

Technical Note on changes to the modelling that underpins Income Related Benefits: Estimates of Take-Up

Summary

1. This note describes a technical change in how the National Statistics series Income Related Benefits: Estimates of Take-Up will be produced in the future.
2. The change relates to our approach to modelling income related benefit entitlement for Family Resources Survey respondents. The note shows that the quantitative impact of this technical change is small, with the majority of the headline upper and lower take-up ranges varying by only one or two percentage points.

Background

3. The take-up estimates rely on comparing information about benefit receipt from administrative sources with an estimate of the numbers who are entitled to, but not receiving, income related benefits (Entitled Non-Recipients or ENRs).
4. The ENR estimates are based on the Family Resources Survey (FRS). The current procedure relies on a suite of computer programs which looks at the reported information about incomes and personal circumstances, for each respondent. The programs seek to mimic the benefit eligibility regulations and identify the income related benefits the respondent would be entitled to if they were to apply.
5. This modelled entitlement information is then compared to the reported information about the benefits that they are actually receiving, and an initial estimate of ENRs can be obtained. After adjustment for sampling and non-sampling errors a range of possible ENRs can be published.
6. The current suite of programs that model benefit entitlement are maintained and updated by Statistical Services Division (SSD) purely for the purposes of producing National Statistics. This requires resource to ensure the correct benefit rules are being applied and that any changes to benefit rules are incorporated.
7. The Department for Work and Pensions also maintains a static micro simulation model called the Policy Simulation Model (PSM). The aim of this model is similar to the suite of programs maintained by SSD. It also seeks to mimic the benefit regulations and apply them to FRS respondents in order to get benefit entitlement. It is widely used to simulate changes in the benefit and tax system, but can of course also model the system as it currently stands.

8. The technical change we are proposing is to use the PSM to identify income related benefit entitlement for FRS respondents rather than the current SSD model.
9. The benefits from this technical change are as follows:
 - Less risk of modelling error in the National Statistics, because the PSM is widely used and scrutinised by a wide user community. Whereas the SSD model was not widely available.
 - Less risk of error in the PSM (and therefore policy analysis within DWP) because of the extra scrutiny exercised by the National Statistics producers.
 - Reduced resource requirement in updating, maintaining and validating a separate model.
 - Greater transparency, at least for internal customers, in understanding exactly how the estimates are constructed.
 - Consistency with other take-up modelling using the PSM.

Approach

10. In making this change our primary focus was to avoid any reduction in quality of the National Statistics estimates. A detailed comparison exercise was undertaken and where differences between the two modelling approaches came to light, reference to the published benefit regulations was made and one of four conclusions reached:
 - A. The PSM was found better to reflect the regulations and no further action was taken.
 - B. The SSD model was found better to reflect the regulations and an improvement was built into the PSM.
 - C. The SSD model was found to be more suitable from the point of view of National Statistics purposes, though the PSM offered a better option for policy analysts. In this case SSD analysts built their approach into a variant of the main PSM.
 - D. Both models were found to be equally valid in approach. In this case no further action was taken. The presumption was towards using the PSM approach to maximise the benefits of the change, as identified above.

11. However, the guiding principal to all changes to the systems as outlined in the points above was to result in a modelling approach which utilised the best of both the SSD model and PSM for the production of the National Statistics.

Results

12. The tables in the Annex give a full comparison between the published results for 2007-08 and 2008-09 and the results that would have been obtained if the (variant of the) Policy Simulation Model had been used. Table 1 below gives a summary of the changes to caseload and expenditure take-up ranges, which are small for all benefits.

13. The tables in the Annex also reflect some small changes to the administrative data for Income Support & Employment and Support Allowance (Income-Related) (IS & ESA (IR)) and Jobseeker's Allowance (Income-Based) (JSA (IB)) that we have made to introduce greater consistency with the other benefits.
14. Please note that for Pension Credit the 2008-09 results better reflect the impact of using the PSM: the 2007-08 figures are also affected by a difference in the data linking methodology used, and do not just reflect the change caused by the move to the PSM. This is due to the data linking methodology being improved for 2008-09 and the approach used in 2007-08 not being suitable for use against the PSM output.
15. In order to overcome this, we have applied the 2008-09 data linking methodology to the 2007-08 data. This has resulted in the changes being slightly larger than the change caused by the move between SSD and PSM models alone. This should be taken into account when comparing results.

Next Steps

16. Income Related Benefits Estimates of Take-Up 2009-10 uses this new approach based on the Policy Simulation Model.
17. The 2009-10 publication also includes the re-issued 2007-08 and 2008-09 figures as derived from the new methodology covered in the annex to this technical note. The 2009-10 report highlights the break in the time series associated with the move to the PSM methodology.
18. The 2007-08 and 2008-09 historical figures derived from the new methodology take precedence over the previous figures in terms of the official take-up series.

Contact Details

19. If you have further questions or comments please contact the team at irb.takeup@dwp.gsi.gov.uk or on 020 7449 7344.

Table 1: Summary of previously published and revised estimates of take-up ranges due to changes to the modelling approach.

Take-Up measure / Year		IS & ESA (IR)	Pension Credit				Housing Benefit	Council Tax Benefit	JSA (IB)
			Pension Credit	Guarantee Credit only	Guarantee & Savings Credit	Savings Credit only			
Caseload Take-Up Ranges (%)	2007-08 (published)	78 : 88	61 : 70	72 : 81	66 : 80	52 : 58	80 : 87	62 : 68	52 : 60
	2007-08 (revised)	79 : 90	63 : 73	70 : 81	69 : 82	51 : 60	80 : 87	63 : 70	51 : 60
	Change	1 : 1	3 : 3	-2 : 0	4 : 2	-1 : 2	0 : 0	1 : 2	-1 : 0
	2008-09 (published)	78 : 90	62 : 73	71 : 83	72 : 83	44 : 54	77 : 86	63 : 70	47 : 59
	2008-09 (revised)	80 : 91	63 : 74	72 : 84	71 : 83	46 : 56	77 : 85	64 : 71	49 : 59
	Change	2 : 1	1 : 1	0 : 1	0 : 0	1 : 3	0 : 0	0 : 1	2 : 0
Expenditure Take-Up Ranges (%)	2007-08 (published)	85 : 93	70 : 80	74 : 85	70 : 84	58 : 65	85 : 91	63 : 70	54 : 65
	2007-08 (revised)	87 : 94	73 : 83	74 : 86	74 : 86	57 : 67	85 : 91	66 : 73	52 : 64
	Change	1 : 1	3 : 3	0 : 1	4 : 2	-1 : 3	0 : 0	2 : 2	-1 : -1
	2008-09 (published)	84 : 94	71 : 81	72 : 85	76 : 87	50 : 61	82 : 90	65 : 73	49 : 63
	2008-09 (revised)	85 : 94	72 : 82	74 : 87	76 : 87	51 : 63	83 : 90	66 : 74	49 : 62
	Change	1 : 0	1 : 1	1 : 1	0 : 0	0 : 1	0 : 0	1 : 1	0 : -2