In the four areas with more than two providers, we calculate the difference by subtracting the lowest from the highest value of the characteristic. Unit of observation is the area.

3 The average difference in number of days in the work programme is exaggerated because in one area, the Department replaced one provider with another. As a result, participants who switched providers appear as having being in the programme for a shorter time period.

Source: National Audit Office analysis of Department for Work & Pensions data

Relevance and strength of the instrument

28 We assume that our instrument – the sanction referral rate – is a good predictor of an individual's likelihood of receiving a sanction (relevance). To test this assumption we looked at how well the instrumental variable predicts whether an individual received or did not receive a sanction. We found a statistically significant relationship (**Figure 9**).

Figure 9
First-stage regression results

Independent variable	Jobseeker's Allowance		Employment and Support Allowance	
	Coefficient[1]	Standard error (clustered)[2]	Coefficient[1]	Standard error (clustered)[2]
Average sanction referral rate (increase by one percentage point)	.0034***	.0002	.0073***	.0007
Average performance (increase by one percentage point)	-.017***	.003	-.001***	.0004
Sex (male compared to female)	.007***	.001	-.0002	.001
Ethnic group (White compared to Black or Minority Ethnic)	-.0003	.002	.004***	.001
Age (increase by one year)	-.0007***	.0001	-.0004***	.00005
Days in the Work Programme at 1 February 2014	-0.00004***	.00001	-.00006***	.000009
Contract package area fixed effects	Yes			Yes
Provider fixed effects	Yes			Yes
Opportunity type dummies	Included			Included
Disability status dummies	Included			Included

Note
1 Clustered standard errors at the contract level. Significance is shown by asterisks. ***p≤.01; **p≤.05; *p≤.1, two tailed.

Source: National Audit Office analysis of Department for Work & Pensions data

29 To confirm that our results do not suffer from a 'weak instrument' problem we calculated the F-statistic for the instrumental variable (**Figure 10**). The F-statistic is substantially higher than the rule-of-thumb value of 10, which sometimes indicates a weak instrument problem.[8]

Stable unit treatment value

30 We assume one person's outcomes are not affected by whether someone else receives a sanction.

31 It is not clear whether people are aware of other people's sanctions or not. Sanction information is private, but it is possible that claimants may sometimes become aware that others have been sanctioned. If the assumption does not hold, our findings may be picking up some deterrence effects of sanctions, as well as the direct effects we intend to measure.

Figure 10
Specification: test of strength of instrumental variables

Instrumental variable	F-statistic[1]
Jobseeker's Allowance sanction referral rate	135
Employment and Support Allowance sanction referral rate	103

Note
1 The F-statistics relate to the instrumental variable from the first-stage regression. They are based on clustered standard errors at the contract level.

Source: National Audit Office analysis of Department for Work & Pensions data

8 See, D Staiger and J Stock, 'Instrumental variables regression with weak instruments', *Econometrica*, 65, 557-86, 1997.

Differences in approach

32 Our approach differs from Boockmann et al (2014) in four respects (**Figure 11**). In particular, our instrument is continuous rather than binary and it captures sanction referral rates rather than sanction rates. We chose a continuous instrument to allow for more variation in the instrumental variable.[9] We use sanction referral rates, not sanction rates, because the Department, not providers, imposes sanctions. Providers refer claimants to the Department for possible sanctions.

Figure 11
Differences from method taken by previous work

National Audit Office approach	Boockmann et al approach	Explanation
Continuous instrument	Binary instrument	**Quality of instrument**. Our instrument allows for analysis of greater variation between contracts.
Sanction referral rate	Sanction rate	**Relevance of instrument**. On the Work Programme providers refer claimants, but the Department decides whether to apply a sanction.
Random allocation of claimants and some control variables	Large number of control variables	**Exclusion principle**. We benefit from random allocation, which makes it less important to include additional control variables.
Control for provider performance	Does not control for differences in employment support across welfare agencies	**Exclusion principle**. We benefit from data on performance, which reduces the possibility that the instrumental variable reflects differences in employment support across providers.

Note

1 Bernhard Boockmann, Stephan L Thomsen, and Thomas Walter, 'Intensifying the use of benefit sanctions – an effective tool to shorten welfare receipt and speed up transitions to employment?', *IZA Journal of Labor Policy,* 3:21, 2014.

Source: National Audit Office

9 In Boockmann et al (2014), the instrument values differ based on whether the sanction rate of the welfare agency is above or below the median sanction rate of all welfare agencies. This means that two agencies with very different sanction rates could be assigned the same value for the instrument as long as they are both below or both above the medial sanction rate.

Results

Description of results

33 Two types of claimants are subject to the possibility of sanctions on the Work Programme: unemployed Jobseeker's Allowance claimants and sick and disabled Employment and Support Allowance claimants in the work-related activity group.

Jobseeker's Allowance claimants

34 Our results for Jobseeker's Allowance claimants show statistically significant effects in a number of outcomes (**Figure 12**). We find that sanctions:

- increase the probability of being in employment in later months;
- reduce the number of days claiming benefits;
- increase days in employment (accounting for about half the fall in days claiming); and
- increase days neither in employment nor claiming benefits (accounting for the remaining half of the fall in days claiming).

35 For Jobseeker's Allowance claimants the effect on earnings is statistically significant at 6 months but not at 3 or 12 months. There is no observable effect on days both claiming and employed. Jobseeker's Allowance claimants can work for up to 16 hours a week without this affecting their claim.

Employment and Support Allowance claimants

36 Our results for Employment and Support Allowance claimants are different (**Figure 13** on page 20). We find statistically significant effects that sanctions:

- reduce the probability of employment in later months;
- increase the number of days claiming benefits and not working;
- increase days neither in employment nor claiming benefits;
- reduce the number of days both claiming and employed; and
- reduce earnings.

37 These results differ markedly, both in terms of the size and direction of the effects, from those we obtained when we estimated an alternative ordinary least squares (OLS) model of the effect of sanctions on employment outcomes. The large difference between the OLS and instrumental variables results suggests the instrumental variables approach has been important in controlling for unobserved factors.

Figure 12
Results: Jobseeker's Allowance claimants

Outcome	Impact on outcome[1]	Standard error[2]	Significant[3]
Probability of employment:			
within 3 months	+71 percentage points	9.8 percentage points	Yes
within 6 months	+72 percentage points	12.4 percentage points	Yes
within 12 months	+98 percentage points	18.3 percentage points	Yes
Days employed and not claiming:			
within 3 months	+24	3.7	Yes
within 6 months	+86	8.5	Yes
within 12 months	+225	20.4	Yes
Days neither employed nor claiming:			
within 3 month	+29	4.1	Yes
within 6 months	+76	12.7	Yes
within 12 months	+236	41.1	Yes
Days claiming and not employed:			
within 3 months	-54	5.6	Yes
within 6 months	-163	10.1	Yes
within 12 months	-468	34	Yes
Days claiming and employed:			
within 3 months	+1	2.0	No
within 6 months	+2	3.9	No
within 12 months	+6	8.1	No
Earnings from employment:			
within 3 months	+£795	£746	No
within 6 months	+£3,229	£1,191	Yes
within 12 months	+£1,208	£2,207	No

Notes

1 Impact of receiving a sanction compared with not receiving a sanction.

2 The standard errors are clustered at the contract level.

3 We report that results are significant if the p-value was less than 0.1.

Source: National Audit Office analysis of Department for Work & Pensions data

Figure 13
Results: Employment and Support Allowance claimants

Outcome	Impact on outcome[1]	Standard error[2]	Significant[3]
Probability of employment:			
within 3 months	-36 percentage points	4 percentage points	Yes
within 6 months	-43 percentage points	4.8 percentage points	Yes
within 12 months	-63 percentage points	11.4 percentage points	Yes
Days employed and not claiming:			
within 3 months	-4	0.3	Yes
within 6 months	-14	1.5	Yes
within 12 months	-40	9.3	Yes
Days neither employed nor claiming:			
within 3 month	+3	0.5	Yes
within 6 months	+18	3.2	Yes
within 12 months	+23	6.4	Yes
Days claiming and not employed:			
within 3 months	+15	2.2	Yes
within 6 months	+38	6.5	Yes
within 12 months	+88	20.8	Yes
Days claiming and employed:			
within 3 months	-14	1.8	Yes
within 6 months	-41	4.0	Yes
within 12 months	-71	6.6	Yes
Earnings from employment:			
within 3 months	-£2,314	£393	Yes
within 6 months	-£2,810	£430	Yes
within 12 months	-£4,213	£884	Yes

Notes

1 Impact of receiving a sanction compared with not receiving a sanction.

2 The standard errors are clustered at the contract level.

3 We report that results are significant if the p-value was less than 0.1.

Source: National Audit Office analysis of Department for Work & Pensions data

Interpretation of results

38 Our results for the effect of sanctions on outcomes for Jobseeker's Allowance are consistent with findings from other studies, which suggest sanctions both increase employment and exit from benefits without employment, and lead to low earnings in post-sanction employment. However, it is important to take care in interpreting the results.

Local average treatment effect

39 The coefficients (Figure 12 and Figure 13) show the impact of sanctions on claimants who received a sanction because they were allocated to Work Programme providers who make greater use of sanctions. Our results measure the effect of intensifying the use of sanctions.

40 Our findings cannot necessarily be extrapolated to sanction rates that we did not observe in our sample. For example, very large increases in sanction rates may not lead to equally large changes in employment. Neither should our results be used to estimate the impact of not using sanctions at all.

Direct and indirect effects

41 Our findings for Jobseeker's Allowance claimants look only at the direct effect of receiving a sanction. Although we do not consider deterrence effects, other empirical studies suggest that the indirect effect also increases employment among unemployed claimants who do not receive sanctions. So, the total effect of Jobseeker's Allowance sanctions on the likelihood of employment should be positive (**Figure 14**).

42 We found that the direct effect of receiving a sanction reduced time spent in employment for Employment and Support Allowance claimants. It is natural to assume that claimants respond in similar ways to the possibility of a sanction and the experience of a sanction, just as Jobseeker's Allowance claimants do. However, there is limited evidence and more work needs to be done in this area.

Figure 14
Direct and indirect effects of sanctions

Effect of sanctions	Claimants of unemployment benefits	Claimants of sickness and disability benefits
Direct effect		
Probability of employment among people who receive sanctions	Increases	Decreases
Indirect deterrence effect		
Probability of employment among people who do not receive sanctions	Increases	Not empirically tested
Total effect		
Probability of employment	Increases	Unknown

Source: National Audit Office analysis and summary of research evidence

The size of effects

43 Most of our results are statistically significant. But in interpreting the results it is also important to consider the size of the effects. Small effects can be statistically significant if standard errors are low.

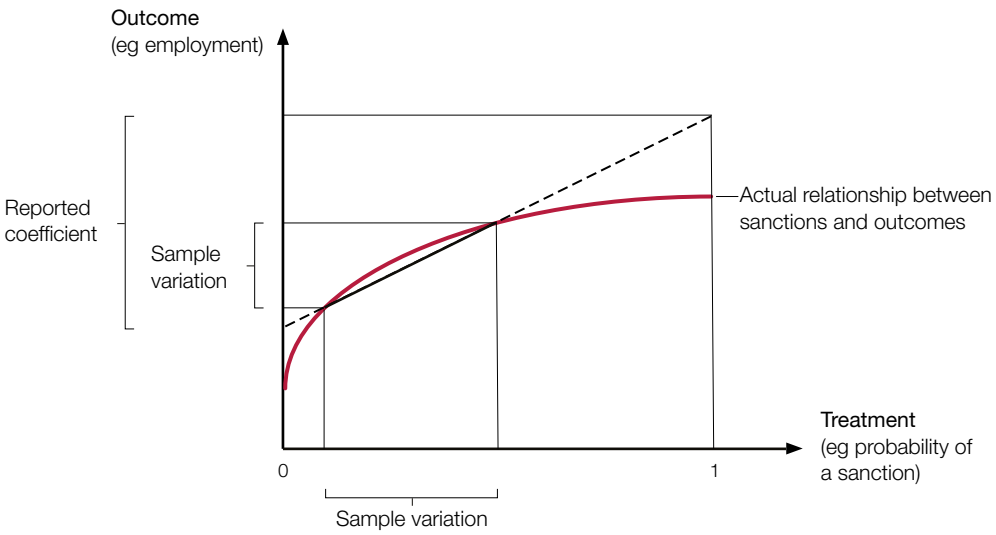
44 In some cases the size of our effects appear implausibly large. One reason is illustrated in **Figure 15**. We estimate the effect of a change in the probability of a sanction from 0% to 100%. But we produce this estimate by comparing smaller differences between providers in the probability of sanctions.

45 Instrumental variables estimates can be sensitive to whether underlying conditions hold, such as the exclusion principle. To test whether our results are picking up other potential relationships between variables we would ideally use a falsification test. These would test whether other outcomes (which are highly unlikely to be related to sanctions) appear to be affected by differences in sanction referral rates across providers (our instrumental variable). We have not been able to identify suitable data for these tests.

Figure 15

Interpretation: illustration of coefficients in a linear model

We estimate the effect of a change in the probability of a sanction from 0% to 100%. But we produce this estimate by comparing smaller differences between providers in the probability of sanctions



Source: National Audit Office

The nature of responses to sanctions

46 Our analysis suggests further work should be done to understand how people respond to sanctions. For example, our model expresses the average impact of sanctions on employment outcomes. The average fall in days spent claiming is split relatively equally between higher employment and higher inactivity. The model does not distinguish between two possibilities:

- people both increasing their time spent in work and in inactivity; and
- some people going into employment and other people becoming inactive.

47 Similarly, further work could be done to understand the pattern of earnings responses. In our findings earnings increases appear relatively small given the large coefficients on employment; this suggests that employment spells may not represent full-time work or that average wages are affected.

Generalising from our results to other groups

48 Our analysis is based on Work Programme participants who meet our conditions. Although we restrict our sample, the characteristics of the individuals in our sample are very similar to the characteristics of Work Programme claimants in general (**Figure 16** overleaf).

49 Other types of claimants could respond to sanctions differently. In **Figure 17** on page 25 we consider some of the limitations and our assessment of the wider relevance of our results. It is likely that our findings are relevant to some extent for existing and emerging claimant groups under new policies and programmes. We consider that our findings support the case for further investigation by the Department and others of the impacts of sanctions on benefit claimants, and greater availability and use of Department data to explore these impacts.

Figure 16
Descriptive statistics

	Jobseeker's Allowance		Employment and Support Allowance	
	Sample	**Population[1]**	**Sample**	**Population[2]**
Number of observations	95,374	1,447,606	130,582	333,978
Percentage who received a sanction in the treatment period	9.1	N/A	3.2	N/A
Average age in years	38	35	43	42
Percentage male	58	66	51	51
Percentage White	74	74	82	81
Average number of days spent on the Work Programme at the start of the treatment period	289	N/A	294	N/A
Contract with the highest sanction referral rate (%)	33	33	10	10
Contract with the lowest sanction referral rate (%)	5	5	0.5	0.5
Sanction referral rate mean (standard deviation)	14 (6)	14 (6)	4 (2)	4 (2)

Notes

1 All individuals who were claiming Jobseeker's Allowance at the time of referral to the Work Programme. Data cover the period from the introduction of the Work Programme to April 2016.

2 All individuals who were claiming Employment and Support Allowance at the time of referral to the Work Programme. Data cover the period from the introduction of the Work Programme to April 2016.

Source: National Audit Office analysis of Department for Work & Pensions data

Figure 17

Interpretation: wider relevance of results[1]

Limitation	Why results may not apply widely	Impact this may make
Long claim duration	Work Programme participants have been claiming benefits for longer than average.	**May be less responsive**. Work Programme participants might be less sensitive to interventions and sanctions given their long claim histories.
Time period	Claimant responses to sanctions may change over time.	**No clear difference**. It is not clear why responses in 2014 would be atypical. The labour market improved from January 2013, so claimants in earlier periods may have been less able to respond to sanctions. Future analysis could look at other time periods. From October 2012, the Department introduced the Work Programme for Employment and Support Allowance claimants who were further from the labour market. By 2014, providers should have overcome any initial disruption to support.
Age	Younger claimants have higher employment outcomes and receive more sanctions	**Uncertain impact**. The claimants we analysed are older than the average Jobseeker's Allowance claimant.
Length of observation	February to May 2014 could be an unrepresentative period.	**No clear difference**. Month of the year could affect whether claimants are referred for sanctions and availability of jobs. We avoided December to January as fewer people are referred around Christmas.
First sanction only	We may have selected people who were disproportionately likely to respond positively to a sanction.	**May be more responsive**. On average, the claimants we analysed spent a year on the Work Programme before being sanctioned. We excluded claimants who had already been sanctioned.
Multiple sanctions	People with multiple sanctions may respond differently to people who receive one sanction.	**May be more responsive**. Most claimants only get one sanction, so our analysis is useful for understanding their behaviour. We excluded claimants who had more than one sanction in the period of observation. Successive sanctions may have weaker effects as the fact that someone is still on benefits suggests they are less responsive to the effects of previous sanctions.
Support model	The Work Programme differs from other employment programmes. Sanction responses may differ.	**Uncertain impact**. It is possible that programme-specific factors matter; but welfare-to-work programmes are common and it is not clear why and in which direction responses might differ. International evidence finds that the impact of sanctions is broadly similar between different programmes in the same country.[2]
Benefit	Responses to Universal Credit sanctions may differ from responses to Jobseeker's Allowance sanctions.	**Uncertain impact**. The Department will continue to support the types of claimants we analysed, but Universal Credit may change how they respond to sanctions. Rules and processes have been converging with Universal Credit, although this was more limited in 2014.

Notes

1 The results of our analysis apply to the group of Work Programme participants we identified in specifying our model. This table examines the extent to which our findings may or may not be informative about the effect of sanctions on other groups of claimants.

2 See, Japp H Abbring, Gerard J van den Berg and Jan C van Ours, 'The effect of unemployment insurance sanctions on the transition rate from unemployment to employment', *Economic Journal*, vol. 115, pp. 602-30, 2005.

Source: National Audit Office analysis

Discussion and limitations

50 Any econometric analysis of this kind makes certain methodological choices and is limited by the availability and accuracy of data. Here we discuss some of the potential limitations of our approach. Our analysis of the effects of sanctions is preliminary and needs further investigation. Our value-for-money report *Benefit sanctions* recommends that the Department should build on this analysis and improve the evidence base for sanction design.

Data availability and quality

51 A common limitation in the analysis of the effects of sanctions is the availability of relevant data. For example, in our analysis we do not have complete data on the outcomes that people experience after a sanction. Self-employment income is not included in the earnings data we used to identify employment spells and earnings. **Figure 18** summarises some of the possible limitations of the data and discusses their likely impact.

Figure 18
Robustness: data limitations

Issue	Likely impact
Self-employment data are not available	**Unknown**. This information is missing for both the control and treatment groups. Around 15% of the jobs found by Work Programme participants were in self-employment.
National Insurance numbers are missing for 2% of sanctioned claimants	**Unlikely to have a significant effect**. It is not likely that individuals without National Insurance numbers are systematically different from those who have them in ways that could affect the results.
Information on educational attainment and skills is not available	**Unlikely to have a significant effect**. The random assignment of claimants to providers makes controlling for individual-level variables less important once contract package area fixed effects are included.

Source: National Audit Office

52 There are restrictions on data in all academic studies of sanctions, including those supplied by the Department when we asked for their evidence base for sanctions (**Figure 19** overleaf).

Technical choices

53 The way an econometric model is specified can lead to differences in results. One way to test the robustness of results is to test different specifications to see if results are very different or broadly consistent.

54 In Figures 20 to 23 we show the results of our tests of different assumptions:

- **Figure 20** on page 29 and **Figure 21** on page 30 compare results when we define Work Programme caseloads differently. Because we do not have reliable data for active caseloads on the Work Programme we had to estimate this using attachment and performance data. We tested different specifications and found consistent results.
- **Figure 22** on page 31 and **Figure 23** on page 32 compare results using different standard errors. In our main results we use clustered standard errors. These take account of the fact that our data are grouped (by Work Programme contract, for example). Clustered standard errors account for the risk that observations in a group can be correlated. We compare these clustered standard errors with the conventional, unclustered standard errors. Our comparison shows that our clustered standard errors are smaller than our conventional estimates, so using conventional standard errors would mean that some results were not statistically significant. Clustering standard errors also addresses potential technical concerns around heteroscedasticity (differences in the variation of responses across the sample).

55 Given the strong methodological preference for clustered standard errors we have presented those in our main results.

Figure 19

Robustness: comparison of data used in international evidence cited by the Department

	Coverage	Data			
Study	**Country, group and time period covered**	**Distinguishes reasons for leaving benefits**	**Administrative data on outcomes**	**Administrative data on sanctions**	**Quality of outcome data**
NAO (2016)[1]	Great Britain; Jobseeker's Allowance and Employment and Support Allowance claimants on the Work Programme; 2014	✔	✔	✔	Self-employment income missing
Abbring et al (2005)[2]	Netherlands; Unemployment Insurance claimants; 16 (out of 19) Unemployment Insurance agencies; 1992 to 1993	✔	✔	✔	Self-employment income missing
Van der Klaauw et al (2013)[3]	Rotterdam, Netherlands; people aged 16 to 60; 2000 to 2003	✔	✗	✔	Outcomes are self-reported
Arni et al (2013)[4]	Seven cantons in Switzerland; people aged 30 to 55; 1998 to 2003	✔	✔	✔	Employment spells with very low earnings are not included
Van den Berg et al (2004)[5]	Rotterdam, Netherlands; welfare recipients, 1994	✔	✗	✔	Outcomes are self-reported
Boockmann et al (2014)[6]	Germany; claimants aged 18 to 57 at 154 of 439 welfare agencies; 2003 to 2006	✔	✔	✗	Self-employment and income from very low paid work is missing
Svarer (2011)[7]	Denmark; people aged 26 to 65; 2003 to 2005	✗	✔	✔	Does not distinguish between inactivity and employment

Notes

1 Paragraphs 3.9 to 3.11 of Comptroller & Auditor General, *Benefit sanctions*, HC 628, Session 2016-17, National Audit Office, November 2016.

2 Jaap H Abbring, Gerard J van den Berg and Jan C van Ours, 'The effect of unemployment insurance sanctions on the transition rate from unemployment to employment', *Economic Journal*, vol. 115, pp. 602-630, 2005.

3 Bas Van der Klaauw and Jan C van Ours, 'Carrot and Stick: How re-employment bonuses and benefit sanctions affect exit rates from welfare', *Journal of Applied Econometrics*, vol. 28, pp. 275-96, 2013.

4 Patrick Arni, Rafael Lalive and Jan C van Ours, 'How effective are unemployment benefit sanctions? Looking beyond unemployment exit', *Journal of Applied Econometrics*, vol. 28, pp. 1153-78, 2013.

5 Gerard Van den Berg, Bas Van der Klaauw and J van Ours, 'Punitive sanctions and the transition rate from welfare to work', *Journal of Labor Economics*, vol. 22, pp. 211-41, 2004.

6 Bernhard Boockman, Stephan L Thomsen and Thomas Walter, 'Intensifying the use of benefit sanctions - an effective tool to shorten welfare receipt and speed up transitions to employment?', *IZA Journal of Labor Policy* 3:21, 2014.

7 Michael Svarer, 'The effect of sanctions on exit from unemployment: evidence from Denmark', *Economica*, vol. 78, pp. 751-78, 2011.

8 Comparisons across different studies should be treated with caution given different data, specifications and methodologies.

Source: National Audit Office

Figure 20

Caseload specification – Jobseeker's Allowance results

Sensitivity of our results to our method of estimating the Work Programme caseload

Outcome	Baseline[1]	Alternative 1[2]	Alternative 2[3]
Probability of employment:			
within 3 months	+71 percentage points	+71 percentage points	+69 percentage points
within 6 months	+72 percentage points	+75 percentage points	+75 percentage points
within 12 months	+98 percentage points	+98 percentage points	+100 percentage points
Days employed and not claiming:			
within 3 months	+24	+24	+24
within 6 months	+86	+86	+85
within 12 months	+225	+226	+226
Days neither employed nor claiming:			
within 3 month	+29	+28	+28
within 6 months	+76	+73	+75
within 12 months	+236	+230	+235
Days claiming and not employed:			
within 3 months	-54	-53	-53
within 6 months	-163	-161	-162
within 12 months	-468	-463	-469
Days claiming and employed:			
within 3 months	+1	+1	+1
within 6 months	+2	+2	+2
within 12 months	+6	+7	+8
Earnings from employment:			
within 3 months	+£795	+£811	+£951
within 6 months	+£3,229	+£3,182	+£3,339
within 12 months	+£1,208	+£599	+£342

Notes

1 For a given month we calculate the caseload by subtracting the cumulative job outcomes from the cumulative attachments for the previous 24 months.

2 For a given month we calculate the caseload by subtracting the cumulative job outcomes from the previous 18 months from the cumulative attachments from the previous 24 months. We exclude the first 6 months of outcomes when calculating the caseload because providers only receive payments once participants complete 6 months in employment.

3 We calculate the caseload by substracting the cumulative job outcomes from the cumulative attachments in a 24-month period. The 24-month period differs between attachments and outcomes. For attachments we use the 24 preceding months. The 24-month period for outcomes starts at 18 months before any given month and lasts for an additional 6 months. This method of calculating the caseload aims to reflect the fact that an individual who is at work in any given month can only be counted as an outcome once they have completed 6 months of employment.

Source: National Audit Office analysis of Department for Work & Pensions data

Figure 21

Caseload specification – Employment and Support Allowance results

The sensitivity of our results to our method of estimating the Work Programme caseload

Outcome	Baseline[1]	Alternative 1[2]	Alternative 2[3]
Probability of employment:			
within 3 months	-36 percentage points	-38 percentage points	-38 percentage points
within 6 months	-43 percentage points	-44 percentage points	-45 percentage points
within 12 months	-63 percentage points	-65 percentage points	-65 percentage points
Days employed and not claiming:			
within 3 months	-4	-4	-4
within 6 months	-14	-15	-16
within 12 months	-40	-42	-42
Days neither employed nor claiming:			
within 3 month	+3	+3	+3
within 6 months	+18	+18	+19
within 12 months	+23	+25	+26
Days claiming and not employed:			
within 3 months	+15	+16	+16
within 6 months	+38	+40	+40
within 12 months	+88	+91	+91
Days claiming and employed:			
within 3 months	-14	-15	-15
within 6 months	-41	-43	-43
within 12 months	-71	-74	-75
Earnings from employment:			
within 3 months	-£2,314	-£2,481	-£2,500
within 6 months	-£2,810	-£2,999	-£3,024
within 12 months	-£4,213	-£4,463	-£4,494

Notes

1 For a given month we calculate the caseload by subtracting the cumulative job outcomes from the cumulative attachments for the previous 24 months.

2 For a given month we calculate the caseload by subtracting the cumulative job outcomes from the previous 18 months from the cumulative attachments from the previous 24 months. We exclude the first 6 months of outcomes when calculating the caseload because providers only receive payments once participants complete 6 months in employment.

3 We calculate the caseload by substracting the cumulative job outcomes from the cumulative attachments in a 24-month period. The 24-month period differs between attachments and outcomes. For attachments we use the 24 preceding months. The 24-month period for outcomes starts at 18 months before any given month and lasts for an additional 6 months. This method of calculating the caseload aims to reflect the fact that an individual who is at work in any given month can only be counted as an outcome once they have completed 6 months of employment.

Source: National Audit Office analysis of Department for Work & Pensions data

Figure 22

Standard error specification – Jobseeker's Allowance

The sensitivity of our results to our method of estimating standard errors

Outcome	Impact on outcome	Standard error (clustered)[1]	Standard error (not clustered)[1]
Probability of employment:			
within 3 months	+71 percentage points	9.8***	35.9**
within 6 months	+72 percentage points	12.4***	42.4*
within 12 months	+98 percentage points	18.3***	48.4**
Days employed and not claiming:			
within 3 months	+24	3.7***	14.5*
within 6 months	+86	8.5***	40.5**
within 12 months	+225	20.4***	98.8**
Days neither employed nor claiming:			
within 3 month	+29	4.1***	14.3**
within 6 months	+76	12.7***	35.3**
within 12 months	+236	41.1***	93.5***
Days claiming and not employed:			
within 3 months	-54	5.6***	23.7***
within 6 months	-163	10.1***	61***
within 12 months	-468	34***	155.5***
Days claiming and employed:			
within 3 months	+1	2.0	8.3
within 6 months	+2	3.9	19.1
within 12 months	+6	8.1	39.5
Earnings from employment:			
within 3 months	+£795	£746	£1,822
within 6 months	+£3,229	£1,191***	£3,495
within 12 months	+£1,208	£2,207	£10,981

Note

1 Asterisks signify different levels of statistical significance of the corresponding coefficients shown. Three asterisks (***) show a p-value smaller than 0.01, two asterisks (**) show a p-value smaller than 0.05 and one asterisk (*) a p-value smaller than 0.1.

Source: National Audit Office analysis of Department for Work & Pensions data

Figure 23

Standard error specification – Employment and Support Allowance

The sensitivity of our results to our method of estimating standard errors

Outcome	Impact on outcome	Standard error (clustered)[1]	Standard error (not clustered)[1]
Probability of employment:			
within 3 months	-36 percentage points	4***	15.1***
within 6 months	-43 percentage points	4.8***	20.5**
within 12 months	-63 percentage points	11.4***	26.4***
Days employed and not claiming:			
within 3 months	-4	0.3***	3.3
within 6 months	-14	1.5***	10.4
within 12 months	-40	9.3***	29.6
Days neither employed nor claiming:			
within 3 month	+3	0.5***	6.3
within 6 months	+18	3.2***	17.4
within 12 months	+23	6.4***	47.7
Days claiming and not employed:			
within 3 months	+15	2.2***	9.5
within 6 months	+38	6.5***	25.2
within 12 months	+88	20.8***	65.7
Days claiming and employed:			
within 3 months	-14	1.8***	6.0***
within 6 months	-41	4.0***	15.0***
within 12 months	-71	6.6***	31.2**
Earnings from employment:			
within 3 months	-£2,314	£393***	£1,033**
within 6 months	-£2,810	£430***	£1,293**
within 12 months	-£4,213	£884***	£2,651

Note

1 Asterisks signify different levels of statistical significance of the corresponding coefficients shown. Three asterisks (***) indicate a p-value smaller than 0.01, two asterisks (**) indicate a p-value smaller than 0.05 and one asterisk (*) a p-value smaller than 0.1.

Source: National Audit Office analysis of Department for Work & Pensions data

Suggestions for future work

56 Future work can make use of the Department's administrative data to expand the scope of our analysis. Our findings are preliminary and we recommend that they are used to inform further investigation of the impact of sanctions on claimants. In particular, we suggest that future work considers:

a alternative estimation techniques such as duration models – these models do not suffer from the limitations associated with instrumental variables;[10]

b deterrence effects of benefit sanctions – this is a less developed research area but previous work provides some guidance on how to examine these issues;[11]

c direct and indirect impacts on other Employment and Support Allowance claimants;

d impacts of variation between comparable jobcentres using the Department's data on jobcentre referrals and sanctions;

e impacts of first and subsequent referrals and sanctions at different times in claims, and for different reasons;

f the quality of work that claimants find, including how sanctions affect earnings. This will be important as the Department starts to use evidence of earnings as a measure of performance under Universal Credit; and

g whether different groups of people respond differently to sanctions, and why they become inactive.

Process and quality review

57 In designing the analysis we benefited from advice from external experts, in particular Professor Gerard van den Berg of the University of Bristol and Jonathan Portes of the National Institute of Economic and Social Research, and from discussions with Department analysts through October and early November 2016 about benefit data and underlying systems. While we have tried to reflect all comments in our discussion of our approach and its limitations, we have not undertaken a full peer review, and we remain responsible for any weaknesses in our method or errors in our analysis.

58 We have recommended that the Department undertakes further analysis of its data and supports wider access to researchers in this area. We conducted our analysis using Department systems in a limited time period. We received full access to the required data towards the end of August 2016, and sent our findings and underlying code to the Department at the end of September 2016. We conducted our analysis on site on Department computers using SAS v. 5.1 software and so are not able to provide access to the data for replication purposes.

10 See, for example, Gerard van den Berg, Bas van der Klaauw and J van Ours, 'Punitive sanctions and the transition rate from welfare to work', *Journal of Labor Economics*, vol. 22, pp. 211-41, 2004.

11 See, for example, Rafael Lalive, Jan C van Ours and Josef Zweimüller, 'The effect of benefit sanctions on the duration of unemployment', *Journal of the European Economic Association,* vol. 3 (6), pp. 1386-417, 2005.

References

In Figure 21 of our report, *Benefit Sanctions*, we reviewed international literature on sanctions. We provide the references below.

JH Abbring, GJ Van den Berg and JC Van Ours, *The effect of unemployment insurance sanctions on the transition rate from unemployment to employment*, Economic Journal, vol. 115, pp. 602–630, 2005.

P Arni, R Lalive, and JC Van Ours, *How effective are unemployment benefit sanctions*? Looking beyond unemployment exit, Journal of Applied Econometrics, vol. 28, pp. 1153–78, 2013.

B Boockmann, SL Thomsen and T Walter, *Intensifying the use of benefit sanctions – an effective tool to shorten welfare receipt and speed up transitions to employment?*, IZA Journal of Labor Policy 3:21, 2014.

RC Fording, SF Schram and J Soss, *Do welfare sanctions help or hurt the poor*? estimating the causal effect of sanctioning on client earnings, Social Service Review, vol. 87, No. 4, pp. 641–676, 2013.

B Hofmann, *Short and long-term ex-post effects of unemployment insurance sanctions*. Jahrbücher für Nationalökonomie und Statistik, 232(1), 31–60, 2012.

B Van der Klaauw and JC Van Ours , *Carrot and stick: How re-employment bonuses and benefit sanctions affect exit rates from welfare*, Journal of Applied Econometrics, Vol. 28, pp. 275–96, 2013.

R Lalive and J Zweimüller, *The effect of benefit sanctions on the duration of unemployment*, Journal of the European Economic Association, vol. 3, No. 6, pp. 1386–1417, 2005.

R Loopstra, A Reeves, M McKee and D Stuckler, *Do punitive approaches to unemployment benefit recipients increase welfare exit and employment?* A cross-area analysis of UK sanctioning reforms, Sociology working paper 2015-01, Department of Sociology, University of Oxford, 2015.

K-U Müller and V Steiner, *Imposed benefit sanctions and the unemployment to employment transition: the German experience*, Discussion papers, German Institute for Economic Research, No. 792, 2008.

M Svarer, *The effect of sanctions on exit from unemployment: evidence from Denmark*, Economica, vol. 78, pp. 751–78, 2011.

GJ Van den Berg, B Hofmann, and A Uhlendorff, *The role of sickness in the evaluation of job search assistance and sanctions*, DIW Berlin Discussion paper 1542, German Institute for Economic Research (DIW), Berlin, 2016.

GJ Van den Berg, B Van der Klaauw and JC Van Ours, *Punitive sanctions and the transition rate from welfare to work*, Journal of Labor Economics, vol 22, pp. 211–41, 2004.

GJ Van den Berg and J Vikstrom, *Monitoring job offer decisions punishments exit to work and job quality*, Working Paper, IFAU – Institute for Evaluation of Labour Market and Education Policy, No. 2009:18, 2009.

GJ Van den Berg, A Uhlendorff and J Wolff, *Sanctions for young welfare recipients*, Working Paper, IFAU – Institute for Evaluation of Labour Market and Education Policy, No. 2013:26, 2013.

National Audit Office

Design and Production by NAO External Relations
DP Ref: 11351-001